# Tables

## Section 2

**Table 2.2-01 Water Resources Monitoring Programs Relevant to the Mound Basin GSP.**

| Program | Agency | Parameter(s) | Description | Reference |
|---|---|---|---|---|
| United Groundwater Extraction Reporting | United Water Conservation District | Groundwater Extraction | Semi-annual self-reporting of groundwater extractions records for two 6-month periods (January 1 through June 30 and July 1 through December 31) | California Water Code Sections 74500-74554 |
| United Groundwater Monitoring Program | United Water Conservation District | Groundwater Levels<br>Groundwater Quality | Districtwide groundwater monitoring program | https://www.unitedwater.org/key-documents/#groundwater-conditions |
| Countywide Groundwater Monitoring Program | Ventura County Watershed Protection District | Groundwater Levels<br>Groundwater Quality | Countywide groundwater monitoring program | https://s29422.pcdn.co/wp-content/uploads/2018/08/2015-Annual-Report-Final-Reduced.pdf |
| Division of Drinking Water Compliance Monitoring | City of Ventura (Ventura Water) | Groundwater Quality | Ventura Water monitors the quality of groundwater from its municipal wells in the Mound Basin. | https://www.cityofventura.ca.gov/DocumentCenter/View/21807/2020-Consumer-Confidence-Report |
| California Statewide Groundwater Elevation Monitoring (CASGEM) | Ventura County Watershed Protection District | Groundwater Levels | VCWPD is the CASGEM monitoring entity for the Ventura County. Data is compiled from the Countywide Groundwater Monitoring Program and cooperative entities. | https://water.ca.gov/Programs/Groundwater-Management/Groundwater-Elevation-Monitoring--CASGEM |
| Groundwater Ambient Monitoring and Assessment Program (GAMA) | State Water Resources Control Board | Groundwater Quality | SWRCB Program implemented in 2000 (modified by Assembly Bill 599 in 2001) to monitor and assess groundwater basins throughout the state. | https://www.waterboards.ca.gov/water_issues/programs/gama/ |
| GeoTracker | State Water Resources Control Board | Groundwater Quality | Records for contamination remediation sites. | https://geotracker.waterboards.ca.gov/ |
| Lower Santa Clara River Salt and Nutrient Management Plan (SNMP) | Los Angeles Regional Water Quality Control Board and regulated entities | Groundwater Quality | Monitoring program for plan implementation of the SNMP to meet the requirements of the Recycled Water Policy (SWRCB Resolution 2009-0011). Monitoring program relies primarily on existing monitoring programs listed on other of this table. | https://www.waterboards.ca.gov/losangeles/water_issues/programs/salt_and_nutrient_management/docs/lscr/3_FinalLSCRSNMP_pg38-376.pdf |
| Countywide Precipitation Monitoring | Ventura County Watershed Protection District | Precipitation | Countywide rainfall monitoring program (3 active stations located within Mound Basin See Figure 3.1-01) | https://www.vcwatershed.net/hydrodata/ |
| Countywide Stream Flow Monitoring | Ventura County Watershed Protection District | Stream flow | Countywide stream flow monitoring program (4 stations located within Mound Basin – See Figure 3.1-01) | https://www.vcwatershed.net/hydrodata/ |
| Countywide Evaporation Monitoring | Ventura County Watershed Protection District | Evaporation | Countywide evaporation monitoring program (no stations located within Mound Basin, but data is useful for estimating conditions in the Basin) | https://www.vcwatershed.net/hydrodata/ |
| California Irrigation Management Information System (CIMIS) | California Department of Water Resources | Weather Station (multiple parameters) | Statewide weather station network (no stations located within Mound Basin, but data is useful for estimating conditions in the Basin) | https://cimis.water.ca.gov/ |
| National Water Information System | United States Geologic Survey | Groundwater Levels<br>Groundwater Quality<br>Stream Flow<br>Spring Flow | Countrywide monitoring network (no sites are located within Mound Basin, but data is relevant for regional context) | https://maps.waterdata.usgs.gov/mapper/index.html |

**Table 2.2-02 Water Resources Management Programs Relevant to the Mound Basin GSP**

| Program | Agency | Parameter(s) | Description | Reference |
|---|---|---|---|---|
| City of Ventura Urban Water Management Plan | City of Ventura (Ventura Water) | Water Supply | Planning tool that generally guides the actions related to water supply issues for the Ventura Water service area. | https://www.cityofventura.ca.gov/DocumentCenter/View/5623/2015-Urban-Water-Management-Plan-Main-Text |
| Casitas Municipal Water District Urban Water Management Plan | Casitas Municipal Water District | Water Supply | Planning tool that generally guides the actions related to water supply issues for the Casitas Municipal Water District service area. | https://www.casitaswater.org/home/showpublisheddocument/163/636896291075730000 |
| Integrated Regional Water Management (IRWM) Program and Plan | Watershed Coalition of Ventura County (WCVC) | Water Supply Groundwater Levels<br>Groundwater Levels<br>Surface Water Quality | Initiated with Proposition 50 in 2006, the program provides competitive grant funds for projects and studies in accordance with a comprehensive IRWM Plan. | http://wcvc.ventura.org/<br>http://www.scrwatershed.org/ |
| Freeman Diversion and Related Facilities | United Water Conservation District | Groundwater Recharge | Diversion of Santa Clara River flood flows for managed aquifer groundwater recharge and direct water deliveries in-lieu of groundwater pumping in the adjacent Oxnard Subbasin. Although these water management activities occur in the adjacent Oxnard Basin, groundwater levels benefits are realized in the Mound Basin. | https://www.unitedwater.org/about-us/#facilities-strategies |
| Lower Santa Clara River Salt and Nutrient Management Plan (SNMP) | Los Angeles Regional Water Quality Control Board and regulated entities | Groundwater Quality | Plan to meet the requirements of the Recycled Water Policy (SWRCB Resolution 2009-0011). | https://www.waterboards.ca.gov/losangeles/water_issues/programs/salt_and_nutrient_management/docs/lscr/3_FinalLSCRSNMP_pg38-376.pdf |
| Ventura County Stormwater Quality Monitoring Program | Ventura County Watershed Protection District and City Partners | Surface Water Quality | Program meets the requirements of the Ventura County Stormwater Permits. Includes water quality sampling, watershed assessments, business inspections, and pollution prevention programs. | http://www.vcstormwater.org/ |
| VCAILG Water Quality Management Plan | Los Angeles Regional Water Quality Control Board and regulated entities. Program is managed by the Ventura County Farm Bureau | Surface Water Quality<br>Groundwater Quality | VCAILG's Water Quality Management Plan (WQMP) serves as the roadmap to meet local water quality standards and goals. These plans are prepared and submitted to the Los Angeles Regional Water Quality Control Board (Regional Board) to comply with the agricultural conditional waiver of waste discharge requirements. The plan addresses measurement and control of discharges from irrigated farmland to protect surface water quality. | http://www.farmbureauvc.com/issues/water-issues/water-quality/vcailg |

# Tables

## Section 3

## Table 3.1-01 Summary of Hydraulic Parameters for Mound Basin Hydrostratigraphic Units.

| Hydrostratigraphic Unit (aquifer or aquitard) | Horizontal Hydraulic Conductivity (feet per day) | Vertical Hydraulic Conductivity (feet per day) | Specific Yield (percent) | Storage Coefficient (unitless) |
|---|---|---|---|---|
| Shallow Alluvial Deposits | 200 | 20 | 15 | N/A |
| Fine-grained Pleistocene deposits | 0.01 | 0.001 | 5 | 0.001 |
| Mugu Aquifer | 100 | 10 | 15 | 0.001 |
| Mugu-Hueneme aquitard | 0.01 | 0.001 | 5 | 0.0005 |
| Hueneme Aquifer | 20 | 2 | 10 | 0.0005 |
| Hueneme-Fox Canyon aquitard | 0.1 | 0.01 | 5 | 0.0005 |
| Fox Canyon Aquifer-main | 10 | 1 | 10 | 0.0005 |
| Fox Canyon upper-basal aquitard | 0.1 | 0.01 | 5 | 0.0005 |
| Fox Canyon Aquifer – basal | 10 | 1 | 10 | 0.0005 |

**Notes:**
N/A = Not applicable

## Table 3.1-02 Aquifers and Pumping Rates for Active Water Supply Wells in Mound Basin During 2019.

| State Well Identification Number | Reported Groundwater Use | Year Well Constructed | Depth of Screened Interval(s) (feet bgs)[b] | Aquifers Screened | Groundwater Pumped in 2019 for Agricultural Use[b] (acre-feet) | Groundwater Pumped in 2019 for Municipal and Industrial Use[b] (acre-feet) | Total Groundwater Pumped in 2019[b] (acre-feet) |
|---|---|---|---|---|---|---|---|
| 02N22W07P01S | Agriculture | 2000 | 460-580 | Mugu | 28 | 0 | 28 |
| 02N22W08G01S | M&I | 2000 | 580-650 | Mugu[c] | 0 | 1,740 | 1,740 |
| 02N22W19M04S | Agriculture | 2004 | 343-493 | Mugu | 155 | 0 | 155 |
| 02N23W13E01S | Agriculture | 1983 | 523-1123 | Mugu | 2 | 0 | 2 |
| 02N23W13G01S | Agriculture | 2010 | 360-860 | Mugu | 470 | 0 | 470 |
| 02N23W14H01S | Agriculture | 2016 | 407-717, 877-977, 1077-1137 | Mugu | 293 | 0 | 293 |
| 02N22W09K01S | Agriculture | --- | 236-336 | Mugu & Hueneme | 51 | 0 | 51 |
| 02N22W09K08S | Agriculture | 2010 | 224-284, 304-324, 404-465 | Mugu & Hueneme | 73 | 0 | 73 |
| 02N22W10N02S | Agriculture | 1947 | 200-251, 279-354 | Mugu & Hueneme | 9 | 0 | 9 |
| 02N22W15E02S | Agriculture | 2014 | 120-320 | Mugu & Hueneme | 1 | 0 | 1 |
| 02N22W08F01S | M&I | 1994 | 580-640, 900-940, 1060-1180 | Hueneme | 0 | 1,546 | 1,546 |
| 02N22W10N03S | Agriculture | 2002 | 200-280 | Hueneme | 115 | 0 | 115 |
| 02N23W13F02S | Agriculture | 1990 | 521-982 | Hueneme[d] | 279 | 0 | 279 |
| 02N22W15D02S | Agriculture | 1973 | 227-379 | Hueneme | 74 | 0 | 74 |
| 02N22W16K01S | M&I | 1934 | 292-345 | Hueneme | 0 | 28 | 28 |
| 02N22W17M02S | M&I | 2001 | 550-850 | Hueneme | 0 | 133 | 133 |
| 02N22W18N01S | Agriculture | 1957 | 660-696, 804-876, 912-1020, 1056-1200 | Hueneme | 25 | 0 | 25 |
| 02N22W19K03S | Agriculture | 2007 | 450-470, 490-510, 560-600 | Hueneme | 107 | 0 | 107 |
| 02N22W20E01S | Agriculture | 1991 | 462-592, 612-723, 737-818 | Hueneme | 91 | 0 | 91 |

| State Well Identification Number | Reported Groundwater Use | Year Well Constructed | Depth of Screened Interval(s) (feet bgs)[b] | Aquifers Screened | Groundwater Pumped in 2019 for Agricultural Use[b] (acre-feet) | Groundwater Pumped in 2019 for Municipal and Industrial Use[b] (acre-feet) | Total Groundwater Pumped in 2019[b] (acre-feet) |
|---|---|---|---|---|---|---|---|
| 02N23W13K03S | Agriculture | 1977 | 800-1200 | Hueneme | 251 | 0 | 251 |
| 02N23W13K04S | Agriculture | 1981 | 800-1200 | Hueneme | 187 | 0 | 187 |
| 02N22W09K05S | Agriculture | 1975 | 625-1455 | Hueneme & Fox Canyon | 8 | 0 | 8 |
| 02N22W09K07S | Agriculture | 2003 | 640-1440 | Hueneme & Fox Canyon | 183 | 0 | 183 |
| 02N22W10N04S | Agriculture | 2017(?) | --- | unknown[e] | 336 | 0 | 336 |
| 02N22W16H01S | Agriculture | --- | --- | unknown[e] | 135 | 0 | 135 |
| 02N23W24F01S | Agriculture | --- | --- | unknown[e] | 2 | 0 | 2 |
| | | | | ***Totals:*** | ***2,873*** | ***3,446*** | ***6,319*** |

**Notes:**

"---" = Not reported.

M&I = Municipal and industrial.

a feet bgs = Feet below ground surface, reported by driller (updated by video survey by United Water Conservation District in some wells).

b Reported by owner to United Water Conservation District for calendar year 2019.

c This well may be partially screened in the Hueneme Aquifer; however, groundwater extracted from this well likely is derived primarily from the Mugu Aquifer.

d This well is screened primarily in the Hueneme Aquifer with a small length of its screen in the Mugu Aquifer. Sample results from this well appear to be consistent with sample results from other wells screened in the Hueneme Aquifer, indicating that groundwater extracted from this well is derived primarily from the Hueneme Aquifer.

e Agricultural water-supply wells with unknown screen depths are assumed in United's (2021) groundwater model to be constructed to extract groundwater from the shallowest principal aquifer, which is the Mugu Aquifer in the area of this well.

## Table 3.1-03 Groundwater Quality Objectives for Mound Basin.

| Constituent | Groundwater Quality Objective (Unconfined Aquifers) | Groundwater Quality Objective (Confined Aquifers) |
|---|---|---|
| TDS (mg/L) | 3,000 | 1,200 |
| Sulfate (mg/L) | 1,000 | 600 |
| Chloride (mg/L) | 500 | 150 |
| Boron (mg/L) | N/A | 1.0 |

**Notes:**
N/A = not applicable.
TDS = total dissolved solids.

## Table 3.2-01 Vertical Hydraulic Gradients Calculated at Clustered Monitoring Wells in Mound Basin.

| Location | Well IDs | Screened Intervals | Screened Aquifers | Data Record Time Period | Minimum Vertical Gradient (ft/ft) | Maximum Vertical Gradient (ft/ft) | Average Vertical Gradient (ft/ft) |
|---|---|---|---|---|---|---|---|
| Marina Park | 02N23W15J03S, 02N23W15J02S | 170-240, 480-660 | fine-grained Pleistocene deposits, Mugu | 1995-2019 | 0.009 | 0.120 | 0.075 |
| | 02N23W15J02S, 02N23W15J01S | 480-660, 970-1070 | Mugu, Hueneme | 1995-2019 | -0.020 | 0.033 | 0.008 |
| Camino Real Park | 02N22W07M03S, 02N22W07M02S | 210-280, 710-780 | fine-grained Pleistocene deposits, Mugu | 1995-2019 | 0.219 | 0.325 | 0.276 |
| | 02N22W07M02S, 02N22W07M01S | 710-780, 1200-1280 | Mugu, Hueneme | 1995-2019 | -0.028 | 0.043 | 0.008 |
| Community Water Park, Kimball Rd. | 02N22W09L04S, 02N22W09L03S | 480-510, 890-950 | Hueneme, Hueneme | 2008-2019 | -0.018 | 0.070 | 0.038 |

**Note:**
A positive vertical gradient value represents downward flow; a negative vertical gradient value represents an upward flow.

**Table 3.3-01 Summary of Data Sources for Water Budget Components.**

| Water Budget Component | Data Source or Estimation Method |
|---|---|
| ***Directly measured components:*** | |
| Precipitation (i.e., rainfall) | • Historical and current: Precipitation data for Ventura County Government Center and other rain gauges in Ventura County collected and maintained by Ventura County Watershed Protection District (VCWPD) at https://www.vcwatershed.net/hydrodata/.<br>• Projected: VCWPD precipitation data as noted above (assume repeat of water year 1945-2019 rainfall amounts), modified in accordance with central-tendency climate-change precipitation factors for 2030 and 2070, as recommended by California Department of Water Resources (2018). |
| Surface water imports | • Historical and current: Annual volumes of surface water from Casitas MWD used within City of Ventura reported by Ventura Water (2020a), scaled proportionally to percentage of Ventura Water's service area in Mound Basin.<br>• Projected: Planned surface-water imports to City of Ventura (Ventura Water, 2020b), scaled proportionally to percentage of Ventura Water's service area in Mound Basin. |
| Groundwater imports | • Historical and current: Annual or long-term average volumes of groundwater imported by agricultural users and Ventura Water (described in Section 3.1.1.3), scaled proportionally to percentage of application area within Mound Basin (Alta MWC, 2020; FICO, 2017a; Ventura Water, 2020a).<br>• Projected: Planned long-term average groundwater imports to City of Ventura (Ventura Water, 2020b), scaled proportionally to percentage of Ventura Water's service area in Mound Basin. Application of imported groundwater by Alta MWC and FICO assumed to remain constant over the long-term average. |
| Groundwater extractions (pumping) | • Historical and current: Groundwater extraction reported by users to United semiannually (for periods January 1-June 30 and July 1 through December 31 of each year), with monthly pumping estimated from semiannual totals based on monthly rainfall.<br>• Projected: United groundwater extraction data as noted above (assume repeat of water year 1945-2019 rainfall amounts), modified in accordance with central-tendency climate-change evapotranspiration factors for 2030 and 2070, as recommended by California Department of Water Resources (2018). |
| ***Components estimated using related data:*** | |
| Ephemeral stream flows entering and exiting Mound Basin in barrancas | • Historical, current, and projected: Annual streamflows reported by VCWPD (https://www.vcwatershed.net/hydrodata/) for Arundell Barranca from 1986 through 2006 were correlated to rainfall at Ventura County Government Center (described above), and extrapolated to the remainder of Mound Basin (described further in Section 3.3) based on historical, current, and projected annual rainfall. |
| Surface flows entering and exiting Mound Basin in Santa Clara River | • Historical, current, and projected: Estimated based on past and assumed future rainfall in the Santa Clara River watershed, based on surface-water and groundwater modeling conducted by United (2021a, 2021b, and 2021c). |

| Water Budget Component | Data Source or Estimation Method |
|---|---|
| ***Components estimated by groundwater flow modeling:*** | |
| Interaction (exchanges) of groundwater and surface water within Mound Basin | • Historical, current, and projected: Calculated for the Santa Clara River and Harmon Barranca by United's groundwater flow model based on factors including river stage, groundwater elevation, and hydraulic parameters within and directly below the riverbed (United, 2021a, 2021b, and 2021c). River stage and surface flows in the Santa Clara River are a function of rainfall throughout the Santa Clara River watershed, as noted above. |
| Recharge (including infiltration of precipitation, agricultural and M&I return flows, and mountain-front) | • Historical, current, and projected: Infiltration of precipitation and mountain-front recharge were estimated based on model calibration as a function of monthly rainfall (United, 2021a, 2021b, and 2021c). M&I and agricultural return flows were also estimated based on model calibration, but are a function of water applied to farmland or used for M&I purposes, as described further in Section 3.3. The volume of water applied to farmland in the future was modified in accordance with central-tendency climate-change evapotranspiration factors for 2030 and 2070, as recommended by California Department of Water Resources (2018). |
| Direct evapotranspiration (ET) of groundwater in aquifers | • Historical, current, and projected: Significant rates of ET directly from aquifers in Mound Basin area assumed to occur solely along the Santa Clara River, and are calculated by United's groundwater flow model based on factors including maximum ET rate, ET extinction depth, and, groundwater elevations (United, 2021a, 2021b, and 2021c). Future maximum ET rates were modified in accordance with central-tendency climate-change evapotranspiration factors for 2030 and 2070, as recommended by California Department of Water Resources (2018). |
| Discharge of shallow groundwater to tile drains | • Historical, current, and projected: Where tile drains are present (southern Mound Basin), rates of discharge were calculated by United's groundwater flow model based on factors including drain depth, hydraulic parameters of the drains, and groundwater elevations in the Shallow Alluvial Deposits (United, 2021a, 2021b, and 2021c). |
| Groundwater underflow into or out of Mound Basin (from adjacent basins or offshore) | • Historical, current, and projected: Calculated by United's groundwater flow model based on aquifer parameters (most notably transmissivity) and hydraulic gradients between Mound Basin and adjacent basins or offshore areas (United, 2021a, 2021b, and 2021c). |
| Vertical groundwater flow between aquifers (and other HSUs) within Mound Basin | • Historical, current, and projected: Calculated by United's groundwater flow model based on aquifer parameters (most notably vertical conductance) and vertical hydraulic gradients between each aquifer and aquitard within Mound Basin (United, 2021a, 2021b, and 2021c). |

**Table 3.3-02 Mound Basin Surface Water Inflows and Outflows by Water Year, Historical and Current Periods.**

| | | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Fate of Imported Surface Water (from Casitas MWD) | | | | | | |
| Water Year | Annual Rainfall at Ventura County Govt. Center (inches) | Water-Year Type Based on Local Rainfall[a] | California Dept. of Water Resources "Water Year Type"[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | M&I Return Flows[e] | Consumptive Use[f] | Groundwater/ Surface Water Exchange in the Santa Clara River[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| *Historical period (water years 1985 through 2015)* | | | | | | | | | | | | | | | | | |
| 1986 | 25.15 | Above Average | Above Normal | 157,512 | 6,814 | 12,828 | 4,706 | -158,857 | -4,036 | -15,606 | -235 | -4,470 | 244 | -30 | 182,103 | -183,234 | -1,131 |
| 1987 | 7.50 | Below Average | Dry | 1,287 | 1,170 | 2,202 | 6,229 | -3,044 | -622 | -2,750 | -311 | -5,918 | 363 | 0 | 11,251 | -12,645 | -1,394 |
| 1988 | 13.22 | Near Average | Dry | 24,862 | 2,999 | 5,646 | 5,740 | -26,229 | -1,872 | -6,772 | -287 | -5,453 | 221 | -6 | 39,468 | -40,619 | -1,152 |
| 1989 | 8.23 | Below Average | Dry | 1,403 | 1,403 | 2,642 | 6,780 | -2,805 | -1,081 | -2,964 | -339 | -6,441 | 527 | -4 | 12,755 | -13,634 | -879 |
| 1990 | 5.62 | Below Average | Critical | 1,577 | 569 | 1,070 | 4,217 | -2,901 | -578 | -1,061 | -211 | -4,006 | 217 | 0 | 7,650 | -8,757 | -1,107 |
| 1991 | 16.92 | Near Average | Dry | 79,289 | 4,182 | 7,873 | 2,162 | -80,387 | -3,029 | -9,026 | -108 | -2,054 | -112 | -23 | 93,506 | -94,740 | -1,233 |
| 1992 | 20.34 | Above Average | Wet | 251,991 | 5,276 | 9,932 | 768 | -252,632 | -4,035 | -11,173 | -38 | -730 | -896 | -26 | 267,967 | -269,530 | -1,562 |
| 1993 | 28.76 | Above Average | Wet | 831,337 | 7,969 | 15,001 | 1,607 | -830,609 | -5,115 | -17,854 | -80 | -1,526 | -2,402 | -40 | 855,913 | -857,627 | -1,714 |
| 1994 | 11.68 | Near Average | Above Normal | 48,785 | 2,507 | 4,719 | 3,440 | -50,028 | -1,468 | -5,757 | -172 | -3,268 | 844 | -9 | 60,294 | -60,702 | -408 |
| 1995 | 31.72 | Above Average | Wet | 427,824 | 8,915 | 16,783 | 1,126 | -428,589 | -5,808 | -19,890 | -56 | -1,070 | -1,500 | -8 | 454,648 | -456,921 | -2,273 |
| 1996 | 12.79 | Near Average | Above Normal | 56,652 | 2,862 | 5,387 | 3,005 | -58,198 | -1,981 | -6,267 | -150 | -2,855 | 923 | -11 | 68,828 | -69,462 | -634 |
| 1997 | 14.75 | Near Average | Below Normal | 79,380 | 3,488 | 6,567 | 4,855 | -81,048 | -2,762 | -7,293 | -243 | -4,612 | 431 | -15 | 94,721 | -95,973 | -1,251 |
| 1998 | 42.54 | Above Average | Wet | 671,093 | 12,375 | 23,296 | 2,972 | -671,626 | -7,531 | -28,140 | -149 | -2,823 | -2,148 | 142 | 709,878 | -712,417 | -2,539 |
| 1999 | 10.33 | Below Average | Wet | 35,400 | 2,075 | 3,906 | 4,806 | -36,943 | -984 | -4,997 | -240 | -4,566 | 819 | -2 | 47,005 | -47,731 | -726 |
| 2000 | 17.11 | Near Average | Dry | 53,289 | 4,243 | 7,987 | 3,985 | -55,147 | -2,619 | -9,612 | -199 | -3,786 | 915 | -18 | 70,420 | -71,381 | -961 |
| 2001 | 22.79 | Above Average | Above Normal | 151,353 | 6,059 | 11,407 | 4,297 | -153,137 | -4,021 | -13,445 | -215 | -4,082 | 172 | -29 | 173,288 | -174,928 | -1,641 |
| 2002 | 6.41 | Below Average | Critical | 1,001 | 821 | 1,546 | 4,867 | -3,002 | -690 | -1,677 | -243 | -4,623 | 375 | -3 | 8,611 | -10,239 | -1,628 |
| 2003 | 19.00 | Near Average | Below Normal | 50,124 | 4,847 | 9,125 | 3,354 | -51,683 | -3,446 | -10,527 | -168 | -3,187 | 987 | -20 | 68,438 | -69,030 | -593 |
| 2004 | 10.73 | Below Average | Below Normal | 27,751 | 2,203 | 4,147 | 4,666 | -29,289 | -1,549 | -4,801 | -233 | -4,433 | 842 | -8 | 39,609 | -40,312 | -703 |
| 2005 | 34.64 | Above Average | Wet | 1,024,362 | 9,849 | 18,540 | 4,859 | -1,024,403 | -7,132 | -21,258 | -243 | -4,616 | -2,934 | -55 | 1,057,610 | -1,060,640 | -3,030 |
| 2006 | 16.64 | Near Average | Wet | 151,093 | 4,093 | 7,704 | 3,686 | -152,133 | -2,671 | -9,126 | -184 | -3,502 | -3 | -12 | 166,576 | -167,631 | -1,055 |
| 2007 | 5.75 | Below Average | Critical | 1,867 | 610 | 1,149 | 4,575 | -3,728 | -331 | -1,428 | -229 | -4,346 | 511 | 0 | 8,711 | -10,062 | -1,351 |
| 2008 | 12.77 | Near Average | Critical | 151,068 | 2,855 | 5,375 | 3,864 | -152,501 | -2,646 | -5,583 | -193 | -3,671 | 266 | -17 | 163,429 | -164,613 | -1,184 |
| 2009 | 9.32 | Below Average | Below Normal | 25,903 | 1,752 | 3,298 | 3,659 | -27,394 | -1,404 | -3,645 | -183 | -3,476 | 856 | -5 | 35,468 | -36,107 | -639 |
| 2010 | 16.82 | Near Average | Above Normal | 91,609 | 4,150 | 7,813 | 4,093 | -92,623 | -2,992 | -8,971 | -205 | -3,888 | 299 | -15 | 107,964 | -108,694 | -729 |
| 2011 | 19.70 | Above Average | Wet | 161,886 | 5,071 | 9,547 | 4,160 | -162,851 | -3,555 | -11,062 | -208 | -3,952 | -161 | -21 | 180,664 | -181,811 | -1,148 |
| 2012 | 9.49 | Below Average | Below Normal | 10,630 | 1,806 | 3,400 | 3,203 | -11,917 | -806 | -4,401 | -160 | -3,043 | 451 | 0 | 19,490 | -20,326 | -836 |
| 2013 | 5.80 | Below Average | Critical | 34 | 626 | 1,179 | 4,133 | -1,445 | -483 | -1,322 | -207 | -3,927 | 298 | 0 | 6,270 | -7,384 | -1,114 |
| 2014 | 6.14 | Below Average | Critical | 18,733 | 735 | 1,383 | 3,482 | -19,991 | -703 | -1,416 | -174 | -3,308 | 259 | -3 | 24,592 | -25,595 | -1,003 |
| 2015 | 9.15 | Below Average | Critical | 2,391 | 1,697 | 3,196 | 3,311 | -3,543 | -819 | -4,074 | -166 | -3,145 | 156 | -3 | 10,750 | -11,750 | -999 |
| *Average:* | *15.73* | | | *153,050* | *3,801* | *7,155* | *3,887* | *-154,289* | *-2,559* | *-8,397* | *-194* | *-3,692* | *27* | *-8* | *168,263* | *-169,483* | *-1,221* |

| | | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water Year | Annual Rainfall at Ventura County Govt. Center (inches) | Water-Year Type Based on Local Rainfall[a] | California Dept. of Water Resources "Water Year Type"[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | Fate of Imported Surface Water (from Casitas MWD) | | Groundwater/ Surface Water Exchange in the Santa Clara River[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| | | | | | | | | | | | M&I Return Flows[e] | Consumptive Use[f] | | | | | |
| *Current period (water years 2016 through 2019)* | | | | | | | | | | | | | | | | | |
| 2016 | 8.49 | Below Average | Critical | 2,651 | 1,486 | 2,798 | 1,799 | -3,739 | -1,259 | -3,026 | -90 | -1,709 | 167 | -5 | 8,902 | -9,828 | -926 |
| 2017 | 19.11 | Near Average | Below Normal | 88,032 | 4,883 | 9,191 | 1,494 | -88,693 | -3,555 | -10,519 | -75 | -1,419 | -256 | -24 | 103,600 | -104,541 | -941 |
| 2018 | 7.16 | Below Average | Dry | 6,837 | 1,061 | 1,998 | 1,855 | -7,888 | -1,300 | -1,759 | -93 | -1,762 | 196 | -7 | 11,947 | -12,809 | -862 |
| 2019 | 19.19 | Near Average | not listed | 167,440 | 4,908 | 9,240 | 937 | -167,724 | -3,151 | -10,997 | -47 | -890 | -1,188 | -19 | 182,525 | -184,015 | -1,491 |
| *Average:* | *13.49* | | | *66,240* | *3,085* | *5,807* | *1,521* | *-67,011* | *-2,316* | *-6,575* | *-76* | *-1,445* | *-270* | *-14* | *76,743* | *-77,798* | *-1,055* |
| | | | | | | | | | | | | | | | | | |
| ***Average 1986-2019:*** | ***15.46*** | | | ***142,837*** | ***3,717*** | ***6,996*** | ***3,609*** | ***-144,021*** | ***-2,530*** | ***-8,182*** | ***-180*** | ***-3,428*** | ***-8*** | ***-9*** | ***157,496*** | ***-158,697*** | ***-1,201*** |

**Notes:**

Positive values represent inflows or gains of surface-water flows in Mound Basin, and negative numbers represent outflows or losses of surface-water flows in Mound Basin.

a See Section 3.3 for an explanation of how water-year types were classified in this GSP.

b The California Department of Water Resources classification approach is described in Section 3.3.

c Inflows of ephemeral surface water to Mound Basin are estimated based on an empirical relationship between measured streamflow in Arundell Barranca and annual (water year) rainfall measured at Ventura County Government Center, applied to the watershed areas of streams (barrancas) within Mound Basin and upstream from Mound Basin (in stream channels that flow across the basin's northern boundary). Outflows are assumed equal to inflows across the northern basin boundary plus surface flows generated by rainfall within Mound Basin, minus mountain-front recharge of inflows immediately south of the northern boundary of Mound Basin."

d The annual volume of imported surface water from Casitas MWD to Mound Basin is estimated by multiplying the total volume of Ventura Water's Casitas MWD imports by the fraction of Ventura Water's service area that is within Mound Basin.

e Estimated using United's (2021a) groundwater flow model or resulting from model calibration.

f "Consumptive use" represents loss of imported surface water from Casitas MWD to evaporation and wastewater discharges after M&I use, and in this table is equal to imported surface water (from Casitas MWD) minus M&I return flows.

g These components can comprise either net gains or losses of surface water from streams within Mound Basin, depending on hydrogeologic conditions that vary over time.

h Inflows and outflows of surface water in Mound Basin should be equal, resulting in a difference of zero. Although the long-term average difference is less than 1 percent of the long-term average inflows or outflows, indicating good overall agreement, the apparent difference between inflows and outflows is larger during years with above-average rainfall. This likely is a result of minor deviations of actual streamflow in Arundell Barranca in a given water year compared to the empirical relationship developed to estimate basinwide ephemeral flows across the basin."

## Table 3.3-03 Mound Basin Groundwater Inflows and Outflows by Water Year, Historical and Current Periods.

| | | | | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[e] | | | | | Summary (acre-feet per year) | | | | All Aquifers Combined | | | | Mugu Aquifer | | | | Hueneme Aquifer | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water Year | Annual Rainfall at Ventura County Govt. Center (inches) | Water-Year Type Based on Local Rainfall[a] | California Department of Water Resources "Water Year Type"[b] | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[c] | Groundwater Extraction (pumping from wells) | Discharge of Groundwater to Tile Drains[d] | Groundwater/ Surface Water Interaction in the Santa Clara River[f] | Groundwater/ Surface Water Interaction in Harmon Barranca[g] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage per Water Year[h] | Groundwater Released from Storage Between Seasonal Highs[i] | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Cumulative Change in Storage per Water Year | Water-Year Pumping for Change in Storage Graph | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year |
| *Historical period (water years 1985 through 2015)* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1986 | 25.15 | Above Average | Above Normal | 4,880 | 4,036 | -1,171 | -6,452 | -31 | -244 | 30 | 4,603 | -1,105 | -2,341 | 13,548 | -11,345 | -2,203 | -294 | 294 | 294 | 2,203 | 6,452 | -530 | -530 | -135 | -135 | 2,302 | 2,302 | 859 | 859 |
| 1987 | 7.50 | Below Average | Dry | 2,775 | 622 | -1,391 | -7,204 | -109 | -363 | 0 | 4,609 | -7,166 | -91 | 8,007 | -16,324 | 8,317 | 4,794 | -4,794 | -4,500 | -6,114 | 7,204 | -385 | -914 | -1,234 | -1,369 | -1,723 | 579 | -1,834 | -975 |
| 1988 | 13.22 | Near Average | Dry | 3,525 | 1,872 | -1,515 | -7,381 | -131 | -221 | 6 | 4,723 | -5,392 | 536 | 10,662 | -14,639 | 3,978 | 7,129 | -7,129 | -11,629 | -10,091 | 7,381 | -1,416 | -2,331 | -849 | -2,217 | -1,968 | -1,389 | -1,283 | -2,258 |
| 1989 | 8.23 | Below Average | Dry | 3,034 | 1,081 | -1,025 | -8,267 | -14 | -527 | 4 | 4,985 | -7,075 | 834 | 9,939 | -16,908 | 6,969 | 5,299 | -5,299 | -16,928 | -17,060 | 8,267 | -1,097 | -3,428 | -1,612 | -3,829 | -1,463 | -2,853 | -1,744 | -4,002 |
| 1990 | 5.62 | Below Average | Critical | 2,623 | 578 | -1,090 | -10,511 | -23 | -217 | 0 | 5,379 | -9,091 | 2,913 | 11,492 | -20,932 | 9,439 | 9,004 | -9,004 | -25,932 | -26,499 | 10,511 | -2,139 | -5,567 | -2,340 | -6,169 | -2,483 | -5,336 | -2,519 | -6,521 |
| 1991 | 16.92 | Near Average | Dry | 3,990 | 3,029 | -1,089 | -8,595 | -14 | 112 | 23 | 5,309 | -4,527 | 2,105 | 14,568 | -14,225 | -367 | 2,803 | -2,803 | -28,735 | -26,132 | 8,595 | -1,687 | -7,254 | -185 | -6,354 | 364 | -4,972 | -98 | -6,619 |
| 1992 | 20.34 | Above Average | Wet | 4,339 | 4,035 | -1,133 | -7,662 | -41 | 896 | 26 | 4,820 | 7,575 | -67 | 21,692 | -8,903 | -12,833 | -9,228 | 9,228 | -19,506 | -13,299 | 7,662 | 2,821 | -4,433 | 4,708 | -1,647 | 1,043 | -3,929 | 2,097 | -4,522 |
| 1993 | 28.76 | Above Average | Wet | 5,214 | 5,115 | -1,637 | -5,118 | -223 | 2,402 | 40 | 4,112 | 8,054 | -3,013 | 24,937 | -9,990 | -14,946 | -18,265 | 18,265 | -1,241 | 1,647 | 5,118 | 4,163 | -270 | 1,977 | 330 | 3,622 | -307 | 3,471 | -1,051 |
| 1994 | 11.68 | Near Average | Above Normal | 3,208 | 1,468 | -1,292 | -7,469 | -29 | -844 | 9 | 4,299 | 420 | -1,152 | 9,403 | -10,785 | 1,382 | -1,177 | 1,177 | -64 | 265 | 7,469 | 314 | 45 | -193 | 138 | 150 | -157 | -73 | -1,123 |
| 1995 | 31.72 | Above Average | Wet | 6,006 | 5,808 | -1,690 | -7,468 | -176 | 1,500 | 8 | 4,141 | 5,501 | -3,787 | 22,965 | -13,121 | -9,841 | -7,756 | 7,756 | 7,692 | 10,106 | 7,468 | 284 | 329 | 627 | 765 | 2,589 | 2,433 | 1,852 | 729 |
| 1996 | 12.79 | Near Average | Above Normal | 3,654 | 1,981 | -1,201 | -7,912 | -27 | -923 | 11 | 4,078 | 932 | -2,527 | 10,655 | -12,590 | 1,935 | -641 | 641 | 8,334 | 8,172 | 7,912 | 134 | 463 | -118 | 647 | -491 | 1,941 | -264 | 465 |
| 1997 | 14.75 | Near Average | Below Normal | 3,957 | 2,762 | -1,114 | -5,585 | -18 | -431 | 15 | 3,898 | 88 | -3,188 | 10,721 | -10,335 | -386 | 96 | -96 | 8,237 | 8,558 | 5,585 | -180 | 283 | -185 | 461 | -196 | 1,745 | 634 | 1,099 |
| 1998 | 42.54 | Above Average | Wet | 7,033 | 7,531 | -2,037 | -4,273 | -232 | 2,148 | -142 | 3,814 | 2,393 | -5,345 | 22,918 | -12,029 | -10,886 | -8,253 | 8,253 | 16,491 | 19,444 | 4,273 | 93 | 376 | 503 | 964 | 3,681 | 5,425 | 2,845 | 3,944 |
| 1999 | 10.33 | Below Average | Wet | 2,984 | 984 | -1,507 | -7,576 | -88 | -819 | 2 | 3,970 | 419 | -2,444 | 8,359 | -12,434 | 4,076 | 1,834 | -1,834 | 14,657 | 15,368 | 7,576 | 164 | 540 | -111 | 853 | -2,016 | 3,409 | -1,339 | 2,605 |
| 2000 | 17.11 | Near Average | Dry | 4,143 | 2,619 | -1,321 | -8,789 | -81 | -915 | 18 | 4,064 | -1,057 | -2,427 | 10,843 | -14,590 | 3,747 | 3,869 | -3,869 | 10,789 | 11,621 | 8,789 | -451 | 89 | -475 | 378 | -351 | 3,058 | -1,402 | 1,203 |
| 2001 | 22.79 | Above Average | Above Normal | 4,738 | 4,021 | -1,283 | -8,512 | -36 | -172 | 29 | 3,997 | 3,066 | -3,127 | 15,851 | -13,130 | -2,720 | -3,094 | 3,094 | 13,883 | 14,341 | 8,512 | 133 | 222 | 231 | 609 | 639 | 3,697 | 418 | 1,622 |
| 2002 | 6.41 | Below Average | Critical | 2,536 | 690 | -1,593 | -7,714 | -168 | -375 | 3 | 4,196 | -2,569 | -1,190 | 7,425 | -13,609 | 6,185 | 4,697 | -4,697 | 9,186 | 8,157 | 7,714 | -117 | 105 | -543 | 66 | -2,415 | 1,282 | -1,232 | 390 |
| 2003 | 19.00 | Near Average | Below Normal | 4,252 | 3,446 | -1,155 | -7,916 | -20 | -987 | 20 | 4,242 | 24 | -2,271 | 11,984 | -12,349 | 365 | 3,071 | -3,071 | 6,115 | 7,792 | 7,916 | -674 | -569 | -197 | -131 | 54 | 1,336 | -427 | -37 |
| 2004 | 10.73 | Below Average | Below Normal | 3,233 | 1,549 | -1,035 | -9,792 | -5 | -842 | 8 | 4,315 | -1,418 | -1,180 | 9,105 | -14,272 | 5,167 | 3,514 | -3,514 | 2,600 | 2,625 | 9,792 | -366 | -935 | -819 | -951 | -1,256 | 79 | -850 | -887 |
| 2005 | 34.64 | Above Average | Wet | 6,021 | 7,132 | -1,769 | -6,468 | -280 | 2,934 | 55 | 4,014 | 6,978 | -4,919 | 27,133 | -13,437 | -13,695 | -12,191 | 12,191 | 14,791 | 16,320 | 6,468 | 947 | 12 | 1,698 | 747 | 3,370 | 3,449 | 1,966 | 1,079 |
| 2006 | 16.64 | Near Average | Wet | 3,747 | 2,671 | -1,327 | -7,845 | -27 | 3 | 12 | 4,190 | 1,661 | -3,408 | 12,285 | -12,606 | 322 | 1,345 | -1,345 | 13,446 | 15,998 | 7,845 | 354 | 366 | 61 | 808 | -1,752 | 1,697 | -231 | 847 |
| 2007 | 5.75 | Below Average | Critical | 2,677 | 331 | -1,474 | -9,454 | -103 | -511 | 0 | 4,482 | -3,478 | -690 | 7,490 | -15,710 | 8,182 | 4,908 | -4,908 | 8,538 | 7,816 | 9,454 | -295 | 71 | -793 | 15 | -1,571 | 126 | -1,291 | -443 |
| 2008 | 12.77 | Near Average | Critical | 3,501 | 2,646 | -1,345 | -7,962 | -100 | -266 | 17 | 4,424 | 246 | -1,797 | 10,835 | -11,470 | 636 | 1,184 | -1,184 | 7,354 | 7,180 | 7,962 | -341 | -270 | -12 | 3 | 8 | 134 | -514 | -957 |
| 2009 | 9.32 | Below Average | Below Normal | 2,960 | 1,404 | -1,099 | -7,254 | -26 | -856 | 5 | 4,513 | -2,540 | -1,026 | 8,882 | -12,800 | 3,919 | 4,463 | -4,463 | 2,891 | 3,262 | 7,254 | -349 | -619 | -530 | -528 | -897 | -764 | -416 | -1,373 |
| 2010 | 16.82 | Near Average | Above Normal | 3,914 | 2,992 | -1,094 | -6,812 | -14 | -299 | 15 | 4,329 | -1,285 | -1,431 | 11,250 | -10,937 | -482 | 1,858 | -1,858 | 1,033 | 3,744 | 6,812 | -740 | -1,359 | -192 | -719 | 223 | -541 | 71 | -1,302 |
| 2011 | 19.70 | Above Average | Wet | 3,930 | 3,555 | -1,139 | -4,898 | -15 | 161 | 21 | 4,123 | 4,709 | -2,837 | 16,499 | -8,889 | -7,610 | -6,103 | 6,103 | 7,136 | 11,354 | 4,898 | 826 | -533 | 1,138 | 419 | 1,365 | 824 | 1,447 | 145 |

| | | | | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[e] | | | | | Summary (acre-feet per year) | | | | All Aquifers Combined | | | | Mugu Aquifer | | | | Hueneme Aquifer | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water Year | Annual Rainfall at Ventura County Govt. Center (inches) | Water-Year Type Based on Local Rainfall[a] | California Department of Water Resources "Water Year Type"[b] | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[c] | Groundwater Extraction (pumping from wells) | Discharge of Groundwater to Tile Drains[d] | Groundwater/ Surface Water Interaction in the Santa Clara River[f] | Groundwater/ Surface Water Interaction in Harmon Barranca[g] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage per Water Year[h] | Groundwater Released from Storage Between Seasonal Highs[i] | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Cumulative Change in Storage per Water Year | Water-Year Pumping for Change in Storage Graph | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year |
| 2012 | 9.49 | Below Average | Below Normal | 2,700 | 806 | -1,319 | -6,351 | -63 | -451 | 0 | 4,367 | -3,799 | -906 | 7,873 | -12,889 | 5,016 | 1,389 | -1,389 | 5,747 | 6,338 | 6,351 | 351 | -181 | -537 | -118 | -732 | 92 | -640 | -495 |
| 2013 | 5.80 | Below Average | Critical | 2,316 | 483 | -1,481 | -6,544 | -132 | -298 | 0 | 4,664 | -6,425 | 212 | 7,675 | -14,880 | 7,205 | 6,760 | -6,760 | -1,014 | -867 | 6,544 | -1,005 | -1,186 | -1,563 | -1,681 | -1,094 | -1,002 | -1,037 | -1,531 |
| 2014 | 6.14 | Below Average | Critical | 2,560 | 703 | -1,288 | -7,876 | -67 | -259 | 3 | 4,902 | -8,784 | 1,337 | 9,504 | -18,274 | 8,770 | 8,316 | -8,316 | -9,330 | -9,637 | 7,876 | -2,309 | -3,495 | -2,482 | -4,163 | -1,576 | -2,579 | -2,082 | -3,613 |
| 2015 | 9.15 | Below Average | Critical | 2,330 | 819 | -824 | -6,084 | -5 | -156 | 3 | 4,862 | -5,832 | 460 | 8,475 | -12,899 | 4,424 | 6,837 | -6,837 | -16,166 | -14,061 | 6,084 | -1,647 | -5,142 | -1,088 | -5,251 | -1,565 | -4,144 | -518 | -4,132 |
| *Average:* | *15.73* | | | *3,759* | *2,559* | *-1,315* | *-7,391* | *-77* | *-27* | *8* | *4,414* | *-983* | *-1,426* | *12,766* | *-13,243* | *469* | *539* | | | | | | | | | | | | |
| ***Current period (water years 2016 through 2019)*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2016 | 8.49 | Below Average | Critical | 2,500 | 1,259 | -765 | -6,736 | 0 | -167 | 5 | 4,755 | -8,031 | 2,255 | 10,773 | -15,700 | 4,927 | 3,459 | -3,459 | -19,625 | -18,988 | 6,736 | -1,258 | -6,399 | -1,452 | -6,703 | -349 | -4,493 | -1,253 | -5,385 |
| 2017 | 19.11 | Near Average | Below Normal | 3,928 | 3,555 | -935 | -5,214 | -6 | 256 | 24 | 4,650 | -4,473 | 1,021 | 13,434 | -10,627 | -2,807 | -1,064 | 1,064 | -18,561 | -16,181 | 5,214 | -315 | -6,714 | 247 | -6,456 | 531 | -3,961 | 757 | -4,628 |
| 2018 | 7.16 | Below Average | Dry | 2,623 | 1,300 | -809 | -6,848 | 0 | -196 | 7 | 4,806 | -7,249 | 2,293 | 11,029 | -15,102 | 4,074 | 3,051 | -3,051 | -21,613 | -20,254 | 6,848 | -800 | -7,514 | -1,275 | -7,731 | -458 | -4,419 | -638 | -5,266 |
| 2019 | 19.19 | Near Average | not listed | 3,856 | 3,151 | -1,015 | -7,242 | -13 | 1,188 | 19 | 4,777 | 610 | 274 | 13,875 | -8,270 | -5,605 | -2,775 | 2,775 | -18,838 | -14,649 | 7,242 | 485 | -7,029 | 2,452 | -5,279 | 562 | -3,857 | 240 | -5,026 |
| *Average:* | *13.49* | | | *3,227* | *2,316* | *-881* | *-6,510* | *-5* | *270* | *14* | *4,747* | *-4,786* | *1,461* | *12,278* | *-12,425* | *147* | *668* | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Average 1986-2019:*** | ***15.46*** | | | ***3,697*** | ***2,530*** | ***-1,264*** | ***-7,288*** | ***-68*** | ***8*** | ***9*** | ***4,453*** | ***-1,430*** | ***-1,086*** | ***12,708*** | ***-13,147*** | ***431*** | ***554*** | | | | | | | | | | | | |

**Notes:**

N/A = Not applicable

Positive values represent inflows to the Mound Basin, and negative numbers represent outflows from the basin

a See Section 3.3 for an explanation of how water-year types were classified in this report.

b The California Department of Water Resources classification approach is described in Section 3.3.

c The Shallow Alluvial Deposits is modeled to be the sole hydrostratigraphic unit in Mound Basin with saturated conditions consistently shallow enough to be significantly affected by evapotranspiration.

d Tile drains are only known or suspected to be present in the Shallow Alluvial Deposits in Mound Basin.

e These components can comprise either net inflows to or outflows from each aquifer, depending on hydrogeologic conditions that vary over time (e.g., hydraulic gradients).

f Within Mound Basin, the sole hydrostratigraphic unit known or suspected to be in direct hydraulic communication with the Santa Clara River is the Shallow Alluvial Deposits.

g United (2021) modeled Harmon Barranca using MODFLOW's "Stream package," as described in Section 3.3 of this report, allowing the model to simulate direct hydraulic communication with the Shallow Alluvial Deposits, as well as with the fine-grained Pleistocene deposits.

h Water-year changes in storage are calculated from October 1 of the preceding calendar year to September 30 of the indicated year. Positive values for groundwater released from storage represent inflows to the basin, same as all other components on this table.
However, specific to this parameter, inflow of groundwater from storage is associated with declining groundwater levels (or potentiometric heads) in the basin. Negative values are associated with increasing groundwater-levels (or potentiometric heads), as a result of groundwater being ""added to storage.

i Represents change in groundwater storage between April 1 of the preceding year and March 30 of the indicated year; groundwater levels are commonly at their highest in spring.

## Table 3.3-04 Mound Basin Average Groundwater Inflows and Outflows by Aquifer, Historical and Current Periods.

| | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[a] | | | | | | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aquifer | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[b] | Groundwater Extraction | Discharge of Groundwater to Tile Drains[c] | Groundwater/ Surface Water Interaction in the Santa Clara River[d] | Groundwater/ Surface Water Interaction in Harmon Barranca[e] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Vertical Groundwater Flow to/from the Overlying Aquifer | Vertical Groundwater Flow to/from the Underlying Aquifer | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage[f] |
| ***Averages during historical period (water years 1986 through 2015)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,970 | 0 | -1,315 | 0 | -77 | -27 | 103 | -1 | 1,641 | -1,768 | N/A | -1,553 | 4,714 | -4,740 | 26 |
| Fine-grained Pleistocene deposits[g] | 203 | 0 | N/A | -22 | N/A | N/A | 110 | 7 | 960 | 4 | 1,553 | -2,655 | 2,836 | -2,677 | -159 |
| Mugu Aquifer | 0 | 0 | N/A | -1,917 | N/A | N/A | 0 | 312 | 320 | -142 | 2,655 | -1,404 | 3,287 | -3,462 | 175 |
| Hueneme Aquifer[h] | 587 | 2,559 | N/A | -5,255 | N/A | N/A | -205 | 2,253 | -2,299 | 496 | 1,404 | 312 | 7,612 | -7,758 | 138 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -198 | N/A | N/A | 0 | 1,842 | -1,605 | -16 | -312 | N/A | 1,842 | -2,131 | 289 |
| ***Basin Total:*** | ***3,759*** | ***2,559*** | ***-1,315*** | ***-7,391*** | ***-77*** | ***-27*** | ***8*** | ***4,414*** | ***-983*** | ***-1,426*** | ***5,299*** | ***-5,299*** | ***20,291*** | ***-20,768*** | ***469*** |
| ***Averages during current period (water years 2016 through 2019)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,579 | 0 | -881 | 0 | -5 | 270 | 44 | 0 | 1,028 | -1,215 | N/A | -1,609 | 3,922 | -3,710 | -213 |
| Fine-grained Pleistocene deposits[g] | 151 | 0 | N/A | -11 | N/A | N/A | 144 | 3 | -76 | 130 | 1,609 | -2,219 | 2,036 | -2,306 | 269 |
| Mugu Aquifer | 0 | 0 | N/A | -2,046 | N/A | N/A | 0 | 344 | -1,109 | 1,486 | 2,219 | -902 | 4,050 | -4,057 | 7 |
| Hueneme Aquifer[h] | 497 | 2,316 | N/A | -4,236 | N/A | N/A | -175 | 2,413 | -2,721 | 901 | 902 | -120 | 7,029 | -7,252 | 224 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -217 | N/A | N/A | 0 | 1,987 | -1,909 | 159 | 120 | N/A | 2,266 | -2,126 | -140 |
| ***Basin Total:*** | ***3,227*** | ***2,316*** | ***-881*** | ***-6,510*** | ***-5*** | ***270*** | ***14*** | ***4,747*** | ***-4,786*** | ***1,461*** | ***4,850*** | ***-4,850*** | ***19,303*** | ***-19,450*** | ***147*** |



**Notes:**

N/A = Not applicable

Positive values represent inflows to an aquifer; negative numbers represent outflows from an aquifer.

a These components can comprise either net inflows to or outflows from each aquifer, depending on hydrogeologic conditions that vary over time (e.g., hydraulic gradients).

b The Shallow Alluvial Deposits is the sole hydrostratigraphic unit in Mound Basin with saturated conditions consistently shallow enough to be significantly affected by evapotranspiration.

c Tile drains are only known or suspected to be present in the Shallow Alluvial Deposits in Mound Basin.

d Within Mound Basin, the sole hydrostratigraphic unit known or suspected to be in direct hydraulic communication with the Santa Clara River is the Shallow Alluvial Deposits.

e United (2021) modeled Harmon Barranca using MODFLOW's "Stream package," as described in Section 3.3 of this report, allowing the model to simulate direct hydraulic communication with the Shallow Alluvial Deposits and the fine-grained Pleistocene deposits.

f Positive values for groundwater released from storage represent inflows to an aquifer, same as all other components on this page. Inflow of groundwater from storage is associated with declining groundwater levels (or potentiometric heads) in that aquifer. Negative values are associated with increasing groundwater-levels (or potentiometric-heads), as a result of groundwater being "added to storage."

g Although the fine-grained Pleistocene deposits in Mound Basin are not considered a principal aquifer due to their low hydraulic conductivity, they have a substantial thickness and are stratigraphically adjacent to the Oxnard Aquifer in the Oxnard Basin (see Section 3.1 for more information). The fine-grained Pleistocene deposits are included in this table for completeness in depicting the groundwater budget for Mound Basin

h To provide a complete and balanced water budget (the sum of water-budget components for all units should be zero), the values shown in this row include both the Hueneme Aquifer and the overlying Mugu-Hueneme aquitard, which is thin and has low hydraulic conductivity. For these reasons, inflows and outflows from the aquitard are small compared to those from the aquifer.

i To provide a complete and balanced water budget (the sum of water-budget components for all units should be zero), the values shown in this row include the Fox Canyon Aquifer (main and basal) and the overlying and intervening aquitards, which are thin and have low hydraulic conductivity. For these reasons, inflows and outflows from the aquitards are small compared to those from the aquifer.

## Table 3.3-05 Imports of Casitas MWD Surface Water to Mound Basin by City of Ventura, 2010-2019

| Water Year | Annual Rainfall at Ventura County Govt. Center (inches) | Water-Year Type Based on Local Rainfall[a] | Estimated Available Supply of Casitas MWD Surface Water[a] (acre-feet) | Source | Actual Imports of Casitas MWD Surface Water[b] (acre-feet) | Difference Between Planned and Actual Imports (acre-feet) | Difference Between Planned and Actual Imports (percent) |
|---|---|---|---|---|---|---|---|
| 2010 | 16.82 | Near Average | 6,000 | 2010 UWMP | 5,994 | -6 | 0% |
| 2011 | 19.70 | Above Average | 6,000 | 2010 UWMP | 6,092 | 92 | 2% |
| 2012 | 9.49 | Below Average | 6,000 | 2010 UWMP | 4,690 | -1,310 | -22% |
| 2013 | 5.80 | Below Average | 6,000 | 2010 UWMP | 6,053 | 53 | 1% |
| 2014 | 6.14 | Below Average | 6,000 | 2010 UWMP | 5,099 | -901 | -15% |
| 2015 | 9.15 | Below Average | 6,000 | 2010 UWMP | 4,848 | -1,152 | -19% |
| 2016 | 8.49 | Below Average | 4,593 | 2015 UWMP | 2,634 | -1,959 | -43% |
| 2017 | 19.11 | Near Average | 5,741 | 2015 UWMP | 2,188 | -3,553 | -62% |
| 2018 | 7.16 | Below Average | 5,741 | 2015 UWMP | 2,716 | -3,025 | -53% |
| 2019 | 19.19 | Near Average | 5,741 | 2015 UWMP | 1,372 | -4,369 | -76% |
| *Average:* | *12.11* | | *5,782* | | *4,169* | -1,613 | -29% |

**Notes:**

a Assumed based on City of Ventura's 2010 and 2015 Urban Water Management Plans (Kennedy/Jenks Consultants, 2011; 2016).

b Includes all Casitas MWD imports by the City of Ventura for use within their service area, not just Mound Basin (Ventura Water, 2020a).

**Table 3.3-06 Mound Basin Projected Surface Water Inflows and Outflows by Water Year, Future Baseline Conditions.**

| | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Fate of Imported Surface Water (from Casitas MWD) | | | | | | |
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | M&I Return Flows[e] | Consumptive Use[f] | Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| ***Implementation Period (water years 2022 through 2041)*** | | | | | | | | | | | | | | | | |
| 2022 | 1945 | 11.75 | 62,783 | 2,529 | 4,761 | 3,362 | -61,973 | -2,710 | -4,580 | -168 | -3,194 | -1,746 | -14 | 73,435 | -74,385 | -950 |
| 2023 | 1946 | 11.07 | 32,202 | 2,311 | 4,351 | 4,000 | -31,740 | -1,789 | -4,874 | -200 | -3,800 | -1,276 | -8 | 42,865 | -43,687 | -822 |
| 2024 | 1947 | 10.24 | 18,361 | 2,046 | 3,852 | 4,000 | -17,732 | -1,805 | -4,093 | -200 | -3,800 | -1,244 | -11 | 28,259 | -28,885 | -626 |
| 2025 | 1948 | 6.95 | 1,150 | 994 | 1,871 | 5,816 | -1,120 | -788 | -2,077 | -291 | -5,525 | -47 | -2 | 9,831 | -9,850 | -19 |
| 2026 | 1949 | 8.22 | 1,580 | 1,400 | 2,636 | 5,816 | -1,549 | -744 | -3,291 | -291 | -5,525 | -44 | 0 | 11,432 | -11,444 | -12 |
| 2027 | 1950 | 13.28 | 3,964 | 3,018 | 5,682 | 5,816 | -3,912 | -1,433 | -7,267 | -291 | -5,525 | -63 | -6 | 18,480 | -18,497 | -17 |
| 2028 | 1951 | 7.40 | 0 | 1,138 | 2,142 | 5,816 | 0 | -527 | -2,753 | -291 | -5,525 | -16 | 0 | 9,096 | -9,112 | -16 |
| 2029 | 1952 | 26.70 | 159,051 | 7,310 | 13,761 | 5,816 | -158,176 | -5,084 | -15,986 | -291 | -5,525 | -3,116 | -34 | 185,938 | -188,213 | -2,276 |
| 2030 | 1953 | 11.30 | 984 | 2,385 | 4,490 | 5,977 | -969 | -1,485 | -5,390 | -299 | -5,678 | -949 | -6 | 13,836 | -14,776 | -940 |
| 2031 | 1954 | 15.65 | 23,856 | 3,776 | 7,109 | 5,977 | -23,592 | -2,517 | -8,368 | -299 | -5,678 | -1,135 | -13 | 40,718 | -41,601 | -883 |
| 2032 | 1955 | 12.45 | 2,150 | 2,753 | 5,182 | 5,977 | -2,110 | -1,607 | -6,328 | -299 | -5,678 | -753 | -6 | 16,062 | -16,780 | -719 |
| 2033 | 1956 | 16.50 | 25,845 | 4,048 | 7,620 | 5,977 | -25,646 | -2,213 | -9,455 | -299 | -5,678 | -955 | -13 | 43,490 | -44,259 | -769 |
| 2034 | 1957 | 10.35 | 10,347 | 2,081 | 3,918 | 5,977 | -10,241 | -1,394 | -4,605 | -299 | -5,678 | -823 | -5 | 22,323 | -23,045 | -721 |
| 2035 | 1958 | 28.80 | 248,105 | 7,981 | 15,025 | 5,977 | -246,776 | -5,226 | -17,781 | -299 | -5,678 | -3,334 | -33 | 277,088 | -279,126 | -2,038 |
| 2036 | 1959 | 6.65 | 36,601 | 898 | 1,691 | 5,977 | -36,294 | -1,200 | -1,388 | -299 | -5,678 | -1,101 | -4 | 45,166 | -45,965 | -798 |
| 2037 | 1960 | 12.10 | 3,618 | 2,641 | 4,971 | 5,977 | -3,530 | -1,163 | -6,450 | -299 | -5,678 | -102 | -4 | 17,207 | -17,225 | -18 |
| 2038 | 1961 | 7.20 | 0 | 1,074 | 2,022 | 5,977 | 0 | -984 | -2,112 | -299 | -5,678 | -39 | -5 | 9,073 | -9,117 | -44 |
| 2039 | 1962 | 25.55 | 228,317 | 6,942 | 13,068 | 5,977 | -227,574 | -4,111 | -15,899 | -299 | -5,678 | -2,130 | -29 | 254,304 | -255,719 | -1,415 |
| 2040 | 1963 | 12.65 | 11,665 | 2,817 | 5,303 | 5,977 | -11,544 | -1,512 | -6,607 | -299 | -5,678 | -815 | -8 | 25,761 | -26,463 | -702 |
| 2041 | 1964 | 8.25 | 6,124 | 1,410 | 2,654 | 5,977 | -6,035 | -938 | -3,125 | -299 | -5,678 | -47 | -2 | 16,165 | -16,123 | 41 |
| *Average:* | | *13.15* | *43,835* | *2,978* | *5,605* | *5,608* | *-43,526* | *-1,961* | *-6,622* | *-280* | *-5,328* | *-987* | *-10* | *58,026* | *-58,714* | *-687* |
| ***Sustaining Period (water years 2042 through 2071)*** | | | | | | | | | | | | | | | | |
| 2042 | 1965 | 14.85 | 5,286 | 3,520 | 6,627 | 5,977 | -5,218 | -2,036 | -8,111 | -299 | -5,678 | -1,030 | -12 | 21,410 | -22,385 | -974 |
| 2043 | 1966 | 15.94 | 130,499 | 3,869 | 7,283 | 5,977 | -130,004 | -3,057 | -8,095 | -299 | -5,678 | -2,313 | -20 | 147,628 | -149,466 | -1,838 |
| 2044 | 1967 | 18.88 | 113,441 | 4,809 | 9,053 | 5,977 | -111,974 | -4,078 | -9,784 | -299 | -5,678 | -3,189 | -20 | 133,280 | -135,022 | -1,741 |
| 2045 | 1968 | 14.40 | 8,670 | 3,376 | 6,356 | 5,977 | -8,028 | -1,727 | -8,005 | -299 | -5,678 | -855 | -10 | 24,379 | -24,602 | -223 |
| 2046 | 1969 | 24.50 | 969,376 | 6,606 | 12,436 | 5,977 | -966,843 | -5,039 | -14,003 | -299 | -5,678 | -3,536 | -38 | 994,396 | -995,436 | -1,040 |
| 2047 | 1970 | 16.34 | 50,488 | 3,997 | 7,524 | 5,977 | -49,264 | -1,759 | -9,762 | -299 | -5,678 | -909 | -7 | 67,985 | -67,678 | 307 |
| 2048 | 1971 | 14.61 | 54,000 | 3,444 | 6,482 | 5,977 | -52,955 | -2,232 | -7,694 | -299 | -5,678 | -1,354 | -14 | 69,903 | -70,226 | -323 |
| 2049 | 1972 | 8.94 | 25,593 | 1,630 | 3,069 | 5,977 | -24,864 | -1,431 | -3,269 | -299 | -5,678 | -1,229 | -10 | 36,269 | -36,779 | -510 |
| 2050 | 1973 | 20.71 | 221,954 | 5,394 | 10,155 | 5,977 | -220,473 | -4,073 | -11,475 | -299 | -5,678 | -2,278 | -24 | 243,480 | -244,300 | -820 |
| 2051 | 1974 | 15.00 | 76,002 | 3,568 | 6,717 | 5,977 | -74,892 | -2,318 | -7,967 | -299 | -5,678 | -1,288 | -14 | 92,265 | -92,457 | -193 |
| 2052 | 1975 | 16.30 | 63,069 | 3,984 | 7,500 | 5,977 | -61,908 | -2,803 | -8,680 | -299 | -5,678 | -1,777 | -15 | 80,530 | -81,161 | -631 |
| 2053 | 1976 | 13.46 | 27,920 | 3,076 | 5,790 | 5,977 | -27,362 | -1,812 | -7,054 | -299 | -5,678 | -915 | -10 | 42,763 | -43,131 | -368 |
| 2054 | 1977 | 10.94 | 13,374 | 2,270 | 4,273 | 5,977 | -13,206 | -1,413 | -5,130 | -299 | -5,678 | -714 | -6 | 25,894 | -26,445 | -551 |

| | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | Fate of Imported Surface Water (from Casitas MWD) | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | M&I Return Flows[e] | Consumptive Use[f] | Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| 2055 | 1978 | 34.88 | 722,655 | 9,926 | 18,685 | 5,977 | -720,778 | -6,712 | -21,899 | -299 | -5,678 | -3,595 | -49 | 757,242 | -759,009 | -1,767 |
| 2056 | 1979 | 18.73 | 178,691 | 4,761 | 8,963 | 5,977 | -177,421 | -3,566 | -10,158 | -299 | -5,678 | -1,897 | -21 | 198,392 | -199,040 | -648 |
| 2057 | 1980 | 26.60 | 407,422 | 7,278 | 13,700 | 5,977 | -406,176 | -4,366 | -16,612 | -299 | -5,678 | -2,052 | -34 | 434,377 | -435,216 | -840 |
| 2058 | 1981 | 13.66 | 45,299 | 3,140 | 5,911 | 5,977 | -44,448 | -1,804 | -7,246 | -299 | -5,678 | -920 | -9 | 60,326 | -60,403 | -78 |
| 2059 | 1982 | 12.51 | 39,451 | 2,772 | 5,218 | 5,977 | -38,471 | -1,786 | -6,204 | -299 | -5,678 | -1,215 | -6 | 53,418 | -53,660 | -241 |
| 2060 | 1983 | 31.66 | 556,293 | 8,896 | 16,747 | 5,977 | -555,004 | -6,311 | -19,332 | -299 | -5,678 | -3,027 | -42 | 587,912 | -589,692 | -1,780 |
| 2061 | 1984 | 10.22 | 29,799 | 2,040 | 3,840 | 5,977 | -29,199 | -1,849 | -4,031 | -299 | -5,678 | -120 | -9 | 41,656 | -41,185 | 471 |
| 2062 | 1985 | 11.84 | 16,759 | 2,558 | 4,815 | 5,977 | -15,787 | -1,353 | -6,019 | -299 | -5,678 | -193 | -5 | 30,108 | -29,335 | 774 |
| 2063 | 1986 | 25.15 | 191,726 | 6,814 | 12,828 | 5,977 | -190,665 | -3,879 | -15,763 | -299 | -5,678 | -2,520 | -25 | 217,345 | -218,828 | -1,483 |
| 2064 | 1987 | 7.50 | 3,862 | 1,170 | 2,202 | 5,977 | -3,299 | -521 | -2,851 | -299 | -5,678 | -156 | 0 | 13,211 | -12,804 | 407 |
| 2065 | 1988 | 13.22 | 28,139 | 2,999 | 5,646 | 5,977 | -27,371 | -1,755 | -6,890 | -299 | -5,678 | -165 | -4 | 42,761 | -42,162 | 599 |
| 2066 | 1989 | 8.23 | 2,223 | 1,403 | 2,642 | 5,977 | -2,101 | -1,026 | -3,019 | -299 | -5,678 | -97 | -5 | 12,245 | -12,225 | 20 |
| 2067 | 1990 | 5.62 | 4,102 | 569 | 1,070 | 5,977 | -4,015 | -610 | -1,029 | -299 | -5,678 | -56 | 0 | 11,718 | -11,687 | 32 |
| 2068 | 1991 | 16.92 | 109,595 | 4,182 | 7,873 | 5,977 | -109,124 | -2,886 | -9,169 | -299 | -5,678 | -1,845 | -23 | 127,627 | -129,024 | -1,397 |
| 2069 | 1992 | 20.34 | 286,136 | 5,276 | 9,932 | 5,977 | -284,791 | -4,250 | -10,958 | -299 | -5,678 | -3,059 | -28 | 307,321 | -309,062 | -1,741 |
| 2070 | 1993 | 28.76 | 847,789 | 7,969 | 15,001 | 5,977 | -845,234 | -5,409 | -17,561 | -299 | -5,678 | -3,754 | -35 | 876,735 | -877,970 | -1,235 |
| 2071 | 1994 | 11.68 | 51,294 | 2,507 | 4,719 | 5,977 | -50,031 | -1,468 | -5,757 | -299 | -5,678 | -958 | -7 | 64,496 | -64,199 | 298 |
| *Average:* | | *16.75* | *176,030* | *4,127* | *7,768* | *5,977* | *-175,030* | *-2,778* | *-9,118* | *-299* | *-5,678* | *-1,567* | *-17* | *193,902* | *-194,486* | *-584* |
| ***Post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | | | | | | |
| 2072 | 1995 | 31.72 | 476,805 | 8,915 | 16,783 | 5,977 | -475,316 | -5,580 | -20,118 | -299 | -5,678 | -2,689 | -30 | 508,480 | -509,708 | -1,229 |
| 2073 | 1996 | 12.79 | 70,704 | 2,862 | 5,387 | 5,977 | -69,962 | -1,966 | -6,282 | -299 | -5,678 | -857 | -11 | 84,930 | -85,055 | -125 |
| 2074 | 1997 | 14.75 | 80,131 | 3,488 | 6,567 | 5,977 | -79,142 | -2,831 | -7,224 | -299 | -5,678 | -1,533 | -15 | 96,163 | -96,722 | -559 |
| 2075 | 1998 | 42.54 | 655,150 | 12,375 | 23,296 | 5,977 | -653,802 | -7,413 | -28,259 | -299 | -5,678 | -3,388 | 127 | 696,925 | -698,838 | -1,914 |
| 2076 | 1999 | 10.33 | 46,493 | 2,075 | 3,906 | 5,977 | -45,918 | -834 | -5,147 | -299 | -5,678 | -169 | -1 | 58,451 | -58,046 | 404 |
| 2077 | 2000 | 17.11 | 79,537 | 4,243 | 7,987 | 5,977 | -78,750 | -2,410 | -9,820 | -299 | -5,678 | -1,128 | -15 | 97,745 | -98,101 | -356 |
| 2078 | 2001 | 22.79 | 193,162 | 6,059 | 11,407 | 5,977 | -192,366 | -3,931 | -13,535 | -299 | -5,678 | -1,632 | -24 | 216,606 | -217,466 | -860 |
| 2079 | 2002 | 6.41 | 2,201 | 821 | 1,546 | 5,977 | -1,826 | -584 | -1,783 | -299 | -5,678 | -101 | -2 | 10,545 | -10,274 | 271 |
| 2080 | 2003 | 19.00 | 46,105 | 4,847 | 9,125 | 5,977 | -45,450 | -3,129 | -10,844 | -299 | -5,678 | -1,429 | -17 | 66,055 | -66,846 | -791 |
| 2081 | 2004 | 10.73 | 35,344 | 2,203 | 4,147 | 5,977 | -34,978 | -1,490 | -4,860 | -299 | -5,678 | -688 | -7 | 47,671 | -48,000 | -329 |
| 2082 | 2005 | 34.64 | 1,078,780 | 9,849 | 18,540 | 5,977 | -1,077,144 | -6,996 | -21,394 | -299 | -5,678 | -3,791 | -51 | 1,113,146 | -1,115,352 | -2,206 |
| 2083 | 2006 | 16.64 | 136,241 | 4,093 | 7,704 | 5,977 | -135,390 | -2,654 | -9,143 | -299 | -5,678 | -1,294 | -13 | 154,015 | -154,471 | -456 |
| 2084 | 2007 | 5.75 | 5,738 | 610 | 1,149 | 5,977 | -5,135 | -183 | -1,576 | -299 | -5,678 | -135 | 0 | 13,474 | -13,006 | 469 |
| 2085 | 2008 | 12.77 | 154,943 | 2,855 | 5,375 | 5,977 | -153,952 | -2,485 | -5,745 | -299 | -5,678 | -1,687 | -14 | 169,150 | -169,860 | -710 |
| 2086 | 2009 | 9.32 | 18,549 | 1,752 | 3,298 | 5,977 | -18,020 | -1,353 | -3,697 | -299 | -5,678 | -915 | -5 | 29,575 | -29,966 | -391 |
| 2087 | 2010 | 16.82 | 89,966 | 4,150 | 7,813 | 5,977 | -89,285 | -2,916 | -9,048 | -299 | -5,678 | -1,336 | -13 | 107,906 | -108,574 | -668 |
| 2088 | 2011 | 19.70 | 142,654 | 5,071 | 9,547 | 5,977 | -141,629 | -3,742 | -10,876 | -299 | -5,678 | -1,900 | -23 | 163,249 | -164,147 | -898 |
| 2089 | 2012 | 9.49 | 10,710 | 1,806 | 3,400 | 5,977 | -10,119 | -624 | -4,583 | -299 | -5,678 | -123 | 0 | 21,893 | -21,425 | 469 |
| 2090 | 2013 | 5.80 | 325 | 626 | 1,179 | 5,977 | -49 | -1,559 | -246 | -299 | -5,678 | -677 | -9 | 8,107 | -8,516 | -409 |

| | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | Fate of Imported Surface Water (from Casitas MWD): M&I Return Flows[e] | Fate of Imported Surface Water (from Casitas MWD): Consumptive Use[f] | Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| 2091 | 2014 | 6.14 | 25,475 | 735 | 1,383 | 5,977 | -25,336 | -1,245 | -873 | -299 | -5,678 | -501 | -4 | 33,570 | -33,936 | -366 |
| 2092 | 2015 | 9.15 | 605 | 1,697 | 3,196 | 5,977 | -597 | -1,185 | -3,708 | -299 | -5,678 | -38 | -3 | 11,475 | -11,508 | -33 |
| 2093 | 2016 | 8.49 | 2,492 | 1,486 | 2,798 | 5,977 | -2,447 | -1,980 | -2,304 | -299 | -5,678 | -312 | -10 | 12,753 | -13,031 | -277 |
| 2094 | 2017 | 19.11 | 87,303 | 4,883 | 9,191 | 5,977 | -86,819 | -3,571 | -10,503 | -299 | -5,678 | -2,259 | -20 | 107,354 | -109,148 | -1,794 |
| 2095 | 2018 | 7.16 | 6,421 | 1,061 | 1,998 | 5,977 | -6,334 | -1,950 | -1,109 | -299 | -5,678 | -699 | -8 | 15,457 | -16,076 | -619 |
| 2096 | 2019 | 19.19 | 158,890 | 4,908 | 9,240 | 5,977 | -157,961 | -3,571 | -10,577 | -299 | -5,678 | -2,832 | -20 | 179,015 | -180,937 | -1,923 |
| *Average:* | | *15.53* | *144,189* | *3,739* | *7,038* | *5,977* | *-143,509* | *-2,647* | *-8,130* | *-299* | *-5,678* | *-1,284* | *-8* | *160,948* | *-161,560* | *-612* |
| | | | | | | | | | | | | | | | | |
| ***Average 2022-2096:*** | | ***15.38*** | ***130,164*** | ***3,691*** | ***6,948*** | ***5,879*** | ***-129,455*** | ***-2,517*** | ***-8,123*** | ***-294*** | ***-5,585*** | ***-1,318*** | ***-12*** | ***146,684*** | ***-147,305*** | ***-621*** |

**Notes**

Positive values represent inflows or gains of surface-water flows in Mound Basin, and negative numbers represent outflows or losses of surface-water flows in Mound Basin.

a See Section 3.3 for an explanation of how water-year types were classified in this report.

b The California Department of Water Resources classification approach is described in Section 3.3.

c Inflows of ephemeral surface water to Mound Basin are projected based on an empirical relationship between measured streamflow in Arundell Barranca and annual (water year) rainfall measured at Ventura County Government Center, applied to the watershed areas of streams (barrancas) within Mound Basin and upstream from Mound Basin (in stream channels that flow across the basin's northern boundary). Outflows are assumed equal to inflows across the northern basin boundary plus surface flows generated by rainfall within Mound Basin, minus mountain-front recharge of inflows immediately south of the northern boundary of Mound Basin.

d Projected imports are from Ventura Water, 2020b.

e Estimated using United's (2021a) groundwater flow model or resulting from model calibration.

f "Consumptive use" represents loss of imported surface water from Casitas MWD to evaporation and wastewater discharges after M&I use, and in this table is equal to imported surface water (from Casitas MWD) minus M&I return flows.

g These components can comprise either net gains or losses of surface water from streams within Mound Basin, depending on hydrogeologic conditions that vary over time.

h Inflows and outflows of surface water in Mound Basin should be equal, resulting in a difference of zero. Although the long-term average difference is less than 1 percent of the long-term average inflows or outflows, indicating good overall agreement, the apparent difference between inflows and outflows is larger during years with above-average rainfall. This likely is a result of minor deviations of actual streamflow in Arundell Barranca in a given water year compared to the empirical relationship developed to estimate basinwide ephemeral flows across the basin.

## Table 3.3-07 Mound Basin Projected Groundwater Inflows and Outflows by Water Year, Future Baseline Conditions.

| | | | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[e] | | | | | Summary (acre-feet per year) | | | All Aquifers Combined | | | Mugu Aquifer | | | | Hueneme Aquifer | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[c] | Groundwater Extraction (pumping from wells) | Discharge of Groundwater to Tile Drains[d] | Groundwater/ Surface Water Interaction in the Santa Clara River[f] | Groundwater/ Surface Water Interaction in Harmon Barranca[g] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage per Water Year[h] | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year |
| *Implementation Period (water years 2022 through 2041)* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | 1945 | 11.75 | 3,007 | 2,710 | -801 | -7,961 | 0 | 1,746 | 14 | 3,936 | 4,695 | -5,345 | 16,109 | -14,107 | -2,002 | 3,978 | 3,978 | 2,002 | 605 | 605 | 158 | 158 | 1,768 | 1,768 | 1,266 | 1,266 |
| 2023 | 1946 | 11.07 | 2,525 | 1,789 | -804 | -8,377 | 0 | 1,276 | 8 | 3,874 | 5,068 | -4,906 | 14,540 | -14,088 | -452 | 65 | 4,042 | 2,454 | 74 | 679 | 103 | 261 | 133 | 1,901 | 425 | 1,691 |
| 2024 | 1947 | 10.24 | 2,702 | 1,805 | -847 | -7,424 | 0 | 1,244 | 11 | 3,883 | 4,273 | -5,075 | 13,917 | -13,347 | -571 | 400 | 4,442 | 3,024 | 35 | 714 | 36 | 297 | 189 | 2,090 | 613 | 2,304 |
| 2025 | 1948 | 6.95 | 2,159 | 788 | -685 | -8,052 | 0 | 47 | 2 | 4,002 | 475 | -3,582 | 7,473 | -12,320 | 4,847 | -3,532 | 911 | -1,822 | -209 | 505 | -499 | -202 | 11 | 2,101 | -490 | 1,814 |
| 2026 | 1949 | 8.22 | 2,286 | 744 | -508 | -8,487 | 0 | 44 | 0 | 4,125 | -1,123 | -2,582 | 7,199 | -12,699 | 5,501 | -4,830 | -3,919 | -7,323 | -681 | -175 | -703 | -906 | -782 | 1,319 | -1,048 | 766 |
| 2027 | 1950 | 13.28 | 2,689 | 1,433 | -387 | -7,501 | 0 | 63 | 6 | 4,149 | -753 | -2,120 | 8,340 | -10,762 | 2,422 | -2,996 | -6,916 | -9,745 | -451 | -626 | -401 | -1,306 | -721 | 598 | -501 | 265 |
| 2028 | 1951 | 7.40 | 2,147 | 527 | -350 | -8,627 | 0 | 16 | 0 | 4,380 | -2,813 | -1,367 | 7,070 | -13,157 | 6,086 | -6,125 | -13,041 | -15,831 | -1,012 | -1,638 | -1,340 | -2,646 | -988 | -391 | -1,096 | -831 |
| 2029 | 1952 | 26.70 | 4,765 | 5,084 | -601 | -7,496 | 0 | 3,116 | 34 | 3,986 | 5,848 | -3,114 | 22,834 | -11,211 | -11,623 | 7,445 | -5,596 | -4,208 | 516 | -1,122 | 1,988 | -657 | 1,687 | 1,296 | 1,085 | 253 |
| 2030 | 1953 | 11.30 | 2,541 | 1,485 | -566 | -7,532 | 0 | 949 | 6 | 3,961 | 5,029 | -3,779 | 13,972 | -11,878 | -2,094 | 5,298 | -298 | -2,114 | 1,455 | 334 | 516 | -142 | -571 | 725 | 1,003 | 1,256 |
| 2031 | 1954 | 15.65 | 3,202 | 2,517 | -549 | -7,863 | 0 | 1,135 | 13 | 3,852 | 2,429 | -3,592 | 13,147 | -12,005 | -1,142 | 1,345 | 1,047 | -973 | -123 | 211 | -30 | -172 | 1,660 | 2,385 | 261 | 1,518 |
| 2032 | 1955 | 12.45 | 2,871 | 1,607 | -539 | -7,966 | 0 | 753 | 6 | 3,904 | 958 | -3,362 | 10,099 | -11,868 | 1,769 | -2,956 | -1,909 | -2,742 | -232 | -21 | -290 | -462 | -1,023 | 1,362 | -165 | 1,353 |
| 2033 | 1956 | 16.50 | 3,180 | 2,213 | -545 | -7,200 | 0 | 955 | 13 | 3,890 | 2,352 | -3,401 | 12,603 | -11,146 | -1,457 | 949 | -960 | -1,285 | -66 | -88 | 128 | -334 | 213 | 1,575 | 376 | 1,729 |
| 2034 | 1957 | 10.35 | 2,519 | 1,394 | -535 | -8,665 | 0 | 823 | 5 | 3,957 | 436 | -3,290 | 9,133 | -12,489 | 3,356 | -933 | -1,893 | -4,641 | -70 | -158 | -380 | -714 | -4 | 1,572 | -584 | 1,145 |
| 2035 | 1958 | 28.80 | 4,642 | 5,226 | -820 | -6,415 | -10 | 3,334 | 33 | 3,673 | 6,858 | -5,052 | 23,766 | -12,297 | -11,469 | 5,410 | 3,517 | 6,828 | 132 | -26 | 923 | 209 | 1,808 | 3,379 | 1,866 | 3,011 |
| 2036 | 1959 | 6.65 | 2,070 | 1,200 | -877 | -8,560 | 0 | 1,101 | 4 | 3,711 | 3,920 | -5,136 | 12,006 | -14,574 | 2,567 | 3,279 | 6,795 | 4,261 | 719 | 693 | -11 | 198 | -439 | 2,940 | -99 | 2,912 |
| 2037 | 1960 | 12.10 | 2,557 | 1,163 | -637 | -7,795 | 0 | 102 | 4 | 3,845 | 1,381 | -3,932 | 9,050 | -12,364 | 3,314 | -3,152 | 3,643 | 947 | -163 | 531 | -323 | -125 | -95 | 2,845 | -324 | 2,588 |
| 2038 | 1961 | 7.20 | 2,072 | 984 | -451 | -8,579 | 0 | 39 | 5 | 3,965 | -346 | -3,165 | 7,064 | -12,541 | 5,477 | -5,125 | -1,482 | -4,530 | -564 | -33 | -632 | -757 | -890 | 1,955 | -734 | 1,853 |
| 2039 | 1962 | 25.55 | 4,103 | 4,111 | -678 | -6,502 | 0 | 2,130 | 29 | 3,865 | 4,772 | -4,078 | 19,010 | -11,257 | -7,753 | 5,449 | 3,967 | 3,223 | 58 | 25 | 692 | -65 | 1,643 | 3,598 | 844 | 2,697 |
| 2040 | 1963 | 12.65 | 2,559 | 1,512 | -612 | -7,995 | 0 | 815 | 8 | 3,843 | 5,279 | -4,218 | 14,017 | -12,825 | -1,191 | 227 | 4,194 | 4,415 | 455 | 480 | 319 | 254 | -655 | 2,942 | 215 | 2,912 |
| 2041 | 1964 | 8.25 | 2,322 | 938 | -489 | -8,634 | 0 | 47 | 2 | 3,850 | 748 | -3,458 | 7,906 | -12,581 | 4,675 | -1,851 | 2,343 | -261 | -65 | 415 | -505 | -252 | -355 | 2,587 | -521 | 2,392 |
| *Average:* | | *13.15* | *2,846* | *1,961* | *-614* | *-7,882* | *-1* | *987* | *10* | *3,933* | *2,474* | *-3,728* | *12,463* | *-12,476* | *13* | | | | | | | | | | | |
| *Sustaining Period (water years 2042 through 2071)* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2042 | 1965 | 14.85 | 2,870 | 2,036 | -511 | -7,637 | 0 | 1,030 | 12 | 3,788 | 1,151 | -3,678 | 10,888 | -11,825 | 937 | -3,882 | -1,539 | -1,198 | -461 | -46 | -233 | -485 | -671 | 1,916 | -245 | 2,147 |
| 2043 | 1966 | 15.94 | 3,390 | 3,057 | -751 | -7,680 | 0 | 2,313 | 20 | 3,675 | 6,577 | -4,927 | 19,032 | -13,357 | -5,675 | 8,051 | 6,512 | 4,477 | 563 | 517 | 655 | 170 | 1,035 | 2,952 | 656 | 2,803 |
| 2044 | 1967 | 18.88 | 3,729 | 4,078 | -756 | -7,162 | 0 | 3,189 | 20 | 3,479 | 5,524 | -6,013 | 20,020 | -13,931 | -6,089 | 3,890 | 10,402 | 10,566 | 299 | 815 | 281 | 451 | 1,120 | 4,071 | 1,287 | 4,089 |
| 2045 | 1968 | 14.40 | 2,897 | 1,727 | -837 | -7,351 | 0 | 855 | 10 | 3,541 | 4,049 | -5,638 | 13,079 | -13,825 | 746 | 1,922 | 12,324 | 9,819 | 115 | 930 | -14 | 437 | 598 | 4,669 | 110 | 4,199 |
| 2046 | 1969 | 24.50 | 4,333 | 5,039 | -1,056 | -7,323 | -157 | 3,536 | 38 | 3,542 | 3,991 | -6,665 | 20,479 | -15,201 | -5,278 | 5,971 | 18,294 | 15,098 | 155 | 1,085 | 118 | 555 | 2,138 | 6,807 | 1,403 | 5,602 |
| 2047 | 1970 | 16.34 | 2,760 | 1,759 | -859 | -8,097 | 0 | 909 | 7 | 3,606 | 3,881 | -5,952 | 12,922 | -14,908 | 1,985 | -2,020 | 16,274 | 13,112 | -81 | 1,004 | -62 | 493 | -595 | 6,212 | -568 | 5,034 |
| 2048 | 1971 | 14.61 | 2,832 | 2,232 | -897 | -7,554 | 0 | 1,354 | 14 | 3,561 | 3,822 | -6,269 | 13,814 | -14,720 | 906 | -1,544 | 14,730 | 12,206 | -88 | 916 | -40 | 454 | -758 | 5,454 | 5 | 5,039 |
| 2049 | 1972 | 8.94 | 2,282 | 1,431 | -920 | -8,271 | 0 | 1,229 | 10 | 3,646 | 4,270 | -5,774 | 12,868 | -14,965 | 2,097 | -2,432 | 12,298 | 10,109 | -52 | 864 | -28 | 425 | -753 | 4,701 | -477 | 4,562 |
| 2050 | 1973 | 20.71 | 3,814 | 4,073 | -868 | -6,995 | -4 | 2,278 | 24 | 3,400 | 3,853 | -6,113 | 17,442 | -13,980 | -3,462 | 4,416 | 16,714 | 13,572 | 134 | 998 | 74 | 499 | 2,004 | 6,705 | 680 | 5,242 |
| 2051 | 1974 | 15.00 | 3,002 | 2,318 | -885 | -7,344 | 0 | 1,288 | 14 | 3,444 | 3,847 | -6,025 | 13,914 | -14,254 | 340 | -800 | 15,914 | 13,231 | -9 | 989 | 2 | 501 | -739 | 5,966 | -31 | 5,211 |
| 2052 | 1975 | 16.30 | 3,133 | 2,803 | -848 | -7,220 | 0 | 1,777 | 15 | 3,463 | 3,950 | -6,222 | 15,141 | -14,289 | -851 | 328 | 16,242 | 14,082 | -21 | 968 | 12 | 513 | 270 | 6,236 | 196 | 5,407 |
| 2053 | 1976 | 13.46 | 2,677 | 1,812 | -931 | -7,893 | 0 | 915 | 10 | 3,602 | 3,559 | -5,687 | 12,576 | -14,510 | 1,934 | -3,342 | 12,900 | 12,148 | -115 | 853 | -78 | 435 | -1,224 | 5,012 | -159 | 5,248 |
| 2054 | 1977 | 10.94 | 2,465 | 1,413 | -806 | -8,297 | 0 | 714 | 6 | 3,529 | 3,237 | -5,002 | 11,363 | -14,106 | 2,742 | -1,622 | 11,278 | 9,406 | -99 | 753 | -121 | 314 | -617 | 4,395 | -992 | 4,256 |
| 2055 | 1978 | 34.88 | 5,698 | 6,712 | -1,033 | -7,517 | -91 | 3,595 | 49 | 3,270 | 4,404 | -6,679 | 23,727 | -15,320 | -8,407 | 9,111 | 20,389 | 17,813 | 302 | 1,055 | 227 | 541 | 3,796 | 8,191 | 2,123 | 6,379 |
| 2056 | 1979 | 18.73 | 3,840 | 3,566 | -904 | -7,479 | -11 | 1,897 | 21 | 3,323 | 3,547 | -6,911 | 16,193 | -15,305 | -888 | 2,223 | 22,613 | 18,701 | -2 | 1,053 | 36 | 578 | 241 | 8,431 | 375 | 6,755 |
| 2057 | 1980 | 26.60 | 4,443 | 4,366 | -994 | -6,893 | -52 | 2,052 | 34 | 3,320 | 3,085 | -7,271 | 17,300 | -15,209 | -2,090 | 2,425 | 25,037 | 20,791 | 109 | 1,163 | 40 | 618 | 942 | 9,373 | 842 | 7,596 |
| 2058 | 1981 | 13.66 | 2,693 | 1,804 | -905 | -7,890 | 0 | 920 | 9 | 3,441 | 3,276 | -6,474 | 12,143 | -15,269 | 3,126 | -3,966 | 21,071 | 17,666 | -136 | 1,026 | -87 | 531 | -1,396 | 7,978 | -1,007 | 6,590 |
| 2059 | 1982 | 12.51 | 2,721 | 1,786 | -814 | -8,282 | 0 | 1,215 | 6 | 3,484 | 3,988 | -5,906 | 13,201 | -15,001 | 1,801 | -3,139 | 17,933 | 15,865 | -53 | 973 | -7 | 523 | -1,405 | 6,572 | -866 | 5,724 |
| 2060 | 1983 | 31.66 | 5,636 | 6,311 | -1,043 | -7,987 | -79 | 3,027 | 42 | 3,168 | 3,552 | -7,244 | 21,735 | -16,352 | -5,392 | 7,087 | 25,020 | 21,257 | 204 | 1,177 | 60 | 583 | 2,827 | 9,399 | 1,679 | 7,402 |
| 2061 | 1984 | 10.22 | 2,676 | 1,849 | -941 | -7,623 | 0 | 120 | 9 | 3,389 | 3,307 | -6,232 | 11,349 | -14,796 | 3,446 | -4,077 | 20,943 | 17,810 | -194 | 983 | -45 | 538 | -2,105 | 7,295 | -747 | 6,655 |
| 2062 | 1985 | 11.84 | 2,523 | 1,353 | -863 | -7,441 | 0 | 193 | 5 | 3,550 | 3,242 | -5,473 | 10,866 | -13,776 | 2,911 | -2,888 | 18,056 | 14,900 | 23 | 1,006 | -45 | 493 | -716 | 6,578 | -871 | 5,784 |
| 2063 | 1986 | 25.15 | 4,187 | 3,879 | -860 | -6,711 | -6 | 2,520 | 25 | 3,389 | 3,401 | -6,678 | 17,402 | -14,255 | -3,146 | 2,806 | 20,861 | 18,046 | 49 | 1,055 | 86 | 579 | 1,129 | 7,707 | 611 | 6,395 |
| 2064 | 1987 | 7.50 | 2,097 | 521 | -838 | -9,093 | 0 | 156 | 0 | 3,634 | 3,489 | -5,126 | 9,897 | -15,058 | 5,160 | -4,680 | 16,181 | 12,886 | -105 | 950 | -177 | 402 | -2,017 | 5,691 | -1,515 | 4,879 |
| 2065 | 1988 | 13.22 | 2,818 | 1,755 | -772 | -7,025 | 0 | 165 | 4 | 3,583 | 3,937 | -4,817 | 12,262 | -12,614 | 351 | -2,214 | 13,967 | 12,534 | -59 | 892 | 64 | 466 | -766 | 4,924 | -245 | 4,634 |

MoundBasin
GROUNDWATER SUSTAINABILITY AGENCY

| | | | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[e] | | | | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[c] | Groundwater Extraction (pumping from wells) | Discharge of Groundwater to Tile Drains[d] | Groundwater/ Surface Water Interaction in the Santa Clara River[f] | Groundwater/ Surface Water Interaction in Harmon Barranca[g] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage per Water Year[h] |
| 2066 | 1989 | 8.23 | 2,221 | 1,026 | -740 | -7,439 | 0 | 97 | 5 | 3,710 | 2,556 | -4,633 | 9,614 | -12,812 | 3,198 |
| 2067 | 1990 | 5.62 | 1,779 | 610 | -566 | -7,887 | 0 | 56 | 0 | 3,884 | 15 | -4,035 | 6,343 | -12,488 | 6,145 |
| 2068 | 1991 | 16.92 | 3,155 | 2,886 | -625 | -8,042 | 0 | 1,845 | 23 | 3,866 | 3,324 | -4,105 | 15,100 | -12,772 | -2,328 |
| 2069 | 1992 | 20.34 | 4,069 | 4,250 | -850 | -7,430 | -3 | 3,059 | 28 | 3,569 | 5,967 | -5,619 | 20,943 | -13,902 | -7,041 |
| 2070 | 1993 | 28.76 | 4,556 | 5,409 | -1,089 | -6,850 | -144 | 3,754 | 35 | 3,378 | 3,755 | -7,072 | 20,887 | -15,156 | -5,731 |
| 2071 | 1994 | 11.68 | 2,485 | 1,468 | -828 | -8,163 | 0 | 958 | 7 | 3,538 | 3,828 | -6,016 | 12,284 | -15,006 | 2,722 |
| *Average:* | | *16.75* | *3,259* | *2,778* | *-853* | *-7,619* | *-18* | *1,567* | *17* | *3,526* | *3,680* | *-5,808* | *14,826* | *-14,299* | *-528* |
| ***Post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | | | | | |
| 2072 | 1995 | 31.72 | 5,022 | 5,580 | -1,006 | -6,937 | -74 | 2,689 | 30 | 3,503 | 3,366 | -6,986 | 20,189 | -15,002 | -5,186 |
| 2073 | 1996 | 12.79 | 2,877 | 1,966 | -841 | -8,542 | 0 | 857 | 11 | 3,500 | 3,484 | -6,333 | 12,694 | -15,716 | 3,022 |
| 2074 | 1997 | 14.75 | 3,230 | 2,831 | -943 | -7,342 | 0 | 1,533 | 15 | 3,440 | 3,630 | -6,836 | 14,680 | -15,122 | 442 |
| 2075 | 1998 | 42.54 | 6,336 | 7,413 | -1,081 | -6,019 | -139 | 3,388 | -127 | 3,333 | 2,385 | -7,607 | 22,855 | -14,972 | -7,882 |
| 2076 | 1999 | 10.33 | 2,337 | 834 | -807 | -8,096 | 0 | 169 | 1 | 3,543 | 2,948 | -6,009 | 9,832 | -14,913 | 5,081 |
| 2077 | 2000 | 17.11 | 3,201 | 2,410 | -814 | -7,821 | 0 | 1,128 | 15 | 3,495 | 3,329 | -6,183 | 13,578 | -14,819 | 1,241 |
| 2078 | 2001 | 22.79 | 3,916 | 3,931 | -843 | -7,987 | -15 | 1,632 | 24 | 3,355 | 3,629 | -6,546 | 16,487 | -15,390 | -1,097 |
| 2079 | 2002 | 6.41 | 2,027 | 584 | -797 | -8,517 | 0 | 101 | 2 | 3,579 | 3,166 | -5,249 | 9,460 | -14,563 | 5,103 |
| 2080 | 2003 | 19.00 | 3,722 | 3,129 | -765 | -7,220 | 0 | 1,429 | 17 | 3,431 | 4,011 | -6,025 | 15,739 | -14,010 | -1,730 |
| 2081 | 2004 | 10.73 | 2,361 | 1,490 | -825 | -7,914 | 0 | 688 | 7 | 3,528 | 3,215 | -5,588 | 11,289 | -14,327 | 3,038 |
| 2082 | 2005 | 34.64 | 5,698 | 6,996 | -1,049 | -6,272 | -208 | 3,791 | 51 | 3,311 | 3,354 | -7,339 | 23,201 | -14,868 | -8,332 |
| 2083 | 2006 | 16.64 | 3,081 | 2,654 | -782 | -7,302 | -12 | 1,294 | 13 | 3,441 | 3,313 | -6,454 | 13,796 | -14,551 | 755 |
| 2084 | 2007 | 5.75 | 1,789 | 183 | -846 | -8,653 | 0 | 135 | 0 | 3,672 | 3,443 | -5,569 | 9,221 | -15,068 | 5,847 |
| 2085 | 2008 | 12.77 | 2,949 | 2,485 | -861 | -8,258 | -3 | 1,687 | 14 | 3,561 | 4,072 | -5,998 | 14,770 | -15,120 | 350 |
| 2086 | 2009 | 9.32 | 2,374 | 1,353 | -807 | -7,905 | 0 | 915 | 5 | 3,627 | 3,751 | -5,419 | 12,025 | -14,131 | 2,106 |
| 2087 | 2010 | 16.82 | 3,327 | 2,916 | -768 | -7,649 | 0 | 1,336 | 13 | 3,416 | 4,326 | -5,460 | 15,334 | -13,877 | -1,457 |
| 2088 | 2011 | 19.70 | 3,882 | 3,742 | -782 | -6,996 | -9 | 1,900 | 23 | 3,361 | 4,115 | -6,228 | 17,024 | -14,015 | -3,009 |
| 2089 | 2012 | 9.49 | 2,196 | 624 | -822 | -8,323 | 0 | 123 | 0 | 3,658 | 3,721 | -5,111 | 10,321 | -14,256 | 3,935 |
| 2090 | 2013 | 5.80 | 2,581 | 1,559 | -806 | -7,470 | 0 | 677 | 9 | 3,611 | 2,202 | -5,307 | 10,640 | -13,583 | 2,944 |
| 2091 | 2014 | 6.14 | 2,244 | 1,245 | -782 | -8,388 | 0 | 501 | 4 | 3,759 | 176 | -4,502 | 7,929 | -13,673 | 5,743 |
| 2092 | 2015 | 9.15 | 2,513 | 1,185 | -491 | -7,454 | 0 | 38 | 3 | 3,890 | -461 | -3,172 | 7,629 | -11,578 | 3,950 |
| 2093 | 2016 | 8.49 | 2,949 | 1,980 | -401 | -8,022 | 0 | 312 | 10 | 3,866 | -222 | -3,165 | 9,117 | -11,811 | 2,694 |
| 2094 | 2017 | 19.11 | 3,623 | 3,571 | -600 | -7,497 | 0 | 2,259 | 20 | 3,762 | 3,065 | -3,882 | 16,299 | -11,979 | -4,320 |
| 2095 | 2018 | 7.16 | 2,936 | 1,950 | -456 | -8,188 | 0 | 699 | 8 | 3,873 | -768 | -3,379 | 9,465 | -12,791 | 3,326 |
| 2096 | 2019 | 19.19 | 3,583 | 3,571 | -679 | -7,266 | 0 | 2,832 | 20 | 3,777 | 5,885 | -4,461 | 19,667 | -12,406 | -7,261 |
| *Average:* | | *15.53* | *3,230* | *2,647* | *-786* | *-7,682* | *-18* | *1,284* | *8* | *3,572* | *2,925* | *-5,552* | *13,730* | *-14,102* | *372* |
| | | | | | | | | | | | | | | | |
| ***Average 2022-2096:*** | | ***15.38*** | ***3,139*** | ***2,517*** | ***-767*** | ***-7,710*** | ***-14*** | ***1,318*** | ***12*** | ***3,650*** | ***3,107*** | ***-5,168*** | ***13,830*** | ***-13,747*** | ***-84*** |

| | All Aquifers Combined | | | Mugu Aquifer | | | | Hueneme Aquifer | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year |
| 2066 | -2,016 | 11,951 | 9,336 | -70 | 822 | -163 | 304 | -494 | 4,430 | -392 | 4,242 |
| 2067 | -5,557 | 6,394 | 3,191 | -395 | 427 | -577 | -273 | -914 | 3,516 | -982 | 3,260 |
| 2068 | -488 | 5,907 | 5,519 | -422 | 6 | 166 | -107 | 881 | 4,398 | -246 | 3,015 |
| 2069 | 8,351 | 14,257 | 12,560 | 696 | 702 | 514 | 407 | 1,145 | 5,542 | 1,119 | 4,134 |
| 2070 | 8,068 | 22,325 | 18,291 | 466 | 1,168 | 177 | 584 | 2,274 | 7,817 | 2,072 | 6,205 |
| 2071 | -3,954 | 18,370 | 15,569 | -167 | 1,001 | -72 | 512 | -1,543 | 6,274 | -742 | 5,463 |
| *Average:* | | | | | | | | | | | |
| ***Post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | |
| 2072 | 6,280 | 24,651 | 20,756 | 223 | 1,225 | 120 | 632 | 2,569 | 8,844 | 1,580 | 7,043 |
| 2073 | -3,157 | 21,494 | 17,734 | -136 | 1,088 | -115 | 517 | -1,438 | 7,406 | -917 | 6,126 |
| 2074 | -1,007 | 20,487 | 17,292 | -98 | 990 | 12 | 529 | -471 | 6,934 | 11 | 6,137 |
| 2075 | 7,658 | 28,145 | 25,174 | 186 | 1,176 | 124 | 653 | 3,363 | 10,297 | 2,514 | 8,652 |
| 2076 | -5,429 | 22,716 | 20,094 | -139 | 1,037 | -83 | 571 | -2,575 | 7,722 | -1,669 | 6,983 |
| 2077 | -1,390 | 21,326 | 18,853 | 33 | 1,070 | -33 | 538 | -329 | 7,393 | -532 | 6,451 |
| 2078 | 2,357 | 23,683 | 19,950 | -13 | 1,058 | 15 | 553 | 1,186 | 8,579 | 323 | 6,774 |
| 2079 | -5,821 | 17,861 | 14,847 | -137 | 921 | -145 | 407 | -2,686 | 5,893 | -1,405 | 5,369 |
| 2080 | 891 | 18,752 | 16,577 | 30 | 951 | 91 | 499 | 397 | 6,290 | 82 | 5,450 |
| 2081 | -2,125 | 16,628 | 13,539 | -72 | 879 | -97 | 401 | -855 | 5,435 | -601 | 4,850 |
| 2082 | 9,529 | 26,156 | 21,872 | 285 | 1,164 | 205 | 606 | 3,594 | 9,029 | 2,392 | 7,241 |
| 2083 | -4,001 | 22,156 | 21,117 | -134 | 1,029 | 7 | 613 | -1,584 | 7,444 | -268 | 6,974 |
| 2084 | -4,314 | 17,842 | 15,270 | -85 | 944 | -150 | 462 | -1,569 | 5,875 | -1,561 | 5,412 |
| 2085 | 148 | 17,990 | 14,919 | 31 | 975 | 2 | 464 | -112 | 5,763 | -374 | 5,038 |
| 2086 | -2,606 | 15,384 | 12,813 | -89 | 886 | -49 | 415 | -877 | 4,886 | -514 | 4,524 |
| 2087 | 1,021 | 16,404 | 14,270 | 4 | 890 | 47 | 462 | 433 | 5,319 | 21 | 4,545 |
| 2088 | 3,906 | 20,310 | 17,279 | 157 | 1,047 | 96 | 559 | 1,371 | 6,690 | 943 | 5,488 |
| 2089 | -5,160 | 15,151 | 13,344 | -131 | 916 | -128 | 431 | -1,861 | 4,828 | -914 | 4,575 |
| 2090 | -1,224 | 13,927 | 10,400 | -77 | 839 | -203 | 228 | -369 | 4,459 | -307 | 4,268 |
| 2091 | -5,305 | 8,621 | 4,657 | -530 | 308 | -598 | -370 | -617 | 3,843 | -1,068 | 3,199 |
| 2092 | -4,625 | 3,996 | 707 | -426 | -118 | -430 | -800 | -852 | 2,991 | -675 | 2,524 |
| 2093 | -2,811 | 1,185 | -1,986 | -390 | -507 | -365 | -1,165 | -354 | 2,636 | -689 | 1,835 |
| 2094 | 3,827 | 5,011 | 2,333 | 268 | -239 | 574 | -592 | 959 | 3,596 | 458 | 2,293 |
| 2095 | -2,411 | 2,600 | -992 | -132 | -371 | -433 | -1,025 | -501 | 3,094 | -345 | 1,948 |
| 2096 | 3,788 | 6,388 | 6,269 | 239 | -132 | 995 | -29 | 670 | 3,765 | 700 | 2,648 |
| *Average:* | | | | | | | | | | | |
| | | | | | | | | | | | |
| ***Average 2022-2096:*** | | | | | | | | | | | |

**Notes:**

N/A = Not applicable.

Positive values represent inflows to the Mound Basin negative numbers represent outflows from the basin.

a The representative historical water year used as the basis for assumptions regarding rainfall and surface flows about future years, as described in Section 3.3.

b See Section 3.3 for an explanation of how water-year types were classified in this report.

c The Shallow Alluvial Deposits is modeled to be the sole hydrostratigraphic unit in Mound Basin with saturated conditions consistently shallow enough to be significantly affected by evapotranspiration.

d Tile drains are only known or suspected to be present in the Shallow Alluvial Deposits in Mound Basin.

e These components can comprise either net inflows to or outflows from each aquifer, depending on hydrogeologic conditions that vary over time (e.g., hydraulic gradients).

f Within Mound Basin, the sole hydrostratigraphic unit known or suspected to be in direct hydraulic communication with the Santa Clara River is the Shallow Alluvial Deposits.

g United (2021) modeled Harmon Barranca using MODFLOW's ""Stream package,"" as described in Section 3.3 of this report, allowing the model to simulate direct hydraulic communication with the Shallow Alluvial Deposits, as well as with the fine-grained Pleistocene deposits.

h Water-year changes in storage are calculated from October 1 of the preceding calendar year to September 30 of the indicated year. Positive values for groundwater released from storage represent inflows to the basin, same as all other components on this table. However, specific to this parameter, inflow of groundwater from storage is associated with declining groundwater levels (or potentiometric heads) in the basin. Negative values are associated with increasing groundwater-levels (or potentiometric heads), as a result of groundwater being "added to storage."

**Table 3.3-08 Mound Basin Projected Average Inflows and Outflows by Aquifer, Baseline Future Conditions.**

| | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[a] | | | | | | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aquifer | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[b] | Groundwater Extraction | Discharge of Groundwater to Tile Drains[c] | Groundwater/ Surface Water Interaction in the Santa Clara River[d] | Groundwater/ Surface Water Interaction in Harmon Barranca[e] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Vertical Groundwater Flow to/from the Overlying Aquifer | Vertical Groundwater Flow to/from the Underlying Aquifer | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage[f] |
| ***Averages during Implementation Period (water years 2022 through 2041)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,269 | 0 | -614 | 0 | -1 | 987 | 45 | 0 | 1,145 | -3,055 | N/A | -923 | 4,446 | -4,592 | 146 |
| Fine-grained Pleistocene deposits[g] | 139 | 0 | N/A | -6 | N/A | N/A | 70 | 7 | 1,593 | -77 | 923 | -2,701 | 2,732 | -2,783 | 52 |
| Mugu Aquifer | 0 | 0 | N/A | -2,560 | N/A | N/A | 0 | 219 | 1,659 | -918 | 2,701 | -1,113 | 4,579 | -4,592 | 13 |
| Hueneme Aquifer[h] | 438 | 1,961 | N/A | -4,701 | N/A | N/A | -105 | 1,972 | -921 | 318 | 1,113 | 43 | 5,847 | -5,727 | -120 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -615 | N/A | N/A | 0 | 1,734 | -1,002 | 4 | -43 | N/A | 1,738 | -1,660 | -78 |
| ***Basin Total:*** | ***2,846*** | ***1,961*** | ***-614*** | ***-7,882*** | ***-1*** | ***987*** | ***10*** | ***3,933*** | ***2,474*** | ***-3,728*** | ***4,694*** | ***-4,694*** | ***19,342*** | ***-19,355*** | ***13*** |
| ***Averages during Sustaining Period (water years 2042 through 2071)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,550 | 0 | -853 | 0 | -18 | 1,567 | 99 | 0 | 1,565 | -3,862 | N/A | -963 | 5,781 | -5,696 | -85 |
| Fine-grained Pleistocene deposits[g] | 163 | 0 | N/A | -4 | N/A | N/A | 131 | 7 | 1,811 | -125 | 963 | -2,746 | 3,075 | -2,875 | -200 |
| Mugu Aquifer | 0 | 0 | N/A | -2,437 | N/A | N/A | 0 | 191 | 2,031 | -1,598 | 2,746 | -907 | 4,968 | -4,943 | -25 |
| Hueneme Aquifer[h] | 546 | 2,778 | N/A | -4,570 | N/A | N/A | -213 | 1,704 | -848 | -72 | 907 | -131 | 5,935 | -5,833 | -102 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -608 | N/A | N/A | 0 | 1,624 | -880 | -151 | 131 | N/A | 1,755 | -1,639 | -116 |
| ***Basin Total:*** | ***3,259*** | ***2,778*** | ***-853*** | ***-7,619*** | ***-18*** | ***1,567*** | ***17*** | ***3,526*** | ***3,680*** | ***-5,808*** | ***4,748*** | ***-4,748*** | ***21,515*** | ***-20,987*** | ***-528*** |
| ***Averages during post-SGMA period (water years 2072 through 2096):*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,533 | 0 | -786 | 0 | -18 | 1,284 | 101 | 0 | 1,522 | -3,729 | N/A | -975 | 5,440 | -5,509 | 69 |
| Fine-grained Pleistocene deposits[g] | 163 | 0 | N/A | -4 | N/A | N/A | 123 | 7 | 1,576 | -115 | 975 | -2,806 | 2,843 | -2,925 | 82 |
| Mugu Aquifer | 0 | 0 | N/A | -2,431 | N/A | N/A | 0 | 211 | 1,689 | -1,476 | 2,806 | -821 | 4,706 | -4,728 | 22 |
| Hueneme Aquifer[h] | 535 | 2,647 | N/A | -4,635 | N/A | N/A | -216 | 1,728 | -944 | -74 | 821 | 26 | 5,756 | -5,868 | 113 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -612 | N/A | N/A | 0 | 1,627 | -918 | -159 | -26 | N/A | 1,627 | -1,714 | 87 |
| ***Basin Total:*** | ***3,230*** | ***2,647*** | ***-786*** | ***-7,682*** | ***-18*** | ***1,284*** | ***8*** | ***3,572*** | ***2,925*** | ***-5,552*** | ***4,576*** | ***-4,576*** | ***20,372*** | ***-20,743*** | ***372*** |



**Notes:**

N/A = Not applicable

Positive values represent inflows to an aquifer; negative numbers represent outflows from an aquifer.

a These components can comprise either net inflows to or outflows from each aquifer, depending on hydrogeologic conditions that vary over time (e.g., hydraulic gradients).

b The Shallow Alluvial Deposits is the sole hydrostratigraphic unit in Mound Basin with saturated conditions consistently shallow enough to be significantly affected by evapotranspiration.

c Tile drains are only known or suspected to be present in the Shallow Alluvial Deposits in Mound Basin.

d Within Mound Basin, the sole hydrostratigraphic unit known or suspected to be in direct hydraulic communication with the Santa Clara River is the Shallow Alluvial Deposits.

e United (2021) modeled Harmon Barranca using MODFLOW's "Stream package," as described in Section 3.3 of this report, allowing the model to simulate direct hydraulic communication with the Shallow Alluvial Deposits and the fine-grained Pleistocene deposits.

f Positive values for groundwater released from storage represent inflows to an aquifer, same as all other components on this page. Inflow of groundwater from storage is associated with declining groundwater levels (or potentiometric heads) in that aquifer. Negative values are associated with increasing groundwater-levels (or potentiometric-heads), as a result of groundwater being "added to storage."

g Although the fine-grained Pleistocene deposits in Mound Basin are not considered a principal aquifer due to their low hydraulic conductivity, they have a substantial thickness and are stratigraphically adjacent to the Oxnard Aquifer in the Oxnard Basin (see Section 3.1 for more information). The fine-grained Pleistocene deposits are included in this table for completeness in depicting the groundwater budget for Mound Basin.

h To provide a complete and balanced water budget (the sum of water-budget components for all units should be zero), the values shown in this row include both the Hueneme Aquifer and the overlying Mugu-Hueneme aquitard, which is thin and has low hydraulic conductivity. For these reasons, inflows and outflows from the aquitard are small compared to those from the aquifer.

i To provide a complete and balanced water budget (the sum of water-budget components for all units should be zero), the values shown in this row include the Fox Canyon Aquifer (main and basal) and the overlying and intervening aquitards, which are thin and have low hydraulic conductivity. For these reasons, inflows and outflows from the aquitards are small compared to those from the aquifer.

j See Section 3.3 for an explanation of how water-year types were classified in this report.

**Table 3.3-09 Mound Basin Projected Surface Water Inflows and Outflows by Water Year, 2030 Climate Change and Sea Level Rise Factors.**

| | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | Fate of Imported Surface Water (from Casitas MWD) | | Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| | | | | | | | | | | M&I Return Flows[e] | Consumptive Use[f] | | | | | |
| *Implementation Period (water years 2022 through 2041)* | | | | | | | | | | | | | | | | |
| 2022 | 1945 | 11.86 | 62,752 | 2,565 | 4,828 | 3,362 | -61,943 | -2,670 | -4,723 | -168 | -3,194 | -1,209 | -14 | 73,507 | -73,920 | -413 |
| 2023 | 1946 | 11.18 | 32,165 | 2,347 | 4,418 | 4,000 | -31,731 | -1,752 | -5,013 | -200 | -3,800 | -1,370 | -8 | 42,930 | -43,875 | -944 |
| 2024 | 1947 | 10.90 | 17,467 | 2,259 | 4,252 | 4,000 | -16,864 | -2,009 | -4,502 | -200 | -3,800 | -1,299 | -13 | 27,978 | -28,687 | -709 |
| 2025 | 1948 | 6.77 | 1,147 | 938 | 1,766 | 5,816 | -1,119 | -717 | -1,987 | -291 | -5,525 | -43 | -2 | 9,667 | -9,684 | -17 |
| 2026 | 1949 | 8.57 | 1,580 | 1,513 | 2,848 | 5,816 | -1,549 | -863 | -3,498 | -291 | -5,525 | -43 | 0 | 11,757 | -11,768 | -12 |
| 2027 | 1950 | 13.88 | 3,965 | 3,211 | 6,045 | 5,816 | -3,912 | -1,603 | -7,653 | -291 | -5,525 | -63 | -7 | 19,036 | -19,054 | -18 |
| 2028 | 1951 | 7.53 | 0 | 1,178 | 2,218 | 5,816 | 0 | -546 | -2,851 | -291 | -5,525 | -15 | -1 | 9,213 | -9,229 | -16 |
| 2029 | 1952 | 26.42 | 159,048 | 7,220 | 13,592 | 5,816 | -158,170 | -5,059 | -15,753 | -291 | -5,525 | -3,057 | -34 | 185,677 | -187,889 | -2,213 |
| 2030 | 1953 | 12.12 | 983 | 2,647 | 4,983 | 5,977 | -968 | -1,547 | -6,082 | -299 | -5,678 | -865 | -6 | 14,590 | -15,445 | -856 |
| 2031 | 1954 | 15.86 | 23,853 | 3,842 | 7,233 | 5,977 | -23,589 | -2,480 | -8,595 | -299 | -5,678 | -1,106 | -13 | 40,905 | -41,760 | -855 |
| 2032 | 1955 | 12.53 | 2,148 | 2,780 | 5,233 | 5,977 | -2,109 | -1,515 | -6,497 | -299 | -5,678 | -609 | -5 | 16,138 | -16,713 | -575 |
| 2033 | 1956 | 16.21 | 25,839 | 3,954 | 7,444 | 5,977 | -25,641 | -2,230 | -9,168 | -299 | -5,678 | -936 | -13 | 43,214 | -43,965 | -750 |
| 2034 | 1957 | 10.55 | 10,345 | 2,146 | 4,040 | 5,977 | -10,239 | -1,462 | -4,725 | -299 | -5,678 | -780 | -6 | 22,509 | -23,189 | -680 |
| 2035 | 1958 | 27.93 | 248,075 | 7,702 | 14,500 | 5,977 | -246,748 | -5,070 | -17,132 | -299 | -5,678 | -3,410 | -31 | 276,254 | -278,368 | -2,114 |
| 2036 | 1959 | 6.99 | 36,594 | 1,007 | 1,896 | 5,977 | -36,288 | -1,329 | -1,574 | -299 | -5,678 | -1,082 | -5 | 45,474 | -46,254 | -779 |
| 2037 | 1960 | 12.24 | 3,616 | 2,685 | 5,055 | 5,977 | -3,528 | -1,303 | -6,436 | -299 | -5,678 | -102 | -4 | 17,333 | -17,351 | -19 |
| 2038 | 1961 | 7.50 | 0 | 1,169 | 2,201 | 5,977 | 0 | -952 | -2,418 | -299 | -5,678 | -38 | -4 | 9,347 | -9,389 | -42 |
| 2039 | 1962 | 27.16 | 228,325 | 7,458 | 14,040 | 5,977 | -227,575 | -4,396 | -17,101 | -299 | -5,678 | -2,159 | 9 | 255,809 | -257,209 | -1,400 |
| 2040 | 1963 | 12.80 | 11,667 | 2,865 | 5,394 | 5,977 | -11,546 | -1,622 | -6,637 | -299 | -5,678 | -841 | -9 | 25,903 | -26,632 | -729 |
| 2041 | 1964 | 8.70 | 6,128 | 1,553 | 2,923 | 5,977 | -6,038 | -1,022 | -3,454 | -299 | -5,678 | -46 | -2 | 16,581 | -16,539 | 41 |
| *Average:* | | *13.39* | *43,785* | *3,052* | *5,745* | *5,608* | *-43,478* | *-2,007* | *-6,790* | *-280* | *-5,328* | *-954* | *-8* | *58,191* | *-58,846* | *-655* |
| *Sustaining Period (water years 2042 through 2071)* | | | | | | | | | | | | | | | | |
| 2042 | 1965 | 15.34 | 5,288 | 3,676 | 6,919 | 5,977 | -5,220 | -1,918 | -8,677 | -299 | -5,678 | -973 | -10 | 21,860 | -22,775 | -916 |
| 2043 | 1966 | 16.59 | 130,532 | 4,077 | 7,675 | 5,977 | -130,011 | -3,313 | -8,438 | -299 | -5,678 | -2,322 | -23 | 148,260 | -150,084 | -1,824 |
| 2044 | 1967 | 18.25 | 112,063 | 4,608 | 8,674 | 5,977 | -110,645 | -4,099 | -9,183 | -299 | -5,678 | -3,099 | -20 | 131,322 | -133,023 | -1,701 |
| 2045 | 1968 | 14.27 | 8,268 | 3,334 | 6,276 | 5,977 | -7,673 | -1,649 | -7,961 | -299 | -5,678 | -878 | -10 | 23,855 | -24,148 | -292 |
| 2046 | 1969 | 24.02 | 968,493 | 6,452 | 12,145 | 5,977 | -965,949 | -4,955 | -13,642 | -299 | -5,678 | -3,409 | -37 | 993,067 | -993,969 | -902 |
| 2047 | 1970 | 16.13 | 49,571 | 3,929 | 7,396 | 5,977 | -48,414 | -1,668 | -9,657 | -299 | -5,678 | -928 | -7 | 66,873 | -66,651 | 222 |
| 2048 | 1971 | 15.02 | 53,373 | 3,574 | 6,728 | 5,977 | -52,393 | -2,324 | -7,978 | -299 | -5,678 | -1,355 | -15 | 69,653 | -70,043 | -390 |
| 2049 | 1972 | 8.39 | 24,837 | 1,453 | 2,735 | 5,977 | -24,296 | -1,492 | -2,696 | -299 | -5,678 | -1,198 | -11 | 35,002 | -35,671 | -668 |
| 2050 | 1973 | 20.98 | 220,376 | 5,480 | 10,317 | 5,977 | -218,890 | -4,096 | -11,701 | -299 | -5,678 | -2,275 | -24 | 242,150 | -242,963 | -813 |
| 2051 | 1974 | 15.51 | 75,257 | 3,730 | 7,021 | 5,977 | -74,173 | -2,328 | -8,423 | -299 | -5,678 | -1,314 | -16 | 91,984 | -92,230 | -246 |
| 2052 | 1975 | 15.60 | 62,319 | 3,761 | 7,080 | 5,977 | -61,171 | -2,817 | -8,024 | -299 | -5,678 | -1,790 | -16 | 79,137 | -79,796 | -659 |
| 2053 | 1976 | 14.10 | 27,763 | 3,281 | 6,176 | 5,977 | -27,342 | -2,191 | -7,266 | -299 | -5,678 | -1,218 | -13 | 43,197 | -44,007 | -810 |

| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Surface Water Gains and Inflows (acre-feet per year): Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Surface Water Losses and Outflows (acre-feet per year): Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | Fate of Imported Surface Water (from Casitas MWD): M&I Return Flows[e] | Fate of Imported Surface Water (from Casitas MWD): Consumptive Use[f] | Surface Water Inflow and Outflow Components (acre-feet per year)[g]: Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Summary (acre-feet per year): Sum of Inflows | Sum of Outflows | Difference[h] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2054 | 1977 | 11.73 | 13,380 | 2,521 | 4,746 | 5,977 | -13,206 | -1,549 | -5,719 | -299 | -5,678 | -713 | -6 | 26,625 | -27,170 | -545 |
| 2055 | 1978 | 34.58 | 722,565 | 9,829 | 18,502 | 5,977 | -720,695 | -6,781 | -21,550 | -299 | -5,678 | -3,386 | -49 | 756,873 | -758,438 | -1,565 |
| 2056 | 1979 | 18.60 | 177,566 | 4,721 | 8,887 | 5,977 | -176,287 | -3,537 | -10,071 | -299 | -5,678 | -1,816 | -21 | 197,151 | -197,708 | -557 |
| 2057 | 1980 | 26.28 | 407,091 | 7,176 | 13,509 | 5,977 | -405,799 | -4,365 | -16,320 | -299 | -5,678 | -2,026 | -34 | 433,753 | -434,521 | -768 |
| 2058 | 1981 | 12.96 | 44,443 | 2,915 | 5,487 | 5,977 | -43,555 | -1,713 | -6,689 | -299 | -5,678 | -929 | -9 | 58,822 | -58,871 | -49 |
| 2059 | 1982 | 12.28 | 37,493 | 2,697 | 5,078 | 5,977 | -36,504 | -1,723 | -6,052 | -299 | -5,678 | -1,187 | -6 | 51,245 | -51,449 | -203 |
| 2060 | 1983 | 32.27 | 555,084 | 9,091 | 17,114 | 5,977 | -553,750 | -6,421 | -19,784 | -299 | -5,678 | -2,980 | -43 | 587,266 | -588,954 | -1,688 |
| 2061 | 1984 | 10.44 | 29,625 | 2,110 | 3,971 | 5,977 | -29,035 | -1,956 | -4,125 | -299 | -5,678 | -687 | -10 | 41,683 | -41,789 | -106 |
| 2062 | 1985 | 12.13 | 15,444 | 2,651 | 4,991 | 5,977 | -14,480 | -1,444 | -6,199 | -299 | -5,678 | -1,136 | -5 | 29,063 | -29,240 | -177 |
| 2063 | 1986 | 25.61 | 190,583 | 6,963 | 13,107 | 5,977 | -189,498 | -3,969 | -16,101 | -299 | -5,678 | -1,835 | -26 | 216,630 | -217,407 | -777 |
| 2064 | 1987 | 7.82 | 3,445 | 1,272 | 2,395 | 5,977 | -2,882 | -569 | -3,098 | -299 | -5,678 | -159 | 0 | 13,090 | -12,685 | 405 |
| 2065 | 1988 | 13.44 | 27,954 | 3,068 | 5,776 | 5,977 | -27,187 | -1,865 | -6,978 | -299 | -5,678 | -164 | -5 | 42,775 | -42,177 | 598 |
| 2066 | 1989 | 8.44 | 2,230 | 1,471 | 2,768 | 5,977 | -2,101 | -1,088 | -3,151 | -299 | -5,678 | -1,028 | -5 | 12,446 | -13,350 | -904 |
| 2067 | 1990 | 5.98 | 4,104 | 684 | 1,288 | 5,977 | -4,017 | -681 | -1,290 | -299 | -5,678 | -56 | 0 | 12,052 | -12,021 | 31 |
| 2068 | 1991 | 16.22 | 109,593 | 3,959 | 7,453 | 5,977 | -109,121 | -2,799 | -8,612 | -299 | -5,678 | -1,733 | -22 | 126,982 | -128,264 | -1,282 |
| 2069 | 1992 | 20.34 | 286,099 | 5,277 | 9,933 | 5,977 | -284,754 | -4,338 | -10,871 | -299 | -5,678 | -3,010 | -30 | 307,285 | -308,980 | -1,695 |
| 2070 | 1993 | 28.42 | 847,487 | 7,860 | 14,796 | 5,977 | -844,908 | -5,463 | -17,193 | -299 | -5,678 | -3,669 | -37 | 876,120 | -877,247 | -1,127 |
| 2071 | 1994 | 11.79 | 51,540 | 2,540 | 4,782 | 5,977 | -50,244 | -1,544 | -5,778 | -299 | -5,678 | -1,007 | -8 | 64,840 | -64,559 | 281 |
| *Average:* | | *16.78* | *175,462* | *4,139* | *7,791* | *5,977* | *-174,473* | *-2,822* | *-9,108* | *-299* | *-5,678* | *-1,609* | *-17* | *193,369* | *-194,006* | *-638* |
| ***Post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | | | | | | |
| 2072 | 1995 | 30.11 | 475,895 | 8,401 | 15,815 | 5,977 | -474,335 | -5,276 | -18,940 | -299 | -5,678 | -2,603 | -42 | 506,089 | -507,174 | -1,085 |
| 2073 | 1996 | 13.23 | 69,724 | 3,002 | 5,650 | 5,977 | -68,939 | -2,026 | -6,626 | -299 | -5,678 | -900 | -11 | 84,353 | -84,480 | -127 |
| 2074 | 1997 | 15.29 | 79,281 | 3,662 | 6,894 | 5,977 | -78,265 | -2,915 | -7,641 | -299 | -5,678 | -1,557 | -16 | 95,814 | -96,370 | -557 |
| 2075 | 1998 | 43.89 | 654,521 | 12,806 | 24,107 | 5,977 | -653,151 | -7,725 | -29,188 | -299 | -5,678 | -3,078 | 201 | 697,612 | -699,118 | -1,506 |
| 2076 | 1999 | 10.90 | 46,015 | 2,256 | 4,247 | 5,977 | -45,402 | -888 | -5,615 | -299 | -5,678 | -93 | -2 | 58,495 | -57,976 | 519 |
| 2077 | 2000 | 17.82 | 79,620 | 4,470 | 8,415 | 5,977 | -78,795 | -2,560 | -10,326 | -299 | -5,678 | -1,162 | -16 | 98,482 | -98,836 | -353 |
| 2078 | 2001 | 22.45 | 192,786 | 5,951 | 11,203 | 5,977 | -191,956 | -3,920 | -13,233 | -299 | -5,678 | -1,637 | -25 | 215,917 | -216,749 | -833 |
| 2079 | 2002 | 6.74 | 1,898 | 927 | 1,745 | 5,977 | -1,511 | -602 | -2,071 | -299 | -5,678 | -107 | -2 | 10,548 | -10,270 | 277 |
| 2080 | 2003 | 18.68 | 45,748 | 4,744 | 8,930 | 5,977 | -45,094 | -3,150 | -10,524 | -299 | -5,678 | -1,066 | -17 | 65,399 | -65,828 | -429 |
| 2081 | 2004 | 11.59 | 35,245 | 2,478 | 4,665 | 5,977 | -34,921 | -1,479 | -5,664 | -299 | -5,678 | -734 | -8 | 48,365 | -48,783 | -418 |
| 2082 | 2005 | 34.22 | 1,078,445 | 9,714 | 18,287 | 5,977 | -1,076,751 | -7,177 | -20,825 | -299 | -5,678 | -3,711 | -53 | 1,112,423 | -1,114,495 | -2,072 |
| 2083 | 2006 | 15.50 | 131,916 | 3,728 | 7,018 | 5,977 | -131,023 | -2,482 | -8,265 | -299 | -5,678 | -1,413 | -12 | 148,639 | -149,171 | -532 |
| 2084 | 2007 | 6.38 | 5,233 | 811 | 1,527 | 5,977 | -4,587 | -243 | -2,094 | -299 | -5,678 | -124 | 0 | 13,548 | -13,025 | 522 |
| 2085 | 2008 | 12.32 | 153,718 | 2,710 | 5,102 | 5,977 | -152,759 | -2,518 | -5,295 | -299 | -5,678 | -1,660 | -15 | 167,507 | -168,223 | -716 |
| 2086 | 2009 | 9.92 | 18,614 | 1,944 | 3,660 | 5,977 | -18,067 | -1,384 | -4,220 | -299 | -5,678 | -978 | -5 | 30,196 | -30,632 | -436 |
| 2087 | 2010 | 17.14 | 90,022 | 4,254 | 8,008 | 5,977 | -89,318 | -3,084 | -9,178 | -299 | -5,678 | -1,360 | -14 | 108,261 | -108,932 | -671 |

| | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | Fate of Imported Surface Water (from Casitas MWD) | | Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| | | | | | | | | | | M&I Return Flows[e] | Consumptive Use[f] | | | | | |
| 2088 | 2011 | 18.82 | 140,667 | 4,791 | 9,020 | 5,977 | -139,628 | -3,749 | -10,062 | -299 | -5,678 | -1,858 | -23 | 160,455 | -161,298 | -843 |
| 2089 | 2012 | 9.33 | 9,997 | 1,754 | 3,303 | 5,977 | -9,393 | -602 | -4,455 | -299 | -5,678 | -130 | 0 | 21,030 | -20,557 | 473 |
| 2090 | 2013 | 6.77 | 270 | 936 | 1,762 | 5,977 | -21 | -1,637 | -1,061 | -299 | -5,678 | -102 | -8 | 8,945 | -8,806 | 139 |
| 2091 | 2014 | 6.39 | 25,475 | 814 | 1,532 | 5,977 | -25,335 | -1,340 | -1,007 | -299 | -5,678 | -536 | -5 | 33,798 | -34,198 | -400 |
| 2092 | 2015 | 9.80 | 605 | 1,905 | 3,587 | 5,977 | -597 | -1,316 | -4,177 | -299 | -5,678 | -39 | -4 | 12,075 | -12,109 | -35 |
| 2093 | 2016 | 7.96 | 2,492 | 1,317 | 2,478 | 5,977 | -2,447 | -1,951 | -1,844 | -299 | -5,678 | -296 | -11 | 12,264 | -12,526 | -262 |
| 2094 | 2017 | 20.00 | 87,307 | 5,166 | 9,725 | 5,977 | -86,817 | -3,575 | -11,315 | -299 | -5,678 | -2,210 | -20 | 108,175 | -109,915 | -1,740 |
| 2095 | 2018 | 6.69 | 6,420 | 909 | 1,712 | 5,977 | -6,332 | -1,865 | -756 | -299 | -5,678 | -576 | -8 | 15,018 | -15,515 | -497 |
| 2096 | 2019 | 19.96 | 158,881 | 5,155 | 9,705 | 5,977 | -157,946 | -3,575 | -11,285 | -299 | -5,678 | -2,858 | -20 | 179,718 | -181,662 | -1,943 |
| *Average:* | | *15.68* | *143,632* | *3,784* | *7,124* | *5,977* | *-142,936* | *-2,682* | *-8,227* | *-299* | *-5,678* | *-1,232* | *-5* | *160,525* | *-161,066* | *-541* |
| | | | | | | | | | | | | | | | | |
| ***Average 2022-2096:*** | | ***15.51*** | ***129,738*** | ***3,731*** | ***7,023*** | ***5,879*** | ***-129,029*** | ***-2,558*** | ***-8,196*** | ***-294*** | ***-5,585*** | ***-1,309*** | ***-11*** | ***146,373*** | ***-146,983*** | ***-610*** |

**Notes**

Positive values represent inflows or gains of surface-water flows in Mound Basin, and negative numbers represent outflows or losses of surface-water flows in Mound Basin.

a See Section 3.3 for an explanation of how water-year types were classified in this report.

b The California Department of Water Resources classification approach is described in Section 3.3.

c Inflows of ephemeral surface water to Mound Basin are projected based on an empirical relationship between measured streamflow in Arundell Barranca and annual (water year) rainfall measured at Ventura County Government Center, applied to the watershed areas of streams (barrancas) within Mound Basin and upstream from Mound Basin (in stream channels that flow across the basin's northern boundary). Outflows are assumed equal to inflows across the northern basin boundary plus surface flows generated by rainfall within Mound Basin, minus mountain-front recharge of inflows immediately south of the northern boundary of Mound Basin.

d Projected imports are from Ventura Water, 2020b.

e Estimated using United's (2021a) groundwater flow model or resulting from model calibration.

f "Consumptive use" represents loss of imported surface water from Casitas MWD to evaporation and wastewater discharges after M&I use, and in this table is equal to imported surface water (from Casitas MWD) minus M&I return flows.

g These components can comprise either net gains or losses of surface water from streams within Mound Basin, depending on hydrogeologic conditions that vary over time.

h Inflows and outflows of surface water in Mound Basin should be equal, resulting in a difference of zero. Although the long-term average difference is less than 1 percent of the long-term average inflows or outflows, indicating good overall agreement, the apparent difference between inflows and outflows is larger during years with above-average rainfall. This likely is a result of minor deviations of actual streamflow in Arundell Barranca in a given water year compared to the empirical relationship developed to estimate basinwide ephemeral flows across the basin.

Mound Basin
GROUNDWATER SUSTAINABILITY AGENCY

**Table 3.3-10 Mound Basin Projected Surface Water Inflows and Outflows by Water Year, 2070 Climate Change and Sea Level Rise Factors.**

| | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | Fate of Imported Surface Water (from Casitas MWD): M&I Return Flows[e] | Fate of Imported Surface Water (from Casitas MWD): Consumptive Use[f] | Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| *Implementation Period (water years 2022 through 2041)* | | | | | | | | | | | | | | | | |
| 2022 | 1945 | 11.93 | 69,224 | 2,588 | 4,871 | 3,362 | -67,803 | -2,753 | -4,706 | -168 | -3,194 | -1,420 | -14 | 80,045 | -80,059 | -14 |
| 2023 | 1946 | 10.57 | 35,599 | 2,150 | 4,048 | 4,000 | -34,378 | -1,699 | -4,499 | -200 | -3,800 | -1,335 | -8 | 45,797 | -45,919 | -122 |
| 2024 | 1947 | 10.28 | 20,182 | 2,059 | 3,876 | 4,000 | -19,057 | -1,831 | -4,103 | -200 | -3,800 | -1,275 | -12 | 30,116 | -30,279 | -162 |
| 2025 | 1948 | 6.37 | 3,448 | 807 | 1,519 | 5,816 | -2,443 | -652 | -1,674 | -291 | -5,525 | -38 | -2 | 11,590 | -10,625 | 965 |
| 2026 | 1949 | 7.89 | 3,341 | 1,296 | 2,439 | 5,816 | -2,362 | -849 | -2,885 | -291 | -5,525 | -35 | 0 | 12,892 | -11,948 | 943 |
| 2027 | 1950 | 14.11 | 5,475 | 3,283 | 6,180 | 5,816 | -4,516 | -1,522 | -7,940 | -291 | -5,525 | -55 | -7 | 20,753 | -19,856 | 897 |
| 2028 | 1951 | 7.07 | 689 | 1,033 | 1,944 | 5,816 | -67 | -607 | -2,370 | -291 | -5,525 | -13 | -2 | 9,483 | -8,875 | 608 |
| 2029 | 1952 | 26.82 | 159,903 | 7,349 | 13,834 | 5,816 | -158,435 | -5,123 | -16,060 | -291 | -5,525 | -3,067 | -36 | 186,902 | -188,537 | -1,635 |
| 2030 | 1953 | 10.75 | 3,185 | 2,208 | 4,156 | 5,977 | -2,243 | -1,305 | -5,059 | -299 | -5,678 | -734 | -3 | 15,526 | -15,321 | 205 |
| 2031 | 1954 | 16.13 | 25,135 | 3,930 | 7,398 | 5,977 | -24,044 | -2,562 | -8,766 | -299 | -5,678 | -1,092 | -14 | 42,440 | -42,456 | -16 |
| 2032 | 1955 | 12.49 | 3,921 | 2,765 | 5,206 | 5,977 | -2,974 | -1,587 | -6,384 | -299 | -5,678 | -554 | -7 | 17,869 | -17,483 | 386 |
| 2033 | 1956 | 16.88 | 26,948 | 4,170 | 7,849 | 5,977 | -25,877 | -2,195 | -9,825 | -299 | -5,678 | -871 | -13 | 44,945 | -44,757 | 187 |
| 2034 | 1957 | 10.35 | 11,831 | 2,081 | 3,918 | 5,977 | -10,889 | -1,503 | -4,497 | -299 | -5,678 | -804 | -7 | 23,808 | -23,676 | 131 |
| 2035 | 1958 | 29.83 | 249,188 | 8,311 | 15,645 | 5,977 | -247,302 | -5,377 | -18,579 | -299 | -5,678 | -3,507 | -33 | 279,122 | -280,776 | -1,655 |
| 2036 | 1959 | 7.32 | 39,598 | 1,113 | 2,095 | 5,977 | -38,365 | -1,534 | -1,674 | -299 | -5,678 | -1,165 | -6 | 48,783 | -48,722 | 61 |
| 2037 | 1960 | 12.38 | 6,013 | 2,732 | 5,143 | 5,977 | -5,001 | -1,416 | -6,459 | -299 | -5,678 | -819 | -5 | 19,864 | -19,677 | 188 |
| 2038 | 1961 | 6.72 | 1,411 | 921 | 1,735 | 5,977 | -497 | -873 | -1,783 | -299 | -5,678 | -36 | -4 | 10,044 | -9,171 | 873 |
| 2039 | 1962 | 27.90 | 228,942 | 7,695 | 14,485 | 5,977 | -227,372 | -4,436 | -17,744 | -299 | -5,678 | -2,157 | 3 | 257,102 | -257,686 | -584 |
| 2040 | 1963 | 13.20 | 14,273 | 2,994 | 5,635 | 5,977 | -13,228 | -1,783 | -6,846 | -299 | -5,678 | -813 | -9 | 28,878 | -28,656 | 222 |
| 2041 | 1964 | 8.31 | 8,136 | 1,430 | 2,693 | 5,977 | -7,117 | -928 | -3,195 | -299 | -5,678 | -40 | -1 | 18,236 | -17,258 | 978 |
| *Average:* | | *13.37* | *45,822* | *3,046* | *5,734* | *5,608* | *-44,698* | *-2,027* | *-6,752* | *-280* | *-5,328* | *-992* | *-9* | *60,210* | *-60,087* | *123* |
| *Sustaining Period (water years 2042 through 2071)* | | | | | | | | | | | | | | | | |
| 2042 | 1965 | 14.57 | 6,836 | 3,431 | 6,459 | 5,977 | -5,853 | -1,616 | -8,274 | -299 | -5,678 | -842 | -9 | 22,704 | -22,572 | 132 |
| 2043 | 1966 | 15.79 | 132,745 | 3,820 | 7,191 | 5,977 | -131,358 | -3,078 | -7,933 | -299 | -5,678 | -2,308 | -21 | 149,733 | -150,675 | -942 |
| 2044 | 1967 | 18.65 | 112,219 | 4,734 | 8,912 | 5,977 | -110,527 | -4,042 | -9,605 | -299 | -5,678 | -3,044 | -20 | 131,843 | -133,215 | -1,372 |
| 2045 | 1968 | 13.34 | 10,394 | 3,036 | 5,716 | 5,977 | -9,301 | -1,665 | -7,087 | -299 | -5,678 | -953 | -10 | 25,123 | -24,994 | 129 |
| 2046 | 1969 | 25.72 | 966,585 | 6,997 | 13,173 | 5,977 | -963,947 | -5,563 | -14,607 | -299 | -5,678 | -3,504 | -33 | 992,732 | -993,630 | -899 |
| 2047 | 1970 | 16.37 | 52,580 | 4,007 | 7,543 | 5,977 | -51,235 | -1,787 | -9,764 | -299 | -5,678 | -988 | -9 | 70,107 | -69,760 | 348 |
| 2048 | 1971 | 13.80 | 55,355 | 3,185 | 5,996 | 5,977 | -54,082 | -2,277 | -6,904 | -299 | -5,678 | -1,322 | -15 | 70,514 | -70,577 | -63 |
| 2049 | 1972 | 7.66 | 27,939 | 1,221 | 2,299 | 5,977 | -26,817 | -1,430 | -2,090 | -299 | -5,678 | -1,132 | -10 | 37,437 | -37,457 | -20 |
| 2050 | 1973 | 22.47 | 222,987 | 5,958 | 11,216 | 5,977 | -221,284 | -4,311 | -12,863 | -299 | -5,678 | -2,340 | -27 | 246,138 | -246,802 | -663 |
| 2051 | 1974 | 15.65 | 76,825 | 3,777 | 7,111 | 5,977 | -75,474 | -2,408 | -8,481 | -299 | -5,678 | -1,345 | -16 | 93,690 | -93,701 | -11 |

| | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Fate of Imported Surface Water (from Casitas MWD) | | | | | | |
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | M&I Return Flows[e] | Consumptive Use[f] | Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| 2052 | 1975 | 15.87 | 65,705 | 3,847 | 7,242 | 5,977 | -64,354 | -2,758 | -8,330 | -299 | -5,678 | -1,797 | -16 | 82,770 | -83,232 | -462 |
| 2053 | 1976 | 16.13 | 30,304 | 3,930 | 7,399 | 5,977 | -29,134 | -3,243 | -8,086 | -299 | -5,678 | -1,448 | -23 | 47,610 | -47,910 | -300 |
| 2054 | 1977 | 11.55 | 16,201 | 2,464 | 4,639 | 5,977 | -15,125 | -1,589 | -5,514 | -299 | -5,678 | -693 | -7 | 29,281 | -28,906 | 375 |
| 2055 | 1978 | 37.23 | 724,631 | 10,676 | 20,097 | 5,977 | -722,783 | -7,317 | -23,456 | -299 | -5,678 | -3,351 | -54 | 761,381 | -762,938 | -1,557 |
| 2056 | 1979 | 20.33 | 184,970 | 5,274 | 9,928 | 5,977 | -183,852 | -3,826 | -11,376 | -299 | -5,678 | -1,750 | -24 | 206,149 | -206,805 | -656 |
| 2057 | 1980 | 27.96 | 408,788 | 7,714 | 14,521 | 5,977 | -407,556 | -4,708 | -17,526 | -299 | -5,678 | -2,014 | -36 | 436,999 | -437,818 | -819 |
| 2058 | 1981 | 13.18 | 48,001 | 2,985 | 5,620 | 5,977 | -47,085 | -1,995 | -6,610 | -299 | -5,678 | -928 | -11 | 62,583 | -62,607 | -23 |
| 2059 | 1982 | 12.47 | 41,074 | 2,758 | 5,192 | 5,977 | -40,026 | -1,978 | -5,973 | -299 | -5,678 | -1,485 | -8 | 55,002 | -55,446 | -444 |
| 2060 | 1983 | 32.62 | 560,277 | 9,202 | 17,322 | 5,977 | -558,968 | -6,434 | -20,090 | -299 | -5,678 | -2,911 | -44 | 592,778 | -594,424 | -1,646 |
| 2061 | 1984 | 9.08 | 32,348 | 1,676 | 3,156 | 5,977 | -31,660 | -1,591 | -3,241 | -299 | -5,678 | -120 | -8 | 43,157 | -42,598 | 559 |
| 2062 | 1985 | 11.33 | 18,539 | 2,396 | 4,510 | 5,977 | -17,447 | -1,206 | -5,699 | -299 | -5,678 | -179 | -3 | 31,421 | -30,512 | 909 |
| 2063 | 1986 | 27.53 | 190,547 | 7,574 | 14,259 | 5,977 | -189,406 | -4,370 | -17,463 | -299 | -5,678 | -2,317 | -29 | 218,357 | -219,562 | -1,205 |
| 2064 | 1987 | 7.25 | 7,667 | 1,091 | 2,053 | 5,977 | -6,828 | -454 | -2,690 | -299 | -5,678 | -154 | 0 | 16,788 | -16,103 | 685 |
| 2065 | 1988 | 12.92 | 27,555 | 2,902 | 5,464 | 5,977 | -26,526 | -1,790 | -6,577 | -299 | -5,678 | -153 | -5 | 41,898 | -41,028 | 870 |
| 2066 | 1989 | 8.03 | 4,956 | 1,339 | 2,521 | 5,977 | -3,961 | -951 | -2,910 | -299 | -5,678 | -72 | -4 | 14,794 | -13,874 | 920 |
| 2067 | 1990 | 6.17 | 6,331 | 744 | 1,400 | 5,977 | -5,316 | -806 | -1,337 | -299 | -5,678 | -55 | -1 | 14,452 | -13,493 | 958 |
| 2068 | 1991 | 17.24 | 112,028 | 4,286 | 8,068 | 5,977 | -110,702 | -3,176 | -9,178 | -299 | -5,678 | -1,882 | -25 | 130,359 | -130,940 | -581 |
| 2069 | 1992 | 21.67 | 287,295 | 5,702 | 10,733 | 5,977 | -285,442 | -4,666 | -11,769 | -299 | -5,678 | -2,777 | -33 | 309,706 | -310,663 | -957 |
| 2070 | 1993 | 30.48 | 846,052 | 8,519 | 16,037 | 5,977 | -843,572 | -5,691 | -18,865 | -299 | -5,678 | -3,730 | -39 | 876,584 | -877,874 | -1,290 |
| 2071 | 1994 | 11.88 | 56,812 | 2,570 | 4,838 | 5,977 | -55,551 | -1,667 | -5,741 | -299 | -5,678 | -1,035 | -9 | 70,198 | -69,981 | 217 |
| *Average:* | | *17.16* | *177,818* | *4,261* | *8,021* | *5,977* | *-176,506* | *-2,946* | *-9,335* | *-299* | *-5,678* | *-1,554* | *-18* | *196,076* | *-196,337* | *-260* |
| ***Post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | | | | | | |
| 2072 | 1995 | 32.33 | 479,886 | 9,110 | 17,150 | 5,977 | -478,382 | -5,901 | -20,359 | -299 | -5,678 | -2,638 | 38 | 512,161 | -513,257 | -1,096 |
| 2073 | 1996 | 13.03 | 74,223 | 2,938 | 5,531 | 5,977 | -73,405 | -2,202 | -6,267 | -299 | -5,678 | -941 | -13 | 88,669 | -88,805 | -136 |
| 2074 | 1997 | 15.40 | 82,779 | 3,696 | 6,958 | 5,977 | -81,706 | -2,892 | -7,761 | -299 | -5,678 | -1,538 | -17 | 99,409 | -99,892 | -483 |
| 2075 | 1998 | 44.22 | 652,633 | 12,913 | 24,309 | 5,977 | -651,248 | -7,785 | -29,437 | -299 | -5,678 | -3,333 | 184 | 696,017 | -697,780 | -1,764 |
| 2076 | 1999 | 10.62 | 47,209 | 2,168 | 4,082 | 5,977 | -46,538 | -804 | -5,446 | -299 | -5,678 | -189 | -1 | 59,437 | -58,956 | 481 |
| 2077 | 2000 | 18.57 | 83,272 | 4,709 | 8,864 | 5,977 | -82,368 | -2,664 | -10,908 | -299 | -5,678 | -1,213 | -17 | 102,821 | -103,147 | -325 |
| 2078 | 2001 | 23.94 | 195,387 | 6,428 | 12,100 | 5,977 | -194,513 | -4,234 | -14,293 | -299 | -5,678 | -1,740 | -29 | 219,891 | -220,786 | -894 |
| 2079 | 2002 | 5.98 | 6,298 | 683 | 1,285 | 5,977 | -5,580 | -494 | -1,474 | -299 | -5,678 | -112 | -1 | 14,243 | -13,638 | 605 |
| 2080 | 2003 | 17.72 | 48,198 | 4,437 | 8,353 | 5,977 | -47,366 | -2,877 | -9,913 | -299 | -5,678 | -1,039 | -17 | 66,965 | -67,189 | -224 |
| 2081 | 2004 | 11.41 | 38,203 | 2,419 | 4,555 | 5,977 | -37,302 | -1,535 | -5,439 | -299 | -5,678 | -725 | -9 | 51,154 | -50,987 | 167 |
| 2082 | 2005 | 36.72 | 1,076,121 | 10,513 | 19,791 | 5,977 | -1,074,418 | -7,586 | -22,718 | -299 | -5,678 | -3,710 | -57 | 1,112,403 | -1,114,467 | -2,064 |
| 2083 | 2006 | 16.16 | 136,880 | 3,940 | 7,417 | 5,977 | -135,989 | -2,659 | -8,699 | -299 | -5,678 | -1,446 | -14 | 154,215 | -154,784 | -569 |

| | | | Surface Water Gains and Inflows (acre-feet per year) | | | | Surface Water Losses and Outflows (acre-feet per year) | | | | | Surface Water Inflow and Outflow Components (acre-feet per year)[g] | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Santa Clara River at Boundary Between Oxnard and Mound Basins | Ephemeral Streamflow Entering Mound Basin from Northern Foothills[c] | Ephemeral Streamflow Generated Within Mound Basin in Response to Rainfall[c] | Imported Surface Water (from Casitas MWD)[d] | Santa Clara River at Pacific Ocean[e] | Mountain-Front Recharge of Surface Flows in Ephemeral Streams in Northern Mound Basin[e] | Ephemeral Streams, Barrancas, and Storm Drain Discharges Exiting Mound Basin[c] | Fate of Imported Surface Water (from Casitas MWD) | | Groundwater/ Surface Water Exchange in the Santa Clara River within Mound Basin[e] | Groundwater/ Surface Water Exchange in Harmon Barranca[e] | Sum of Inflows | Sum of Outflows | Difference[h] |
| | | | | | | | | | | M&I Return Flows[e] | Consumptive Use[f] | | | | | |
| 2084 | 2007 | 5.86 | 10,287 | 647 | 1,218 | 5,977 | -9,444 | -208 | -1,657 | -299 | -5,678 | -127 | 0 | 18,129 | -17,413 | 716 |
| 2085 | 2008 | 12.64 | 157,205 | 2,814 | 5,298 | 5,977 | -156,004 | -2,604 | -5,508 | -299 | -5,678 | -1,662 | -16 | 171,294 | -171,771 | -477 |
| 2086 | 2009 | 9.59 | 22,916 | 1,838 | 3,460 | 5,977 | -21,878 | -1,321 | -3,976 | -299 | -5,678 | -938 | -6 | 34,191 | -34,096 | 94 |
| 2087 | 2010 | 17.19 | 91,477 | 4,270 | 8,038 | 5,977 | -90,352 | -3,026 | -9,282 | -299 | -5,678 | -1,515 | -15 | 109,762 | -110,167 | -405 |
| 2088 | 2011 | 17.89 | 140,766 | 4,493 | 8,457 | 5,977 | -139,714 | -3,775 | -9,175 | -299 | -5,678 | -1,791 | -25 | 159,693 | -160,457 | -763 |
| 2089 | 2012 | 8.96 | 12,951 | 1,637 | 3,081 | 5,977 | -12,008 | -444 | -4,273 | -299 | -5,678 | -136 | 0 | 23,646 | -22,838 | 808 |
| 2090 | 2013 | 5.70 | 2,937 | 594 | 1,119 | 5,977 | -1,986 | -1,384 | -329 | -299 | -5,678 | -75 | -7 | 10,627 | -9,759 | 869 |
| 2091 | 2014 | 6.33 | 27,271 | 794 | 1,495 | 5,977 | -26,213 | -1,563 | -727 | -299 | -5,678 | -519 | -6 | 35,538 | -35,005 | 533 |
| 2092 | 2015 | 9.62 | 2,417 | 1,848 | 3,479 | 5,977 | -1,448 | -1,098 | -4,229 | -299 | -5,678 | -39 | -4 | 13,721 | -12,795 | 926 |
| 2093 | 2016 | 8.36 | 4,032 | 1,445 | 2,720 | 5,977 | -3,063 | -2,027 | -2,137 | -299 | -5,678 | -295 | -12 | 14,174 | -13,512 | 662 |
| 2094 | 2017 | 22.47 | 88,857 | 5,958 | 11,216 | 5,977 | -87,530 | -3,849 | -13,325 | -299 | -5,678 | -2,219 | -24 | 112,008 | -112,924 | -916 |
| 2095 | 2018 | 7.16 | 8,383 | 1,060 | 1,995 | 5,977 | -7,372 | -2,050 | -1,006 | -299 | -5,678 | -588 | -11 | 17,416 | -17,003 | 412 |
| 2096 | 2019 | 21.95 | 160,024 | 5,792 | 10,904 | 5,977 | -158,373 | -3,849 | -12,847 | -299 | -5,678 | -2,886 | -24 | 182,697 | -183,956 | -1,259 |
| *Average:* | | *15.99* | *146,025* | *3,886* | *7,315* | *5,977* | *-144,968* | *-2,753* | *-8,447* | *-299* | *-5,678* | *-1,257* | *-4* | *163,211* | *-163,415* | *-204* |
| | | | | | | | | | | | | | | | | |
| ***Average 2022-2096:*** | | ***15.76*** | ***132,021*** | ***3,812*** | ***7,175*** | ***5,879*** | ***-130,845*** | ***-2,637*** | ***-8,350*** | ***-294*** | ***-5,585*** | ***-1,305*** | ***-11*** | ***148,890*** | ***-149,030*** | ***-139*** |

**Notes**

Positive values represent inflows or gains of surface-water flows in Mound Basin, and negative numbers represent outflows or losses of surface-water flows in Mound Basin.

a See Section 3.3 for an explanation of how water-year types were classified in this report.

b The California Department of Water Resources classification approach is described in Section 3.3.

c Inflows of ephemeral surface water to Mound Basin are projected based on an empirical relationship between measured streamflow in Arundell Barranca and annual (water year) rainfall measured at Ventura County Government Center, applied to the watershed areas of streams (barrancas) within Mound Basin and upstream from Mound Basin (in stream channels that flow across the basin's northern boundary). Outflows are assumed equal to inflows across the northern basin boundary plus surface flows generated by rainfall within Mound Basin, minus mountain-front recharge of inflows immediately south of the northern boundary of Mound Basin.

d Projected imports are from Ventura Water, 2020b.

e Estimated using United's (2021a) groundwater flow model or resulting from model calibration.

f "Consumptive use" represents loss of imported surface water from Casitas MWD to evaporation and wastewater discharges after M&I use, and in this table is equal to imported surface water (from Casitas MWD) minus M&I return flows.

g These components can comprise either net gains or losses of surface water from streams within Mound Basin, depending on hydrogeologic conditions that vary over time.

h Inflows and outflows of surface water in Mound Basin should be equal, resulting in a difference of zero. Although the long-term average difference is less than 1 percent of the long-term average inflows or outflows, indicating good overall agreement, the apparent difference between inflows and outflows is larger during years with above-average rainfall. This likely is a result of minor deviations of actual streamflow in Arundell Barranca in a given water year compared to the empirical relationship developed to estimate basinwide ephemeral flows across the basin.

## Table 3.3-11 Mound Basin Projected Groundwater Inflows and Outflows by Water Year, 2030 Climate Change and Sea Level Rise Factors.

| | | | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[e] | | | | | Summary (acre-feet per year) | | | All Aquifers Combined | | | Mugu Aquifer | | | | Hueneme Aquifer | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[c] | Groundwater Extraction (pumping from wells) | Discharge of Groundwater to Tile Drains[d] | Groundwater/ Surface Water Interaction in the Santa Clara River[f] | Groundwater/ Surface Water Interaction in Harmon Barranca[g] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage per Water Year[h] | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year |
| *Implementation Period (water years 2022 through 2041)* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | 1945 | 11.86 | 2,972 | 2,670 | -827 | -8,136 | 0 | 1,209 | 14 | 3,958 | 4,454 | -4,741 | 15,277 | -13,703 | -1,574 | 3,647 | 3,647 | 1,574 | 640 | 640 | 156 | 156 | 1,580 | 1,580 | 1,223 | 1,223 |
| 2023 | 1946 | 11.18 | 2,563 | 1,752 | -827 | -8,555 | 0 | 1,370 | 8 | 3,899 | 5,184 | -4,779 | 14,777 | -14,161 | -616 | 72 | 3,719 | 2,190 | 76 | 716 | 119 | 275 | 94 | 1,674 | 423 | 1,646 |
| 2024 | 1947 | 10.90 | 2,866 | 2,009 | -864 | -7,465 | 0 | 1,299 | 13 | 3,871 | 4,256 | -5,017 | 14,314 | -13,345 | -968 | 954 | 4,673 | 3,159 | 62 | 778 | 46 | 321 | 368 | 2,042 | 692 | 2,338 |
| 2025 | 1948 | 6.77 | 2,129 | 717 | -688 | -8,279 | 0 | 43 | 2 | 4,018 | 180 | -3,534 | 7,090 | -12,501 | 5,411 | -4,113 | 559 | -2,252 | -266 | 512 | -563 | -242 | -101 | 1,942 | -562 | 1,776 |
| 2026 | 1949 | 8.57 | 2,382 | 863 | -499 | -8,602 | 0 | 43 | 0 | 4,128 | -1,152 | -2,492 | 7,415 | -12,746 | 5,330 | -4,703 | -4,143 | -7,583 | -692 | -180 | -710 | -952 | -770 | 1,172 | -1,057 | 719 |
| 2027 | 1950 | 13.88 | 2,877 | 1,603 | -382 | -7,529 | 0 | 63 | 7 | 4,136 | -748 | -2,071 | 8,685 | -10,729 | 2,044 | -2,627 | -6,770 | -9,627 | -426 | -606 | -361 | -1,313 | -619 | 552 | -440 | 279 |
| 2028 | 1951 | 7.53 | 2,251 | 546 | -353 | -8,802 | 0 | 15 | 1 | 4,379 | -2,745 | -1,347 | 7,192 | -13,248 | 6,055 | -6,042 | -12,812 | -15,682 | -988 | -1,594 | -1,309 | -2,622 | -1,024 | -472 | -1,105 | -826 |
| 2029 | 1952 | 26.42 | 4,780 | 5,059 | -601 | -7,642 | 0 | 3,057 | 34 | 4,014 | 5,316 | -3,044 | 22,260 | -11,287 | -10,973 | 7,127 | -5,685 | -4,708 | 447 | -1,147 | 1,892 | -730 | 1,645 | 1,174 | 1,051 | 225 |
| 2030 | 1953 | 12.12 | 2,644 | 1,547 | -535 | -7,589 | 0 | 865 | 6 | 3,985 | 4,231 | -3,588 | 13,278 | -11,712 | -1,566 | 4,524 | -1,161 | -3,142 | 1,388 | 241 | 449 | -280 | -576 | 598 | 896 | 1,121 |
| 2031 | 1954 | 15.86 | 3,214 | 2,480 | -509 | -7,971 | 0 | 1,106 | 13 | 3,894 | 2,315 | -3,403 | 13,023 | -11,883 | -1,140 | 995 | -166 | -2,002 | -137 | 104 | 8 | -272 | 1,463 | 2,061 | 231 | 1,353 |
| 2032 | 1955 | 12.53 | 2,829 | 1,515 | -473 | -8,158 | 0 | 609 | 5 | 3,951 | 790 | -3,127 | 9,699 | -11,758 | 2,059 | -2,865 | -3,031 | -4,061 | -179 | -75 | -288 | -560 | -998 | 1,064 | -195 | 1,158 |
| 2033 | 1956 | 16.21 | 3,223 | 2,230 | -494 | -7,359 | 0 | 936 | 13 | 3,920 | 2,222 | -3,164 | 12,543 | -11,016 | -1,527 | 849 | -2,182 | -2,533 | -76 | -151 | 138 | -422 | 194 | 1,258 | 356 | 1,514 |
| 2034 | 1957 | 10.55 | 2,520 | 1,462 | -473 | -8,414 | 0 | 780 | 6 | 3,969 | 105 | -3,102 | 8,841 | -11,990 | 3,149 | -755 | -2,937 | -5,682 | -48 | -199 | -359 | -781 | 28 | 1,285 | -492 | 1,022 |
| 2035 | 1958 | 27.93 | 4,568 | 5,070 | -803 | -6,407 | -6 | 3,410 | 31 | 3,691 | 6,954 | -4,887 | 23,723 | -12,103 | -11,620 | 5,471 | 2,534 | 5,938 | 135 | -63 | 981 | 200 | 1,826 | 3,111 | 1,750 | 2,772 |
| 2036 | 1959 | 6.99 | 2,157 | 1,329 | -856 | -8,618 | 0 | 1,082 | 5 | 3,723 | 3,604 | -4,927 | 11,900 | -14,401 | 2,501 | 3,566 | 6,100 | 3,437 | 769 | 706 | -39 | 161 | -425 | 2,686 | -5 | 2,766 |
| 2037 | 1960 | 12.24 | 2,656 | 1,303 | -597 | -7,954 | 0 | 102 | 4 | 3,836 | 1,328 | -3,787 | 9,230 | -12,337 | 3,107 | -3,027 | 3,073 | 330 | -178 | 528 | -327 | -166 | -33 | 2,653 | -300 | 2,466 |
| 2038 | 1961 | 7.50 | 2,106 | 952 | -415 | -8,646 | 0 | 38 | 4 | 3,983 | -424 | -3,031 | 7,084 | -12,516 | 5,432 | -5,123 | -2,051 | -5,102 | -566 | -39 | -636 | -802 | -891 | 1,762 | -731 | 1,735 |
| 2039 | 1962 | 27.16 | 4,286 | 4,396 | -678 | -6,677 | 0 | 2,159 | -9 | 3,876 | 4,662 | -3,974 | 19,379 | -11,338 | -8,041 | 5,802 | 3,751 | 2,939 | 62 | 24 | 706 | -95 | 1,793 | 3,555 | 939 | 2,674 |
| 2040 | 1963 | 12.80 | 2,668 | 1,622 | -605 | -8,106 | 0 | 841 | 9 | 3,851 | 5,491 | -4,175 | 14,482 | -12,887 | -1,595 | 424 | 4,175 | 4,534 | 479 | 503 | 371 | 275 | -684 | 2,871 | 269 | 2,943 |
| 2041 | 1964 | 8.70 | 2,379 | 1,022 | -479 | -8,718 | 0 | 46 | 2 | 3,835 | 725 | -3,437 | 8,010 | -12,634 | 4,624 | -1,658 | 2,517 | -90 | -38 | 465 | -501 | -226 | -361 | 2,510 | -507 | 2,435 |
| *Average:* | | *13.39* | *2,903* | *2,007* | *-598* | *-7,981* | *0* | *954* | *8* | *3,946* | *2,337* | *-3,581* | *12,410* | *-12,415* | *4* | | | | | | | | | | | |
| *Sustaining Period (water years 2042 through 2071)* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2042 | 1965 | 15.34 | 2,898 | 1,918 | -493 | -7,814 | 0 | 973 | 10 | 3,794 | 1,109 | -3,642 | 10,702 | -11,950 | 1,248 | -3,757 | -1,240 | -1,338 | -454 | 11 | -247 | -473 | -594 | 1,916 | -314 | 2,121 |
| 2043 | 1966 | 16.59 | 3,619 | 3,313 | -757 | -7,819 | 0 | 2,322 | 23 | 3,680 | 6,411 | -4,877 | 19,368 | -13,453 | -5,915 | 7,989 | 6,749 | 4,577 | 551 | 562 | 645 | 172 | 1,013 | 2,929 | 733 | 2,854 |
| 2044 | 1967 | 18.25 | 3,840 | 4,099 | -772 | -7,622 | 0 | 3,099 | 20 | 3,497 | 5,653 | -5,895 | 20,208 | -14,289 | -5,919 | 4,005 | 10,754 | 10,496 | 294 | 856 | 272 | 444 | 1,201 | 4,130 | 1,216 | 4,069 |
| 2045 | 1968 | 14.27 | 2,940 | 1,649 | -861 | -7,430 | 0 | 878 | 10 | 3,563 | 4,033 | -5,569 | 13,072 | -13,860 | 788 | 1,506 | 12,261 | 9,709 | 111 | 967 | 1 | 445 | 377 | 4,507 | 110 | 4,179 |
| 2046 | 1969 | 24.02 | 4,320 | 4,955 | -1,050 | -7,515 | -132 | 3,409 | 37 | 3,540 | 4,123 | -6,563 | 20,384 | -15,259 | -5,124 | 5,749 | 18,010 | 14,833 | 157 | 1,124 | 122 | 567 | 2,115 | 6,621 | 1,327 | 5,507 |
| 2047 | 1970 | 16.13 | 2,741 | 1,668 | -883 | -8,255 | 0 | 928 | 7 | 3,606 | 3,900 | -5,849 | 12,850 | -14,987 | 2,137 | -2,173 | 15,837 | 12,696 | -81 | 1,043 | -68 | 499 | -746 | 5,875 | -623 | 4,883 |
| 2048 | 1971 | 15.02 | 3,007 | 2,324 | -922 | -7,627 | 0 | 1,355 | 15 | 3,561 | 3,770 | -6,178 | 14,032 | -14,727 | 696 | -1,179 | 14,658 | 12,000 | -76 | 966 | -42 | 457 | -581 | 5,294 | 73 | 4,956 |
| 2049 | 1972 | 8.39 | 2,358 | 1,492 | -940 | -8,385 | 0 | 1,198 | 11 | 3,647 | 4,220 | -5,694 | 12,927 | -15,019 | 2,092 | -2,473 | 12,185 | 9,908 | -60 | 907 | -28 | 429 | -773 | 4,521 | -441 | 4,515 |
| 2050 | 1973 | 20.98 | 3,813 | 4,096 | -882 | -7,089 | -3 | 2,275 | 24 | 3,413 | 3,953 | -6,044 | 17,574 | -14,018 | -3,556 | 4,355 | 16,541 | 13,463 | 125 | 1,032 | 85 | 514 | 2,003 | 6,524 | 689 | 5,204 |
| 2051 | 1974 | 15.51 | 3,064 | 2,328 | -913 | -7,503 | 0 | 1,314 | 16 | 3,449 | 3,884 | -5,969 | 14,055 | -14,385 | 330 | -737 | 15,803 | 13,133 | 5 | 1,037 | 1 | 515 | -710 | 5,814 | -34 | 5,170 |
| 2052 | 1975 | 15.60 | 3,158 | 2,817 | -876 | -7,357 | 0 | 1,790 | 16 | 3,463 | 3,934 | -6,168 | 15,179 | -14,401 | -778 | 353 | 16,156 | 13,911 | -25 | 1,013 | 9 | 524 | 250 | 6,065 | 193 | 5,363 |
| 2053 | 1976 | 14.10 | 2,963 | 2,191 | -959 | -7,977 | 0 | 1,218 | 13 | 3,603 | 3,553 | -5,660 | 13,541 | -14,595 | 1,054 | -3,392 | 12,764 | 12,857 | -134 | 878 | -70 | 453 | -1,176 | 4,889 | 177 | 5,539 |
| 2054 | 1977 | 11.73 | 2,671 | 1,549 | -829 | -8,403 | 0 | 713 | 6 | 3,480 | 3,378 | -5,192 | 11,797 | -14,424 | 2,627 | -754 | 12,010 | 10,229 | -63 | 815 | -98 | 355 | -453 | 4,436 | -1,092 | 4,447 |
| 2055 | 1978 | 34.58 | 5,801 | 6,781 | -1,047 | -7,636 | -89 | 3,386 | 49 | 3,237 | 4,366 | -6,626 | 23,620 | -15,398 | -8,222 | 9,184 | 21,195 | 18,451 | 308 | 1,123 | 219 | 574 | 3,889 | 8,325 | 2,161 | 6,608 |
| 2056 | 1979 | 18.60 | 3,851 | 3,537 | -920 | -7,583 | -9 | 1,816 | 21 | 3,309 | 3,487 | -6,917 | 16,021 | -15,430 | -591 | 1,882 | 23,076 | 19,042 | -16 | 1,107 | 24 | 598 | 157 | 8,482 | 297 | 6,905 |
| 2057 | 1980 | 26.28 | 4,461 | 4,365 | -1,014 | -6,997 | -47 | 2,026 | 34 | 3,309 | 3,106 | -7,266 | 17,300 | -15,325 | -1,975 | 2,205 | 25,281 | 21,017 | 108 | 1,215 | 42 | 640 | 884 | 9,366 | 788 | 7,693 |
| 2058 | 1981 | 12.96 | 2,683 | 1,713 | -935 | -7,974 | 0 | 929 | 9 | 3,439 | 3,216 | -6,443 | 11,989 | -15,352 | 3,363 | -4,233 | 21,048 | 17,655 | -146 | 1,070 | -95 | 545 | -1,544 | 7,822 | -1,095 | 6,598 |
| 2059 | 1982 | 12.28 | 2,749 | 1,723 | -839 | -8,474 | 0 | 1,187 | 6 | 3,487 | 4,068 | -5,835 | 13,221 | -15,148 | 1,927 | -3,313 | 17,735 | 15,728 | -58 | 1,012 | -1 | 544 | -1,496 | 6,326 | -931 | 5,667 |
| 2060 | 1983 | 32.27 | 5,882 | 6,421 | -1,042 | -8,100 | -67 | 2,980 | 43 | 3,172 | 3,622 | -7,141 | 22,119 | -16,350 | -5,787 | 7,209 | 24,944 | 21,514 | 192 | 1,204 | 62 | 606 | 2,919 | 9,245 | 1,755 | 7,422 |
| 2061 | 1984 | 10.44 | 2,738 | 1,956 | -968 | -7,747 | 0 | 687 | 10 | 3,330 | 3,398 | -6,834 | 12,118 | -15,550 | 3,431 | -3,671 | 21,274 | 18,083 | -170 | 1,034 | -47 | 559 | -2,010 | 7,235 | -731 | 6,691 |
| 2062 | 1985 | 12.13 | 2,581 | 1,444 | -896 | -7,459 | 0 | 1,136 | 5 | 3,495 | 3,144 | -6,182 | 11,804 | -14,538 | 2,734 | -2,471 | 18,802 | 15,349 | 30 | 1,064 | -58 | 501 | -684 | 6,551 | -852 | 5,839 |
| 2063 | 1986 | 25.61 | 4,242 | 3,969 | -881 | -6,877 | -3 | 1,835 | 26 | 3,376 | 3,509 | -6,294 | 16,957 | -14,055 | -2,902 | 2,115 | 20,917 | 18,252 | 21 | 1,085 | 98 | 599 | 1,062 | 7,612 | 619 | 6,457 |
| 2064 | 1987 | 7.82 | 2,162 | 569 | -859 | -9,253 | 0 | 159 | 0 | 3,616 | 3,431 | -5,086 | 9,938 | -15,197 | 5,260 | -4,507 | 16,411 | 12,992 | -90 | 995 | -186 | 413 | -2,004 | 5,609 | -1,550 | 4,907 |
| 2065 | 1988 | 13.44 | 2,907 | 1,865 | -785 | -7,088 | 0 | 164 | 5 | 3,558 | 3,965 | -4,813 | 12,465 | -12,685 | 220 | -2,080 | 14,331 | 12,772 | -52 | 943 | 70 | 483 | -697 | 4,911 | -220 | 4,687 |
| 2066 | 1989 | 8.44 | 2,281 | 1,088 | -842 | -7,568 | 0 | 1,028 | 5 | 3,672 | 2,718 | -5,219 | 10,792 | -13,630 | 2,838 | -1,515 | 12,816 | 9,934 | -59 | 885 | -152 | 331 | -498 | 4,414 | -407 | 4,280 |

| | | | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[e] | | | | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[c] | Groundwater Extraction (pumping from wells) | Discharge of Groundwater to Tile Drains[d] | Groundwater/ Surface Water Interaction in the Santa Clara River[f] | Groundwater/ Surface Water Interaction in Harmon Barranca[g] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage per Water Year[h] |
| 2067 | 1990 | 5.98 | 1,801 | 681 | -652 | -8,085 | 0 | 56 | 0 | 3,851 | -83 | -4,079 | 6,389 | -12,899 | 6,509 |
| 2068 | 1991 | 16.22 | 3,132 | 2,799 | -648 | -8,128 | 0 | 1,733 | 22 | 3,847 | 2,972 | -4,064 | 14,504 | -12,841 | -1,663 |
| 2069 | 1992 | 20.34 | 4,171 | 4,338 | -866 | -7,538 | -1 | 3,010 | 30 | 3,562 | 6,322 | -5,557 | 21,434 | -13,962 | -7,471 |
| 2070 | 1993 | 28.42 | 4,675 | 5,463 | -1,105 | -6,960 | -127 | 3,669 | 37 | 3,373 | 3,807 | -7,038 | 21,024 | -15,230 | -5,794 |
| 2071 | 1994 | 11.79 | 2,562 | 1,544 | -851 | -8,151 | 0 | 1,007 | 8 | 3,543 | 3,808 | -6,006 | 12,472 | -15,008 | 2,536 |
| *Average:* | | *16.78* | *3,336* | *2,822* | *-876* | *-7,747* | *-16* | *1,609* | *17* | *3,516* | *3,693* | *-5,823* | *14,995* | *-14,465* | *-530* |
| ***Post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | | | | | |
| 2072 | 1995 | 30.11 | 4,822 | 5,276 | -1,008 | -7,194 | -56 | 2,603 | 42 | 3,486 | 3,493 | -6,906 | 19,723 | -15,165 | -4,558 |
| 2073 | 1996 | 13.23 | 2,992 | 2,026 | -865 | -8,611 | 0 | 900 | 11 | 3,491 | 3,484 | -6,270 | 12,905 | -15,746 | 2,841 |
| 2074 | 1997 | 15.29 | 3,329 | 2,915 | -972 | -7,473 | 0 | 1,557 | 16 | 3,439 | 3,714 | -6,781 | 14,970 | -15,226 | 255 |
| 2075 | 1998 | 43.89 | 6,509 | 7,725 | -1,074 | -6,035 | -125 | 3,078 | -201 | 3,357 | 2,329 | -7,311 | 22,998 | -14,747 | -8,251 |
| 2076 | 1999 | 10.90 | 2,400 | 888 | -833 | -8,273 | 0 | 93 | 2 | 3,559 | 2,920 | -5,915 | 9,861 | -15,021 | 5,160 |
| 2077 | 2000 | 17.82 | 3,334 | 2,560 | -842 | -7,934 | 0 | 1,162 | 16 | 3,490 | 3,280 | -6,197 | 13,842 | -14,972 | 1,130 |
| 2078 | 2001 | 22.45 | 3,967 | 3,920 | -866 | -8,105 | -13 | 1,637 | 25 | 3,355 | 3,605 | -6,551 | 16,510 | -15,535 | -975 |
| 2079 | 2002 | 6.74 | 2,058 | 602 | -821 | -8,673 | 0 | 107 | 2 | 3,578 | 3,048 | -5,229 | 9,395 | -14,723 | 5,328 |
| 2080 | 2003 | 18.68 | 3,721 | 3,150 | -793 | -7,328 | 0 | 1,066 | 17 | 3,448 | 3,983 | -5,611 | 15,385 | -13,732 | -1,653 |
| 2081 | 2004 | 11.59 | 2,482 | 1,479 | -852 | -8,014 | 0 | 734 | 8 | 3,544 | 3,092 | -5,517 | 11,339 | -14,383 | 3,044 |
| 2082 | 2005 | 34.22 | 5,865 | 7,177 | -1,057 | -6,358 | -189 | 3,711 | 53 | 3,303 | 3,447 | -7,295 | 23,556 | -14,899 | -8,657 |
| 2083 | 2006 | 15.50 | 2,989 | 2,482 | -783 | -7,439 | -1 | 1,413 | 12 | 3,426 | 3,374 | -6,606 | 13,695 | -14,828 | 1,133 |
| 2084 | 2007 | 6.38 | 1,811 | 243 | -875 | -8,803 | 0 | 124 | 0 | 3,678 | 3,408 | -5,501 | 9,265 | -15,179 | 5,914 |
| 2085 | 2008 | 12.32 | 3,012 | 2,518 | -888 | -8,387 | -2 | 1,660 | 15 | 3,557 | 4,123 | -5,916 | 14,884 | -15,193 | 309 |
| 2086 | 2009 | 9.92 | 2,425 | 1,384 | -834 | -8,023 | 0 | 978 | 5 | 3,627 | 3,841 | -5,387 | 12,260 | -14,245 | 1,985 |
| 2087 | 2010 | 17.14 | 3,465 | 3,084 | -795 | -7,721 | 0 | 1,360 | 14 | 3,402 | 4,244 | -5,450 | 15,571 | -13,967 | -1,604 |
| 2088 | 2011 | 18.82 | 3,990 | 3,749 | -801 | -7,083 | -7 | 1,858 | 23 | 3,370 | 4,093 | -6,190 | 17,084 | -14,081 | -3,003 |
| 2089 | 2012 | 9.33 | 2,180 | 602 | -854 | -8,531 | 0 | 130 | 0 | 3,664 | 3,708 | -5,083 | 10,284 | -14,467 | 4,184 |
| 2090 | 2013 | 6.77 | 2,617 | 1,637 | -801 | -7,511 | 0 | 102 | 8 | 3,630 | 1,826 | -4,683 | 9,820 | -12,995 | 3,175 |
| 2091 | 2014 | 6.39 | 2,327 | 1,340 | -736 | -8,555 | 0 | 536 | 5 | 3,777 | 283 | -4,382 | 8,268 | -13,672 | 5,405 |
| 2092 | 2015 | 9.80 | 2,599 | 1,316 | -464 | -7,610 | 0 | 39 | 4 | 3,890 | -422 | -3,118 | 7,847 | -11,614 | 3,766 |
| 2093 | 2016 | 7.96 | 2,925 | 1,951 | -373 | -8,109 | 0 | 296 | 11 | 3,893 | -488 | -3,108 | 9,074 | -12,078 | 3,003 |
| 2094 | 2017 | 20.00 | 3,663 | 3,575 | -572 | -7,561 | 0 | 2,210 | 20 | 3,793 | 2,655 | -3,770 | 15,916 | -11,903 | -4,012 |
| 2095 | 2018 | 6.69 | 2,939 | 1,865 | -398 | -8,333 | 0 | 576 | 8 | 3,906 | -1,006 | -3,212 | 9,294 | -12,950 | 3,656 |
| 2096 | 2019 | 19.96 | 3,624 | 3,575 | -654 | -7,356 | 0 | 2,858 | 20 | 3,812 | 5,248 | -4,282 | 19,137 | -12,292 | -6,845 |
| *Average:* | | *15.68* | *3,282* | *2,682* | *-792* | *-7,801* | *-16* | *1,232* | *5* | *3,579* | *2,851* | *-5,451* | *13,715* | *-14,144* | *429* |
| | | | | | | | | | | | | | | | |
| ***Average 2022-2096:*** | | ***15.51*** | ***3,202*** | ***2,558*** | ***-774*** | ***-7,827*** | ***-12*** | ***1,309*** | ***11*** | ***3,651*** | ***3,051*** | ***-5,101*** | ***13,879*** | ***-13,812*** | ***-68*** |

| | All Aquifers Combined | | | Mugu Aquifer | | | | Hueneme Aquifer | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year |
| 2067 | -5,888 | 6,927 | 3,425 | -410 | 475 | -618 | -287 | -974 | 3,440 | -991 | 3,288 |
| 2068 | -906 | 6,021 | 5,088 | -446 | 29 | 110 | -177 | 792 | 4,232 | -308 | 2,980 |
| 2069 | 8,198 | 14,219 | 12,559 | 688 | 718 | 597 | 420 | 1,166 | 5,398 | 1,135 | 4,116 |
| 2070 | 8,158 | 22,377 | 18,354 | 494 | 1,212 | 183 | 603 | 2,294 | 7,692 | 2,092 | 6,207 |
| 2071 | -3,748 | 18,628 | 15,818 | -158 | 1,054 | -65 | 538 | -1,443 | 6,249 | -667 | 5,540 |
| *Average:* | | | | | | | | | | | |
| ***Post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | |
| 2072 | 5,577 | 24,206 | 20,376 | 211 | 1,265 | 107 | 645 | 2,278 | 8,526 | 1,367 | 6,908 |
| 2073 | -2,796 | 21,410 | 17,535 | -121 | 1,144 | -118 | 528 | -1,267 | 7,259 | -873 | 6,035 |
| 2074 | -931 | 20,479 | 17,279 | -109 | 1,035 | 19 | 546 | -449 | 6,810 | 83 | 6,117 |
| 2075 | 8,121 | 28,600 | 25,530 | 194 | 1,229 | 129 | 676 | 3,660 | 10,470 | 2,696 | 8,813 |
| 2076 | -5,500 | 23,100 | 20,370 | -142 | 1,087 | -87 | 589 | -2,712 | 7,758 | -1,720 | 7,093 |
| 2077 | -1,164 | 21,936 | 19,240 | 40 | 1,127 | -33 | 556 | -251 | 7,507 | -505 | 6,588 |
| 2078 | 2,121 | 24,057 | 20,215 | -13 | 1,114 | 17 | 573 | 1,062 | 8,569 | 295 | 6,882 |
| 2079 | -5,963 | 18,094 | 14,887 | -147 | 967 | -158 | 415 | -2,709 | 5,860 | -1,472 | 5,411 |
| 2080 | 685 | 18,779 | 16,540 | 26 | 993 | 95 | 510 | 386 | 6,246 | 78 | 5,489 |
| 2081 | -1,951 | 16,828 | 13,496 | -64 | 930 | -104 | 406 | -785 | 5,461 | -639 | 4,850 |
| 2082 | 9,659 | 26,487 | 22,153 | 284 | 1,214 | 222 | 628 | 3,616 | 9,077 | 2,510 | 7,360 |
| 2083 | -4,159 | 22,329 | 21,020 | -138 | 1,076 | 9 | 637 | -1,721 | 7,356 | -426 | 6,934 |
| 2084 | -4,567 | 17,762 | 15,106 | -84 | 992 | -164 | 473 | -1,643 | 5,713 | -1,560 | 5,374 |
| 2085 | 110 | 17,872 | 14,797 | 28 | 1,019 | -2 | 471 | -99 | 5,615 | -365 | 5,010 |
| 2086 | -2,401 | 15,471 | 12,813 | -78 | 942 | -35 | 436 | -818 | 4,797 | -504 | 4,506 |
| 2087 | 1,269 | 16,740 | 14,417 | -1 | 940 | 37 | 473 | 519 | 5,315 | 107 | 4,613 |
| 2088 | 3,837 | 20,577 | 17,419 | 154 | 1,094 | 102 | 575 | 1,330 | 6,645 | 915 | 5,528 |
| 2089 | -5,442 | 15,135 | 13,235 | -141 | 953 | -137 | 438 | -1,949 | 4,696 | -967 | 4,561 |
| 2090 | -1,418 | 13,717 | 10,060 | -73 | 880 | -228 | 210 | -332 | 4,364 | -298 | 4,262 |
| 2091 | -5,172 | 8,545 | 4,656 | -550 | 330 | -573 | -363 | -611 | 3,753 | -1,059 | 3,204 |
| 2092 | -4,330 | 4,215 | 890 | -397 | -67 | -413 | -776 | -831 | 2,921 | -654 | 2,550 |
| 2093 | -3,078 | 1,137 | -2,114 | -415 | -483 | -437 | -1,213 | -398 | 2,523 | -673 | 1,877 |
| 2094 | 3,549 | 4,685 | 1,899 | 238 | -245 | 554 | -660 | 979 | 3,502 | 418 | 2,294 |
| 2095 | -2,810 | 1,875 | -1,757 | -171 | -416 | -488 | -1,147 | -685 | 2,817 | -448 | 1,846 |
| 2096 | 3,737 | 5,612 | 5,088 | 240 | -176 | 985 | -162 | 702 | 3,519 | 674 | 2,520 |
| *Average:* | | | | | | | | | | | |
| | | | | | | | | | | | |
| ***Average 2022-2096:*** | | | | | | | | | | | |



**Notes**

N/A = Not applicable

Positive values represent inflows to the Mound Basin negative numbers represent outflows from the basin.

a The representative historical water year used as the basis for assumptions regarding rainfall and surface flows about future years, as described in Section 3.3.

b See Section 3.3 for an explanation of how water-year types were classified in this report.

c The Shallow Alluvial Deposits is modeled to be the sole hydrostratigraphic unit in Mound Basin with saturated conditions consistently shallow enough to be significantly affected by evapotranspiration.

d Tile drains are only known or suspected to be present in the Shallow Alluvial Deposits in Mound Basin.

e These components can comprise either net inflows to or outflows from each aquifer, depending on hydrogeologic conditions that vary over time (e.g., hydraulic gradients).

f Within Mound Basin, the sole hydrostratigraphic unit known or suspected to be in direct hydraulic communication with the Santa Clara River is the Shallow Alluvial Deposits.

g United (2021) modeled Harmon Barranca using MODFLOW's "Stream package," as described in Section 3.3 of this report, allowing the model to simulate direct hydraulic communication with the Shallow Alluvial Deposits, as well as with the fine-grained Pleistocene deposits."

h Water-year changes in storage are calculated from October 1 of the preceding calendar year to September 30 of the indicated year. Positive values for groundwater released from storage represent inflows to the basin, same as all other components on this table. However, specific to this parameter, inflow of groundwater from storage is associated with declining groundwater levels (or potentiometric heads) in the basin. Negative values are associated with increasing groundwater-levels (or potentiometric heads), as a result of groundwater being "added to storage."

MoundBasin
GROUNDWATER SUSTAINABILITY AGENCY

**Table 3.3-12 Mound Basin Projected Average Inflows and Outflows by Aquifer, 2030 Climate Change and Sea Level Rise Factors.**

| | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[a] | | | | | | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Aquifer** | **Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows)** | **Mountain-Front Recharge** | **Evapo-transpiration[b]** | **Groundwater Extraction** | **Discharge of Groundwater to Tile Drains[c]** | **Groundwater/ Surface Water Interaction in the Santa Clara River[d]** | **Groundwater/ Surface Water Interaction in Harmon Barranca[e]** | **Groundwater Underflow to/from Santa Paula Basin** | **Groundwater Underflow to/from Oxnard Basin** | **Groundwater Underflow to/from Offshore (south and west of the coastline)** | **Vertical Groundwater Flow to/from the Overlying Aquifer** | **Vertical Groundwater Flow to/from the Underlying Aquifer** | **Sum of Inflows** | **Sum of Outflows** | **Groundwater Released from Storage[f]** |
| ***Averages during Implementation Period (water years 2022 through 2041)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,316 | 0 | -598 | 0 | 0 | 954 | 47 | 0 | 1,081 | -3,001 | N/A | -943 | 4,398 | -4,543 | 145 |
| Fine-grained Pleistocene deposits[g] | 141 | 0 | N/A | -6 | N/A | N/A | 71 | 7 | 1,552 | -73 | 943 | -2,685 | 2,715 | -2,764 | 49 |
| Mugu Aquifer | 0 | 0 | N/A | -2,600 | N/A | N/A | 0 | 223 | 1,628 | -856 | 2,685 | -1,092 | 4,536 | -4,547 | 11 |
| Hueneme Aquifer[h] | 446 | 2,007 | N/A | -4,755 | N/A | N/A | -110 | 1,979 | -919 | 340 | 1,092 | 42 | 5,906 | -5,784 | -122 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -620 | N/A | N/A | 0 | 1,737 | -1,004 | 9 | -42 | N/A | 1,745 | -1,666 | -79 |
| ***Basin Total:*** | ***2,903*** | ***2,007*** | ***-598*** | ***-7,981*** | ***0*** | ***954*** | ***8*** | ***3,946*** | ***2,337*** | ***-3,581*** | ***4,678*** | ***-4,678*** | ***19,300*** | ***-19,305*** | ***4*** |
| ***Averages during Sustaining Period (water years 2042 through 2071)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,611 | 0 | -876 | 0 | -16 | 1,609 | 102 | 0 | 1,571 | -3,929 | N/A | -986 | 5,893 | -5,807 | -86 |
| Fine-grained Pleistocene deposits[g] | 166 | 0 | N/A | -4 | N/A | N/A | 131 | 7 | 1,809 | -123 | 986 | -2,769 | 3,099 | -2,897 | -202 |
| Mugu Aquifer | 0 | 0 | N/A | -2,502 | N/A | N/A | 0 | 191 | 2,032 | -1,562 | 2,769 | -902 | 4,991 | -4,966 | -25 |
| Hueneme Aquifer[h] | 559 | 2,822 | N/A | -4,627 | N/A | N/A | -215 | 1,699 | -840 | -60 | 902 | -138 | 5,982 | -5,879 | -103 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -614 | N/A | N/A | 0 | 1,619 | -879 | -149 | 138 | N/A | 1,756 | -1,643 | -113 |
| ***Basin Total:*** | ***3,336*** | ***2,822*** | ***-876*** | ***-7,747*** | ***-16*** | ***1,609*** | ***17*** | ***3,516*** | ***3,693*** | ***-5,823*** | ***4,795*** | ***-4,795*** | ***21,722*** | ***-21,193*** | ***-530*** |
| ***Averages during post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,577 | 0 | -792 | 0 | -16 | 1,232 | 103 | 0 | 1,493 | -3,682 | N/A | -989 | 5,404 | -5,480 | 76 |
| Fine-grained Pleistocene deposits[g] | 164 | 0 | N/A | -5 | N/A | N/A | 127 | 7 | 1,555 | -113 | 989 | -2,835 | 2,843 | -2,953 | 110 |
| Mugu Aquifer | 0 | 0 | N/A | -2,488 | N/A | N/A | 0 | 213 | 1,664 | -1,436 | 2,835 | -816 | 4,712 | -4,740 | 28 |
| Hueneme Aquifer[h] | 540 | 2,682 | N/A | -4,691 | N/A | N/A | -224 | 1,729 | -942 | -62 | 816 | 31 | 5,798 | -5,919 | 121 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -618 | N/A | N/A | 0 | 1,631 | -919 | -157 | -31 | N/A | 1,631 | -1,725 | 94 |
| ***Basin Total:*** | ***3,282*** | ***2,682*** | ***-792*** | ***-7,801*** | ***-16*** | ***1,232*** | ***5*** | ***3,579*** | ***2,851*** | ***-5,451*** | ***4,609*** | ***-4,609*** | ***20,388*** | ***-20,817*** | ***429*** |



**Notes**

N/A = Not applicable

Positive values represent inflows to an aquifer; negative numbers represent outflows from an aquifer.

a These components can comprise either net inflows to or outflows from each aquifer, depending on hydrogeologic conditions that vary over time (e.g., hydraulic gradients).

b The Shallow Alluvial Deposits is the sole hydrostratigraphic unit in Mound Basin with saturated conditions consistently shallow enough to be significantly affected by evapotranspiration.

c Tile drains are only known or suspected to be present in the Shallow Alluvial Deposits in Mound Basin.

d Within Mound Basin, the sole hydrostratigraphic unit known or suspected to be in direct hydraulic communication with the Santa Clara River is the Shallow Alluvial Deposits.

e United (2021) modeled Harmon Barranca using MODFLOW's "Stream package," as described in Section 3.3 of this report, allowing the model to simulate direct hydraulic communication with the Shallow Alluvial Deposits and the fine-grained Pleistocene deposits.

f Positive values for groundwater released from storage represent inflows to an aquifer, same as all other components on this page. Inflow of groundwater from storage is associated with declining groundwater levels (or potentiometric heads) in that aquifer. Negative values are associated with increasing groundwater-levels (or potentiometric-heads), as a result of groundwater being "added to storage."

g Although the fine-grained Pleistocene deposits in Mound Basin are not considered a principal aquifer due to their low hydraulic conductivity, they have a substantial thickness and are stratigraphically adjacent to the Oxnard Aquifer in the Oxnard Basin (see Section 3.1 for more information). The fine-grained Pleistocene deposits are included in this table for completeness in depicting the groundwater budget for Mound Basin

h To provide a complete and balanced water budget (the sum of water-budget components for all units should be zero), the values shown in this row include both the Hueneme Aquifer and the overlying Mugu-Hueneme aquitard, which is thin and has low hydraulic conductivity. For these reasons, inflows and outflows from the aquitard are small compared to those from the aquifer.

i To provide a complete and balanced water budget (the sum of water-budget components for all units should be zero), the values shown in this row include the Fox Canyon Aquifer (main and basal) and the overlying and intervening aquitards, which are thin and have low hydraulic conductivity. For these reasons, inflows and outflows from the aquitards are small compared to those from the aquifer.

j See Section 3.3 for an explanation of how water-year types were classified in this report.

## Table 3.3-13 Mound Basin Projected Groundwater Inflows and Outflows by Water Year, 2070 Climate-Change and Sea Level-Rise Factors.

| | | | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[e] | | | | | Summary (acre-feet per year) | | | All Aquifers Combined | | | Mugu Aquifer | | | | Hueneme Aquifer | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[c] | Groundwater Extraction (pumping from wells) | Discharge of Groundwater to Tile Drains[d] | Groundwater/ Surface Water Interaction in the Santa Clara River[f] | Groundwater/ Surface Water Interaction in Harmon Barranca[g] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage per Water Year[h] | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year |
| *Implementation Period (water years 2022 through 2041)* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | 1945 | 11.93 | 3,027 | 2,753 | -855 | -8,131 | 0 | 1,420 | 14 | 4,049 | 4,131 | -4,760 | 15,395 | -13,746 | -1,649 | 3,445 | 3,445 | 1,649 | 586 | 586 | 147 | 147 | 1,563 | 1,563 | 1,226 | 1,226 |
| 2023 | 1946 | 10.57 | 2,547 | 1,699 | -860 | -8,818 | 0 | 1,335 | 8 | 3,996 | 5,038 | -4,655 | 14,622 | -14,334 | -288 | -256 | 3,189 | 1,937 | 57 | 643 | 118 | 266 | -76 | 1,487 | 343 | 1,569 |
| 2024 | 1947 | 10.28 | 2,786 | 1,831 | -894 | -7,651 | 0 | 1,275 | 12 | 3,979 | 4,007 | -4,830 | 13,890 | -13,374 | -516 | 567 | 3,756 | 2,454 | 59 | 702 | 34 | 299 | 271 | 1,758 | 625 | 2,194 |
| 2025 | 1948 | 6.37 | 2,155 | 652 | -682 | -8,429 | 0 | 38 | 2 | 4,116 | -433 | -3,295 | 6,962 | -12,839 | 5,877 | -4,569 | -813 | -3,423 | -329 | 372 | -637 | -337 | -82 | 1,676 | -621 | 1,573 |
| 2026 | 1949 | 7.89 | 2,382 | 849 | -480 | -8,626 | 0 | 35 | 0 | 4,215 | -1,438 | -2,254 | 7,481 | -12,798 | 5,315 | -4,837 | -5,650 | -8,738 | -711 | -339 | -737 | -1,074 | -819 | 857 | -1,055 | 518 |
| 2027 | 1950 | 14.11 | 2,798 | 1,522 | -375 | -7,733 | 0 | 55 | 7 | 4,229 | -1,244 | -1,792 | 8,610 | -11,144 | 2,533 | -2,963 | -8,613 | -11,272 | -503 | -842 | -489 | -1,563 | -658 | 199 | -492 | 26 |
| 2028 | 1951 | 7.07 | 2,162 | 607 | -344 | -8,964 | 0 | 13 | 2 | 4,448 | -2,786 | -1,053 | 7,232 | -13,147 | 5,910 | -6,139 | -14,752 | -17,182 | -1,086 | -1,928 | -1,296 | -2,859 | -1,087 | -888 | -1,098 | -1,072 |
| 2029 | 1952 | 26.82 | 4,816 | 5,123 | -589 | -7,843 | 0 | 3,067 | 36 | 4,113 | 4,843 | -2,707 | 21,998 | -11,139 | -10,861 | 7,290 | -7,462 | -6,321 | 484 | -1,444 | 1,993 | -866 | 1,785 | 897 | 1,018 | -54 |
| 2030 | 1953 | 10.75 | 2,511 | 1,305 | -470 | -7,752 | 0 | 734 | 3 | 4,134 | 3,248 | -3,138 | 11,936 | -11,360 | -575 | 3,491 | -3,972 | -5,746 | 1,419 | -24 | 354 | -513 | -817 | 80 | 781 | 727 |
| 2031 | 1954 | 16.13 | 3,274 | 2,562 | -448 | -8,006 | 0 | 1,092 | 14 | 4,016 | 1,631 | -2,949 | 12,590 | -11,403 | -1,187 | 1,057 | -2,915 | -4,559 | -162 | -187 | 3 | -510 | 1,557 | 1,636 | 228 | 955 |
| 2032 | 1955 | 12.49 | 2,839 | 1,587 | -400 | -8,305 | 0 | 554 | 7 | 4,064 | 562 | -2,667 | 9,613 | -11,371 | 1,757 | -2,830 | -5,744 | -6,316 | -159 | -345 | -228 | -738 | -1,072 | 564 | -166 | 790 |
| 2033 | 1956 | 16.88 | 3,180 | 2,195 | -430 | -7,718 | 0 | 871 | 13 | 4,043 | 1,371 | -2,663 | 11,673 | -10,810 | -863 | 775 | -4,970 | -5,453 | -39 | -384 | 54 | -684 | 149 | 714 | 281 | 1,071 |
| 2034 | 1957 | 10.35 | 2,609 | 1,503 | -408 | -8,873 | 0 | 804 | 7 | 4,108 | -159 | -2,569 | 9,030 | -12,010 | 2,978 | -955 | -5,925 | -8,432 | -136 | -520 | -410 | -1,094 | 53 | 767 | -542 | 528 |
| 2035 | 1958 | 29.83 | 4,745 | 5,377 | -799 | -6,607 | -3 | 3,507 | 33 | 3,803 | 7,261 | -4,450 | 24,727 | -11,859 | -12,869 | 6,227 | 302 | 4,437 | 195 | -325 | 1,219 | 126 | 2,088 | 2,855 | 1,911 | 2,440 |
| 2036 | 1959 | 7.32 | 2,245 | 1,534 | -823 | -8,861 | 0 | 1,165 | 6 | 3,813 | 3,422 | -4,605 | 12,186 | -14,289 | 2,104 | 4,376 | 4,679 | 2,333 | 918 | 592 | -1 | 124 | -445 | 2,409 | 97 | 2,537 |
| 2037 | 1960 | 12.38 | 2,685 | 1,416 | -633 | -8,068 | 0 | 819 | 5 | 3,887 | 1,451 | -4,091 | 10,262 | -12,792 | 2,530 | -2,203 | 2,476 | -196 | -126 | 466 | -278 | -154 | 27 | 2,436 | -206 | 2,331 |
| 2038 | 1961 | 6.72 | 2,089 | 873 | -418 | -8,849 | 0 | 36 | 4 | 4,043 | -494 | -2,908 | 7,046 | -12,669 | 5,623 | -5,678 | -3,202 | -5,819 | -576 | -110 | -641 | -795 | -979 | 1,457 | -744 | 1,586 |
| 2039 | 1962 | 27.90 | 4,320 | 4,436 | -689 | -6,764 | 0 | 2,157 | -3 | 3,924 | 4,590 | -3,821 | 19,427 | -11,278 | -8,149 | 5,957 | 2,755 | 2,330 | 59 | -51 | 701 | -93 | 1,918 | 3,375 | 973 | 2,560 |
| 2040 | 1963 | 13.20 | 2,843 | 1,783 | -607 | -8,204 | 0 | 813 | 9 | 3,922 | 5,251 | -3,992 | 14,622 | -12,804 | -1,818 | 512 | 3,266 | 4,148 | 477 | 426 | 360 | 267 | -691 | 2,684 | 342 | 2,901 |
| 2041 | 1964 | 8.31 | 2,361 | 928 | -478 | -8,835 | 0 | 40 | 1 | 3,890 | 449 | -3,270 | 7,670 | -12,583 | 4,913 | -1,560 | 1,707 | -765 | -35 | 391 | -512 | -245 | -342 | 2,342 | -548 | 2,353 |
| *Average:* | | *13.37* | *2,919* | *2,027* | *-584* | *-8,152* | *0* | *992* | *9* | *4,040* | *2,035* | *-3,323* | *12,349* | *-12,387* | *38* | *85* | *-1,922* | *-3,247* | *20* | *-116* | *-12* | *-515* | *117* | *1,443* | *118* | *1,338* |
| *Sustaining Period (water years 2042 through 2071)* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2042 | 1965 | 14.57 | 2,710 | 1,616 | -455 | -8,069 | 0 | 842 | 9 | 3,904 | 448 | -3,368 | 9,529 | -11,892 | 2,362 | -4,740 | -3,033 | -3,127 | -523 | -131 | -354 | -599 | -745 | 1,597 | -480 | 1,873 |
| 2043 | 1966 | 15.79 | 3,537 | 3,078 | -723 | -8,197 | 0 | 2,308 | 21 | 3,789 | 6,211 | -4,450 | 18,944 | -13,370 | -5,574 | 7,243 | 4,210 | 2,447 | 496 | 364 | 659 | 59 | 736 | 2,333 | 529 | 2,402 |
| 2044 | 1967 | 18.65 | 3,791 | 4,042 | -772 | -7,840 | 0 | 3,044 | 20 | 3,589 | 5,959 | -5,460 | 20,444 | -14,071 | -6,373 | 4,401 | 8,611 | 8,819 | 373 | 738 | 352 | 411 | 1,189 | 3,523 | 1,193 | 3,595 |
| 2045 | 1968 | 13.34 | 2,943 | 1,665 | -891 | -7,591 | 0 | 953 | 10 | 3,650 | 3,965 | -5,249 | 13,186 | -13,731 | 545 | 1,821 | 10,432 | 8,275 | 132 | 869 | 7 | 419 | 453 | 3,976 | 228 | 3,824 |
| 2046 | 1969 | 25.72 | 4,643 | 5,563 | -1,091 | -7,628 | -137 | 3,504 | 33 | 3,647 | 3,934 | -6,395 | 21,324 | -15,251 | -6,073 | 6,753 | 17,185 | 14,348 | 158 | 1,027 | 135 | 553 | 2,548 | 6,524 | 1,585 | 5,409 |
| 2047 | 1970 | 16.37 | 2,852 | 1,787 | -915 | -8,401 | 0 | 988 | 9 | 3,700 | 3,783 | -5,717 | 13,119 | -15,033 | 1,913 | -1,900 | 15,285 | 12,434 | -53 | 974 | -52 | 502 | -683 | 5,841 | -571 | 4,838 |
| 2048 | 1971 | 13.80 | 2,957 | 2,277 | -961 | -7,839 | 0 | 1,322 | 15 | 3,639 | 3,600 | -6,036 | 13,810 | -14,836 | 1,026 | -1,429 | 13,856 | 11,409 | -73 | 900 | -53 | 449 | -752 | 5,089 | 13 | 4,851 |
| 2049 | 1972 | 7.66 | 2,361 | 1,430 | -947 | -8,537 | 0 | 1,132 | 10 | 3,737 | 3,742 | -5,465 | 12,413 | -14,949 | 2,535 | -2,783 | 11,073 | 8,873 | -81 | 820 | -59 | 390 | -829 | 4,259 | -509 | 4,343 |
| 2050 | 1973 | 22.47 | 3,997 | 4,311 | -902 | -7,121 | -3 | 2,340 | 27 | 3,497 | 3,920 | -5,856 | 18,091 | -13,881 | -4,210 | 4,680 | 15,754 | 13,083 | 113 | 933 | 110 | 501 | 2,187 | 6,447 | 788 | 5,131 |
| 2051 | 1974 | 15.65 | 3,108 | 2,408 | -952 | -7,705 | 0 | 1,345 | 16 | 3,530 | 3,833 | -5,850 | 14,239 | -14,506 | 267 | -597 | 15,156 | 12,816 | 45 | 978 | 18 | 519 | -774 | 5,672 | -26 | 5,105 |
| 2052 | 1975 | 15.87 | 3,157 | 2,758 | -909 | -7,535 | 0 | 1,797 | 16 | 3,545 | 3,786 | -6,017 | 15,057 | -14,461 | -597 | 315 | 15,472 | 13,413 | -29 | 949 | 4 | 523 | 207 | 5,879 | 137 | 5,242 |
| 2053 | 1976 | 16.13 | 3,658 | 3,243 | -1,011 | -7,986 | 0 | 1,448 | 23 | 3,664 | 3,561 | -5,565 | 15,596 | -14,563 | -1,034 | -3,468 | 12,004 | 14,447 | -137 | 812 | 43 | 566 | -1,177 | 4,702 | 1,086 | 6,328 |
| 2054 | 1977 | 11.55 | 2,631 | 1,589 | -861 | -8,478 | 0 | 693 | 7 | 3,460 | 3,228 | -5,330 | 11,609 | -14,670 | 3,061 | 1,301 | 13,305 | 11,386 | 2 | 815 | -172 | 394 | 219 | 4,921 | -1,523 | 4,805 |
| 2055 | 1978 | 37.23 | 6,167 | 7,317 | -1,100 | -7,621 | -93 | 3,351 | 54 | 3,298 | 3,902 | -6,719 | 24,089 | -15,533 | -8,556 | 9,034 | 22,339 | 19,942 | 295 | 1,109 | 218 | 612 | 3,979 | 8,900 | 2,379 | 7,184 |
| 2056 | 1979 | 20.33 | 4,038 | 3,826 | -954 | -7,691 | -12 | 1,750 | 24 | 3,349 | 3,064 | -6,905 | 16,050 | -15,562 | -487 | 2,034 | 24,372 | 20,429 | -47 | 1,062 | 8 | 619 | 266 | 9,166 | 329 | 7,513 |
| 2057 | 1980 | 27.96 | 4,641 | 4,708 | -1,056 | -7,287 | -50 | 2,014 | 36 | 3,327 | 2,800 | -7,294 | 17,527 | -15,687 | -1,840 | 2,112 | 26,484 | 22,269 | 115 | 1,177 | 40 | 660 | 795 | 9,962 | 700 | 8,213 |
| 2058 | 1981 | 13.18 | 2,851 | 1,995 | -964 | -8,087 | 0 | 928 | 11 | 3,471 | 2,895 | -6,468 | 12,151 | -15,519 | 3,368 | -4,279 | 22,205 | 18,901 | -152 | 1,026 | -92 | 568 | -1,580 | 8,382 | -1,127 | 7,086 |
| 2059 | 1982 | 12.47 | 2,945 | 1,978 | -873 | -8,599 | 0 | 1,485 | 8 | 3,518 | 3,839 | -6,140 | 13,773 | -15,612 | 1,838 | -3,449 | 18,756 | 17,063 | -59 | 967 | 9 | 577 | -1,626 | 6,756 | -969 | 6,117 |
| 2060 | 1983 | 32.62 | 5,798 | 6,434 | -1,075 | -8,281 | -72 | 2,911 | 44 | 3,177 | 3,267 | -7,132 | 21,631 | -16,560 | -5,089 | 7,187 | 25,943 | 22,152 | 232 | 1,199 | 49 | 627 | 2,929 | 9,685 | 1,598 | 7,715 |
| 2061 | 1984 | 9.08 | 2,620 | 1,591 | -1,004 | -7,895 | 0 | 120 | 8 | 3,478 | 3,080 | -6,119 | 10,898 | -15,017 | 4,120 | -5,028 | 20,915 | 18,032 | -221 | 978 | -62 | 565 | -2,534 | 7,151 | -996 | 6,720 |
| 2062 | 1985 | 11.33 | 2,464 | 1,206 | -902 | -7,726 | 0 | 179 | 3 | 3,642 | 2,967 | -5,315 | 10,462 | -13,943 | 3,481 | -3,355 | 17,560 | 14,551 | 17 | 995 | -65 | 500 | -857 | 6,293 | -1,022 | 5,698 |
| 2063 | 1986 | 27.53 | 4,539 | 4,370 | -896 | -6,785 | -5 | 2,317 | 29 | 3,475 | 3,339 | -6,331 | 18,069 | -14,015 | -4,054 | 3,152 | 20,712 | 18,605 | 30 | 1,025 | 113 | 613 | 1,356 | 7,649 | 863 | 6,561 |
| 2064 | 1987 | 7.25 | 2,185 | 454 | -876 | -9,670 | 0 | 154 | 0 | 3,706 | 3,245 | -4,903 | 9,745 | -15,449 | 5,704 | -4,608 | 16,104 | 12,901 | -92 | 933 | -203 | 410 | -2,179 | 5,470 | -1,723 | 4,838 |
| 2065 | 1988 | 12.92 | 2,879 | 1,790 | -805 | -7,259 | 0 | 153 | 5 | 3,656 | 3,854 | -4,676 | 12,337 | -12,740 | 403 | -2,431 | 13,673 | 12,498 | -70 | 863 | 77 | 487 | -804 | 4,666 | -240 | 4,598 |
| 2066 | 1989 | 8.03 | 2,172 | 951 | -745 | -7,873 | 0 | 72 | 4 | 3,803 | 1,941 | -4,382 | 8,942 | -12,999 | 4,057 | -2,622 | 11,051 | 8,441 | -90 | 773 | -240 | 247 | -575 | 4,091 | -540 | 4,058 |

| | | | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Groundwater Inflow and Outflow Components (acre-feet per year)[e] | | | | | Summary (acre-feet per year) | | | All Aquifers Combined | | | Mugu Aquifer | | | | Hueneme Aquifer | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Projected Water Year | Analogous Historical Water Year[a] | Assumed Annual Rainfall at Ventura County Govt. Center (inches)[b] | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[c] | Groundwater Extraction (pumping from wells) | Discharge of Groundwater to Tile Drains[d] | Groundwater/ Surface Water Interaction in the Santa Clara River[f] | Groundwater/ Surface Water Interaction in Harmon Barranca[g] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage per Water Year[h] | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year | Annual Change in Spring-high Storage | Cumulative Change in Spring-high Storage | Annual Change in Storage per Water Year | Cumulative Change in Storage per Water Year |
| 2067 | 1990 | 6.17 | 1,869 | 806 | -530 | -8,284 | 0 | 55 | 1 | 3,939 | -216 | -3,760 | 6,671 | -12,791 | 6,120 | -5,656 | 5,396 | 2,321 | -433 | 340 | -599 | -352 | -948 | 3,143 | -993 | 3,066 |
| 2068 | 1991 | 17.24 | 3,341 | 3,176 | -622 | -8,246 | 0 | 1,882 | 25 | 3,948 | 2,877 | -3,850 | 15,249 | -12,717 | -2,532 | -112 | 5,284 | 4,853 | -421 | -80 | 147 | -204 | 1,064 | 4,207 | -152 | 2,913 |
| 2069 | 1992 | 21.67 | 4,418 | 4,666 | -872 | -7,636 | 0 | 2,777 | 33 | 3,672 | 6,136 | -5,189 | 21,702 | -13,698 | -8,004 | 8,903 | 14,187 | 12,856 | 728 | 647 | 621 | 417 | 1,332 | 5,539 | 1,317 | 4,230 |
| 2070 | 1993 | 30.48 | 4,795 | 5,691 | -1,143 | -7,118 | -128 | 3,730 | 39 | 3,469 | 3,590 | -6,946 | 21,315 | -15,335 | -5,980 | 8,440 | 22,627 | 18,837 | 500 | 1,147 | 193 | 609 | 2,307 | 7,846 | 2,128 | 6,358 |
| 2071 | 1994 | 11.88 | 2,631 | 1,667 | -884 | -8,134 | 0 | 1,035 | 9 | 3,613 | 3,505 | -5,960 | 12,461 | -14,977 | 2,516 | -3,780 | 18,847 | 16,321 | -133 | 1,014 | -55 | 554 | -1,506 | 6,339 | -640 | 5,718 |
| *Average:* | | *17.16* | *3,423* | *2,946* | *-890* | *-7,904* | *-17* | *1,554* | *18* | *3,596* | *3,469* | *-5,628* | *15,014* | *-14,446* | *-570* | *571* | *15,192* | *12,986* | *21* | *841* | *27* | *407* | *133* | *5,867* | *112* | *5,211* |
| ***Post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2072 | 1995 | 32.33 | 5,153 | 5,901 | -1,063 | -7,570 | -63 | 2,638 | -38 | 3,574 | 3,285 | -6,867 | 20,552 | -15,601 | -4,950 | 6,149 | 24,997 | 21,271 | 198 | 1,212 | 105 | 659 | 2,563 | 8,903 | 1,523 | 7,242 |
| 2073 | 1996 | 13.03 | 3,038 | 2,202 | -896 | -8,677 | 0 | 941 | 13 | 3,570 | 3,183 | -6,259 | 12,947 | -15,831 | 2,884 | -2,905 | 22,091 | 18,387 | -120 | 1,092 | -110 | 549 | -1,321 | 7,582 | -897 | 6,345 |
| 2074 | 1997 | 15.40 | 3,333 | 2,892 | -1,005 | -7,609 | 0 | 1,538 | 17 | 3,514 | 3,398 | -6,707 | 14,692 | -15,321 | 629 | -1,326 | 20,765 | 17,758 | -105 | 987 | 6 | 556 | -589 | 6,992 | -30 | 6,315 |
| 2075 | 1998 | 44.22 | 6,525 | 7,785 | -1,118 | -6,080 | -121 | 3,333 | -184 | 3,408 | 2,164 | -7,573 | 23,215 | -15,076 | -8,139 | 7,932 | 28,697 | 25,896 | 177 | 1,164 | 131 | 686 | 3,639 | 10,631 | 2,710 | 9,024 |
| 2076 | 1999 | 10.62 | 2,308 | 804 | -866 | -8,436 | 0 | 189 | 1 | 3,600 | 2,735 | -5,935 | 9,638 | -15,237 | 5,599 | -5,928 | 22,769 | 20,297 | -139 | 1,026 | -89 | 597 | -2,927 | 7,704 | -1,888 | 7,137 |
| 2077 | 2000 | 18.57 | 3,387 | 2,664 | -875 | -8,192 | 0 | 1,213 | 17 | 3,558 | 3,138 | -6,064 | 13,977 | -15,132 | 1,155 | -1,204 | 21,566 | 19,143 | 37 | 1,063 | -37 | 560 | -266 | 7,438 | -571 | 6,566 |
| 2078 | 2001 | 23.94 | 4,183 | 4,234 | -910 | -8,299 | -16 | 1,740 | 29 | 3,402 | 3,482 | -6,466 | 17,070 | -15,691 | -1,379 | 2,643 | 24,208 | 20,522 | 35 | 1,097 | 28 | 588 | 1,285 | 8,724 | 416 | 6,982 |
| 2079 | 2002 | 5.98 | 2,023 | 494 | -854 | -8,814 | 0 | 112 | 1 | 3,667 | 2,830 | -5,152 | 9,128 | -14,821 | 5,693 | -6,403 | 17,805 | 14,829 | -179 | 918 | -167 | 421 | -2,934 | 5,789 | -1,574 | 5,409 |
| 2080 | 2003 | 17.72 | 3,734 | 2,877 | -817 | -7,437 | 0 | 1,039 | 17 | 3,528 | 3,857 | -5,470 | 15,052 | -13,725 | -1,328 | 364 | 18,169 | 16,157 | 12 | 930 | 97 | 518 | 217 | 6,006 | -76 | 5,332 |
| 2081 | 2004 | 11.41 | 2,475 | 1,535 | -883 | -8,210 | 0 | 725 | 9 | 3,633 | 2,811 | -5,337 | 11,187 | -14,431 | 3,243 | -2,199 | 15,970 | 12,913 | -62 | 868 | -127 | 391 | -809 | 5,197 | -638 | 4,694 |
| 2082 | 2005 | 36.72 | 6,068 | 7,586 | -1,095 | -6,426 | -189 | 3,710 | 57 | 3,397 | 3,370 | -7,157 | 24,190 | -14,867 | -9,322 | 10,319 | 26,289 | 22,236 | 272 | 1,141 | 238 | 630 | 3,878 | 9,075 | 2,684 | 7,378 |
| 2083 | 2006 | 16.16 | 3,155 | 2,659 | -810 | -7,679 | -1 | 1,446 | 14 | 3,514 | 3,170 | -6,488 | 13,957 | -14,978 | 1,021 | -3,975 | 22,314 | 21,215 | -126 | 1,015 | 5 | 635 | -1,647 | 7,428 | -381 | 6,998 |
| 2084 | 2007 | 5.86 | 1,856 | 208 | -910 | -8,980 | 0 | 127 | 0 | 3,749 | 3,258 | -5,426 | 9,199 | -15,317 | 6,118 | -4,730 | 17,583 | 15,097 | -75 | 940 | -154 | 480 | -1,784 | 5,644 | -1,633 | 5,365 |
| 2085 | 2008 | 12.64 | 3,101 | 2,604 | -918 | -8,446 | -3 | 1,662 | 16 | 3,644 | 3,905 | -5,819 | 14,932 | -15,186 | 254 | 9 | 17,593 | 14,843 | 25 | 964 | 1 | 481 | -98 | 5,546 | -359 | 5,006 |
| 2086 | 2009 | 9.59 | 2,427 | 1,321 | -863 | -8,236 | 0 | 938 | 6 | 3,720 | 3,461 | -5,225 | 11,873 | -14,323 | 2,450 | -2,677 | 14,916 | 12,393 | -93 | 872 | -62 | 419 | -925 | 4,620 | -568 | 4,438 |
| 2087 | 2010 | 17.19 | 3,459 | 3,026 | -828 | -7,691 | 0 | 1,515 | 15 | 3,494 | 4,166 | -5,450 | 15,674 | -13,969 | -1,705 | 1,138 | 16,053 | 14,097 | -15 | 857 | 47 | 466 | 530 | 5,151 | 99 | 4,537 |
| 2088 | 2011 | 17.89 | 4,002 | 3,775 | -817 | -7,266 | -5 | 1,791 | 25 | 3,452 | 3,961 | -5,976 | 17,004 | -14,064 | -2,940 | 3,762 | 19,816 | 17,037 | 164 | 1,021 | 100 | 566 | 1,312 | 6,462 | 877 | 5,415 |
| 2089 | 2012 | 8.96 | 2,054 | 444 | -891 | -8,865 | 0 | 136 | 0 | 3,765 | 3,486 | -4,893 | 9,885 | -14,649 | 4,765 | -5,774 | 14,041 | 12,273 | -149 | 872 | -154 | 412 | -2,098 | 4,365 | -1,076 | 4,339 |
| 2090 | 2013 | 5.70 | 2,591 | 1,384 | -801 | -7,660 | 0 | 75 | 7 | 3,736 | 1,561 | -4,436 | 9,354 | -12,898 | 3,544 | -1,829 | 12,212 | 8,729 | -74 | 797 | -253 | 160 | -445 | 3,920 | -376 | 3,962 |
| 2091 | 2014 | 6.33 | 2,408 | 1,563 | -706 | -8,580 | 0 | 519 | 6 | 3,832 | 92 | -4,119 | 8,419 | -13,405 | 4,986 | -5,012 | 7,200 | 3,743 | -584 | 213 | -568 | -408 | -426 | 3,494 | -960 | 3,002 |
| 2092 | 2015 | 9.62 | 2,514 | 1,098 | -429 | -7,897 | 0 | 39 | 4 | 3,990 | -536 | -2,869 | 7,645 | -11,731 | 4,086 | -4,662 | 2,538 | -343 | -415 | -202 | -445 | -853 | -965 | 2,530 | -699 | 2,303 |
| 2093 | 2016 | 8.36 | 2,916 | 2,027 | -351 | -8,239 | 0 | 295 | 12 | 3,956 | -462 | -2,881 | 9,206 | -11,932 | 2,725 | -2,791 | -253 | -3,069 | -426 | -627 | -406 | -1,259 | -282 | 2,247 | -626 | 1,676 |
| 2094 | 2017 | 22.47 | 3,850 | 3,849 | -556 | -7,712 | 0 | 2,219 | 24 | 3,851 | 2,577 | -3,573 | 16,370 | -11,841 | -4,529 | 4,182 | 3,929 | 1,460 | 299 | -328 | 590 | -669 | 1,194 | 3,442 | 527 | 2,203 |
| 2095 | 2018 | 7.16 | 3,013 | 2,050 | -390 | -8,258 | 0 | 588 | 11 | 3,946 | -1,087 | -3,097 | 9,607 | -12,831 | 3,223 | -2,502 | 1,426 | -1,763 | -148 | -476 | -440 | -1,109 | -653 | 2,789 | -327 | 1,876 |
| 2096 | 2019 | 21.95 | 3,800 | 3,849 | -671 | -7,447 | 0 | 2,886 | 24 | 3,860 | 5,079 | -4,212 | 19,498 | -12,330 | -7,169 | 4,496 | 5,922 | 5,405 | 292 | -184 | 970 | -139 | 899 | 3,688 | 787 | 2,663 |
| *Average:* | | *15.99* | *3,335* | *2,753* | *-813* | *-7,948* | *-16* | *1,257* | *4* | *3,654* | *2,675* | *-5,338* | *13,771* | *-14,207* | *437* | *-517* | *15,945* | *13,221* | *-48* | *689* | *-28* | *213* | *-106* | *5,815* | *-122* | *5,048* |
| ***Average 2022-2096:*** | | ***15.76*** | ***3,259*** | ***2,637*** | ***-783*** | ***-7,985*** | ***-12*** | ***1,305*** | ***11*** | ***3,734*** | ***2,822*** | ***-4,917*** | ***13,889*** | ***-13,817*** | ***-72*** | ***79*** | ***10,879*** | ***8,736*** | ***-2*** | ***535*** | ***-2*** | ***96*** | ***49*** | ***4,670*** | ***36*** | ***4,124*** |

**Notes**

N/A = Not applicable

Positive values represent inflows to the Mound Basin negative numbers represent outflows from the basin.

a The representative historical water year used as the basis for assumptions regarding rainfall and surface flows about future years, as described in Section 3.3.

b See Section 3.3 for an explanation of how water-year types were classified in this GSP.

c The Shallow Alluvial Deposits is modeled to be the sole hydrostratigraphic unit in Mound Basin with saturated conditions consistently shallow enough to be significantly affected by evapotranspiration.

d Tile drains are only known or suspected to be present in the Shallow Deposits Aquifer in Mound Basin.

e These components can comprise either net inflows to or outflows from each aquifer, depending on hydrogeologic conditions that vary over time (e.g., hydraulic gradients).

f Within Mound Basin, the sole hydrostratigraphic unit known or suspected to be in direct hydraulic communication with the Santa Clara River is the Shallow Alluvial Deposits.

g United (2021) modeled Harmon Barranca using MODFLOW's ""Stream package,"" as described in Section 3.3 of this report, allowing the model to simulate direct hydraulic communication with the Shallow Alluvial Deposits, as well as with the fine-grained Pleistocene deposits."

h Water-year changes in storage are calculated from October 1 of the preceding calendar year to September 30 of the indicated year. Positive values for groundwater released from storage represent inflows to the basin, same as all other components on this table. However, specific to this parameter, inflow of groundwater from storage is associated with declining groundwater levels (or potentiometric heads) in the basin. Negative values are associated with increasing groundwater-levels (or potentiometric heads), as a result of groundwater being "added to storage."

**Table 3.3-14 Mound Basin Projected Average Groundwater Inflows and Outflows by Aquifer, 2070 Climate Change and Sea Level Rise Factors.**

| | Groundwater Inflows (acre-feet per year) | | Groundwater Outflows (acre-feet per year) | | | Variable Groundwater Flow Components (acre-feet per year)[a] | | | | | | | Summary (acre-feet per year) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aquifer | Areal Recharge (includes infiltration of precipitation, agricultural return flows, and M&I return flows) | Mountain-Front Recharge | Evapo-transpiration[b] | Groundwater Extraction | Discharge of Groundwater to Tile Drains[c] | Groundwater/ Surface Water Interaction in the Santa Clara River[d] | Groundwater/ Surface Water Interaction in Harmon Barranca[e] | Groundwater Underflow to/from Santa Paula Basin | Groundwater Underflow to/from Oxnard Basin | Groundwater Underflow to/from Offshore (south and west of the coastline) | Vertical Groundwater Flow to/from the Overlying Aquifer | Vertical Groundwater Flow to/from the Underlying Aquifer | Sum of Inflows | Sum of Outflows | Groundwater Released from Storage[f] |
| ***Averages during Implementation Period (water years 2022 through 2041)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,338 | 0 | -584 | 0 | 0 | 992 | 55 | 0 | 1,016 | -3,000 | N/A | -966 | 4,401 | -4,550 | 149 |
| Fine-grained Pleistocene deposits[g] | 140 | 0 | N/A | -7 | N/A | N/A | 78 | 7 | 1,362 | -65 | 966 | -2,548 | 2,552 | -2,619 | 67 |
| Mugu Aquifer | 0 | 0 | N/A | -2,175 | N/A | N/A | 0 | 223 | 1,353 | -757 | 2,548 | -1,204 | 4,123 | -4,136 | 12 |
| Hueneme Aquifer[h] | 441 | 2,027 | N/A | -5,340 | N/A | N/A | -123 | 2,036 | -739 | 458 | 1,204 | 155 | 6,319 | -6,202 | -118 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -630 | N/A | N/A | 0 | 1,774 | -957 | 41 | -155 | N/A | 1,815 | -1,742 | -73 |
| ***Basin Total:*** | ***2,919*** | ***2,027*** | ***-584*** | ***-8,152*** | ***0*** | ***992*** | ***9*** | ***4,040*** | ***2,035*** | ***-3,323*** | ***4,563*** | ***-4,563*** | ***19,211*** | ***-19,250*** | ***38*** |
| ***Averages during Sustaining Period (water years 2042 through 2071)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,684 | 0 | -890 | 0 | -17 | 1,554 | 133 | 0 | 1,533 | -3,875 | N/A | -1,031 | 5,904 | -5,813 | -91 |
| Fine-grained Pleistocene deposits[g] | 169 | 0 | N/A | -5 | N/A | N/A | 143 | 8 | 1,648 | -120 | 1,031 | -2,657 | 2,998 | -2,782 | -216 |
| Mugu Aquifer | 0 | 0 | N/A | -2,089 | N/A | N/A | 0 | 186 | 1,809 | -1,536 | 2,657 | -1,001 | 4,652 | -4,626 | -27 |
| Hueneme Aquifer[h] | 571 | 2,946 | N/A | -5,186 | N/A | N/A | -258 | 1,750 | -679 | 31 | 1,001 | -64 | 6,298 | -6,187 | -112 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -624 | N/A | N/A | 0 | 1,653 | -842 | -128 | 64 | N/A | 1,717 | -1,594 | -123 |
| ***Basin Total:*** | ***3,423*** | ***2,946*** | ***-890*** | ***-7,904*** | ***-17*** | ***1,554*** | ***18*** | ***3,596*** | ***3,469*** | ***-5,628*** | ***4,754*** | ***-4,754*** | ***21,570*** | ***-21,001*** | ***-570*** |
| ***Averages during post-SGMA period (water years 2072 through 2096)*** | | | | | | | | | | | | | | | |
| Shallow Alluvial Deposits | 2,624 | 0 | -813 | 0 | -16 | 1,257 | 124 | 0 | 1,476 | -3,711 | N/A | -1,019 | 5,481 | -5,559 | 78 |
| Fine-grained Pleistocene deposits[g] | 165 | 0 | N/A | -5 | N/A | N/A | 140 | 7 | 1,408 | -110 | 1,019 | -2,738 | 2,739 | -2,852 | 113 |
| Mugu Aquifer | 0 | 0 | N/A | -2,094 | N/A | N/A | 0 | 208 | 1,446 | -1,420 | 2,738 | -906 | 4,392 | -4,420 | 28 |
| Hueneme Aquifer[h] | 546 | 2,753 | N/A | -5,223 | N/A | N/A | -260 | 1,772 | -778 | 34 | 906 | 127 | 6,139 | -6,262 | 122 |
| Fox Canyon Aquifer[i] | 0 | 0 | N/A | -627 | N/A | N/A | 0 | 1,667 | -877 | -132 | -127 | N/A | 1,667 | -1,763 | 95 |
| ***Basin Total:*** | ***3,335*** | ***2,753*** | ***-813*** | ***-7,948*** | ***-16*** | ***1,257*** | ***4*** | ***3,654*** | ***2,675*** | ***-5,338*** | ***4,536*** | ***-4,536*** | ***20,418*** | ***-20,855*** | ***437*** |



**Notes**

N/A = Not applicable.

Positive values represent inflows to an aquifer; negative numbers represent outflows from an aquifer.

a These components can comprise either net inflows to or outflows from each aquifer, depending on hydrogeologic conditions that vary over time (e.g., hydraulic gradients).

b The Shallow Alluvial Deposits is the sole hydrostratigraphic unit in Mound Basin with saturated conditions consistently shallow enough to be significantly affected by evapotranspiration.

c Tile drains are only known or suspected to be present in the Shallow Alluvial Deposits in Mound Basin.

d Within Mound Basin, the sole hydrostratigraphic unit known or suspected to be in direct hydraulic communication with the Santa Clara River is the Shallow Alluvial Deposits.

e United (2021) modeled Harmon Barranca using MODFLOW's "Stream package," as described in Section 3.3 of this report, allowing the model to simulate direct hydraulic communication with the Shallow Alluvial Deposits and the fine-grained Pleistocene deposits.

f Positive values for groundwater released from storage represent inflows to an aquifer, same as all other components on this page. Inflow of groundwater from storage is associated with declining groundwater levels (or potentiometric heads) in that aquifer. Negative values are associated with increasing groundwater-levels (or potentiometric-heads), as a result of groundwater being "added to storage."

g Although the fine-grained Pleistocene deposits in Mound Basin are not considered a principal aquifer due to their low hydraulic conductivity, they have a substantial thickness and are stratigraphically adjacent to the Oxnard Aquifer in the Oxnard Basin (see Section 3.1 for more information). The fine-grained Pleistocene deposits are included in this table for completeness in depicting the groundwater budget for Mound Basin

h To provide a complete and balanced water budget (the sum of water-budget components for all units should be zero), the values shown in this row include both the Hueneme Aquifer and the overlying Mugu-Hueneme aquitard, which is thin and has low hydraulic conductivity. For these reasons, inflows and outflows from the aquitard are small compared to those from the aquifer.

i To provide a complete and balanced water budget (the sum of water-budget components for all units should be zero), the values shown in this row include the Fox Canyon Aquifer (main and basal) and the overlying and intervening aquitards, which are thin and have low hydraulic conductivity. For these reasons, inflows and outflows from the aquitards are small compared to those from the aquifer.

j See Section 3.3 for an explanation of how water-year types were classified in this report.

# Tables

## Section 4

## Table 4.1-01 Sustainable Mangement Criteria for the Chronic Lowering of Groundwater Levels and Land Subsidence Sustainability Indicators.

| State Well Identification Number | Aquifers Monitored | Frequency of Groundwater Elevation Measurement 2015-2020 | Basin Half | Land Subsidence MT (ft amsl) | Land Subsidence MO (ft amsl) | Chronic Lowering of GW Levels MT (ft amsl) | Chronic Lowering of GW Levels MO (ft amsl) | IM 5-year (ft amsl) | IM 10-year (ft amsl) | IM 15-year (ft amsl) | IM 20-year (ft amsl) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 02N22W08G01S | Mugu | Monthly | Eastern | ≥ 0.1 ft/yr* | ≥ 0.1 ft/yr* | -20.39 | 5.21 | -13.99 | -7.59 | -1.19 | 5.21 |
| 02N22W08P01S | Mugu | Quarterly | Eastern | ≥ 0.1 ft/yr* | ≥ 0.1 ft/yr* | -16.11 | 7.93 | -10.10 | -4.09 | 1.92 | 7.93 |
| 02N22W07M02S | Mugu | Monthly | Western | -19.77 | 1.00 | -19.77 | 1.00 | -14.58 | -9.38 | -4.19 | 1.00 |
| 02N22W07P01S | Mugu | Monthly | Western | -21.00 | 0.88 | -21.00 | 0.88 | -15.53 | -10.06 | -4.59 | 0.88 |
| 02N22W19M04S | Mugu | Bimonthly | Western | -64.19 | -43.98 | -64.19 | -43.98 | -59.14 | -54.08 | -49.03 | -43.98 |
| 02N23W15J02S | Mugu | Monthly | Western | -18.64 | -0.96 | -18.64 | -0.96 | -14.22 | -9.80 | -5.38 | -0.96 |
| TBD | Mugu | Quarterly | Western | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |
| TBD | Mugu | Quarterly | Western | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |
| TBD | Mugu | Quarterly | Western | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |
| 02N22W09K04S | Hueneme | Monthly | Eastern | ≥ 0.1 ft/yr* | ≥ 0.1 ft/yr* | -32.41 | -10.31 | -26.88 | -21.36 | -15.83 | -10.31 |
| 02N22W09L03S | Hueneme | Monthly | Eastern | ≥ 0.1 ft/yr* | ≥ 0.1 ft/yr* | 28.27 | 50.37 | 33.80 | 39.32 | 44.85 | 50.37 |
| 02N22W09L04S | Hueneme | Monthly | Eastern | ≥ 0.1 ft/yr* | ≥ 0.1 ft/yr* | 42.28 | 64.39 | 47.81 | 53.34 | 58.86 | 64.39 |
| 02N22W10N03S | Hueneme | Bimonthly | Eastern | ≥ 0.1 ft/yr* | ≥ 0.1 ft/yr* | -38.20 | -15.40 | -32.50 | -26.80 | -21.10 | -15.40 |
| 02N22W16K01S | Hueneme | Quarterly | Eastern | ≥ 0.1 ft/yr* | ≥ 0.1 ft/yr* | -56.09 | -33.73 | -50.50 | -44.91 | -39.32 | -33.73 |
| 02N22W17Q05S | Hueneme | Bimonthly | Eastern | ≥ 0.1 ft/yr* | ≥ 0.1 ft/yr* | -66.73 | -45.48 | -61.42 | -56.11 | -50.79 | -45.48 |
| 02N22W07M01S | Hueneme | Monthly | Western | -25.21 | -4.59 | -25.21 | -4.59 | -20.06 | -14.90 | -9.75 | -4.59 |
| 02N22W17M02S | Hueneme | Bimonthly | Western | -18.76 | 2.51 | -18.76 | 2.51 | -13.44 | -8.12 | -2.81 | 2.51 |
| 02N22W20E01S | Hueneme | Monthly | Western | -72.79 | -51.82 | -72.79 | -51.82 | -67.55 | -62.31 | -57.07 | -51.82 |
| 02N23W13K03S | Hueneme | Quarterly | Western | -34.23 | -14.44 | -34.23 | -14.44 | -29.28 | -24.33 | -19.39 | -14.44 |
| 02N23W13K04S | Hueneme | Quarterly | Western | -25.60 | -5.81 | -25.60 | -5.81 | -20.65 | -15.71 | -10.76 | -5.81 |
| 02N23W15J01S | Hueneme | Monthly | Western | -25.86 | -7.30 | -25.86 | -7.30 | -21.22 | -16.58 | -11.94 | -7.30 |
| 02N23W24G01S | Hueneme | Quarterly | Western | -22.30 | -3.21 | -22.30 | -3.21 | -17.53 | -12.75 | -7.98 | -3.21 |
| TBD | Hueneme | Quarterly | Western | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |
| TBD | Hueneme | Quarterly | Western | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |
| TBD | Hueneme | Quarterly | Western | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |

**Notes:**

GW = Groundwater
MT = Minimum Threshold
MO = Measurable Objective
IM = Interim Measure
SMC = Sustainable Management Criteria
TBD = SMC to be determined following future monitoring well construction and data collection
* MT/MO based on land subsidence measurements

## Table 4.1-02 Water Quality Minimum Thresholds and Measurable Objectives.

| Constituent | MCL (mg/L) | Sec. MCL (R/U/ST)[1] (mg/L) | RWQCB WQO (mg/L) | Average Conc. Representative Monitoring Wells Last 10 Years (mg/l) | Proposed MT[2] (mg/L) | MT Rationale | Proposed MO[3] (mg/L) | MO Rationale |
|---|---|---|---|---|---|---|---|---|
| ***Mugu Aquifer*** | | | | | | | | |
| Nitrate | 45 | N/A | 45 | Non-Detect | 45 | Protect water quality for potable uses. | 5 | Preserve existing water quality for potable uses. |
| TDS | N/A | 500/1,000/1,500 | 1,200 | 902 | 1,200 | Protect agricultural, municipal, and industrial beneficial uses consistent with RWQCB WQOs. | 1,000 | Preserve existing water quality for agricultural, municipal, and industrial beneficial uses. MO is set at Upper Consumer Acceptance Level to support potable uses. |
| Sulfate | N/A | 250/500/600 | 600 | 350 | 600 | Protect municipal beneficial use consistent with RWQCB WQOs and prevent exceedances of Short-Term Consumer Acceptance Level. | 500 | Preserve existing water quality for municipal beneficial use. MO is set at Upper Consumer Acceptance Level to support potable uses. |
| Chloride | N/A | 250/500/600 | 150 | 50 | 150 | Protect agricultural beneficial use consistent with RWQCB WQOs. | 75 | Preserve existing water quality for agricultural beneficial use. MO is selected to preserve existing water quality. |
| Boron | N/A | N/A | 1 | 0.47 | 1 | Protect agricultural beneficial use consistent with RWQCB WQOs. | 0.75 | Preserve existing water quality for agricultural beneficial use. MO is selected to preserve existing water quality. |

| Constituent | MCL (mg/L) | Sec. MCL (R/U/ST)[1] (mg/L) | RWQCB WQO (mg/L) | Average Conc. Representative Monitoring Wells Last 10 Years (mg/l) | Proposed MT[2] (mg/L) | MT Rationale | Proposed MO[3] (mg/L) | MO Rationale |
|---|---|---|---|---|---|---|---|---|
| ***Hueneme Aquifer*** | | | | | | | | |
| Nitrate | 45 | N/A | 45 | Non-Detect | 45 | Protect water quality for potable uses. | 5 | Preserve existing water quality for potable uses. |
| TDS | N/A | 500/1,000/1,500 | 1,200 | 1,171 | 1,400 | Protect agricultural, municipal, and industrial beneficial uses. MT is 200 mg/L higher than RWQCB WQO based on current and historical data at representative monitoring wells (set at upper range of data from past ten years). | 1,400 | Preserve existing water quality for agricultural, municipal, and industrial beneficial uses. |
| Sulfate | N/A | 250/500/600 | 600 | 488 | 600 | Protect municipal beneficial use consistent with RWQCB WQOs and prevent exceedances of Short Term Consumer Acceptance Level. | 600 | Preserve existing water quality for municipal beneficial use. |
| Chloride | N/A | 250/500/600 | 150 | 76 | 150 | Protect agricultural beneficial use consistent with RWQCB WQOs. | 100 | Preserve existing water quality for agricultural beneficial use. MO is selected to preserve existing water quality. |
| Boron | N/A | N/A | 1 | 0.62 | 1 | Protect agricultural beneficial use consistent with RWQCB WQOs. | 0.75 | Preserve existing water quality for agricultural beneficial use. MO is selected to preserve existing water quality. |

**Notes:**
1 Consumer Acceptance Levels, where R = Recommended, U = Upper, and ST = Short Term
2 Undesirable results are considered to occur when all representative monitoring wells in a principal aquifer exceed the minimum threshold concentration for a constituent for two consecutive years.
3 Sustainability Goal for degraded water quality for a given constituent is considered to be met when the two-year running average concentration for at least one representative monitoring well is below the measurable objective.
MCL = Maximum Concentration Limit.
mg/L = milligrams per liter.
MO = Measurable Objective.
MT = Minimum Threshold.

## Table 4.1-03 Water Quality and Seawater Intrusion Minimum Thresholds and Measurable Objectives.

| State Well Identification Number | Local Well Identifier | Aquifers Monitored | Frequency of Groundwater Quality Sampling 2015-2020 | Measurement or Sampling Entity[d] | Degraded WQ Nitrate MT | Degraded WQ Nitrate MO | Degraded WQ TDS MT | Degraded WQ TDS MO | Degraded WQ Sulfate MT | Degraded WQ Sulfate MO | Degraded WQ Chloride MT | Degraded WQ Chloride MO | Degraded WQ Boron MT | Degraded WQ Boron MO | Seawater Intrusion Chloride MT | Seawater Intrusion Chloride MO | IM 5YR | IM 10YR | IM 15YR | IM 20YR | SMC Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 02N22W08G01S | Mound #1 | Mugu[e] | Monthly | City of Ventura | Not used - water quality is anomalous | | | | | | | | | | | | | | | | |
| 02N22W07M02S | CP-780 | Mugu | Semiannually | United | 45 | 5 | 1200 | 1000 | 600 | 500 | 150 | 75 | 1 | 0.75 | | | Same as MOs | Same as MOs | Same as MOs | Same as MOs | |
| 02N23W15J02S | MP-660 | Mugu | Semiannually | United | 45 | 5 | 1200 | 1000 | 600 | 500 | 150 | 75 | 1 | 0.75 | | | Same as MOs | Same as MOs | Same as MOs | Same as MOs | |
| TBD | Site A | Mugu | Semiannually | TBD | 45 | 5 | 1200 | 1000 | 600 | 500 | 150 | 75 | 1 | 1 | | | Same as MOs | Same as MOs | Same as MOs | Same as MOs | Future Monitoring Well |
| TBD | Site B | Mugu | Semiannually | TBD | 45 | 5 | 1200 | 1000 | 600 | 500 | 150 | 75 | 1 | 1 | 150 | 75 | Same as MOs | Same as MOs | Same as MOs | Same as MOs | Future Monitoring Well |
| TBD | Site C | Mugu | Semiannually | TBD | 45 | 5 | 1200 | 1000 | 600 | 500 | 150 | 75 | 1 | 1 | 150 | 75 | Same as MOs | Same as MOs | Same as MOs | Same as MOs | Future Monitoring Well |
| 02N22W08F01S | Victoria #2 | Hueneme | Monthly | City of Ventura | Not used - water quality is anomalous | | | | | | | | | | | | | | | | |
| 02N22W09L03S | CWP-950 | Hueneme | Semiannually | United | 45 | 5 | 1400 | 1200 | 600 | 500 | 150 | 100 | 1 | 0.75 | | | Same as MOs | Same as MOs | Same as MOs | Same as MOs | |
| 02N22W09L04S | CWP-510 | Hueneme | Semiannually | United | Not used - water quality is anomalous | | | | | | | | | | | | | | | | |
| 02N23W13F02S | --- | Hueneme[f] | Annually | United | 45 | 5 | 1400 | 1200 | 600 | 500 | 150 | 100 | 1 | 0.75 | | | Same as MOs | Same as MOs | Same as MOs | Same as MOs | |
| 02N22W07M01S | CP-1280 | Hueneme | Semiannually | United | 45 | 5 | 1400 | 1200 | 600 | 500 | 150 | 100 | 1 | 0.75 | | | Same as MOs | Same as MOs | Same as MOs | Same as MOs | |
| 02N23W13K03S | --- | Hueneme | Annually | VCWPD | Not used - water quality is anomalous | | | | | | | | | | | | | | | | |
| 02N23W15J01S | MP-1070 | Hueneme | Semiannually | United | 45 | 5 | 1400 | 1200 | 600 | 500 | 150 | 100 | 1 | 0.75 | | | Same as MOs | Same as MOs | Same as MOs | Same as MOs | |
| TBD | Site A | Hueneme | Semiannually | TBD | 45 | 5 | 1400 | 1200 | 600 | 500 | 150 | 100 | 1 | 1 | | | Same as MOs | Same as MOs | Same as MOs | Same as MOs | Future Monitoring Well |
| TBD | Site B | Hueneme | Semiannually | TBD | 45 | 5 | 1400 | 1200 | 600 | 500 | 150 | 100 | 1 | 1 | 150 | 100 | Same as MOs | Same as MOs | Same as MOs | Same as MOs | Future Monitoring Well |
| TBD | Site C | Hueneme | Semiannually | TBD | 45 | 5 | 1400 | 1200 | 600 | 500 | 150 | 100 | 1 | 1 | 150 | 100 | Same as MOs | Same as MOs | Same as MOs | Same as MOs | Future Monitoring Well |

**Notes:**
MO = Measurable Objective.
MT = Minimum Threshold.
SMC = sustainable management criteria.
WQ = water quality.

## Table 4.8-01. Land Subsidence Literature Review.

| Reference | Title | Period of Observation | Subsidence Rate (in/yr) | Cumulative Subsidence (ft) | Reported Damage | Location |
|---|---|---|---|---|---|---|
| Leon et al., 2018 | Land Subsidence and its Effects on the Urban Area of Tepic City, Mexico | 2007 - 2011 | 2.4 - 2.8 | Not reported | Surface cracking, sidewalks and planters; ruptured pipes and walls in houses. It is noted that the damage caused by this phenomenon has not been sufficiently noticeable to alarm governments or those affected. | Tepic City, Mexico |
| Dinary et al., 2020 | Land Subsidence: The Forgotten Enigma of Groundwater (Over)Extraction | 1950 - 1957(through early 1970s) | 1.2 | 0.7 | Subsidence exacerbated the impact of sea level rise including, delta, erosion, shoreline retreat, and morphological changes to spits and lagoons. Land uses were impacted by the combined effects of subsidence and sea level rise. | Po River delta, Italy |
| Dinary et al., 2020 | Land Subsidence: The Forgotten Enigma of Groundwater (Over)Extraction | 1993 - 2004, 2004 - 2008 | Not reported | 0.6 | 300 building complaints and estimated damages of nearly 50 million euro. Groundwater use is now managed to prevent more than 2 cm (0.8 inch) of subsidence per year. | Murcia, Spain |
| Dinary et al., 2020 | Land Subsidence: The Forgotten Enigma of Groundwater (Over)Extraction | 1987 - 1995 | 3.1 | 2.2 | Ground fissuring that resulted in damage to existing infrastructure. | Chino Basin, California |
| He et al., 2019 | Land Subsidence Control Zone and Policy for the Environmental Protection of Shanghai | Since ~1986 | 2.3 | 8.0 | Increased risk of coastal hazards such as marine flooding, storm surges, and tsunamis. | Shanghai, China |
| Lawrence Berkeley National Laboratory, 1979 | Environmental and Economic Effects of Subsidence | 1948 - 1967 | 4.5 | 7.5 - 10 | Ground fissuring increased maintenance on highways and railroads, disrupted ditch irrigation systems, increased erosion (along fissures), embankment failure at Picacho Reservoir, and impacted aqueduct routing. Well damage was also reported. | Arizona |
| Lawrence Berkeley National Laboratory, 1979 | Environmental and Economic Effects of Subsidence | 1924 - 1964 | 3 | 10 | Minor sidewalk cracks and well damages. Differential movement on pre-existing faults a dam failure. | Baldwin Hills, California |
| Lawrence Berkeley National Laboratory, 1979 | Environmental and Economic Effects of Subsidence | 1906 - 1973 | 1.5 | 8.5 | Damage to structures and cracks in roads and sewer systems associated with differential movement along pre-existing faults. Subsidence also cause shoreline retreatment in coastal areas. | Houston-Galveston, Texas |
| Lawrence Berkeley National Laboratory, 1979 | Environmental and Economic Effects of Subsidence | 1935- 1974 | 1.5 | 5 | Ground fissuring damaged wells, reservoirs, pipelines, homes, roads, and railroads. | Las Vegas Valley, |
| Lawrence Berkeley National Laboratory, 1979 | Environmental and Economic Effects of Subsidence | 1934 - 1967 | 2.9 | 8 | Well sewer, and bridge damages. Aggravated flood hazard. | Santa Clara Valley, CA |
| | | Range: | 1.2- 4.5 in/yr | 0.6 – 10 ft | | |

# Tables

## Section 5

## Table 5.3-01 Existing Monitoring Well Information.

| State Well Identification Number | Local Well Identifier | CASGEM Master Site Code | Year Well Constructed | Easting Coordinate[a] | Northing Coordinate[a] | Ground Surface Elevation (feet msl)[b] | Reference Point Elevation (feet msl)[b] | Reference Point Description | Reported (Original) Well Use | Well Pumping Status | Well Configuration | Depth of Screened Interval(s) (feet bgs)[c] | Borehole Depth (feet bgs)[c] | Total Well (Casing) Depth (feet bgs)[c] | Casing Diameter (inches) | Aquifers Monitored | Frequency of Groundwater Elevation Measurement 2015-2020 | Frequency of Groundwater Quality Sampling 2015-2020 | Measurement or Sampling Entity[d] | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 02N22W07M02S | CP-780 | 342703N1192342W002 | 1995 | 6,188,662 | 1,922,431 | 164.56 | 164.06 | Ground surface (flush-mount vault) | Monitoring | --- | Cluster | 710-780 | 790 | 790 | 2 | Mugu | Monthly | Semiannually | United | |
| 02N22W07P01S | --- | not currently in CASGEM | 2000 | 6,190,044 | 1,920,430 | 150 (approx.) | 150.21 | Top of casing cover plate (at 1/2" access hole) | Irrigation | Active | Single casing | 460-580 | 580 | 580 | 10 | Mugu | Monthly | --- | United | Water quality is anomalous |
| 02N22W08G01S | Mound #1 | not currently in CASGEM | 2000 | 6,196,790 | 1,923,509 | 260 (approx.) | 261.61 | Lip of sounder access port | Municipal Supply | Active | Single casing | 580-650 | 720 | 660 | 18 | Mugu[e] | Monthly | Monthly | City of Ventura | Water quality is anomalous |
| 02N22W08P01S | --- | 342658N1192109W001 | 1932 | 6,195,769 | 1,921,338 | 215.29 | 213.79 | Lip of sounder access port | Irrigation | Inactive | Single casing | 160-321 | 364 | 321 | 10 | Mugu | Quarterly | --- | VCWPD | |
| 02N22W19M04S | --- | not currently in CASGEM | 2004 | 6,188,984 | 1,912,787 | 48.18 | 49.68 | Lip of 1" access port at base of pump pedestal | Irrigation | Active | Single casing | 343-493 | 500 | 500 | 12 | Mugu | Bimonthly | --- | United | |
| 02N23W15J02S | MP-660 | 342533N1192690W001 | 1995 | 6,178,364 | 1,917,108 | 8.73 | 8.23 | Ground surface (flush-mount vault) | Monitoring | --- | Cluster | 480-660 | 660 | 660 | 2 | Mugu | Monthly | Semiannually | United | |
| 02N22W07M01S | CP-1280 | 342703N1192342W001 | 1995 | 6,188,662 | 1,922,431 | 164.56 | 164.06 | Ground surface (flush-mount vault) | Monitoring | --- | Cluster | 1,200-1,280 | 1,280 | 1,280 | 2 | Hueneme | Monthly | Semiannually | United | |
| 02N22W08F01S | Victoria #2 | not currently in CASGEM | 1994 | 6,195,468 | 1,923,287 | 245 (approx.) | 245.82 | Lip of sounder access port | Municipal Supply | Active | Single casing | 580-640, 900-940, 1,060-1,180 | 1,310 | 1,190 | 14 | Hueneme | --- | Monthly | City of Ventura | Water quality is anomalous |
| 02N22W09K04S | --- | 342703N1191881W001 | 1935 | 6,202,524 | 1,922,919 | 244.89 | 244.49 | Lip of 2" sounder access pipe | Irrigation | Inactive | Single casing | 521-794 | 548 | 548 | 14 | Hueneme | Monthly | --- | United | |
| 02N22W09L03S | CWP-950 | 342688N1191952W001 | 2008 | 6,200,555 | 1,922,367 | 253.25 | 251.25 | Lip of 2" PVC casing | Monitoring | --- | Cluster | 890-950 | 1,480 | 950 | 3 | Hueneme | Monthly | Semiannually | United | |
| 02N22W09L04S | CWP-510 | 342688N1191952W002 | 2008 | 6,200,555 | 1,922,367 | 253.25 | 251.25 | Lip of 2" PVC casing | Monitoring | --- | Cluster | 480-510 | 510 | 510 | 2 | Hueneme | Monthly | Semiannually | United | Water quality is anomalous |
| 02N22W10N03S | Well 2 | not currently in CASGEM | 2002 | 6,205,442 | 1,921,235 | 185 (approx.) | 187.07 | Lip of 2" sounder access pipe | Irrigation | Active | Single casing | 200-280 | 280 | 280 | 12 | Hueneme | Bimonthly | --- | United | |
| 02N23W13F02S | --- | not currently in CASGEM | 1990 | 6,184,131 | 1,918,834 | 60 (approx.) | 60.85 | Lip of sounder access port | Irrigation | Active | Single casing | 521-982 | 997 | 982 | 14 | Hueneme[f] | --- | Annually | United | |
| 02N22W16K01S | --- | 342564N1191892W001 | 1934 | 6,202,316 | 1,917,850 | 150.74 | 149.37 | Lip of sounder access port | Industrial | Active | Single casing | 292-345 | 354 | 354 | 12 | Hueneme | Quarterly | --- | VCWPD | |
| 02N22W17M02S | --- | 342555N1192173W001 | 2001 | 6,193,835 | 1,917,580 | 143.44 | 145.04 | Lip of 2" sounder access pipe | Irrigation | Active | Single casing | 550-850 | 853 | 850 | 14 | Hueneme | Bimonthly | --- | United | |
| 02N22W17Q05S | --- | 342491N1192078W001 | 1965 | 6,196,677 | 1,915,235 | 88.60 | 89.60 | Top of casing cover plate (at access hole) | Irrigation | Inactive | Single casing | 365-483 | 506 | 500 | not reported | Hueneme | Bimonthly | --- | United | |
| 02N22W20E01S | Olivas-Victoria | 342459N1192169W001 | 1991 | 6,193,910 | 1,914,098 | 74.15 | 72.15 | Lip of 1" access port at base of pump pedestal | Irrigation | Active | Single casing | 462-592, 612-723, 737-818 | 818 | 818 | 10 | Hueneme | Monthly | --- | United | |
| 02N23W13K03S | --- | 342552N1192422W001 | 1977 | 6,186,323 | 1,917,561 | 68.71 | 68.71 | Lip of sounder access port | Irrigation | Active | Single casing | 800-1,200 | 1,200 | 1,200 | 16 | Hueneme | Quarterly | Annually | VCWPD | Water quality is anomalous |

| State Well Identification Number | Local Well Identifier | CASGEM Master Site Code | Year Well Constructed | Easting Coordinate[a] | Northing Coordinate[a] | Ground Surface Elevation (feet msl)[b] | Reference Point Elevation (feet msl)[b] | Reference Point Description | Reported (Original) Well Use | Well Pumping Status | Well Configuration | Depth of Screened Interval(s) (feet bgs)[c] | Borehole Depth (feet bgs)[c] | Total Well (Casing) Depth (feet bgs)[c] | Casing Diameter (inches) | Aquifers Monitored | Frequency of Groundwater Elevation Measurement 2015-2020 | Frequency of Groundwater Quality Sampling 2015-2020 | Measurement or Sampling Entity[d] | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 02N23W13K04S | --- | not currently in CASGEM | 1981 | 6,186,689 | 1,917,396 | 70 (approx.) | 70.66 | Lip of 2" sounder access pipe | Irrigation | Active | Single casing | 800-1,200 | 1,215 | 1,200 | 14 | Hueneme | Quarterly | --- | United | |
| 02N23W15J01S | MP-1070 | 342533N1192676W001 | 1995 | 6,178,365 | 1,917,106 | 8.73 | 8.23 | Ground surface (flush-mount vault) | Monitoring | --- | Cluster | 970-1,070 | 1,110 | 1,070 | 2 | Hueneme | Monthly | Semiannually | United | |
| 02N23W24G01S | Olivas (old) | not currently in CASGEM | 1948 | 6,186,343 | 1,913,155 | 25 (approx.) | 26.30 | Lip of 3" access port at base of pump pedestal | Municipal Supply | Inactive | Single casing | 742-754, 795-825, 898-927 | 932 | 932 | not reported | Hueneme | Quarterly | --- | United | |
| 02N22W09K05S | --- | 342684N1191895W001 | 1975 | 6,202,284 | 1,922,175 | 244.89 | 245.39 | Lip of 1.5" sounder access pipe | Irrigation | Active | Single casing | 625-1,455 | 1,468 | 1,455 | 16 | Hueneme and Fox Canyon[g] | Bimonthly | --- | United | |
| 02N22W07M03S | CP-280 | 342703N1192342W003 | 1995 | 6,188,662 | 1,922,431 | 164.56 | 164.06 | Ground surface (flush-mount vault) | Monitoring | --- | Cluster | 210-280 | 290 | 290 | 2 | Fine-grained Pleistocene deposits | Monthly | --- | United | |
| 02N23W15J03S | MP-240 | 342533N1192690W002 | 1995 | 6,178,364 | 1,917,109 | 8.73 | 8.23 | Ground surface (flush-mount vault) | Monitoring | --- | Cluster | 170-240 | 250 | 240 | 2 | Fine-grained Pleistocene deposits | Monthly | --- | United | |
| 02N22W16H01S | | not currently in CASGEM | not reported | 6,203,225 | 1,918,690 | 155 (approx.) | 158.47 | Lip of 2" sounder access pipe | not reported | Active | Single casing | not reported | not reported | not reported | not reported | unknown | Bimonthly | | United | |

**Notes:**
"---" = Not applicable
a Coordinate system is North American Datum 1983 (NAD83), State Plane, California Zone 5, in feet.
b feet msl =Feet above mean sea level, from light detecting and ranging (LiDAR) data to an accuracy of 0.5 feet or better (except where listed as "approx."), referenced to North American Vertical Datum 1988 (NAVD88).
c feet bgs =Feet below ground surface, reported by driller (updated by video survey by United Water Conservation District in some wells).
d United = United Water Conservation District; VCWPD = Ventura County Watershed Protection District.
e This well may be partially screened in the Hueneme Aquifer.
f This well is screened primarily in the Hueneme Aquifer with a small length of its screen in the Mugu Aquifer. Sample results from this well appear to be consistent with sample results from other wells screened in the Hueneme Aquifer.
g This well is screened through substantial intervals of both the Hueneme and Fox Canyon Aquifers. This well is part of the existing monitoring program in Mound Basin and is included in this table for reference only.
CA SGEM =
feet bgs = feet below ground surface.
feet msl = feet above mean sea level.

## Table 5.3-02 Planned and New Groundwater Monitoring Well Information.

| Location[a] | Ground Surface Elevation (feet msl)[b] | Planned Well Use | Proposed Well Configuration | Planned Depth of Screened Interval (feet bgs)[c] | Planned Borehole Depth (feet bgs)[c] | Planned Total Well (Casing) Depth (feet bgs)[c] | Planned Casing Diameter (inches) | Aquifer to be Monitored | Minimum Frequency of Groundwater Elevation Measurement | Minimum Frequency of Groundwater Quality Sampling[d] | Measurement or Sampling Entity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Site A | 12 | Monitoring | Cluster | 480-660 | 670 | 665 | 2 or 3 | Mugu | Quarterly | Semiannually | TBD |
| Site B | 31 | Monitoring | Cluster | 500-680 | 690 | 685 | 2 or 3 | Mugu | Quarterly | Semiannually | TBD |
| Site C | 16 | Monitoring | Cluster | 490-670 | 680 | 675 | 2 or 3 | Mugu | Quarterly | Semiannually | TBD |
| Site A | 12 | Monitoring | Cluster | 970-1,070 | 1,080 | 1,075 | 2 or 3 | Hueneme | Quarterly | Semiannually | TBD |
| Site B | 31 | Monitoring | Cluster | 990-1,090 | 1,100 | 1,095 | 2 or 3 | Hueneme | Quarterly | Semiannually | TBD |
| Site C | 16 | Monitoring | Cluster | 980-1,080 | 1,090 | 1,085 | 2 or 3 | Hueneme | Quarterly | Semiannually | TBD |

**Notes:**

"TBD" = To be determined.

a Locations of planned monitoring well Sites A, B, and C are shown on Figures 5.3-01, -02, -04, and -05.

b feet msl = Feet above mean sea level, estimated from Google Earth digital elevation model data.

c feet bgs = Feet below ground surface (approximate), estimated based on depth of Mugu and Hueneme Aquifers at well 02N23W15J01S in Marina Park (location shown on Figures 5.3-02 and 5.3-04).

d See Table 5.6-01 for the analyte list for water quality samples obtained from these wells.

**Table 5.6-01. Proposed Water Quality Sampling.**

| Type of Monitoring Network | State Well Identification Number | Local Well Identifier | CASGEM Master Site Code | Aquifers Monitored | Minimum Frequency of Groundwater Quality Sampling | Current Monitoring Entity[a] | Notes | Analytes for Spring Sampling Events | Analytes for Fall Sampling Events |
|---|---|---|---|---|---|---|---|---|---|
| Degraded Water Quality | 02N22W07M02S | CP-780 | 342703N1192342W002 | Mugu | Semiannually | United | | **Field**<br>• hydrogen ion activity (pH), temperature<br>**Laboratory**<br>• Method 300.0: sulfate, chloride, nitrate (as nitrate [NO3]), nitrate (as nitrogen [N])<br>• Method 2510B: specific conductance<br>• Method 2540CE: total dissolved solids (total filterable residue [TFR]) | **Field**<br>• pH, temperature<br>**Laboratory**<br>• Method 200.7: total hardness (as calcium carbonate [$CaCO_3$]), calcium, magnesium, potassium, sodium, total cations, boron, copper, iron, manganese, zinc, sodium absorption ratio (SAR)<br>• Method 300.0: sulfate, chloride, nitrate (as $NO_3$), nitrate (as N), nitrite (as N), nitrate+ nitrite (as N), fluoride<br>• Method 2320B: total alkalinity (as $CaCO_3$), hydroxide (as OH), carbonate (as $CO_3$), bicarbonate (as $HCO_3$), total anions<br>• Method 2510B: specific conductance<br>• Method 2540CE: total dissolved solids (TFR)<br>• Method 4500-H B: pH, aggressiveness index, Langelier index (20°C)<br>• Method 5540C: methylene blue active substances (MBAS) screen |
| | 02N22W08G01S | Mound #1 | not currently in CASGEM | Mugu[b] | Monthly | City of Ventura | Water quality is anomalous | | |
| | 02N22W07M01S | CP-1280 | 342703N1192342W001 | Hueneme | Semiannually | United | | | |
| | 02N22W08F01S | Victoria #2 | not currently in CASGEM | Hueneme | Semiannually | City of Ventura | Water quality is anomalous | | |
| | 02N22W09L03S | CWP-950 | 342688N1191952W001 | Hueneme | Semiannually | United | | | |
| | 02N22W09L04S | CWP-510 | 342688N1191952W002 | Hueneme | Semiannually | United | Water quality is anomalous | | |
| | 02N23W13F02S | --- | not currently in CASGEM | Hueneme[c] | Semiannually | United | | | |
| | 02N23W13K03S | --- | 342552N1192422W001 | Hueneme | Semiannually | VCWPD | Water quality is anomalous | | |
| Seawater Intrusion | 02N23W15J02S | MP-660 | 342533N1192690W001 | Mugu | Semiannually | United | | | |
| | TBD | Site A[d] | TBD | Mugu | Semiannually | | | | |
| | TBD | Site B[d] | TBD | Mugu | Semiannually | | | | |
| | TBD | Site C[d] | TBD | Mugu | Semiannually | | | | |
| | 02N23W15J01S | MP-1070 | 342533N1192676W001 | Hueneme | Semiannually | United | | | |
| | TBD | Site A[d] | TBD | Hueneme | Semiannually | | | | |
| | TBD | Site B[d] | TBD | Hueneme | Semiannually | | | | |
| | TBD | Site C[d] | TBD | Hueneme | Semiannually | | | | |

**Notes:**
--- = Not applicable.
TBD = To be determined.
a United = United Water Conservation District; VCWPD = Ventura County Watershed Protection District.
b This well may be partially screened in the Hueneme Aquifer.
c This well is screened primarily in the Hueneme Aquifer with a small length of its screen in the Mugu Aquifer. Sample results from this well appear to be consistent with sample results from other wells screened in the Hueneme Aquifer."
d Locations of planned monitoring well Sites A, B, and C are shown on Figures 5.3-01, -02, -04, and -05.

# Table

## Section 6

**Table 6.6-01 Monitoring Location Information for Temporary Monitoring Project.**

| Location | Latitude | Longitude | Reference Point | Reference Point Elevation (ft amsl) | Aquifer to be Monitored | Groundwater Monitoring Type | Monitoring Frequency | Measurement or Sampling Entity |
|---|---|---|---|---|---|---|---|---|
| GW-1 | 34.22703500000 | -119.26029800000 | Top of Casing | 15.78233267720 | Shallow Alluvial Deposits | Water Levels | transducer monthly downloads | Ventura Water |
| GW-2 | 34.22454600000 | -119.25906100000 | Top of Casing | 14.34585629920 | Shallow Alluvial Deposits | Water Levels | transducer monthly downloads | Ventura Water |
| GW-4 | 34.23788700000 | -119.21859100000 | Top of Casing | 47.07079068240 | Shallow Alluvial Deposits | Water Levels, Water Quality | manual 2/month | Ventura Water |
| GW-6 | 34.23271340000 | -119.22067230000 | Top of Casing | 41.30000000000 | Shallow Alluvial Deposits | Water Levels, Water Quality | manual 2/month | Ventura Water |
| GW-8 | 34.23783600000 | -119.24105500000 | Top of Casing | 27.34400590550 | Shallow Alluvial Deposits | Water Levels | TBD | TBD |
| GW-9 | 34.23660500000 | -119.25614900000 | Top of Casing | 25.11578740160 | Shallow Alluvial Deposits | Water Levels, Water Quality | manual 2/month | Ventura Water |
| GW-10 | 34.23729500000 | -119.25156000000 | Top of Casing | 17.66382217850 | Shallow Alluvial Deposits | Water Levels, Water Quality | manual 2/month | Ventura Water |
| GW-11 | 34.24203700000 | -119.25528400000 | Top of Casing | 21.54430774280 | Shallow Alluvial Deposits | Water Levels | TBD | TBD |
| GW-14 | 34.23694500000 | -119.26091100000 | Top of Casing | 22.49499671920 | Shallow Alluvial Deposits | Water Levels, Water Quality | transducer monthly downloads | Ventura Water |

**Notes:**
"TBD" = To be determined.

# Table

## Section7

**Table 7.1-01 Costs Associated with GSP Implementation Activities.**

| Fiscal Year | Agency Administration | Legal Counsel | GW Mgmt., Coord., & Outreach | Groundwater Level and Quality Monitoring | Annual Reports | Projects and Mgmt. Actions | Model Simulations | GSP Evaluation | GSP Update | Respond to DWR Comments and Requests | Contingency Non-Capital | Monitoring Well Construction | Contingency Capital Projects | Totals | Extraction Fee ($/AF) | Ending Cash |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2022 | $57,538 | $7,500 | $45,000 | $4,500 | $53,000 | $- | $- | $- | $- | $- | $16,754 | $30,000 | $3,000 | $217,292 | $59.00 | $443,817 |
| 2023 | $39,638 | $7,725 | $20,600 | $5,150 | $35,000 | $10,000 | $- | $- | $- | $- | $11,811 | $10,000 | $1,000 | $140,924 | $59.00 | $680,493 |
| 2024 | $54,148 | $7,957 | $21,218 | $6,365 | $36,050 | $25,000 | $- | $- | $- | $50,000 | $20,074 | $30,000 | $3,000 | $253,812 | $59.00 | $804,280 |
| 2025 | $41,986 | $8,195 | $21,855 | $6,556 | $37,132 | $25,000 | $- | $- | $- | $- | $14,072 | $60,000 | $6,000 | $220,796 | $59.00 | $961,085 |
| 2026 | $57,851 | $8,441 | $22,510 | $8,310 | $38,245 | $25,000 | $15,000 | $25,000 | $50,000 | $- | $25,036 | $754,000 | $75,400 | $1,104,794 | $59.00 | $233,891 |
| 2027 | $44,546 | $8,695 | $23,185 | $4,620 | $39,393 | $- | $10,000 | $25,000 | $65,000 | $- | $22,044 | $- | $- | $242,483 | $59.00 | $369,008 |
| 2028 | $61,380 | $8,955 | $23,881 | $4,759 | $40,575 | $- | $- | $- | $- | $28,138 | $16,769 | $35,700 | $3,570 | $223,726 | $59.00 | $522,882 |
| 2029 | $47,263 | $9,224 | $24,597 | $4,902 | $41,792 | $- | $- | $- | $- | $- | $12,778 | $11,900 | $1,190 | $153,646 | $59.00 | $746,836 |
| 2030 | $65,124 | $9,501 | $25,335 | $5,049 | $43,046 | $- | $- | $- | $- | $- | $14,805 | $35,700 | $3,570 | $202,130 | $59.00 | $922,306 |
| 2031 | $50,146 | $9,786 | $26,095 | $5,200 | $44,337 | $- | $17,389 | $28,982 | $57,964 | $- | $23,990 | $71,400 | $7,140 | $342,429 | $59.00 | $957,477 |
| 2032 | $69,097 | $10,079 | $26,878 | $5,356 | $45,667 | $- | $11,593 | $28,982 | $75,353 | $- | $27,301 | $897,260 | $89,726 | $1,287,292 | $59.00 | $47,785 |
| 2033 | $53,205 | $10,382 | $27,685 | $5,517 | $47,037 | $- | $- | $- | $- | $32,640 | $17,646 | $- | $- | $194,111 | $41.00 | $116,074 |
| 2034 | $73,312 | $10,693 | $28,515 | $5,682 | $48,448 | $- | $- | $- | $- | $- | $16,665 | $- | $- | $183,316 | $41.00 | $195,158 |
| 2035 | $56,450 | $11,014 | $29,371 | $5,853 | $49,902 | $- | $- | $- | $- | $- | $15,259 | $- | $- | $167,848 | $41.00 | $289,710 |
| 2036 | $77,784 | $11,344 | $30,252 | $6,028 | $51,399 | $- | $20,159 | $33,598 | $67,196 | $- | $29,776 | $- | $- | $327,535 | $41.00 | $224,574 |
| 2037 | $59,894 | $11,685 | $31,159 | $6,209 | $52,941 | $- | $13,439 | $33,598 | $87,355 | $- | $29,628 | $- | $- | $325,907 | $41.00 | $161,067 |
| 2038 | $82,529 | $12,035 | $32,094 | $6,395 | $54,529 | $- | $- | $- | $- | $37,862 | $22,544 | $- | $- | $247,989 | $41.00 | $175,478 |
| 2039 | $63,547 | $12,396 | $33,057 | $6,587 | $56,165 | $- | $- | $- | $- | $- | $17,175 | $- | $- | $188,928 | $40.00 | $242,550 |
| 2040 | $87,563 | $12,768 | $34,049 | $6,785 | $57,850 | $- | $- | $- | $- | $- | $19,901 | $- | $- | $218,916 | $40.00 | $279,634 |
| 2041 | $67,424 | $13,151 | $35,070 | $6,988 | $59,585 | $- | $23,370 | $38,949 | $77,898 | $- | $32,244 | $- | $- | $354,680 | $40.00 | $180,955 |
| 2042 | $92,904 | $13,546 | $36,122 | $7,198 | $61,373 | $- | $15,580 | $38,949 | $101,268 | $- | $36,694 | $- | $- | $403,634 | $40.00 | $33,321 |
| Yrs.1-5 | $251,161 | $39,819 | $131,183 | $30,882 | $199,427 | $85,000 | $15,000 | $25,000 | $50,000 | $50,000 | $87,747 | $884,000 | $88,400 | $1,937,618 | | |
| Yrs.6-20 | $1,052,167 | $175,255 | $467,347 | $93,129 | $794,036 | $- | $111,529 | $228,058 | $532,033 | $98,640 | $355,219 | $1,051,960 | $105,196 | $5,064,570 | | |
| Total | $1,303,328 | $215,074 | $598,530 | $124,011 | $993,463 | $85,000 | $126,529 | $253,058 | $582,033 | $148,640 | $442,967 | $1,935,960 | $193,596 | $7,002,188 | | |



**Notes:**
Section 7.1 activities wholly funded by Member Agencies are not listed in the table.
Costs escalated for inflation at an assume rate of 3% per year.