SURVEY REPORT

ON

GROUNDWATER CONDITIONS

February 2026

ALAMEDA COUNTY WATER DISTRICT

Fremont, California

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February 12, 2026

Mr. Aziz Akbari, President
Board of Directors
Alameda County Water District
43885 South Grimmer Boulevard
Fremont, California 94538

Dear President Akbari:

Subject: Survey Report on Groundwater Conditions, February 2026

Submitted herewith is the Survey Report on Groundwater Conditions, as requested by the Board on November 13, 2025. It presents information on groundwater conditions together with estimates of FY 2026/27 costs of replenishing and maintaining the groundwater basin. This report is a prerequisite to consideration by the Board of the rate of replenishment assessment for FY 2026/27, under provisions of Chapter 1942, Statutes of 1961. It provides all the data required pursuant to Section 7 of this statute.

Staff is recommending no change in the replenishment assessment rate in FY 2026/27. Prior increases in the replenishment assessment rate for production for purposes other than agricultural and municipal recreation, along with grant funding, have enabled Alameda County Water District to make substantial upgrades and repairs to aging recharge facilities and to render them in compliance with the Endangered Species Act. For next fiscal year, revenue generated under the current replenishment assessment rate, adopted on April 8, 2025, through Resolution No. 25-018, along with other funding, is expected to be sufficient to cover groundwater basin expenses and fixed and capital costs. Capital items will include scheduled projects devoted to water supply and conveyance for groundwater replenishment, and other improvements identified in the Capital Improvement Program for the groundwater basin, as described in this report. The water supply and conveyance initiatives are critical to ensure reliability of sources of groundwater replenishment for the long-term as each of the District's sources is subject to future uncertainties related to climate change and regulatory and environmental pressures.

Sincerely,

Ed Stevenson
General Manager

PROFESSIONAL CERTIFICATION

The 2026 Survey Report on Groundwater Conditions was prepared by Mikel S. Halliwell, Senior Engineer, under the direction of Michelle Walden, Groundwater Resources Manager, and Laura Hidas, Director of Water Resources. The information and other content in this report, including quantities provided in the tables, text, and figures, were developed with a level of effort and methods considered adequate for the purpose of this report's creation; that is, to provide a reasonable basis for the Board of Directors of Alameda County Water District to determine the need for, and rate of, replenishment assessment for the coming fiscal year, pursuant to the requirements of the Replenishment Assessment Act of the Alameda County Water District.

Mikel S. Halliwell

Mikel S. Halliwell, P.E.
Senior Engineer
Groundwater Resources Division

February 6, 2026
Date

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INTRODUCTION

On November 13, 2025, the Board of Directors (Board) of the Alameda County Water District (ACWD or District) ordered the preparation of a Survey Report on Groundwater Conditions. The purpose of the report is to provide information on the Niles Cone Groundwater Basin (Niles Cone, groundwater basin, or basin) in accordance with Section 7, Chapter 1942, Statutes of 1961, referred to as the Replenishment Assessment Act of the Alameda County Water District (Replenishment Assessment Act).

The report contains the results of an annual study which: 1) estimates the total amount of groundwater production for the coming year; 2) estimates the total amount of groundwater recharge required; 3) determines the extent of any salinity intrusion into the groundwater basin; and 4) analyzes the effects on groundwater levels within the basin due to production and other well pumping, recharge, and sea level. The study reflects actual values of pumping[1], recharge, and sea level from July 2024 through November 2025 (except for private pumping which is projected after September 2025), and projected values for the remainder of Fiscal Year (FY) 2025/26 and the entirety of FY 2026/27. The projections, which were developed in December 2025, are based on a scenario of near-median annual rainfall totals for both Calendar Year (CY) 2026 and CY 2027.

In addition, the report: 1) recommends the amount of supplemental water to be purchased to maintain target basin water levels, and 2) summarizes the cost of the District's groundwater program including the estimated cost of the recommended supplemental supply. The amount of these costs is the basis for the determination by the Board of the need for, and the rate of, a replenishment assessment for FY 2026/27. Depending on the amount of natural recharge realized over the remainder of the winter, some supplemental water ultimately may be needed for replenishment of the basin in FY 2026/27. The possibility of operational adjustments to real-time conditions does not diminish the validity of critical content in this report, including the basis of the recommended rate of replenishment assessment.

The Replenishment Assessment Act requires the Board to perform certain actions prior to specific dates in the process of setting a replenishment assessment rate for the coming fiscal year. In addition, a proposal to increase the replenishment assessment rate is subject to the Proposition 218 notification requirement. If the Board agrees with staff's recommendation to not increase the replenishment assessment rate for purposes other than agricultural and municipal recreation in FY 2026/27, then mailed written notices to well owners and property owners subject to the rate would not be required.

[1] *Actual* values of pumped water were determined from a combination of measured data from wells equipped with functioning meters and estimates for those wells for which data by direct measurement was not available. The estimated component of actual pumping in the District is small relative to that directly measured.

Listed below are the required actions for raising funds by replenishment assessment in FY 2026/27:

REQUIRED ACTIONS	TENTATIVE DATE	LATEST DATE
1. Order an Engineering Survey and Report.	Completed on Nov. 13, 2025	
2. To comply with the Sustainable Groundwater Management Act (SGMA), mail written notices of scheduled Board actions on replenishment assessment to interested parties.	Completed on Feb. 2, 2026	
3. Declare whether water funds will be raised by (a) a water charge, (b) by a replenishment assessment, or (c) a combination of both.	Feb. 12, 2026	Mar. 10, 2026
4. To comply with Proposition 218, mail written notices of the proposed increase in the replenishment assessment rate to well owners or operators that would be subject to the new rate. This is not required if the District does not propose to increase the replenishment assessment rate.	Feb. 13, 2026	Feb. 20, 2026
5. Publish a notice of Public Hearing.	Mar. 27, 2026	Apr. 3, 2026
6. Hold a Public Hearing - required on 2nd Tuesday of April.	Apr. 14, 2026	Apr. 14, 2026
7. Complete Public Hearing.	Apr. 14, 2026	May 5, 2026
8. Make formal findings on groundwater conditions and costs, and rate of replenishment assessment.	Apr. 14, 2026	May 12, 2026

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The water level in the Newark Aquifer has remained above sea level (the local mean level of San Francisco Bay). The aquifer was not overdrawn and there is no indication that saltwater entered the basin between Fall 2024 and Fall 2025.

2. The estimated volume of supplemental water needed for the replenishment of groundwater supplies in FY 2026/27 is nil.

3. Funds will be required in FY 2026/27 to pay capital and operating costs that benefit the groundwater basin, including State Water Project and Semitropic Water Storage District contract costs.

4. The estimate of the District's groundwater program costs for FY 2026/27 is summarized below:

Fixed and Capital Costs	$12,452,000
Variable and Operating Costs	$14,757,000
TOTAL	$27,209,000

Recommendations

1. Based on the assumption of near-median annual rainfall totals for both CY 2026 and CY 2027, it is anticipated that supplemental water for the groundwater basin will not be required in FY 2026/27. Instead, some of the District's state water supply should be banked at the Semitropic Water Storage District.

2. If actual conditions through the spring of 2027 prove significantly drier than anticipated, then the District should consider purchase and/or delivery of supplemental water from the State Water Project, Lake Del Valle, the Semitropic Water Storage District, and/or through other sources as they become available.

3. The District should levy a replenishment assessment to recover a portion of its groundwater program costs in FY 2026/27. The rate of replenishment assessment in FY 2026/27, for purposes other than agricultural and municipal recreation, should be the same as the existing rate (the rate for agricultural and municipal recreation is set at $8 per acre-foot per the Replenishment Assessment Act).

Category	Existing	Proposed
Agricultural and Municipal Recreation	$ 8/acre-foot	$ 8/acre-foot
All Other Purposes	$ 557/acre-foot	$ 557/acre-foot

GROUNDWATER BASIN CONDITIONS

Background

The ACWD Groundwater Statutory Service Area, approximately 68,700 acres (107 square miles), is shown on Plate 1. Table 1 is a tabulation of 2023 land use, and Figure 1 illustrates 2023 land use in pie chart format. The categories in Table 1 and Figure 1 were established with consideration of hydrologic characteristics as well as potential water use. The "Salt Ponds and Marsh" category generally refers to the surface water and marsh system (salt ponds, levees, sloughs, small flood control channels, and marshes) extending from the westerly edge of urban development to the coastline of San Francisco Bay. However, the Alameda Creek Flood Control Channel and re-channelized Alameda Creek, which run through salt pond and marsh areas, are included under "Non-Developed." "Non-Developed" also includes idle land; the natural, wooded portion of Fremont Central Park; Tule Pond; Old Alameda Creek; and the 'natural' parts of the Quarry Lake areas. Buildings, paved parking, and lawns within the Quarry Lakes Recreational Area, the Coyote Hills, and other non-city-owned and operated parks comprise the non-municipal recreation component of "Irrigated Agricultural and Non-Municipal Recreation." City parks, except the natural wooded area of Fremont Central Park, are categorized as part of "Municipal," which also includes residential and retail/storefront-oriented commercial areas. The "Industrial" category refers to non-retail commercial lands such as industrial plants, warehouse areas, and business parks.

The Niles Cone Groundwater Basin, as described by the State of California Department of Water Resources (DWR), exists almost exclusively within the District's boundaries. However, certain aquifer layers of the Niles Cone appear to extend substantially beyond this boundary. The Newark Aquifer and Centerville-Fremont Aquifer, according to DWR (Plate 2), continue westward all the way to the San Francisco Bay Peninsula. In addition, there is evidence that the Deep Aquifer is

hydraulically connected to the adjacent East Bay Plain Groundwater Basin to the north, albeit with some impedance.[2] The amount of groundwater production from the basin west of San Francisco Bay is quite small and is neglected for the purposes of this report. The portion of the Newark Aquifer under the bay provides the means of transporting saline water to the groundwater basin underlying the District.

TABLE 1

LAND USE IN ACWD GROUNDWATER STATUTORY SERVICE AREA, 2023

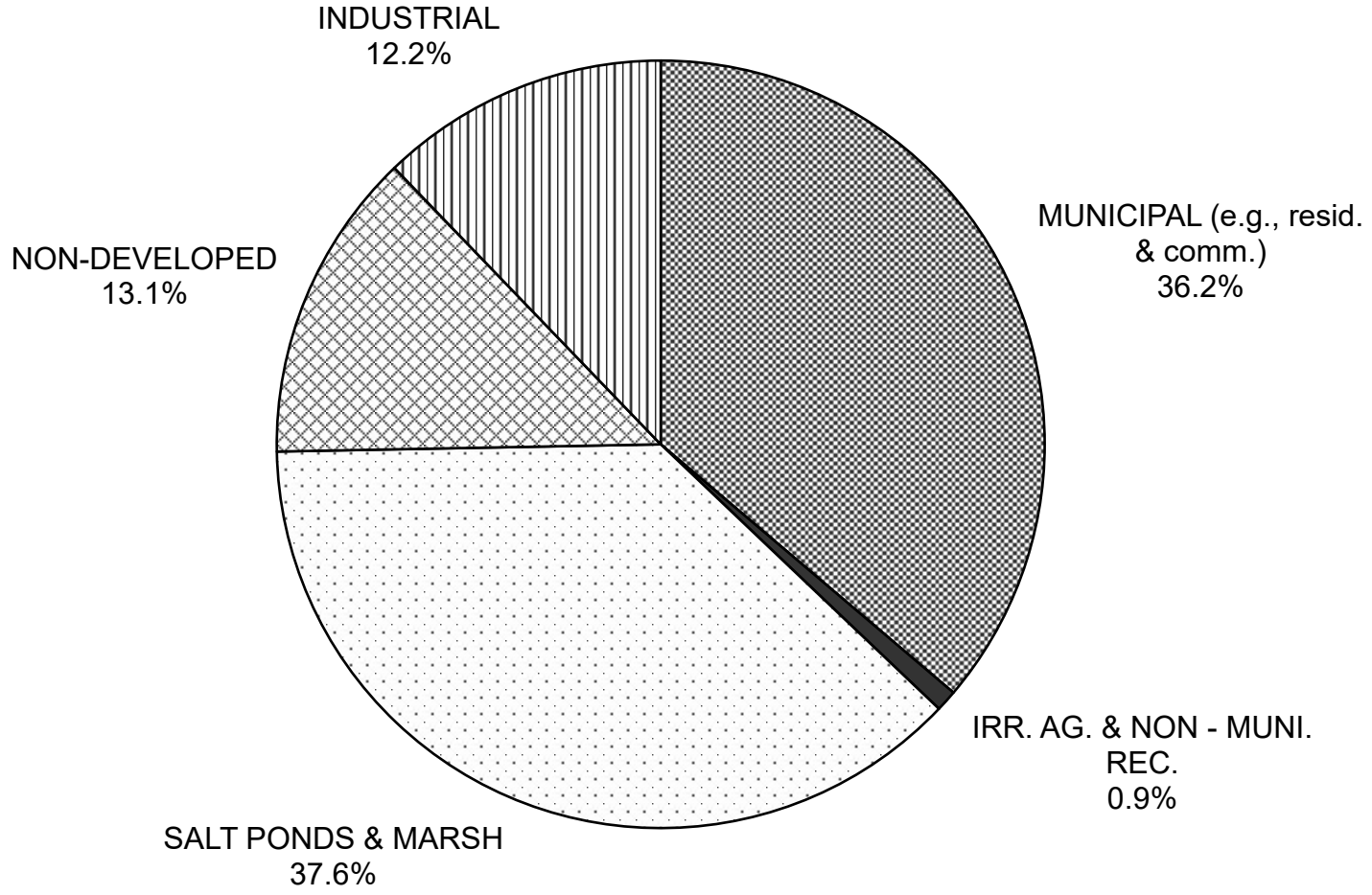
Land Use	**Thousands of Acres**
Municipal (e.g., residential and commercial)	24.9
Industrial	8.4
Irrigated Agricultural and Non-Municipal Recreation	0.6
Non-Developed	9.0
Salt Ponds and Marsh	25.8
TOTAL	68.7

The groundwater basin is divided on the east side of the District by the Hayward Fault. The fault is a relatively impermeable barrier that impedes the flow of water, hence dividing the overall basin into two sub-basins: the Above Hayward Fault (AHF) and Below Hayward Fault (BHF) sub-basins located east and west, respectively, of the Hayward Fault. The AHF Sub-basin is smaller than the BHF Sub-basin. In FY 2024/25, 19% of the groundwater produced from the Niles Cone was pumped from the AHF Sub-basin, whereas 81% was pumped from the BHF Sub-basin.

The BHF Sub-basin is composed of a forebay and three primary aquifers as shown on Plate 2. If the water levels in the Newark Aquifer are below sea level, saline water will flow from the bay and salt evaporation ponds into the Newark Aquifer, then easterly toward the forebay area. Then, following the flow of water caused by pumping, the saline water may move down into the lower levels of the forebay and into the Centerville-Fremont and Deep Aquifers. Saline water can also be transmitted from the upper aquifers to the lower aquifers through natural weaknesses in the aquitards that separate the aquifers, and through defective wells. The saltwater intrusion results when groundwater levels in the Newark Aquifer are below sea level due to an overdraft of the basin. The Newark Aquifer water levels are presently above sea level and are forecast to remain above sea level through June 2026. A graph of historical groundwater levels in the forebay area of the Newark Aquifer is presented on Plate 3.

[2] Luhdorff and Scalmanini Consulting Engineers. 2003. *East Bay Plain Aquifer Test Project, South East Bay Plain and Niles Cone Ground-Water Basins.*

FIGURE 1
LAND USE IN ACWD GROUNDWATER STATUTORY SERVICE AREA
2023



Production of Groundwater

The "production" of groundwater is defined in the Replenishment Assessment Act as the extraction of groundwater by pumping or any other method from shafts, tunnels, wells, excavations, or other sources of groundwater for domestic, irrigation, industrial, or other beneficial uses. Most pumping from the basin is classified as production.

Table 2 lists the various components of groundwater pumping for FY 2024/25 (actual), FY 2025/26 (forecast), and FY 2026/27 (forecast). Most of the FY 2024/25 groundwater production figures in the table were obtained from well meter readings. A relatively small amount of unmetered groundwater production was estimated. Production amounts for FY 2025/26 reflect a combination of actual values (meter readings and estimates) and projections, with actual values through September 2025 for most non-ACWD owned wells on the Replenishment Assessment Program, and through November 2025 for active ACWD wells. The production of groundwater for the remaining months of FY 2025/26 and the entirety of FY 2026/27 was projected based on an analysis of historical trends, expected water demand on the ACWD distribution system, and information provided in planning documents and by well owners/operators.

Production is broken down by usage category and by sub-basin (Above Hayward Fault and Below Hayward Fault). Groundwater supplied to ACWD's distribution system comprises the "Municipal" category of production, and includes water pumped from ACWD's two wellfields, and water delivered to the Newark Desalination Facility from certain Aquifer Reclamation Program (ARP) wells. ARP water not diverted to the Newark Desalination Facility (i.e., ARP water discharged to flood control channels) is accounted for in Table 2 under "Aquifer Reclamation," a category of pumping that is not production.

The purpose of ACWD's ARP is to restore water quality in certain sections of the basin in which groundwater became brackish due to intrusion of saltwater from San Francisco Bay. This saltwater intrusion occurred as a result of high-volume pumping during the 1920s through the early 1960s without adequate recharge (replenishment) of the basin. The ARP involves extracting brackish groundwater, with the objective of improving the quality of groundwater in the basin as recharge water replaces the pumped brackish groundwater. ARP pumping also prevents the plume of brackish water in the Centerville-Fremont Aquifer from further migrating inland toward ACWD's Mowry Wellfield.

Prior to 2003, all pumped ARP water was discharged to San Francisco Bay. Construction of the Phase 1 Newark Desalination Facility subsequently enabled conversion of a portion of this discharge to potable use. The portion for potable use increased after the Phase 2 expansion of the Newark Desalination Facility in 2010.

"Other Reported Pumping," the final category listed in Table 2, is extraction of groundwater quantified and reported to ACWD, but is neither production nor "Aquifer Reclamation." This category may include dewatering of trenches and excavations during construction of subsurface utilities.

"Total Reported Pumping" is the sum of "Total Production," "Aquifer Reclamation," and "Other Reported Pumping." A certain amount of groundwater pumped from the basin is not reported to ACWD, and hence, is not included in Table 2. The District's groundwater flow model numerically compensates for any unreported pumping through various simulated loss mechanisms in order to achieve a reasonably accurate calculation of the water balance for the groundwater basin (see "Annual Overdraft" and Plates 11, 12, and 13).

TABLE 2
PRODUCTION OF GROUNDWATER
(in thousands of acre-feet)**

	FY 2024/25 Actual	FY 2025/26 Forecast	FY 2026/27 Forecast
ABOVE HAYWARD FAULT			
Municipal*	2.8	4.4	5.3
Industrial	0.1	0.1	0.1
Agricultural	0.0	0.0	0.0
Municipal-Recreation	0.5	0.4	0.4
Non-Municipal Recreation	0.0	0.0	0.1
Subtotal	3.4	4.9	5.9
BELOW HAYWARD FAULT			
Municipal*	13.7	14.7	13.6
Industrial	0.8	0.9	0.9
Agricultural	0.1	0.1	0.1
Municipal-Recreation	0.1	0.2	0.1
Non-Municipal Recreation	0.1	0.1	0.0
Subtotal	14.8	16.0	14.7
TOTAL PRODUCTION BY USE			
Municipal*	16.5	19.1	18.9
Industrial	0.9	1.0	1.0
Agricultural	0.1	0.1	0.1
Municipal-Recreation	0.6	0.6	0.5
Non-Municipal Recreation	0.1	0.1	0.1
TOTAL PRODUCTION	18.2	20.9	20.6
Aquifer Reclamation	0.2	0.1	0.0
Other Reported Pumping	0.0	0.0	0.0
TOTAL REPORTED PUMPING	18.4	21.0	20.6

* The discussion on Page 6 describes how the amounts for these categories have been calculated.
** Categories with quantities of "0.0" may have been measurable amounts of pumping below 50 acre-feet but are reported as 0.0 due to rounding.

Figure 2 provides graphs of historical groundwater pumping from FY 1969/70 through FY 2024/25. The terms "AHF Production" and "BHF Production" in the legend correspond to the subtotaled production of the Above Hayward Fault and Below Hayward Fault, respectively, in Table 2. Similarly, "Aquifer Reclamation," "Other Reported Pumping," and "Total Reported Pumping" refer to the same-named categories in Table 2. Figure 3 indicates the extent to which groundwater comprised the District's distribution system supply in FY 2024/25, and the projected values thereof for FY 2025/26 and FY 2026/27.

As indicated in Figure 3, 32.8% of ACWD's distribution system supply in FY 2024/25 was supplied by groundwater, with 13.8% and 19.0% supplied by the wellfields and the Newark Desalination Facility, respectively. In FY 2025/26, the groundwater share is expected to be 39.9%, with 15.9% from the wellfields and 24.0% from the Newark Desalination Facility. In FY 2026/27, it is anticipated that the wellfields will contribute 16.7%, and the Newark Desalination Facility 21.9%, to provide an estimated groundwater share of 38.6% toward the distribution system supply.

Replenishment Assessment Meters

The establishment of the replenishment assessment required that meters be installed on all active wells in the District. This requirement can, however, be deferred by the Board on a year-to-year basis if it is justified. The Board chose to install the necessary water meters on most wells in FY 1970/71 and FY 1971/72. Additional meters have been installed as necessary for new or reactivated wells.

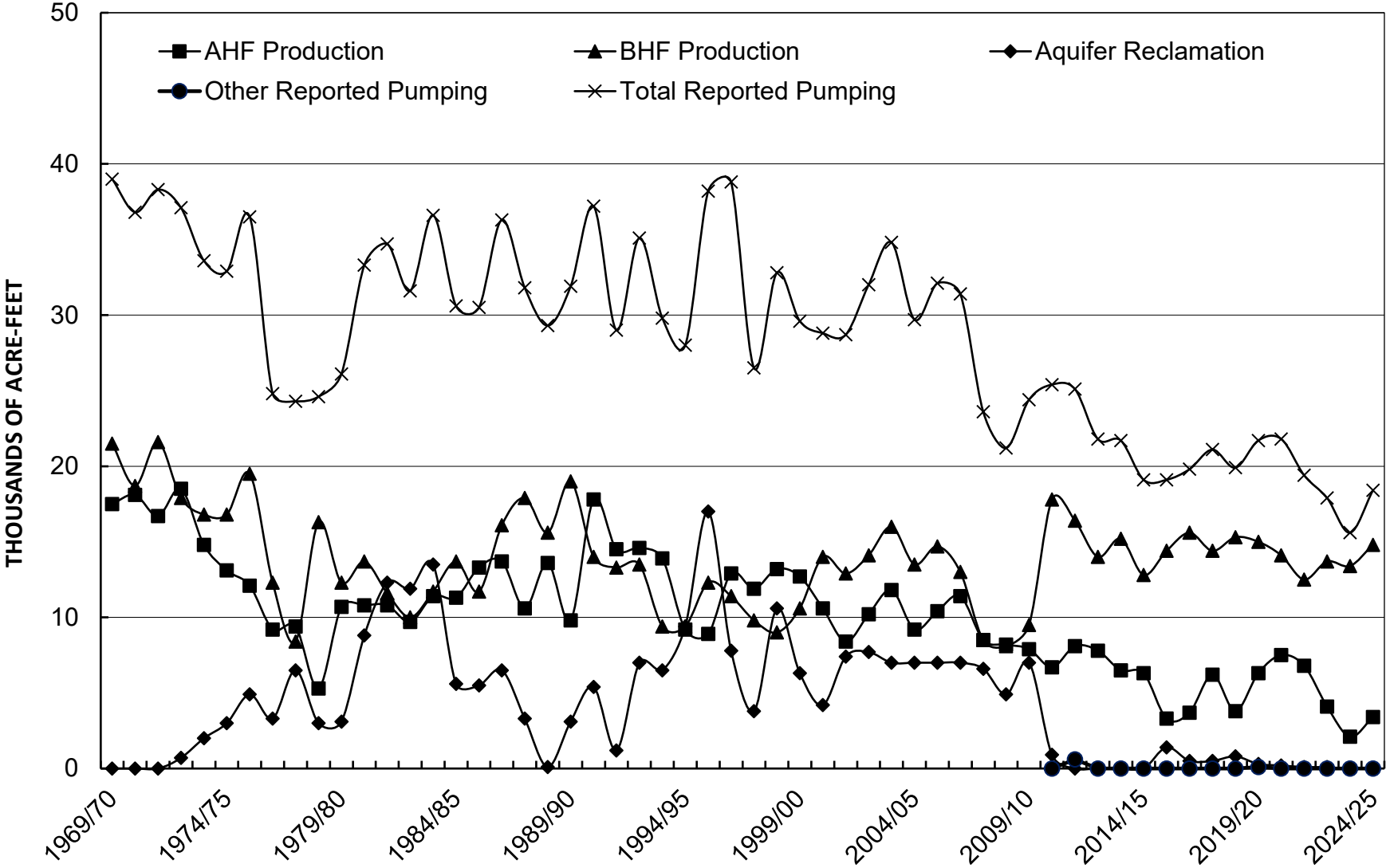
Of the 58 non-ACWD-owned wells with active accounts in the Replenishment Assessment Program, all are currently equipped with meters.[3] All active ACWD production and ARP wells are equipped with functioning meters, except Lowry Well, Nursery Well, and Whipple Well, which are operated infrequently on a standby basis. The amounts pumped from these unequipped wells are based on estimates instead of actual meter readings. Pending a change in their status to more regular use, equipping them with working meters would not be cost effective.[4] To allow for the use of non-metered wells, Section 20 of the Replenishment Assessment Act requires that the Board adopt a resolution extending the date when all water producing facilities are required to be metered. The price of water metering devices or other circumstances can be the basis for the Board's determination. Last year, the Board extended the deadline for metering non-metered wells to March 10, 2026.

Wells with discharge lines not greater than two inches in diameter and providing groundwater for domestic use or for irrigation on less than one acre of land can be excused from the metering requirement, and charged a flat rate established by the Board. The Board would be required to pass a resolution to that effect at the time they fix the general replenishment assessment rate. The Board did not levy a flat rate assessment on these wells for FY 2025/26.

[3] At the time this report was prepared, eleven wells in the Replenishment Assessment Program had metering equipment designated for repair or replacement.

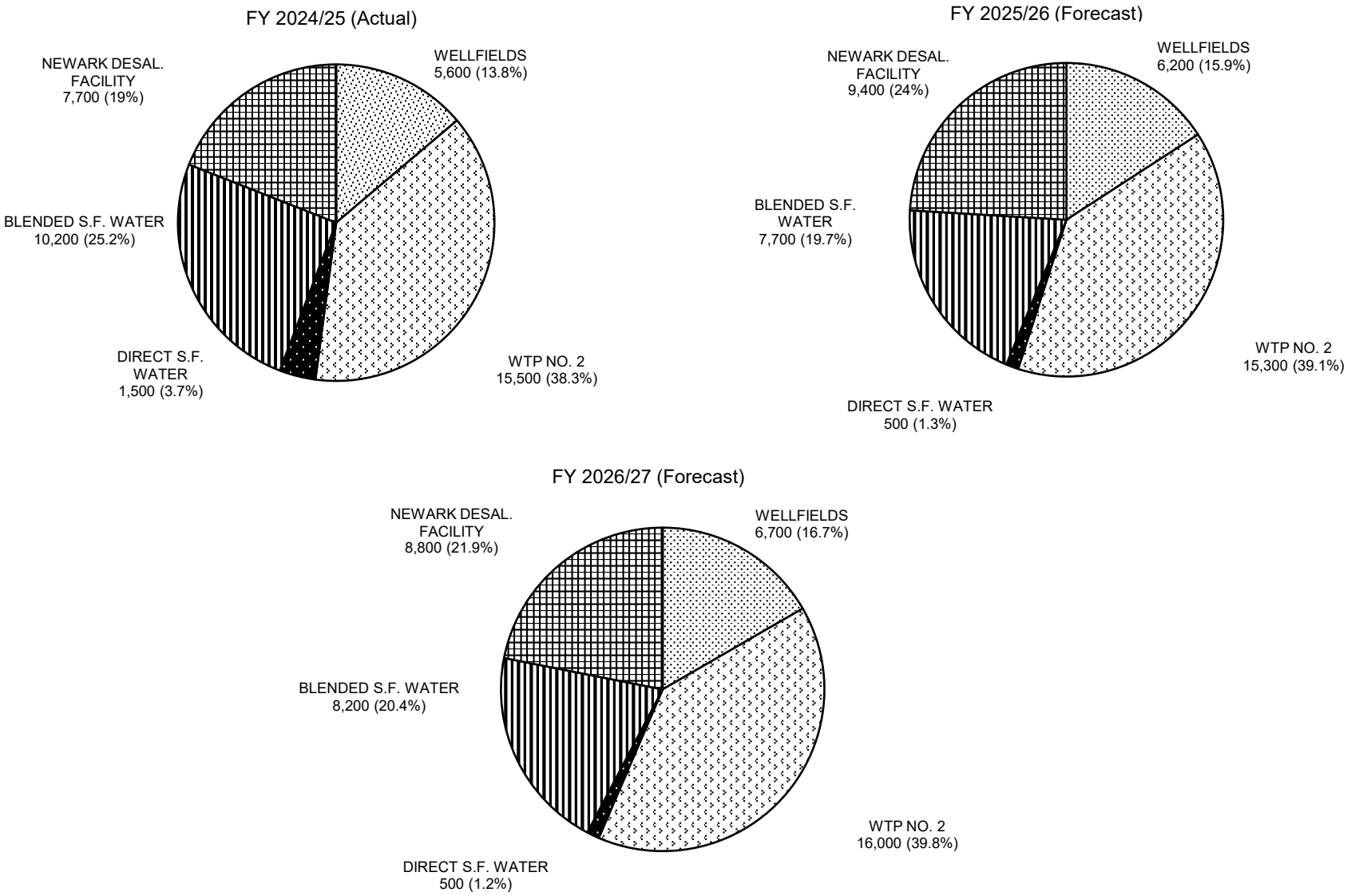
[4] The estimated pumping amounts from Lowry, Nursery, and Whipple wells, combined, are 1.6 acre-feet in FY 2024/25 and 1.4 acre-feet in FY 2025/26.

FIGURE 2
HISTORICAL GROUNDWATER PUMPING IN ACWD GROUNDWATER STATUTORY SERVICE AREA*
(ACTUAL THROUGH FY 2024/25)



*Includes private pumping.

FIGURE 3 - ACWD DISTRIBUTION SYSTEM SOURCE OF SUPPLY



Annual Overdraft

The annual overdraft, as defined in the Replenishment Assessment Act, "means the amount, as determined by the Board, by which the quantity of groundwater removed by any natural or artificial means from the groundwater supplies within the District during the water year exceeds the quantity of non-saline water replaced therein by the replenishment of such groundwater supplies in the water year by any natural or artificial means other than replenishment under provisions of this act". Effectively, the annual overdraft is the difference between the amount of groundwater pumped from the basin and the amount of water recharged from local water supplies during the fiscal year.

The net local water recharged to the groundwater basin is composed of the portion of watershed runoff impounded at the recharge facilities, infiltration from applied water (e.g., irrigation) and rainfall, other inflow, less saline and other outflows from the basin. Part of the local recharge from infiltration and applied water may percolate into the brackish water in the Newark Aquifer. While part of this water is not usable directly due to degradation from mixing with saline water, it does contribute to the volume of water in the basin. The component amounts of net local recharge for FY 2024/25 (actual), FY 2025/26 (forecast), and FY 2026/27 (forecast) are listed in Table 3.

TABLE 3

ANNUAL OVERDRAFT
(In Thousands of Acre-Feet)

	FY 2024/25 Actual	FY 2025/26 Forecast	FY 2026/27 Forecast
TOTAL REPORTED PUMPING (Table 2)	18.4	21.0	20.6
LOCAL RECHARGE			
Runoff to the recharge facilities	11.8	19.0	18.5
Infiltration from direct rain and applied water, and other inflow (modeled)	8.9	9.1	8.8
(less) Saline water outflow (modeled)	-6.5	-5.8	-5.8
(less) Other outflow (modeled)	-0.2	-0.1	-0.1
TOTAL NET LOCAL RECHARGE	14.0	22.2	21.4
ANNUAL OVERDRAFT	+4.4	-1.2	-0.8

Values in Table 3 reflect actual conditions from July 2024 through November 2025 (except private pumping which is projected after September 2025) and then projected conditions through the remainder of FY 2025/26 and the entirety of FY 2026/27. Actual values of "Total Reported Pumping" and "Runoff to the recharge facilities" were mostly measured, and future values thereof have been projected based on trends and the selected hydrologic scenario described on Page 1. Amounts for the other flows in Table 3 were obtained with the assistance of ACWD's groundwater model, which, besides predicting future piezometric head, calculates volumes of flow that cannot easily be measured or estimated by direct methods. The model requires input of measurable or easily estimated parameters, such as rainfall, pumping, recharge at the recharge facilities, and sea

level. Actual values of these parameters were input for the historical portion of the simulation (ending in November 2025), and then forecasted values were appended to model input files to enable the simulation to extend into the future through CY 2027. Resulting model output of simulated flows, including 'actual' values for FY 2024/25, are subject to uncertainty due to limitations of the model and its input parameters.

The District's most recent version of the model, acquired in 2021 and referred to as the Niles East Bay Integrated Model (NEBIM), operates on the *Integrated Water Flow Model* (IWFM) platform. IWFM is the successor platform to *Integrated Groundwater Surface Water Model* (IGSM) upon which the District's previous versions of the model were based. The District retained a consulting firm to develop and calibrate NEBIM. Subsequently, ACWD staff have appended input files and used NEBIM for the Survey Report and the annual SGMA Report.

Among the flow categories referenced in Table 3 and Plates 11, 12, and 13, those whose quantities have been calculated with the aid of NEBIM are described as follows: *Natural saline outflow* includes model-simulated subsurface flow from the Niles Cone to aquifers under San Francisco Bay[5], and net discharge of saline groundwater to salt ponds and streams. *Infiltration from direct rain and applied water, and other inflow* includes model-simulated deep percolation, inflows from small watersheds (hillside areas), and net inflow from the neighboring East Bay Plain Basin. *Other outflow* represents adjusted model-simulated net discharge of groundwater into streams.

Unlike Survey Reports prior to 2023, this report does not distinguish evaporation loss from the recharge facilities because such loss is effectively accounted for through model-simulated evapotranspiration and other processes, which constrain the amount of infiltration from direct rain and applied water, and other inflow.

Change in Piezometric Heads

In this report, each piezometric head value is presented as the actual elevation of the water level in the well in which it was measured, and accordingly, is expected to equate (approximately) to the level of the free water surface in the aquifer if the well is not in a pressure aquifer.

Movement of water within an aquifer is in the direction of decreasing piezometric heads (in certain cases, precise calculations of flow direction may require consideration of not only water levels, but also water density). Prior to 1972, the Newark Aquifer groundwater levels decreased in the landward direction toward the basin forebay (as shown on Plate 2). This caused landward movement of saline water toward the forebay area. The piezometric heads in the lower aquifers were lower than those of the Newark Aquifer, and the aquitards separating the aquifers are thin in the forebay. As a result, saline water in the forebay area migrated downward from the Newark Aquifer and into the lower aquifers. Vertical migration of saline water was also likely facilitated by abandoned or poorly constructed wells.[6]

Quantitative elevations of well levels (piezometric heads) on Plate 4, and elsewhere in this report, are given in reference to the National Geodetic Vertical Datum of 1929 ("NGVD 1929" or "1929 vertical datum"). For example, an elevation of 10.0 feet means 10.0 feet above the 1929 vertical datum. In Survey Reports prepared prior to 2018, elevations were reported in terms of "mean sea

[5] The portion of *natural saline outflow* attributed to flow to aquifers under San Francisco Bay includes not just flow via the Newark Aquifer, but also the Centerville-Fremont and Deep Aquifers. Therefore, some exchange of groundwater between the Niles Cone and aquifers under the bay may not be saline.

[6] Since the early 1970s, when ACWD initiated its Well Ordinance Program, numerous abandoned wells have been properly destroyed and sealed, and appropriate standards for construction of new wells and borings have been mandated.

level" (MSL), with zero feet MSL taken to be the 1929 vertical datum[7]. Therefore, numerical values of elevations in this report are comparable to those previous Survey Reports. To avoid confusion as to how high groundwater levels are relative to contemporary local mean sea level (San Francisco Bay proximal to the Niles Cone Groundwater Basin), this report refrains from use of "MSL". The trend elevation of local sea level in FY 2024/25 is estimated to be 0.65 feet NGVD 1929 per available tidal station data[8]. Accordingly, in this report, only groundwater levels higher than Elevation 0.65 feet are considered "above sea level". Consistent with global sea level trends, the difference between local mean sea level (San Francisco Bay) and Elevation 0 feet NGVD 1929 is likely to increase in future years.

During FY 2024/25, the piezometric heads of groundwater contained within the pressure level areas of the Newark Aquifer were above sea level. The water levels in the Centerville-Fremont Aquifer on Plate 4 fluctuated slightly above and below sea level in the beginning of the fiscal year through July 2024, then were below sea level through mid-October 2024, then above sea level through the remainder of the fiscal year. The water levels in the Deep Aquifer well on Plate 4 were below sea level in the beginning of the fiscal year through late December 2024, above sea level through early April 2025, then fluctuated above and below sea level through early June before spiking substantially above sea level toward the end of the fiscal year. (Note: Charts in Plate 4 include only end-of-month values, and local mean sea level is assumed to coincide with Elevation 0.65 feet, not zero feet, on the vertical axis of each chart.)

The changes in piezometric heads from the beginning to the end of the fiscal year were a decrease of approximately two feet in the Newark Aquifer and increases of approximately four and six feet in the Centerville-Fremont and Deep Aquifers, respectively. However, consistent with the Newark Aquifer, levels in the Centerville-Fremont and Deep Aquifers were, on average, less in FY 2024/25 than they were in FY 2023/24. During FY 2024/25, levels in the Newark Aquifer forebay indicator well varied between Elevation 12 and 18 feet. Since the piezometric heads of the Newark Aquifer remained above sea level (plus an additional increment to overcome higher density of seawater), some of the saltwater in the Newark Aquifer should have been repulsed back toward San Francisco Bay.

The AHF Sub-basin, situated between the Hayward Fault and the hills, is geographically smaller than the BHF Sub-basin but accommodates higher groundwater levels compared to the Newark, Centerville-Fremont, and Deep Aquifers. With reference to the hydrograph of well 4S/1W-27D008 on Plate 4, levels within the AHF were in the upper part of their operating range in FY 2024/25, although the change between the beginning and end of the fiscal year was a decrease of approximately seven feet.

Under the scenario of pumping (Table 2) and recharge (Tables 3 and 4) considered for this report, the water level in the Newark Aquifer forebay indicator well (4S/1W-29A006 on Plate 4) is anticipated to be at Elevation 14 feet in June 2026 and 15 feet in June 2027. The well levels in the Centerville-Fremont and Deep Aquifers are expected to be mostly above Elevation 0 feet for the remainder of the current water year. Levels in the AHF are expected to be higher at the end of FY 2025/26 and FY 2026/27 than they were at the end of FY 2024/25.

[7] NGVD 1929 was established as a sea level-based datum.

[8] Based on the sea level trend line provided by the National Oceanic and Atmospheric Administration (NOAA) for NOAA Tidal Station 9414290, in San Francisco (https://tidesandcurrents.noaa.gov/stationhome.html?id=9414290). The trend elevation for December 2024 (approximately half-way through FY 2024/25) was used for determining when groundwater levels on Plate 4 were above versus below sea level in FY 2024/25.

Extent of Salinity Intrusion

As discussed above under the heading of "Change in Piezometric Heads," the overdraft condition that had existed within the groundwater basin prior to the mid-1970s caused saltwater intrusion to occur in the BHF Sub-basin. Enhancement of ACWD's artificial recharge operation and importation of supplemental water have helped to reverse this condition.

Portions of aquifers that contain water with a chloride concentration greater than 250 parts per million (ppm) are considered to remain degraded by legacy saltwater intrusion. Plates 8 through 10, which were obtained from the District's *2025 Groundwater Monitoring Report* (Groundwater Monitoring Report), indicate the location of the 250-ppm chloride iso-contour line (250-ppm contour line) in the Newark Aquifer, Centerville-Fremont Aquifer, and Deep Aquifer in the fall of 2025. Each plate also includes the corresponding 250-ppm contour line for 1962-the year when supplemental water from the State Water Project was first purchased and groundwater levels began to rebound. These plates aim to illustrate the difference between the two time periods with respect to the 250-ppm contour line.

According to the Groundwater Monitoring Report, chloride concentrations in the AHF Aquifer during Fall 2025 were all below 250 ppm. Chloride contours for the Newark, Centerville-Fremont, and Deep Aquifers in Fall 2025 are similar to those of Fall 2024 except for a noticeable shift to the southwest in the position of the 250-ppm chloride contour for the Centerville Fremont Aquifer near the western end of Automall Parkway. The adjustment is largely consequential of a change in selection of data points for contouring. See the Groundwater Monitoring Report for additional information.

The Groundwater Monitoring Report includes a discussion of trends in chloride over multiple years (indicating overall improvement in water quality), which is useful for assessing success of basin management strategies.

Accumulated Overdraft

The accumulated overdraft is defined in the Replenishment Assessment Act as the amount of water necessary to be replaced in the groundwater basin to prevent the landward movement of bay water into the fresh groundwater basin. This applies only to the BHF Sub-basin. Therefore, for this report, the accumulated overdraft is assumed to be the volume of water required to raise the water levels in the Newark Aquifer to the local mean level of San Francisco Bay.

The accumulated overdraft of the basin has been eliminated since early 1972, as indicated on Plate 3. The water levels in the Newark Aquifer are expected to remain above sea level through FY 2025/26 and for the entire FY 2026/27, based on projections of pumping (Table 2) and local recharge (Table 3). Accordingly, no accumulated overdraft is expected in June 2026.

AMOUNT AND AVAILABILITY OF SUPPLEMENTAL WATER SUPPLIES

Supplemental Water Supplies Available to the District

The District obtains supplemental water for groundwater replenishment from the California State Water Project (SWP), ACWD's share of the local conservation storage in Del Valle Reservoir, ACWD's banked storage at the Semitropic Water Storage District (SWSD), and other sources. 'Withdrawal' of banked water is physically accomplished through an exchange, whereby ACWD receives SWP water from the Sacramento-San Joaquin Delta (Delta) that would otherwise be allocated to the SWSD, or to other State Water Contractors that, in turn, can be compensated

through deliveries from the SWSD. When advantageous, ACWD replenishes its banked water supply through diversion of a portion of its state water allocation to SWSD in lieu of direct delivery to ACWD. The terms of the water banking agreements between ACWD and SWSD include a 10% evaporation and aquifer loss; hence, 90% of ACWD's transfers of SWP water to SWSD (i.e., 90% of the amounts indicated in Plates 11 to 13) is credited to ACWD's balance of banked water.

The amount of water that can be withdrawn from the SWSD in any given year, and the timing of withdrawals, is subject to limitations. To improve flexibility, some SWSD water, when available, may be withdrawn and directed to an intermediate storage facility, such as San Luis Reservoir (SLR), in exchange for water to be delivered to ACWD at a more advantageous time (see Plates 11 through 13). In addition, water may be obtained from other sources, such as in FY 2021/2022 when ACWD obtained some of its imported supply through the State Water Contractors' Dry Year Transfer Program (DYTP). Similar to withdrawal from SWSD 'directly' to ACWD, return of water from SLR to ACWD is also physically accomplished through exchange.

Table 4 indicates the amounts of supplemental water received at ACWD for groundwater replenishment from each of the aforementioned sources in FY 2024/25 and the amounts that are anticipated to be received in FY 2025/26 and FY 2026/27. The anticipated amounts of local recharge in upcoming months should maintain groundwater levels within acceptable ranges through FY 2026/27 without additional supplemental water, according to the model-assisted forecast conducted in December 2025. Assumptions in the analysis include pumping volumes indicated in Table 2, along with a rainfall pattern yielding amounts of local recharge listed in Table 3. The District will adjust procurement of supplemental water in Calendar Year (CY) 2026 and/or CY 2027 depending on real-time conditions and updated forecasts.

TABLE 4

SUPPLEMENTAL WATER SUPPLIES
(In Thousands of Acre-Feet)*

Source	FY 2024/25 Actual	FY 2025/26 Forecast	FY 2026/27 Forecast
State Water Project (SWP)	0.0	0.0	0.0
Del Valle Reservoir	0.0	0.0	0.0
SWSD (without intermediate storage)	0.0	0.0	0.0
SWSD via SLR	0.0	0.0	0.0
Other	0.0	0.0	0.0
TOTAL FOR YEAR	0.0	0.0	0.0

* Values reflect only amounts delivered, or projected to be delivered, to ACWD for groundwater recharge within the fiscal years indicated. This table does not include values for the supply to ACWD's active surface water treatment plant (Treatment Plant No. 2), nor does it include diversions of state water to the SWSD or SLR for future ACWD use. However, values for these entities appear on Plates 11 through 13 and/or are described under "Groundwater Costs and Funding".

External Water Transfer for Future Use

Water banking improves the reliability of supplemental water to the groundwater basin during dry years. As indicated on Plate 11, ACWD deposited some of its SWP supply at SWSD in FY 2024/25 (8,100 acre-feet). The amount of deposit indicated on Plate 12 (6,100 acre-feet) refers to water already delivered to SWSD in July and August of 2025 (2,700 acre-feet) plus additional water (3,400 acre-feet) expected to be delivered in May and June of 2026. Deposits of ACWD SWP supplies to SWSD are expected to continue into FY 2026/27 (6,400 acre-feet), as indicated on Plate 13. Actual deposits or withdrawals through this period will depend on actual hydrologic conditions realized and/or updated forecasts.

Comprehensive Water Supply/Demand Inventory

The water supply/demand inventory for ACWD in FY 2024/25, FY 2025/26, and FY 2026/27 is illustrated in flow chart format on Plates 11, 12, and 13, respectively. These plates depict not only groundwater basin inflows and outflows listed in Tables 2, 3, and 4, but also the supply to Treatment Plant No. 2, inputs of San Francisco Public Utilities Commission water to the distribution system, and external transfers. As noted under "Supplemental Water Supplies Available to the District", external transfers include deposits of banked water (SWP to SWSD) and withdrawals of banked water for holding at intermediate storage facilities (e.g., SWSD to SLR) pending delivery to ACWD.

Volumes of inflow and outflow are added at the lower left of Plates 11, 12, and 13 to give the calculated change in amount of groundwater stored in the basin for each of the three fiscal years. Certain inflows to, and outflows from, the basin, as depicted in the plates, are calculated by the District's groundwater basin flow model; therefore, the change in storage is also effectively a model-calculated quantity. With projected increases in storage in FY 2025/26 and FY 2026/27 (Plates 12 and 13), well levels are anticipated to be in the middle to upper part of their operating range through the end of FY 2026/27.

GROUNDWATER COSTS AND FUNDING

Estimated Groundwater Costs

In FY 2026/27, the District's groundwater program activities will require funds to pay for: 1) fixed SWP and SWSD contract costs for supplemental water; 2) variable SWP costs; 3) capital costs of the District's groundwater recharge facilities; and 4) the District's operation, maintenance, and engineering activities associated with groundwater replenishment and basin management. The estimated cost of the District's groundwater program is shown by major function in Table 5 for FY 2026/27. The amounts on Table 5 reflect costs for only those items in the General Fund, or the portion of such items, which are expected to benefit all users of the groundwater basin. Hence, costs attributed to the distribution system, including (but not limited to) operation of wells and treatment plants to supply the distribution system, are not reflected in Table 5 and therefore not considered in the recommendation of replenishment assessment rates. Individual cost items in the General Fund are reviewed each year for their relevance to the supply and maintenance of the groundwater basin. Administration and General costs support all of the District's operations commonly. Through a detailed evaluation, it is estimated that 15.7% of the total District Administrative and General costs in FY 2026/27 will support the supply and maintenance of the groundwater basin. Additional detail on Capital Improvement Program projects and water supply costs is provided following Table 5.

TABLE 5

ESTIMATED GROUNDWATER COSTS*

FY 2026/27

Item		Cost $
FIXED OR CAPITAL COSTS		
State Water Project Fixed (Groundwater portion)		7,700,000
Water Banking Fixed (Groundwater portion)		388,000
Brackish Groundwater Reclamation Project		2,020,000
Administrative Capital		1,025,000
Delta Conveyance		636,000
Groundwater SGMA Enhancement		313,000
Water Controllers Relocation Planning Study		125,000
Integrated Resources Planning - Extraordinary Expense (Groundwater portion)		118,000
Groundwater PFAs Sampling and Source Investigation		65,000
Vallecitos Channel Betterments		30,000
Recharge Facilities Ancillary Equipment		22,000
ACWD Groundwater Alternative Data Gap Project		10,000
	Subtotal	**$ 12,452,000**
EXPENSES		
State Water Project Variable (Groundwater portion)		55,000
Water Banking Variable (Groundwater portion)		0
Pits and Creek Maintenance and Diversion Pumping		2,695,000
Supervision, Labor and Expense		
1. Management of groundwater basin		2,263,000
2. Management of watershed and recharge facilities		1,113,000
3. Monitoring and analysis of groundwater		522,000
4. Monitoring and analysis of creek and pit water		774,000
5. Well Ordinance administration**		1,436,000
6. Water resources planning		1,439,000
7. Groundwater Protection Program		465,000
8. Local Oversight Program (LUFT/SCP sites)		706,000
Aquifer Reclamation Program **		32,000
Replenishment Assessment and Meter Maintenance		19,000
Administrative and General Expense (Groundwater portion)		3,238,000
	Subtotal	**$ 14,757,000**
	Total	**$ 27,209,000**

* Includes only the non-growth component of costs associated with the management and replenishment of the groundwater basin. Growth and distribution system-related costs are not included herein. Capital costs are based on ACWD's 25-Year Capital Improvement Program (adopted June 2025), State Water Project Fixed, Water Banking Fixed, and Delta Conveyance costs.

** Net cost after permit and lease revenue considered.

Estimated Cost of FY 2026/27 Supplemental Water Supply

The cost of supplemental water for groundwater replenishment in FY 2026/27 is expected to be incurred through ACWD's State Water Project (SWP) contract with the Department of Water Resources, and water banking agreements with the Semitropic Water Storage District (SWSD). As detailed below, SWP and SWSD costs have fixed and variable components. For purposes of this report, fixed costs are generally recurring and independent of the amount of water transferred, whereas variable costs are calculated according to the amount of water transferred. Because variable cost payments are calculated monthly for water transferred over the prior month, transfers payable in FY 2026/27 would occur between June 2026 and May 2027 instead of precisely within the fiscal year (July 2026 through June 2027). Therefore, the volumes of supplemental water for calculation of variable costs discussed below may slightly differ from the amounts in Table 4 and Plate 13.

State Water Project

As listed in Table 5, the share of the SWP cost allocated to the groundwater basin in FY 2026/27 is estimated to be $7,700,000 in fixed cost and $55,000 in variable cost. The net total SWP cost to the basin, $7,755,000, is expected to be fully offset by SWP override tax revenue (see Table 6).

The SWP variable cost to the groundwater basin in FY 2026/27 would be incurred through the delivery of SWP water to SWSD for water banking. The cost, $54,744 rounded to $55,000, has been calculated by applying the groundwater share, 30.1%, to a volume of 5,084 acre-feet to be delivered from June to August of 2026 at $27.3409 per acre-foot, plus 1,492 acre-feet to be delivered in May 2027 at $28.735 per acre-feet. Payment for SWP variable costs of water diverted to SWSD, or from SWSD to SLR, is expected to be credited back to the basin when such water from SLR or SWSD is ultimately received at ACWD (whether delivered to the groundwater basin or Treatment Plant No. 2)[9]. Through this methodology, the groundwater basin shares in the upfront payment for holding of water for future availability when needed, but net actual long-term SWP variable costs for the basin should generally work out to be very close to the transportation charges for actual water delivered to the basin.

As noted in Table 4, it is not expected that supplemental water will be needed for the groundwater basin in FY 2026/27. However, if real time conditions merit such water, the unit SWP variable charge for delivery from the Delta would be $72.2576 per acre-foot in CY 2026 and $75.0611 per acre-foot in CY 2027, according to DWR's latest cost index.

Water Banking (SWSD charges)

The groundwater share of SWSD's annual O&M fee, allocated as a fixed cost, is expected to be approximately $388,000 in FY 2026/27 (30.1% of the total amount of $1,290,000) (see "Water Banking Fixed (Groundwater portion)" in Table 5). No variable SWSD cost is anticipated for FY 2026/27.

Other

No other sources of supplemental water (in addition to those described above) for the groundwater basin are planned for FY 2026/27.

[9] Credit back to the groundwater basin for water pre-diverted to SWSD or SLR and then delivered to ACWD is calculated based on the unit costs that apply in the year that such water is returned to ACWD. Under extreme hydrologic circumstances, not all ACWD water diverted to SLR may be available later for return to ACWD.

Groundwater Basin Capital Improvements

Capital projects expected to incur cost in FY 2026/27 are listed in Table 5 under "Fixed or Capital Costs", specifically, beneath "Water Banking fixed (Groundwater portion)". Highlights of projects are provided below. Most of these projects will require multiple years to complete through planning, design, and construction.

- The *Brackish Groundwater Reclamation Project* will entail installation of a new Aquifer Reclamation Program well to expedite removal of salt from the Fremont Aquifer. DWR has awarded ACWD a grant that is expected to cover 50% of the project work through construction of the well, including acquisition of property to site the well (grant revenue is listed in Table 6).

- *Administrative Capital* includes a portion of costs to upgrade or repair the ACWD headquarters building, computer software, computer hardware, vehicles, vehicle licensing fees, installation of solar panels, and other administrative capital items, to the extent that said portion of these costs serve the supply and quality of groundwater in the basin for the common benefit of its users. Typically, 15 to 16% of the cost of administrative capital items is allocated to the groundwater basin and the remaining 84 to 85% to the distribution system.

- *Delta Conveyance* is a water storage and supply initiative critical to ensure reliability of sources of groundwater replenishment for the long-term. ACWD and other agencies that would benefit from this project are sharing in the costs. The amount shown on Table 5 is the groundwater basin component of ACWD's share for FY 2026/27.

- *Groundwater SGMA Enhancement* will further ACWD's ability to plan the necessary actions to keep the groundwater basin a viable source of water supply under conditions of future sea level rise and other environmental pressures and better meet regulatory requirements of the state's Sustainable Groundwater Management Act (SGMA).

- *Water Controllers Relocation Planning Study* will involve retaining an architect to evaluate the current and future personnel space needs, and functional needs such as telemetry, communications, equipment and materials storage, to determine whether existing District properties adjacent to Alameda Creek or groundwater recharge facilities could meet those needs more effectively than the existing facility at the PT Wellfield.

- *Integrated Resources Planning-Extraordinary Expense (Groundwater portion)*: Integrated Resources Planning (IRP) refers to efforts to develop ACWD's Water Resources Master Plan, which is ACWD's strategy for how it will meet the demands for water today and for the future, including demands on the Niles Cone Groundwater Basin. ACWD's IRP includes technical studies to develop water demand forecasts, study and protect ACWD's existing water supplies from threats, new and alternatives water supplies for future consideration, and demand augmentation (water-use efficiency plans). These efforts are ongoing and occur over time in response to new challenges to ACWD's water supplies, new developments, and evolving regulations. The amount in Table 5 represents the part of the effort in FY 2026/27 expected to benefit the water supply for the groundwater basin. In previous Survey Reports, the groundwater portion of IRP was accounted for under *Program Planning & Environmental Documentation.*

- *Groundwater PFAs Sampling and Source Investigation* will follow up previous sampling of groundwater and surface water to further investigate the occurrence of Per- and Polyfluoroalkyl Substances (PFAs) in groundwater in the Niles Cone and to identify possible sources thereof.

- *Vallecitos Channel Betterments.* Located in the Alameda Creek Watershed, Vallecitos Channel was constructed to convey supplemental water from the South Bay Aqueduct to Alameda Creek for eventual downstream recharge via ACWD's system of inflatable dams and recharge ponds. As an engineered open conduit, Vallecitos Channel is subject to erosion. Work to be conducted under this project will sustain interim viability of the existing channel pending replacement with a pipeline, which would be undertaken through the *Vallecitos Pipeline Project.* This pipeline project is not scheduled to commence until FY 2037/38 (therefore not shown on Table 5).

- *Recharge Facilities Ancillary Equipment* is an aggregation of several items in the Capital Improvement Program pertaining to repair, replacement, and/or upgrade of electrical and mechanical equipment that serve ACWD's recharge operation. Such equipment may include telemetry, pumps/blowers, automated valves, flowmeters, instrumentation and control, and other mechanical and electrical gear.

- *ACWD Groundwater Alternative Data Gap Project* will involve drilling borings and installing monitoring wells in the southern part of the groundwater basin, where productivity of aquifers, sources of recharge, and quality of groundwater are not well understood. Data acquired through this project will improve the District's decision making on actions to sustain the quality and supply of the groundwater in the basin- not only in the southern portion but generally throughout, as conditions in the southern portion are expected to exert some degree of influence on groundwater resources elsewhere in the basin.

Groundwater Program Funding and Replenishment Assessment

In accordance with Section 7, Paragraph f, of the Replenishment Assessment Act, shown below is the rate of replenishment assessment required to be levied upon the production of groundwater to fund the estimated groundwater costs shown on Table 5 without consideration of other revenue sources.

Water Use	Acre-Feet (AF) (from Table 2)	Rate $/AF	Funds $
Agricultural and Municipal Recreation	600	8.00 (a)	4,800
Other than Agricultural and Municipal Recreation	20,000	1,360.21 (b)	27,204,200
		Required Total (from Table 5)	27,209,000

(a) Maximum rate fixed by AB 2052
(b) Computed to nearest 1¢

Historically, the District has used a combination of sources to fund groundwater costs. Table 6 shows the existing and proposed replenishment assessment rates and the corresponding amounts of the other currently utilized sources of groundwater program funds required for the total cost shown on Table 5. The recommended FY 2026/27 replenishment assessment rate (for production for purposes other than agricultural and municipal recreation) has been made with consideration that sources of revenue other than replenishment assessment will be available.

TABLE 6

GROUNDWATER PROGRAM FUNDING AND REPLENISHMENT ASSESSMENT
FY 2026/27

	Acre-Feet	Existing Rate $/AF	Revenue Funds $	Proposed Rate $/AF	Revenue Funds $
A. Replenishment Assessment Categories					
1. Agricultural and Municipal Recreation	600	8	4,800	8	4,800
2. Municipal, Industrial and Non-Municipal Recreation	20,000	557	11,140,000	557	11,140,000
B. Ad Valorem Taxes					
1. Portion of 1% Tax			9,609,000		9,609,000
2. State Water Project			7,755,000		7,755,000
C. Grants			1,520,000		1,520,000
Total Groundwater Revenue			30,028,800		30,028,800
Total Groundwater Costs			27,209,000		27,209,000
Subtotal			2,819,800		2,819,800
Intra-Fund Transfer			(2,819,800)		(2,819,800)
Total			0		0

No change in the replenishment assessment rate is recommended for FY 2026/27. Prior increases in the replenishment assessment rate for production for purposes other than agricultural and municipal recreation, along with grant funding, have enabled Alameda County Water District to make substantial upgrades and repairs to aging recharge facilities and to render them in compliance with the Endangered Species Act. For next fiscal year, revenue generated under the current replenishment assessment rate, adopted on April 8, 2025, through Resolution No. 25-018, along with other funding, is expected to be sufficient to cover groundwater basin expenses and fixed and capital costs. Capital items will include projects devoted to water supply and conveyance for groundwater replenishment, and other improvements identified in the Capital Improvement Program for the groundwater basin, as described in this report. The water supply and conveyance initiatives are critical to ensure reliability of sources of groundwater replenishment for the long-term as each of the District's sources is subject to future uncertainties related to climate change and regulatory and environmental pressures.

The total annual cost to sustain the groundwater basin fluctuates significantly from year to year, mainly due to variability in timing and cost of the fixed and capital items. The projected net positive balance in Table 6 would be applied over the next 15 years as multiyear capital projects such as *Delta Conveyance* and *Vallecitos Channel Pipeline* enter their construction phase following planning and design.

As indicated in Figure 4, the replenishment assessment rates were not increased in FY 1998/99 to FY 2007/08 and in FY 2025/26.

FIGURE 4
REPLENISHMENT ASSESSMENT RATES

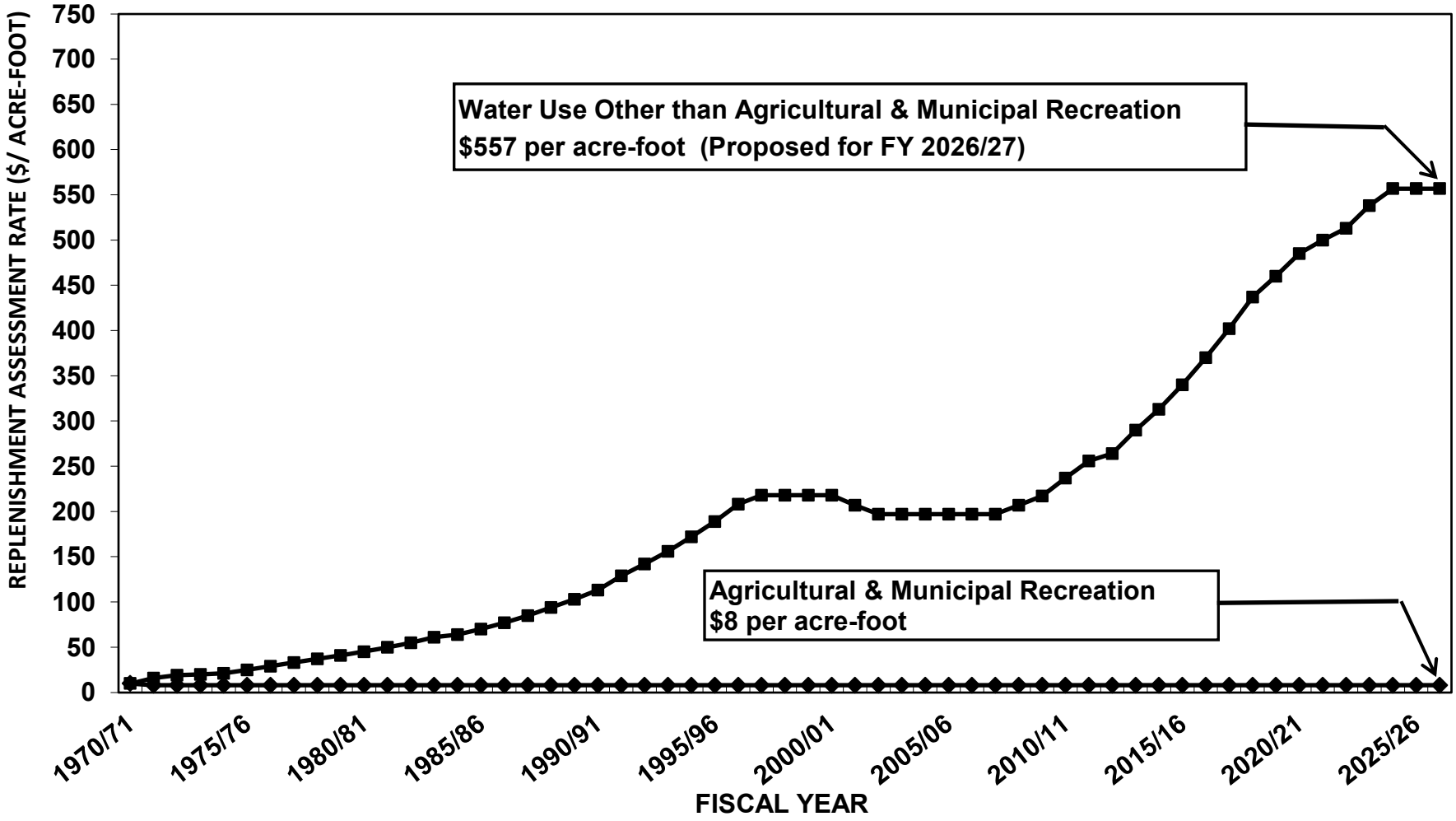
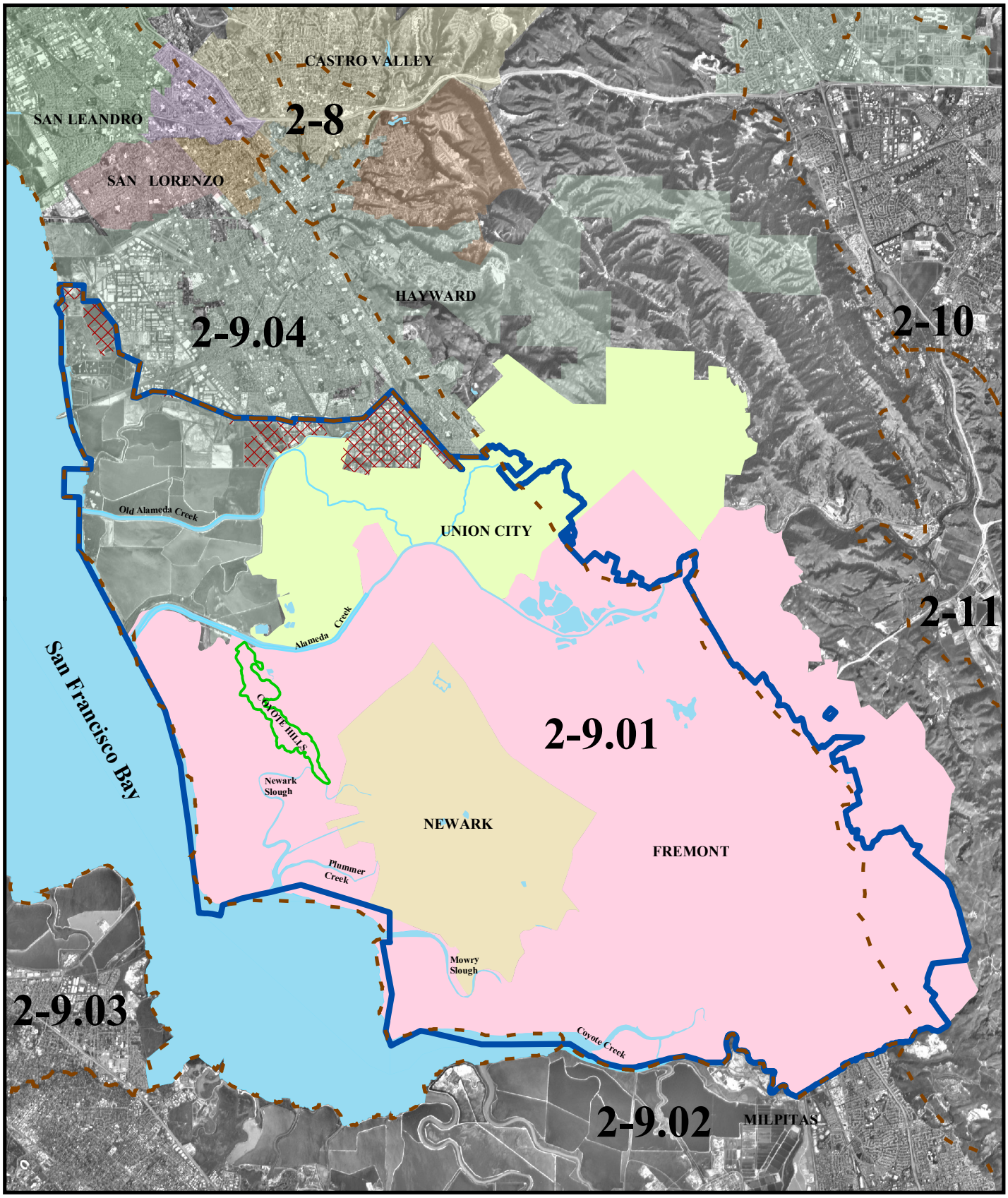


PLATE 1: LOCAL AGENCY BOUNDARIES



ACWD GROUNDWATER STATUTORY SERVICE AREA BOUNDARY

Hayward Detachment

2016 APPROVED DWR BULLETIN-118 GROUNDWATER BASIN BOUNDARY

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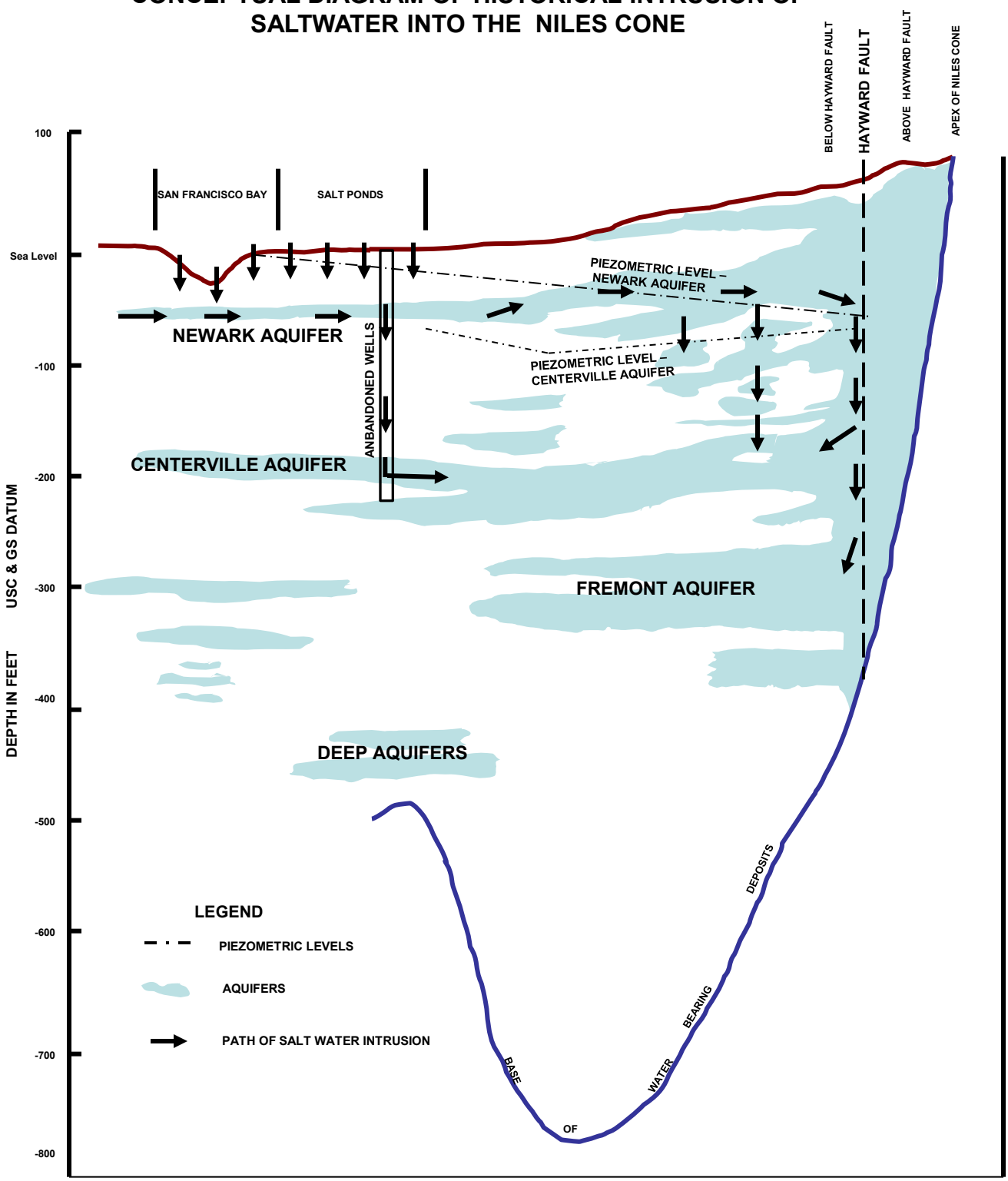
CONCEPTUAL DIAGRAM OF HISTORICAL INTRUSION OF SALTWATER INTO THE NILES CONE



Adapted from State of California Dept. of Water Resources. 1968. *Evaluation of Groundwater Resources, South Bay, Volume 1: Fremont Study Area. Bulletin No. 118-1*.

PLATE 2

HISTORICAL WATER LEVELS IN THE NEWARK AQUIFER (FOREBAY AREA)

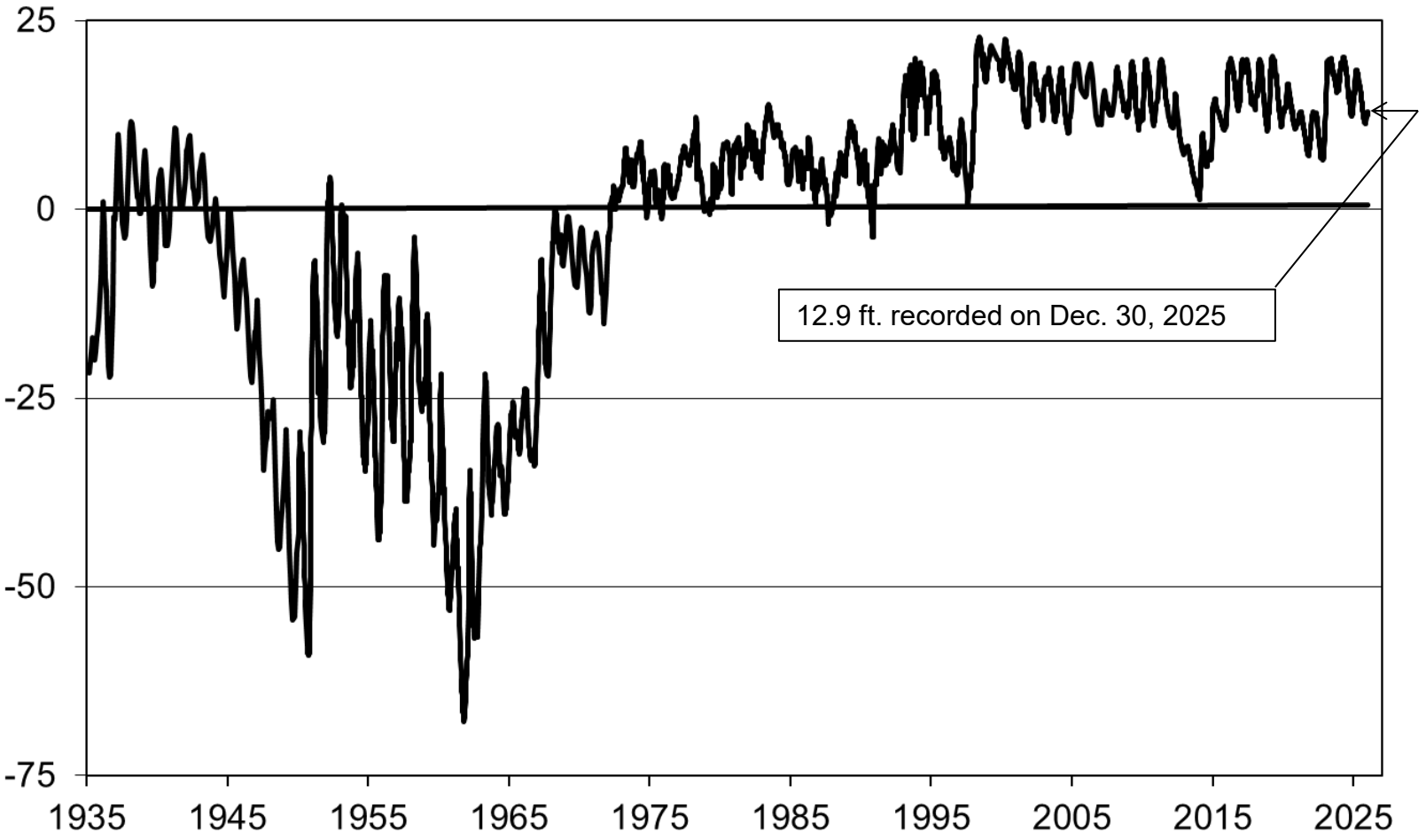
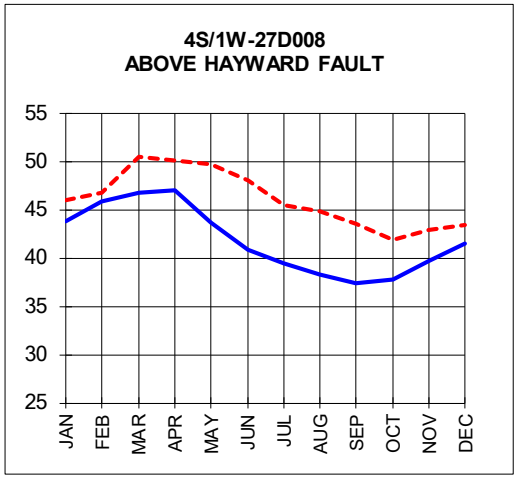
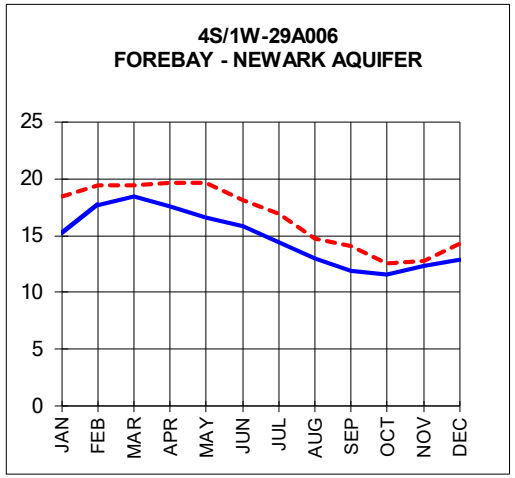
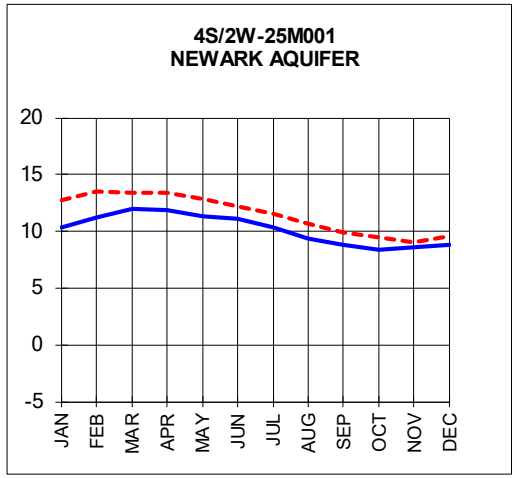
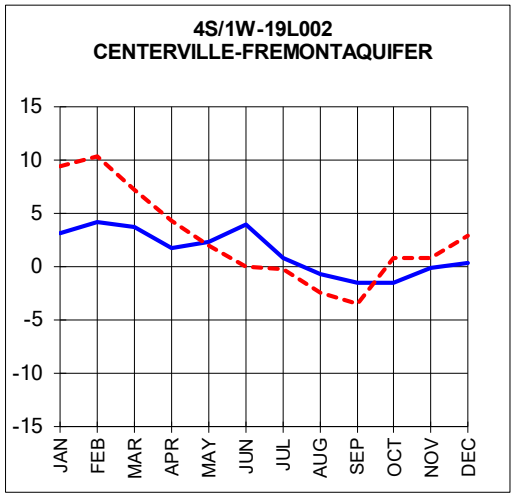


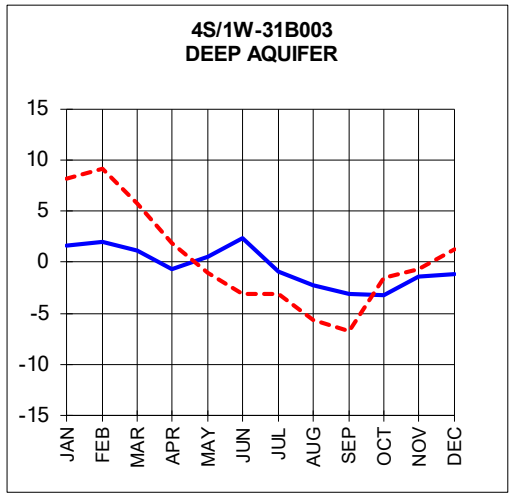
PLATE 3











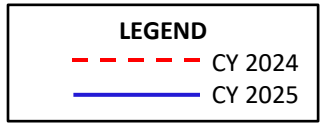


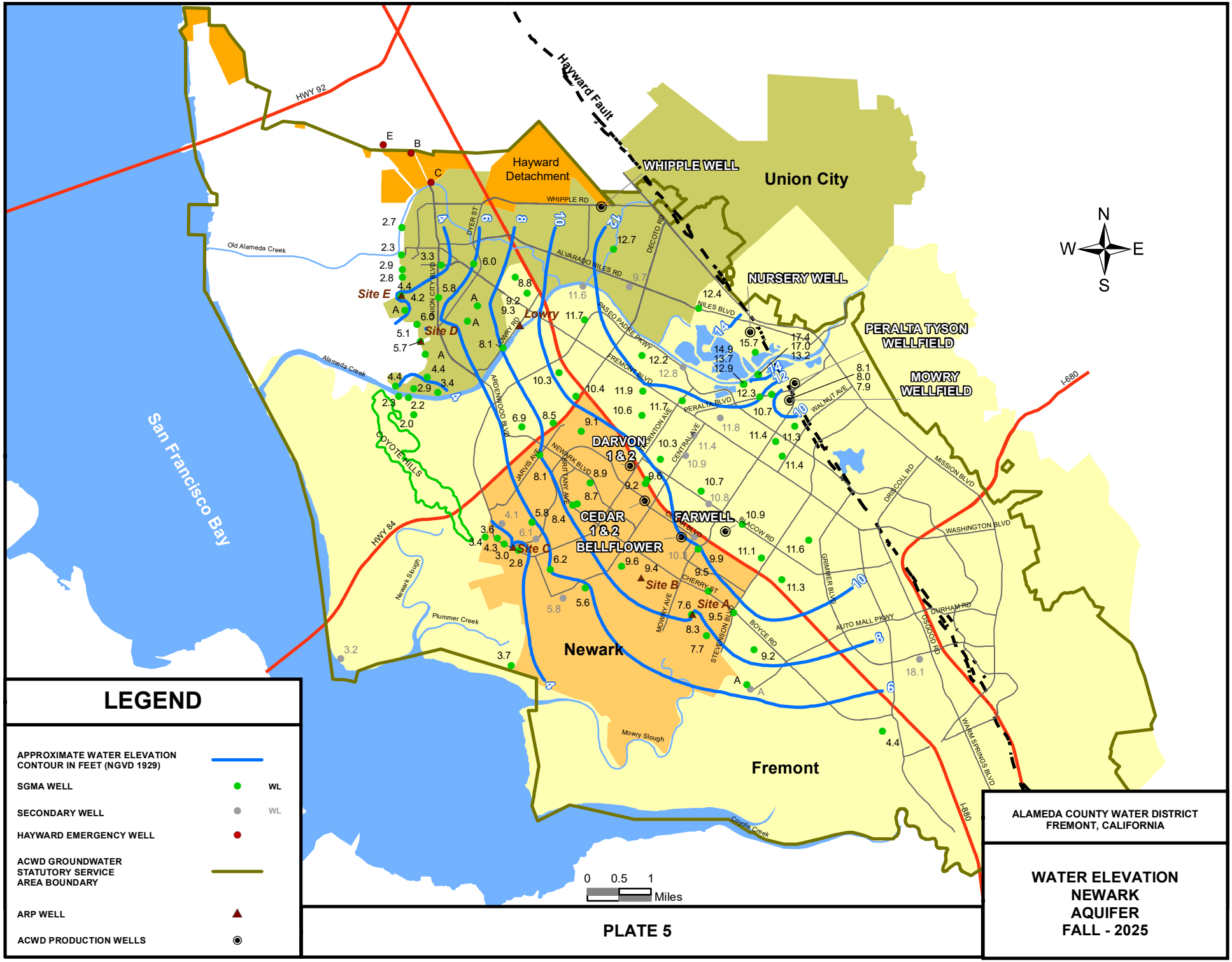
PLATE 4

ALAMEDA COUNTY WATER DISTRICT

GROUNDWATER BASIN END-OF-MONTH WELL LEVEL ELEVATIONS (feet, NGVD 1929)
(Elevation recorded on day nearest to end of month was used for each month.)

TYPICAL INTERVALS OF OCCURRENCE OF BHF AQUIFERS BELOW GROUND SURFACE

NEWARK (UPPER) AQUIFER :	40’ to 140’
CENTERVILLE-FREMONT AQUIFERS:	180’ to 390’
DEEP AQUIFERS:	400’ and deeper



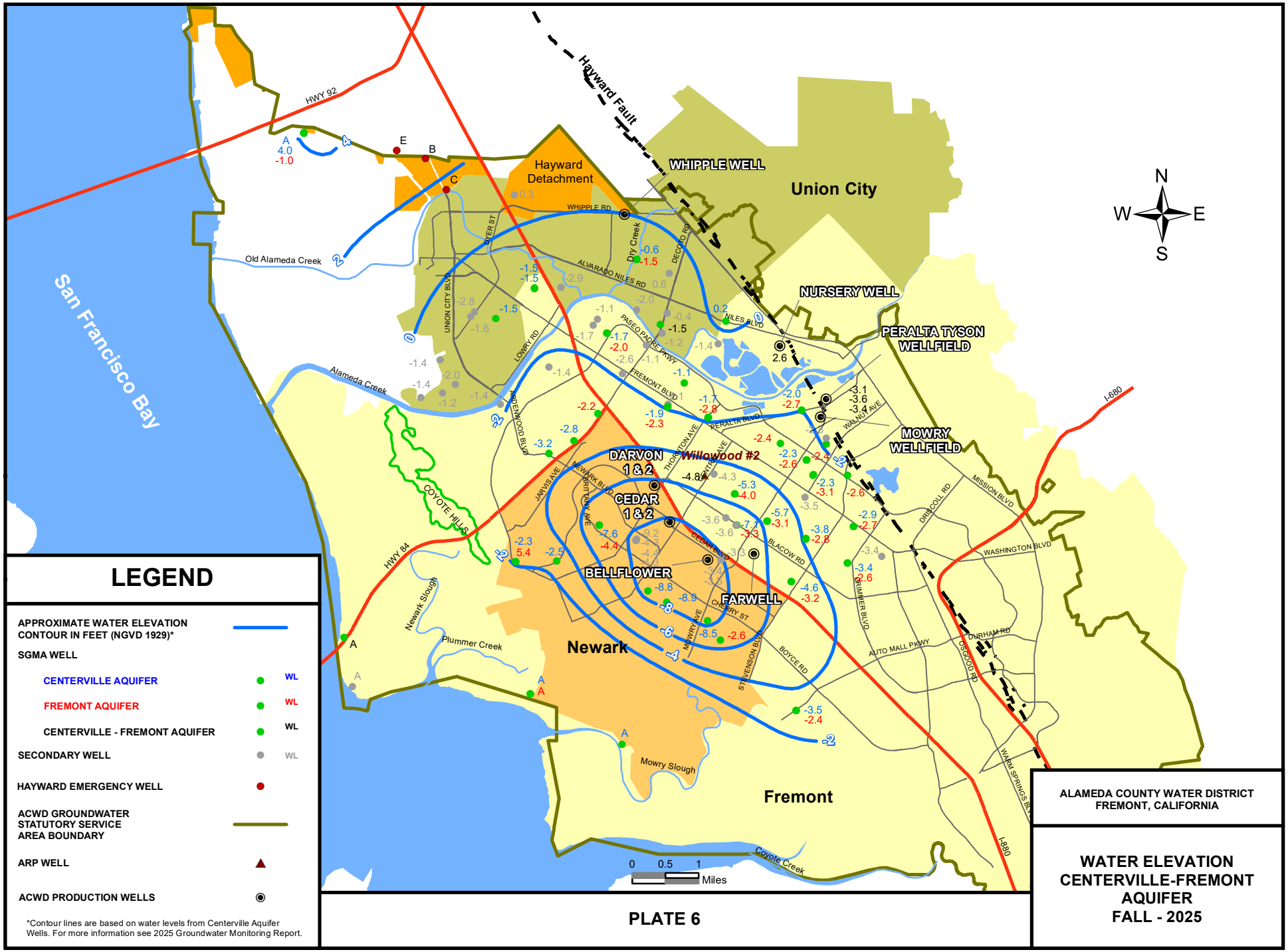
LEGEND

- APPROXIMATE WATER ELEVATION CONTOUR IN FEET (NGVD 1929)
- SGMA WELL — WL
- SECONDARY WELL — WL
- HAYWARD EMERGENCY WELL
- ACWD GROUNDWATER STATUTORY SERVICE AREA BOUNDARY
- ARP WELL
- ACWD PRODUCTION WELLS

ALAMEDA COUNTY WATER DISTRICT
FREMONT, CALIFORNIA

WATER ELEVATION
NEWARK
AQUIFER
FALL - 2025

PLATE 5



LEGEND

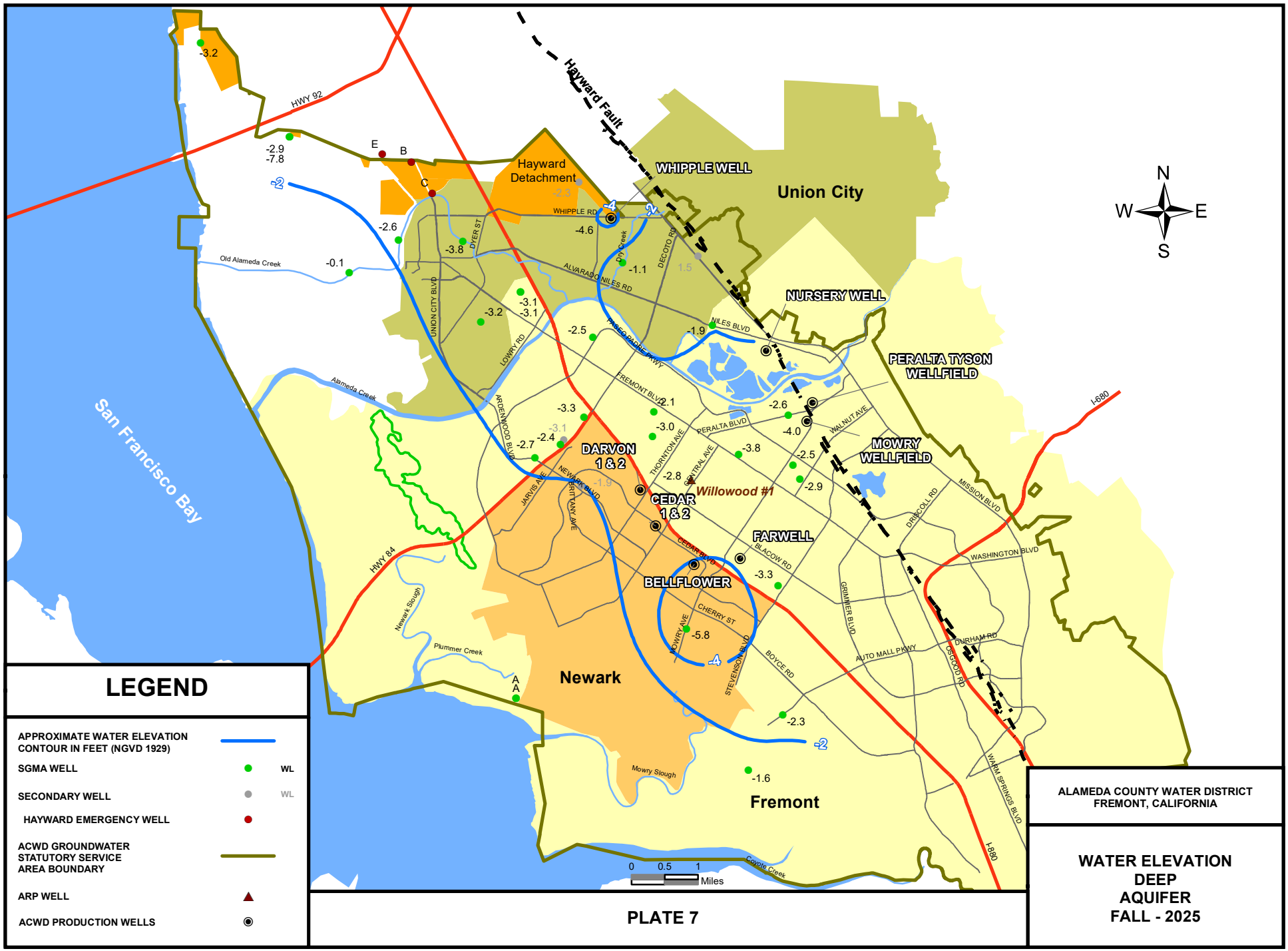
- APPROXIMATE WATER ELEVATION CONTOUR IN FEET (NGVD 1929)*
- SGMA WELL
  - CENTERVILLE AQUIFER — WL
  - FREMONT AQUIFER — WL
  - CENTERVILLE - FREMONT AQUIFER — WL
- SECONDARY WELL — WL
- HAYWARD EMERGENCY WELL
- ACWD GROUNDWATER STATUTORY SERVICE AREA BOUNDARY
- ARP WELL
- ACWD PRODUCTION WELLS

*Contour lines are based on water levels from Centerville Aquifer Wells. For more information see 2025 Groundwater Monitoring Report.

PLATE 6

ALAMEDA COUNTY WATER DISTRICT
FREMONT, CALIFORNIA

WATER ELEVATION CENTERVILLE-FREMONT AQUIFER FALL - 2025



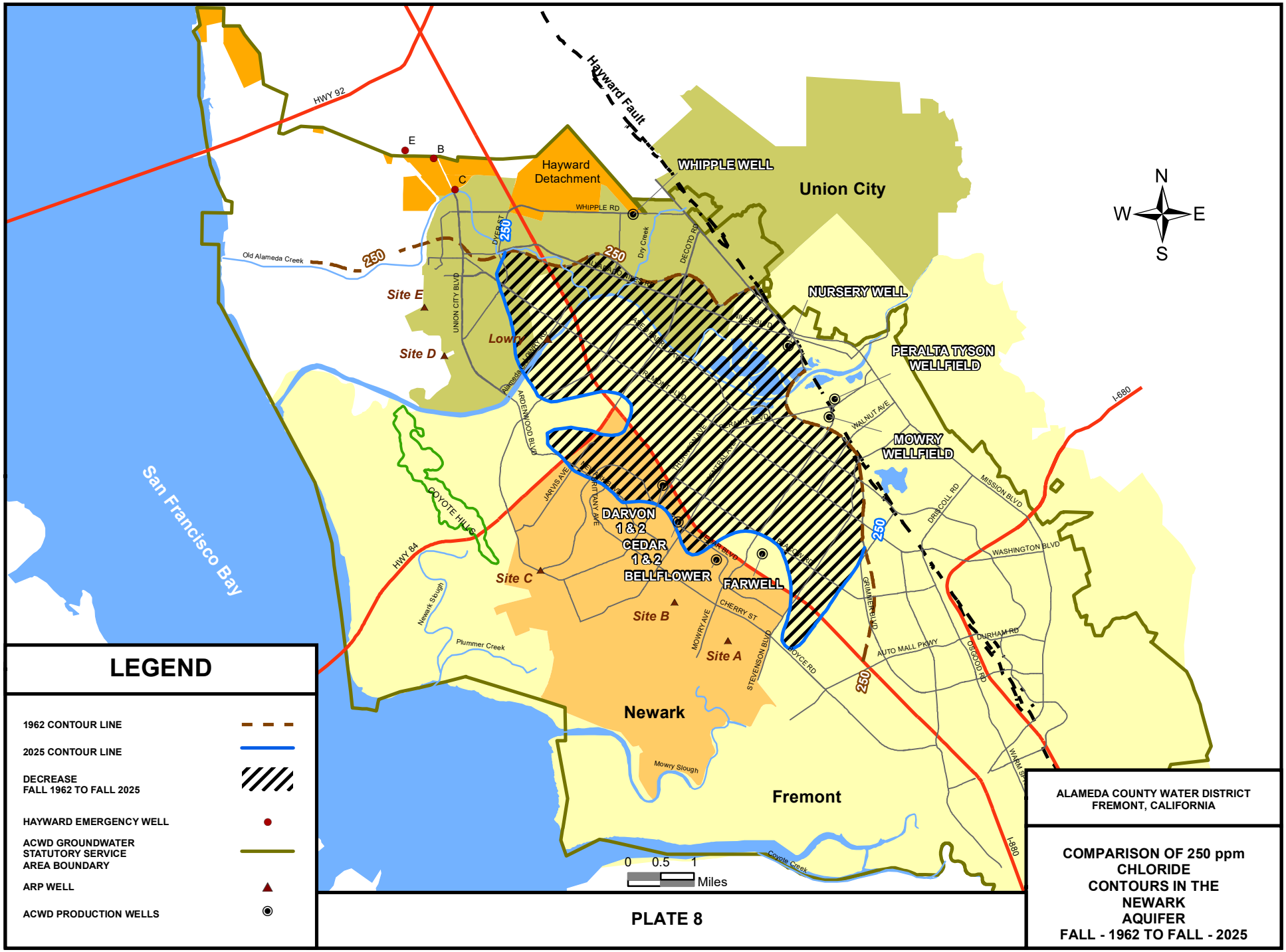
LEGEND

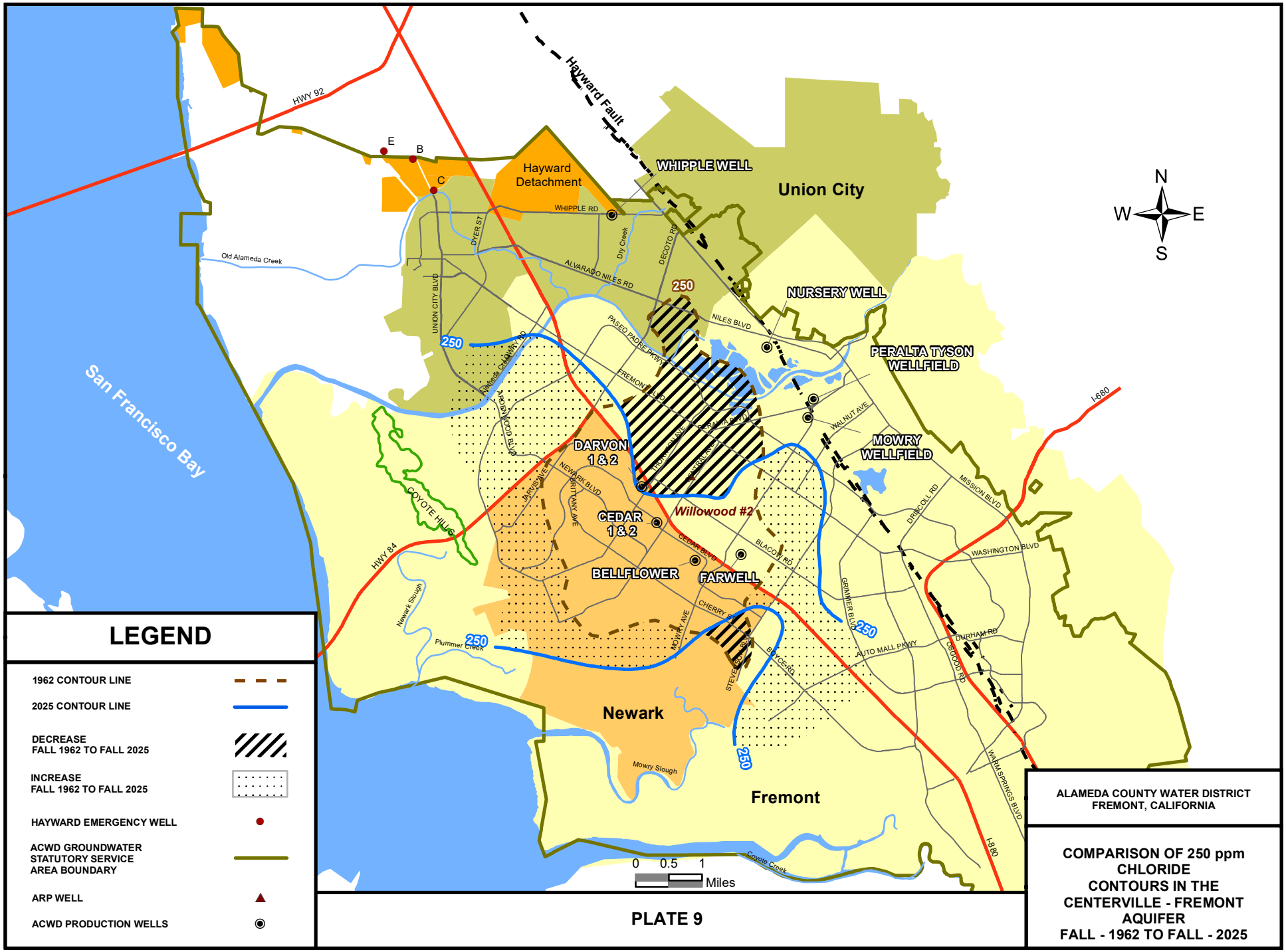
- APPROXIMATE WATER ELEVATION CONTOUR IN FEET (NGVD 1929)
- SGMA WELL — WL
- SECONDARY WELL — WL
- HAYWARD EMERGENCY WELL
- ACWD GROUNDWATER STATUTORY SERVICE AREA BOUNDARY
- ARP WELL
- ACWD PRODUCTION WELLS

PLATE 7

ALAMEDA COUNTY WATER DISTRICT
FREMONT, CALIFORNIA

WATER ELEVATION DEEP AQUIFER FALL - 2025


Hayward Fault
HWY 92
E
B
C
Hayward Detachment
WHIPPLE WELL
Union City
WHIPPLE RD
Old Alameda Creek
250
Site E
Site D
Lowry
NURSERY WELL
PERALTA TYSON WELLFIELD
MOWRY WELLFIELD
DARVON 1&2
CEDAR 1&2
BELLFLOWER
FARWELL
Site C
Site B
Site A
Newark
Fremont
San Francisco Bay
HWY 84
I-680
I-880
N
W
E
S
0 0.5 1
Miles
LEGEND
1962 CONTOUR LINE
2025 CONTOUR LINE
DECREASE FALL 1962 TO FALL 2025
HAYWARD EMERGENCY WELL
ACWD GROUNDWATER STATUTORY SERVICE AREA BOUNDARY
ARP WELL
ACWD PRODUCTION WELLS
PLATE 8
ALAMEDA COUNTY WATER DISTRICT
FREMONT, CALIFORNIA
COMPARISON OF 250 ppm CHLORIDE CONTOURS IN THE NEWARK AQUIFER
FALL - 1962 TO FALL - 2025



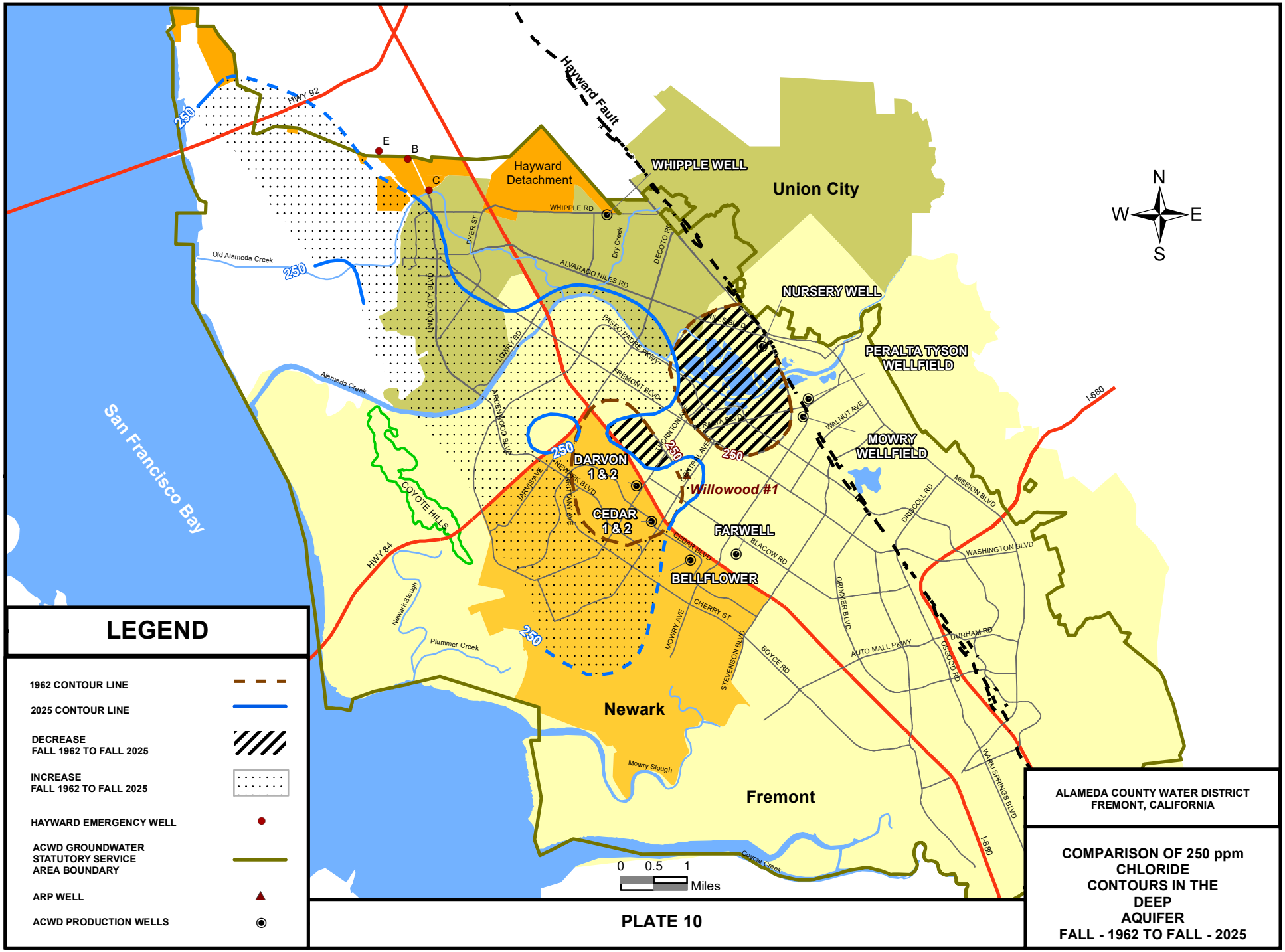
LEGEND

- 1962 CONTOUR LINE
- 2025 CONTOUR LINE
- DECREASE FALL 1962 TO FALL 2025
- INCREASE FALL 1962 TO FALL 2025
- HAYWARD EMERGENCY WELL
- ACWD GROUNDWATER STATUTORY SERVICE AREA BOUNDARY
- ARP WELL
- ACWD PRODUCTION WELLS

ALAMEDA COUNTY WATER DISTRICT
FREMONT, CALIFORNIA

PLATE 9

COMPARISON OF 250 ppm CHLORIDE CONTOURS IN THE CENTERVILLE - FREMONT AQUIFER FALL - 1962 TO FALL - 2025


Hayward Fault
HWY 92
250
E
B
C
Hayward Detachment
WHIPPLE WELL
Union City
WHIPPLE RD
DYER ST
Dry Creek
DECOTO RD
Old Alameda Creek
ALVARADO NILES RD
UNION CITY BLVD
NURSERY WELL
LOWRY RD
PASEO PADRE PKWY
FREMONT BLVD
PERALTA TYSON WELLFIELD
Alameda Creek
ARDENWOOD BLVD
DORNTON AVE
PERALTA BLVD
WALNUT AVE
I-680
MOWRY WELLFIELD
DARVON 1 & 2
NEWARK BLVD
JARVIS AVE
SKYLINE
Willowood #1
COYOTE HILLS
CEDAR 1 & 2
MISSION BLVD
DRISCOLL RD
FARWELL
BLACOW RD
WASHINGTON BLVD
HWY 84
CEDAR BLVD
BELLFLOWER
Newark Slough
CHERRY ST
GRIMMER BLVD
Plummer Creek
MOWRY AVE
STEVENSON BLVD
BOYCE RD
AUTO MALL PKWY
DURHAM RD
OSGOOD RD
Newark
Mowry Slough
Fremont
WARM SPRINGS BLVD
I-880
Coyote Creek
San Francisco Bay
N
W
E
S
0 0.5 1
Miles
LEGEND
1962 CONTOUR LINE
2025 CONTOUR LINE
DECREASE FALL 1962 TO FALL 2025
INCREASE FALL 1962 TO FALL 2025
HAYWARD EMERGENCY WELL
ACWD GROUNDWATER STATUTORY SERVICE AREA BOUNDARY
ARP WELL
ACWD PRODUCTION WELLS
ALAMEDA COUNTY WATER DISTRICT
FREMONT, CALIFORNIA
COMPARISON OF 250 ppm CHLORIDE CONTOURS IN THE DEEP AQUIFER
FALL - 1962 TO FALL - 2025
PLATE 10

ALAMEDA COUNTY WATER DISTRICT

WATER SUPPLY/DEMAND INVENTORY FY 2024/25 (ACTUAL)*

(1000's OF ACRE-FEET)

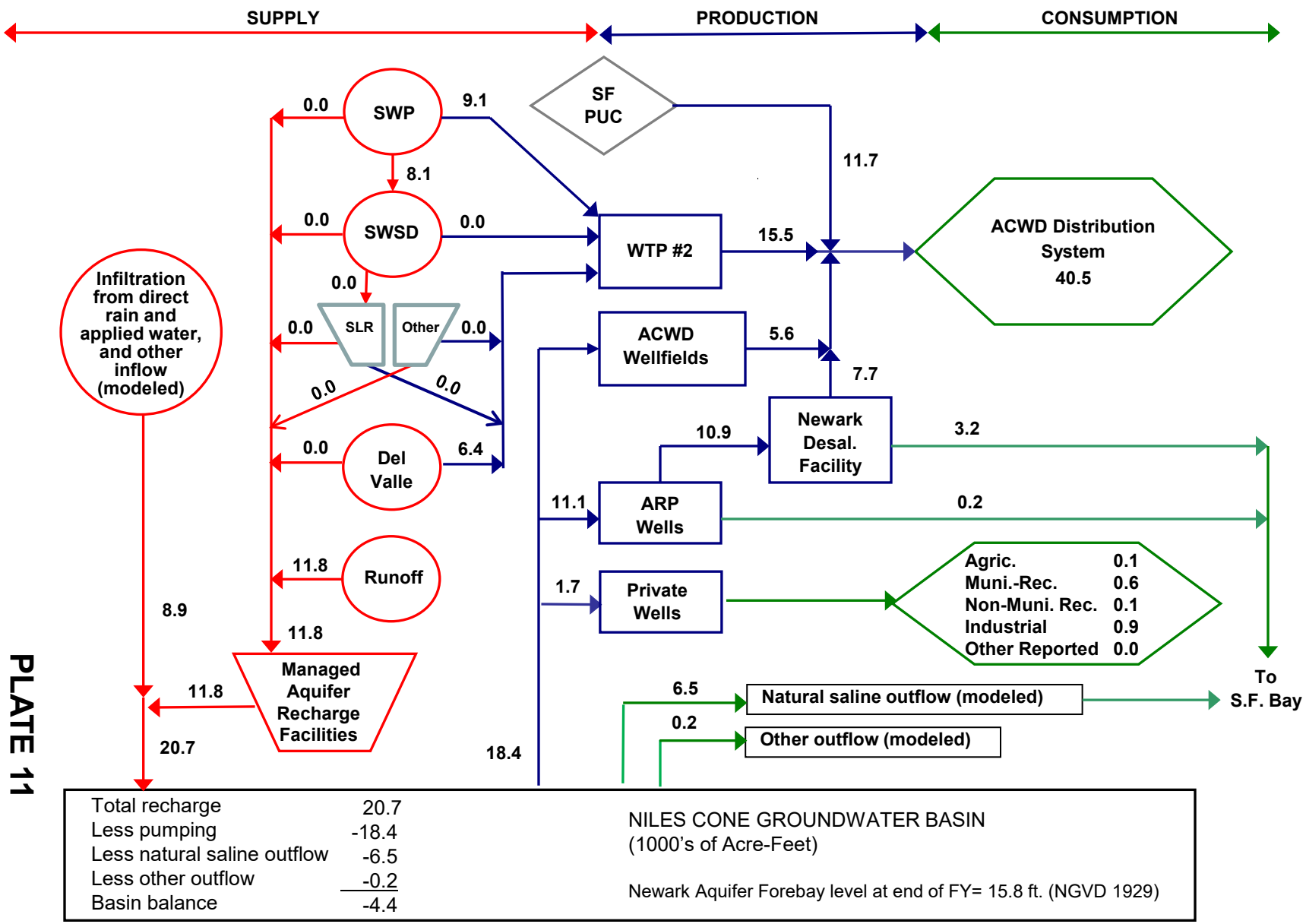


PLATE 11

Total recharge	20.7
Less pumping	-18.4
Less natural saline outflow	-6.5
Less other outflow	-0.2
Basin balance	-4.4

NILES CONE GROUNDWATER BASIN
(1000's of Acre-Feet)

Newark Aquifer Forebay level at end of FY= 15.8 ft. (NGVD 1929)

* Based on actual historical conditions, but quantities herein may deviate from true values due to limitations in accuracy of the numeric model and/or measurements.

ALAMEDA COUNTY WATER DISTRICT

WATER SUPPLY/DEMAND INVENTORY FY 2025/26 (FORECAST)

(1000's OF ACRE-FEET)

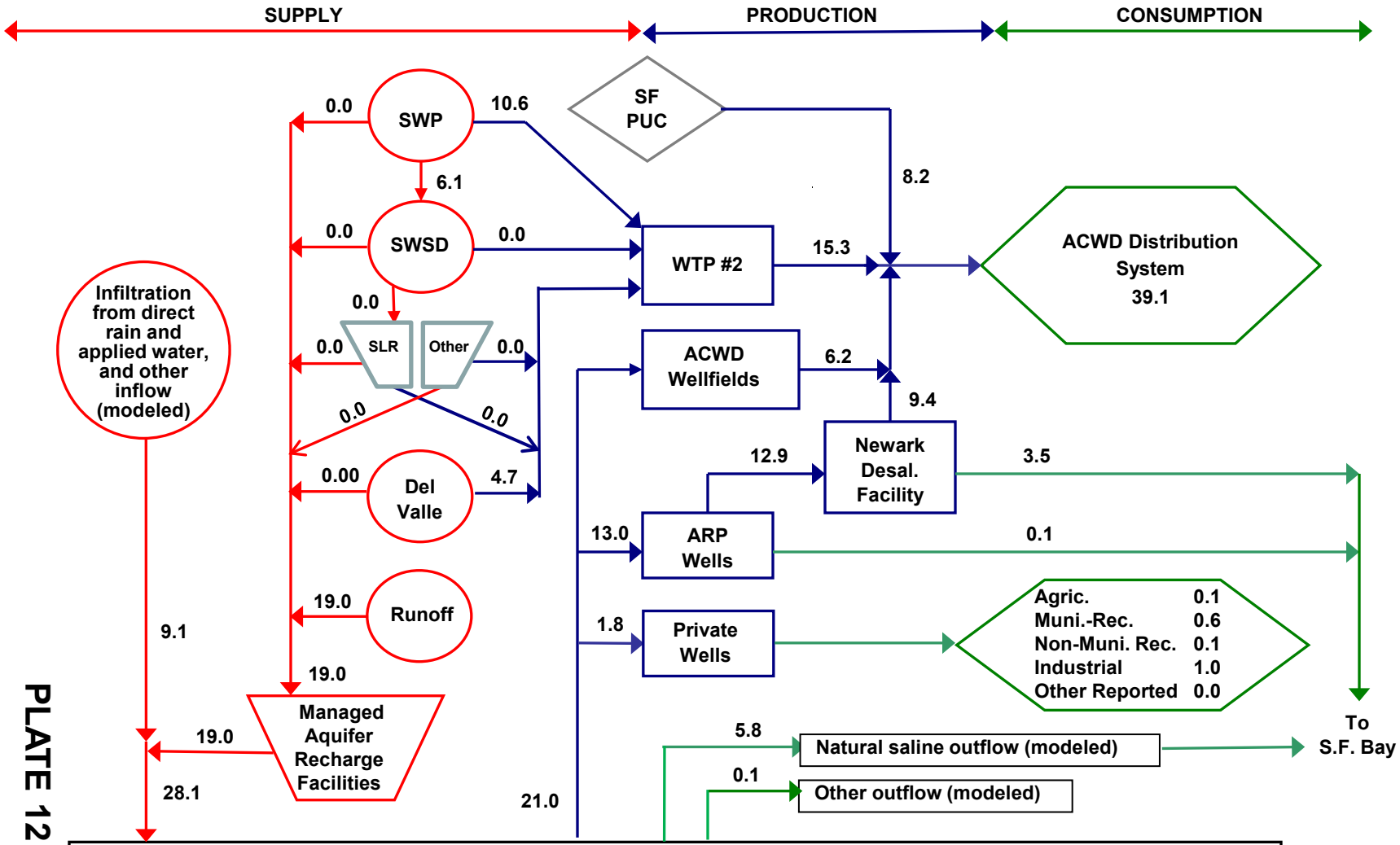


PLATE 12

Total recharge	28.1
Less pumping	-21.0
Less natural saline outflow	- 5.8
Less other outflow	-0.1
Basin balance	+1.2

NILES CONE GROUNDWATER BASIN
(1000's of Acre-Feet)

Newark Aquifer Forebay level at end of FY= 14 ft. (NGVD 1929)

ALAMEDA COUNTY WATER DISTRICT

WATER SUPPLY/DEMAND INVENTORY FY 2026/27 (FORECAST)

(1000's OF ACRE-FEET)

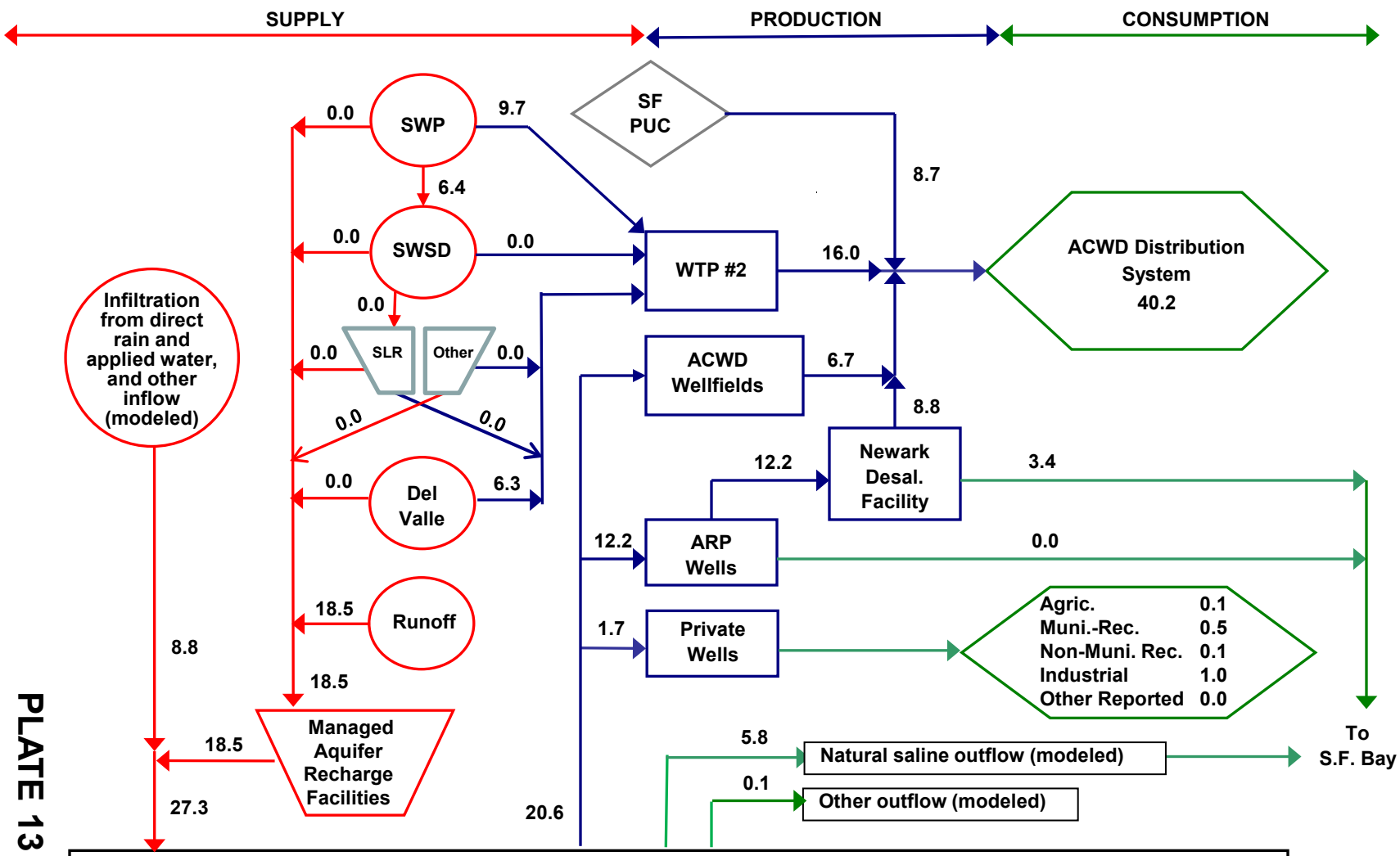


PLATE 13

Total recharge	27.3
Less pumping	-20.6
Less natural saline outflow	- 5.8
Less other outflow	- 0.1
Basin balance	+0.8

NILES CONE GROUNDWATER BASIN
(1000's of Acre-Feet)

Newark Aquifer Forebay level at end of FY= 15 ft. (NGVD 1929)