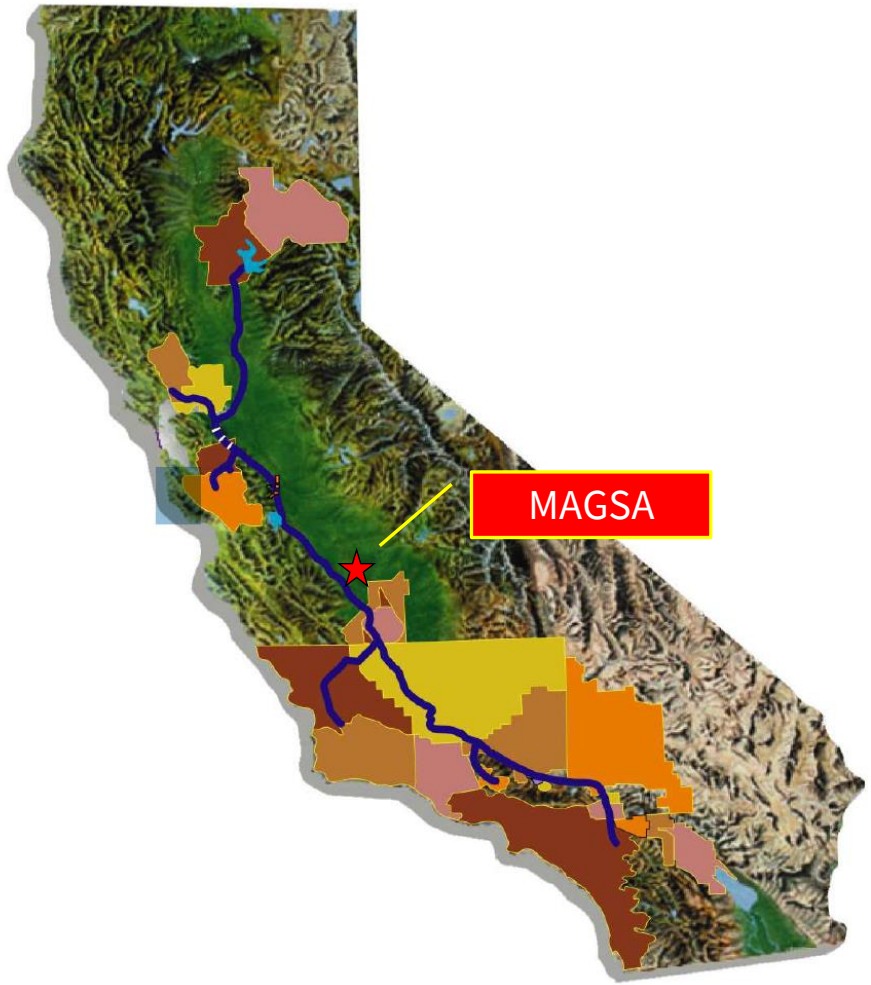
AQUATERRA
WATER BANK

McMullin Area GSA, Fresno County

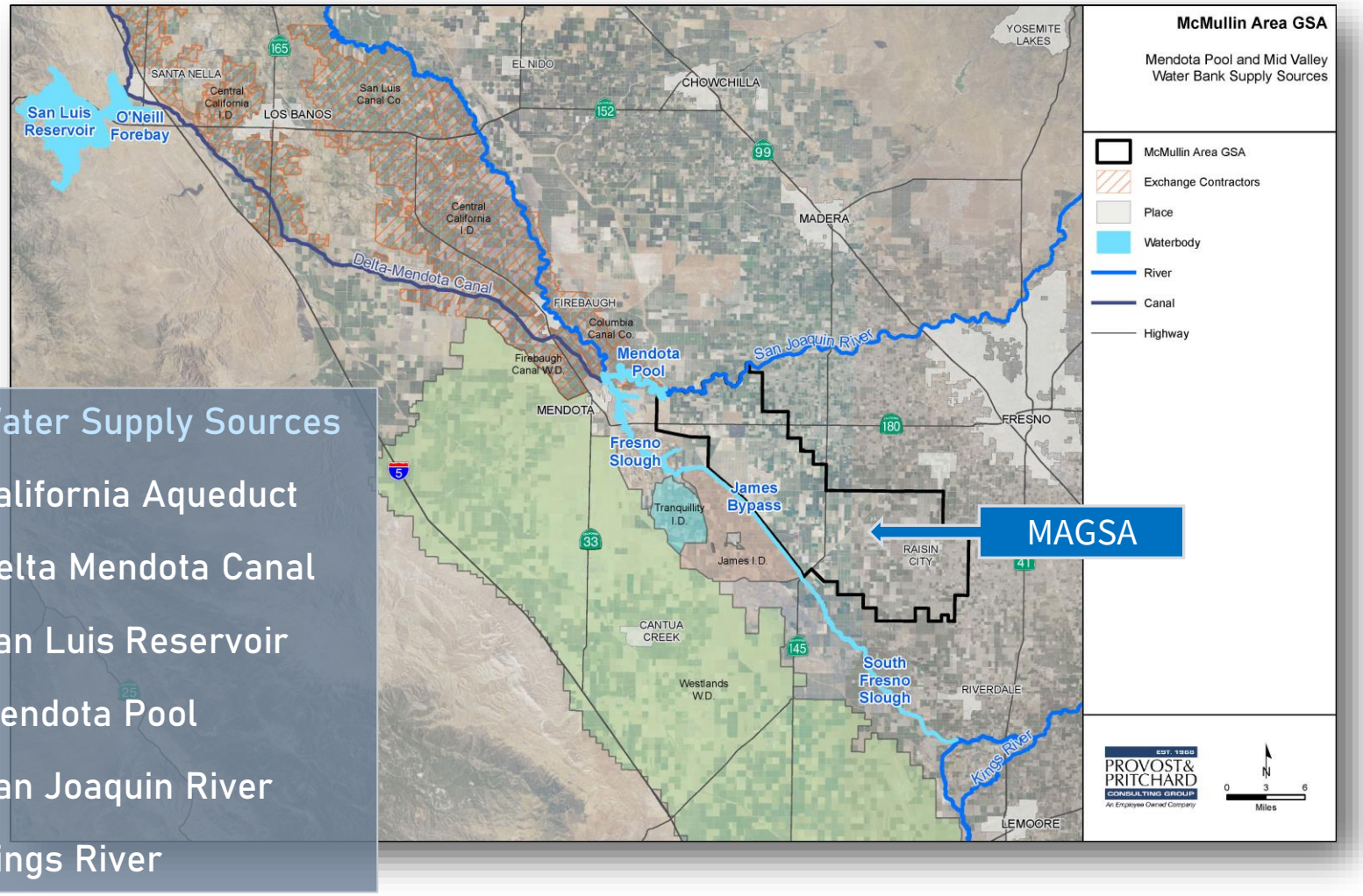
McMullin Area GSA (MAGSA)

- Formed in response to the passing of the Sustainable Groundwater Management Act (SGMA)
- Located in Fresno County, encompassing 120,635 acres
  - 83% permanent and field crops
  - 1.2% rural residential
  - Two ecological reserves
- MAGSA last developed area of Kings Subbasin
  - No Kings River water rights for surface irrigation
  - Agriculture developed based exclusively on groundwater
  - **1.8 Million acre-feet** of available groundwater storage in cone of depression created by local pumping



Aquaterra Water Bank Overview

- **1.8 million acre-feet available groundwater storage capacity** (nearly the storage of San Luis Reservoir)
- Situated near and with direct connections to major water sources
- Soils suited for water percolation and recovery
- Potential Partnership with Exchange Contractors to facilitate project recovery



Water Supply Sources

California Aqueduct

Delta Mendota Canal

San Luis Reservoir

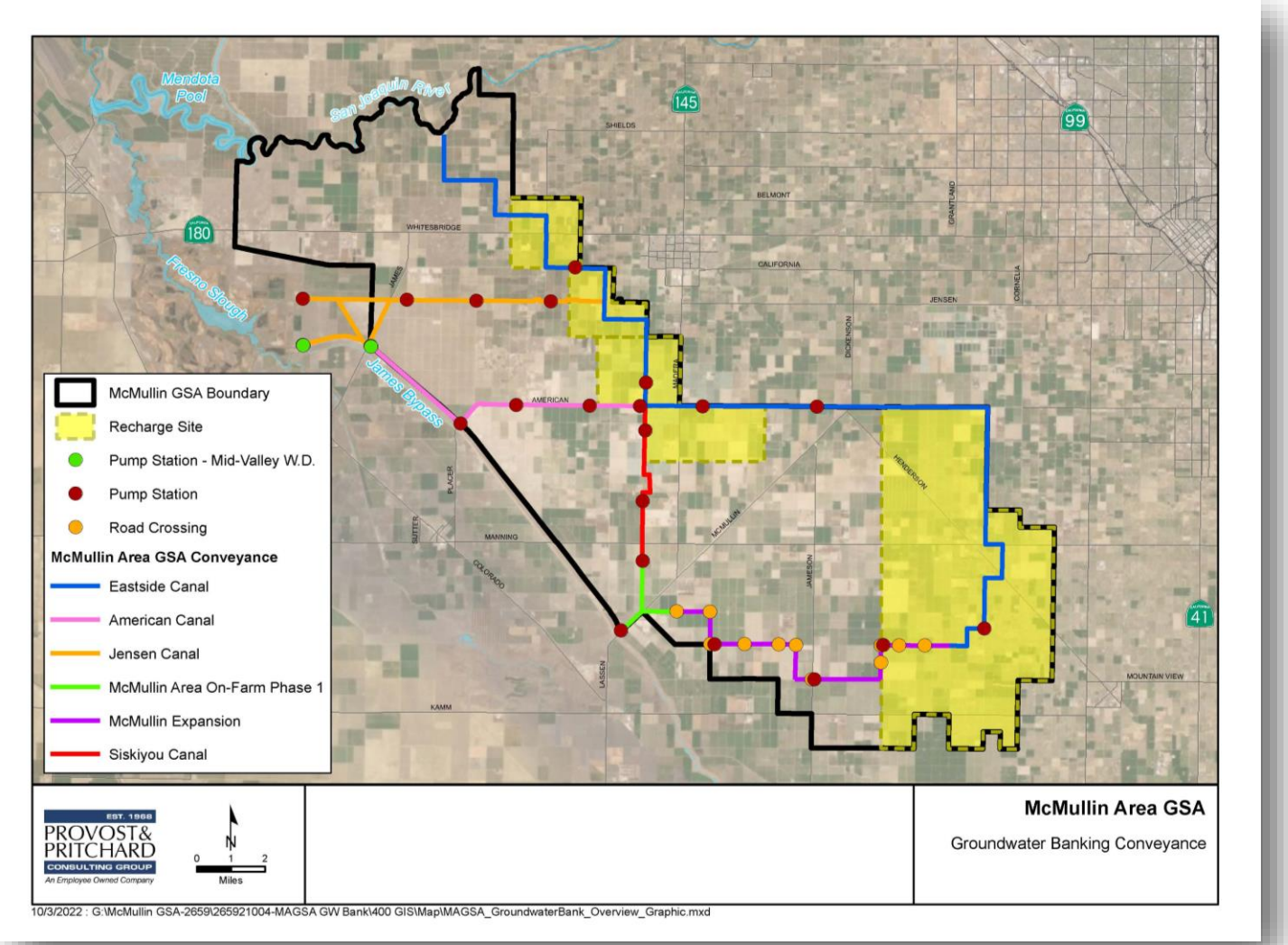
Mendota Pool

San Joaquin River

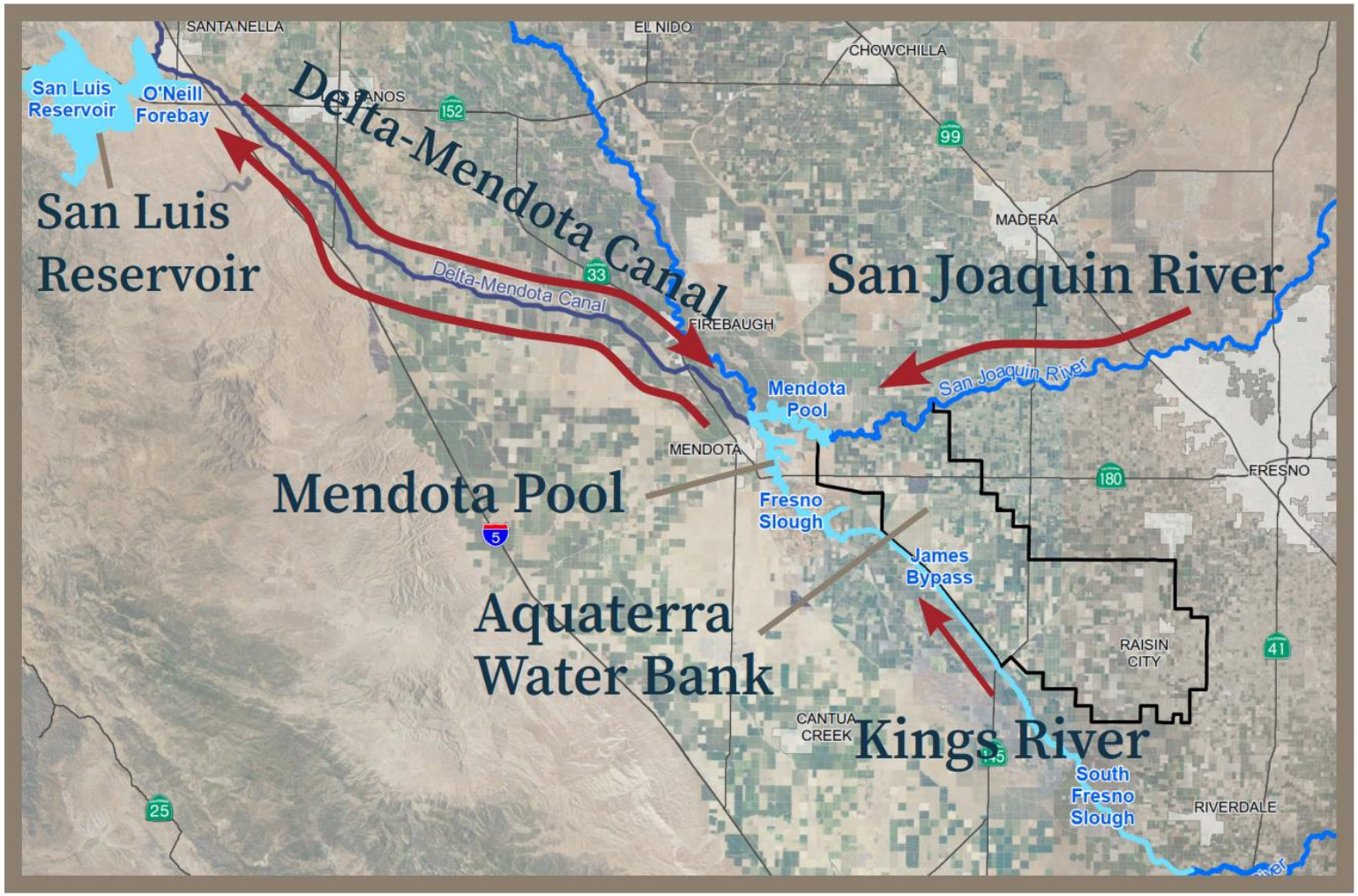
Kings River

Aquaterra Water Bank Features

- **Three conveyance connections** to deliver water to and from groundwater banking and on-farm recharge sites: American, Jensen, and McMullin Expansion canals
- **23 pumping stations** to lift water to MAGSA's east side
- **Eastside canal** will deliver water to recharge sites
- **Dedicated recharge basins** will provide 1,540 AF per day recharge capacity and up to an estimated 208,000 AF annually.
- **87 recovery wells** will provide 960 AF per day of recovery capacity and up to 146,000 AF annually.
- **55 monitoring wells**
- **770 cfs** conveyance and spreading; **480 cfs** recovery (extraction) capacity

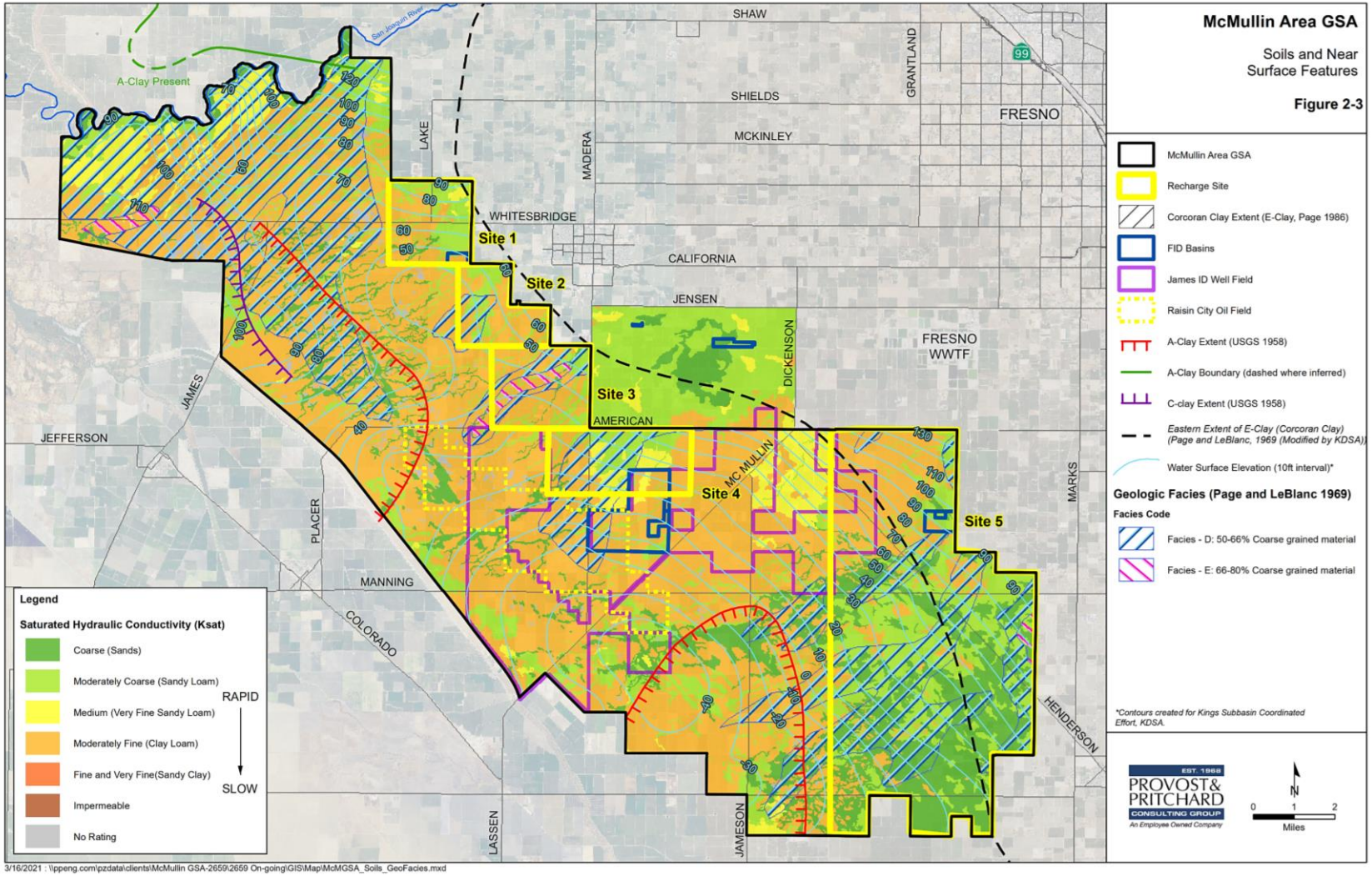


Delivery and Extraction Infrastructure



Geologic and Hydrogeologic Characteristics

- **Coarse- to moderately coarse-grained soils suited for groundwater recharge** along the northern and eastern edges, western boundary, and southeastern portion of MAGSA
- **Favorable geologic formations for groundwater recharge** located in the northern and southern ends of MAGSA, with small areas along the eastern edge
- Groundwater flows into the GSA from east in a southwest direction; groundwater flows toward cone of depression (southwest portion)

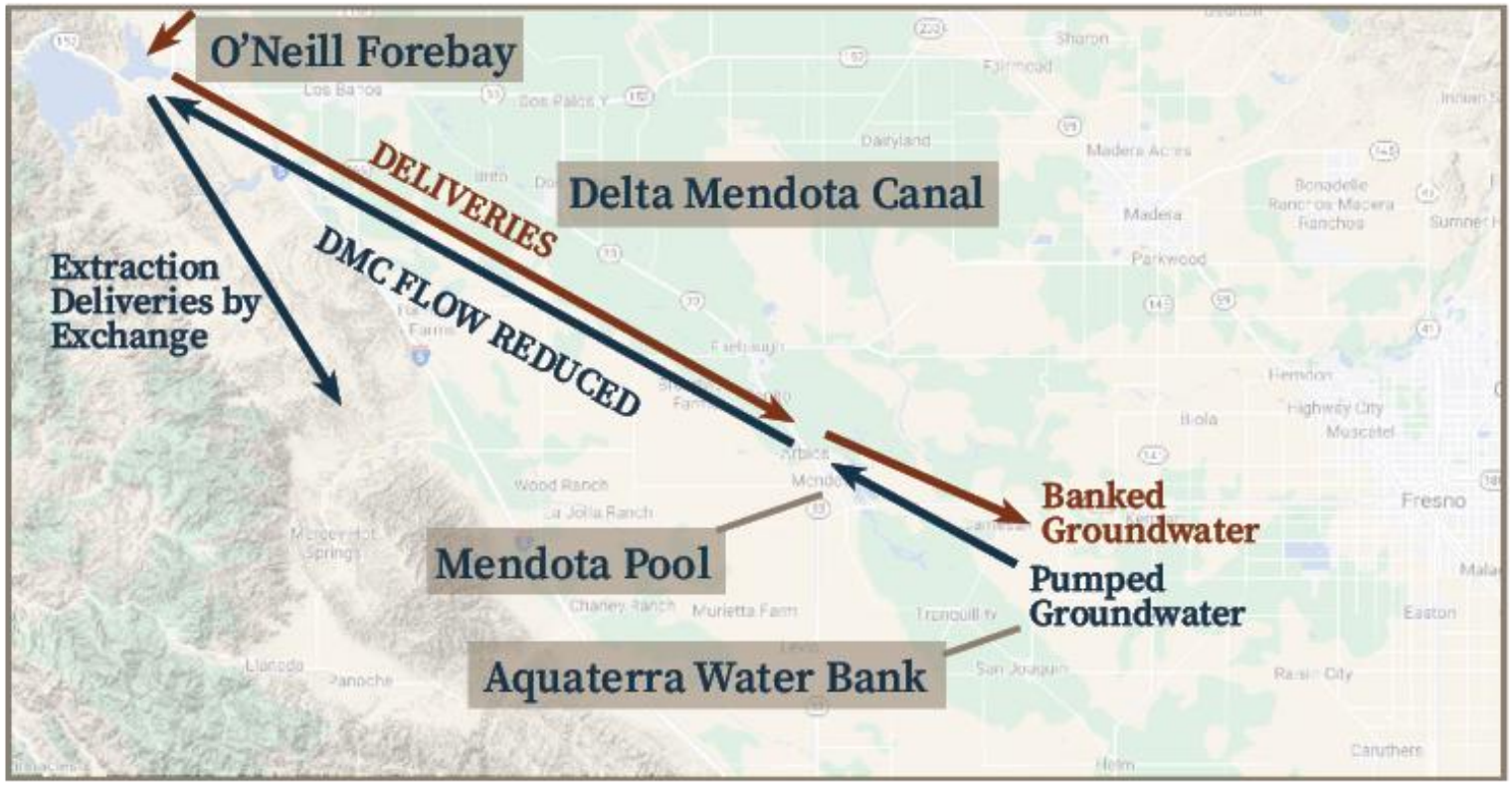


Aquaterra Water Bank Operations

SURFACE WATER DELIVERIES
Aquaterra will receive water from the Fresno Slough (hydraulically connected to Mendota Pool).

Using available capacity on the Delta-Mendota Canal, water can be received from the SWP and CVP systems.

RECOVERY
Extractions from Aquaterra can be returned to CVP or SWP contractors by exchange using the Delta-Mendota Canal.



Water Quality

EXCHANGE AND/OR RECHARGE SURFACE WATER QUALITY

Delta-Mendota Canal near discharge to Mendota Pool

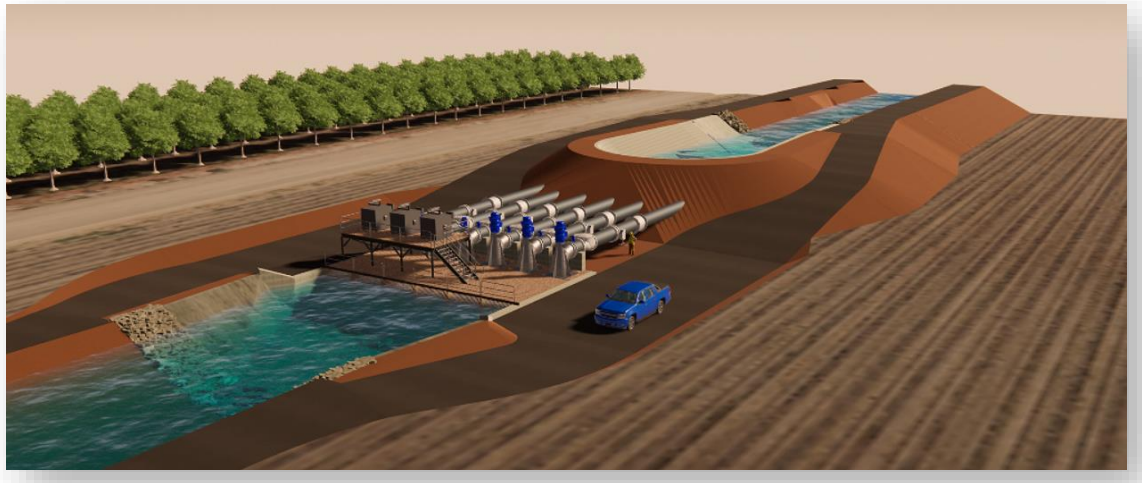
- 2000 – 2019 period annual averages: TDS ~326 mg/L
- Wet and above normal years during proposed recharge periods (Feb-March, Sept-Dec): TDS ~285 mg/L
- Dry and critical years during likely extraction period: TDS ~368 mg/L

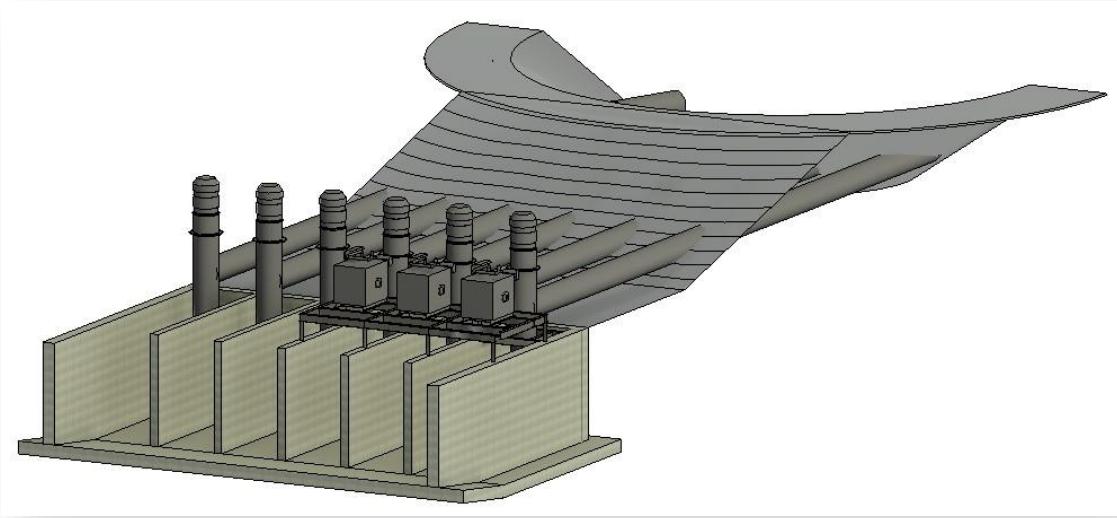
GROUNDWATER QUALITY

- Most recent measurements indicate regional groundwater quality can have higher salinity (average higher than 500 mg/L) than DMC inflows to Mendota Pool (generally less than 400 mg/L)
- Water returned to Mendota Pool must have salinity less than 450 mg/L
- Aquaterra Water Bank has many areas with water quality better than 450 mg/L, and can preferentially extract groundwater with better quality through wells located in those areas
- Over time, Water Bank operations and MAGSA's plans to augment local water supply with other high-quality surface water supplies will gradually improve local groundwater quality

Operations Project Yield

	Design Characteristics
Recharge (Storage)	
Capacity (cfs)	770
Monthly Recharge (AF)	45,800
Annual Recharge (AF)	208,000
Extraction (Recovery)	
Capacity (cfs)	480
Monthly Extraction (AF)	28,600
Annual Extraction (AF)	146,000
Maximum Storage (AF)	800,000





Aquaterra Water Bank Project Costs

Capital Costs Overview

Cost	Amount
Range of Total Capital Costs	$545 - $887 Million
Range of Capital Costs per AF Storage Capacity	$680 - $1110/acre-foot *Note: Subscription to be based on $900/acre-foot cost*

Annual Costs

Cost	Amount
Range of Baseline Annual Costs	$26 - $43 Million
Recharge Costs	$93/acre-foot
Recovery Costs	$164/acre-foot

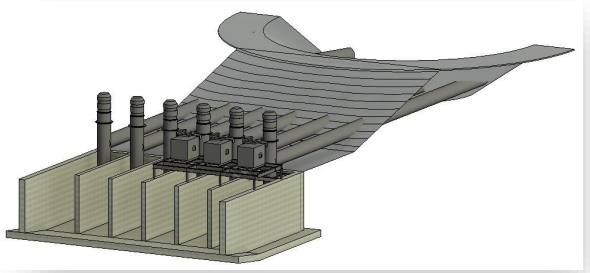
Aquaterra Water Bank Subscription Costs

Participants Identify Amount of Storage Subscription at $900/AF

Installments (5 Payments)	Amount
March 1, 2023	$25/AF
March 1, 2024	20% of Subscription Fee (Est. $175/AF)
March 1, 2025	30% of Subscription Fee (Est. $210/AF)
March 1, 2026	40% of Subscription Fee (Est. $245/AF)
December 31, 2026	Remaining Portion of Actual Costs

In comparison, Sites Reservoir will store an estimated 1.5 million AF for $3 billion, or $2,000/AF

Subscriber Benefits and Participation



DEFINED PRIORITY FOR RECHARGE AND EXTRACTION OPERATIONS

QUARTERLY CONSTRUCTION PROGRESS REPORTS

Participants are kept up-to-date on the Aquaterra Water Bank's construction progress on a quarterly basis.

PROJECT ADVISORY COMMITTEE MEMBERSHIP

Participants become members of the Project Advisory Committee on payment of First Installment

OPTION TO SHARE OR EXIT

Participants may assign their project share to other parties or elect not to complete their payments and drop out of the project.

Aquaterra Water Bank Status

Program Initiation

2020 – Q1 2021

2021 – Q3 2022

Program Development:
Identify permits
Cost analysis
Develop agreements

2022-23

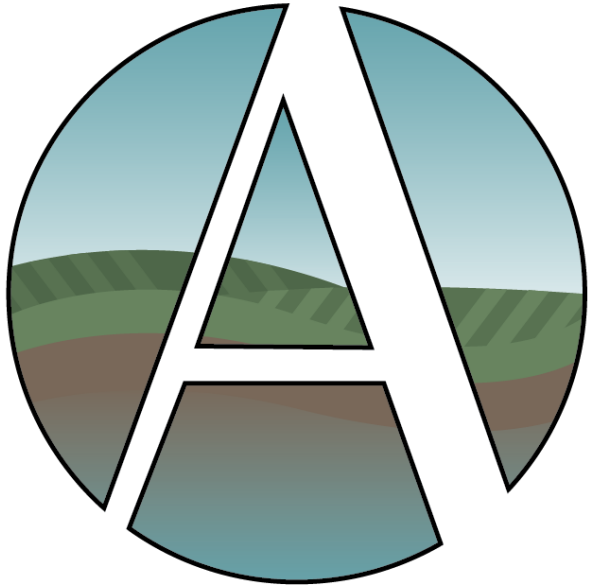
Project Implementation I:
Permitting
Phase I design
Execute agreements

2024 - 2025

Project Implementation II:
Phase II design
Construction begins

2025 – 2027

Project Startup
Construction



AQUATERRA WATER BANK

Appendices

Aquaterra Water Bank Characteristics

High recharge rates, with ability to capture Article 21 Water

Upstream location on California Aqueduct

- Minimizes potential operational capacity limitations
- Reduced initial costs – Minimal initial pumping costs
- Reduced operational costs – Low energy costs
- Physical connection to the Mendota Pool

Firm Recovery Capability – Extractions exchanged with highest seniority Delta water user

Delta-Mendota Canal Availability (Conservative)

- Figure shows maximum, minimum, and average monthly diversions from 1980 – 2018.
- Peak diversions:
  - Occurred July 2006
  - 179,449 AF (2,918 cfs)
- Conservative available capacity assumption:
  - August 2018 for recent year conservative estimate: 140,741 AF (2,289 cfs)
  - August 2018 flow rate – maximum historical monthly deliveries = minimum available capacity for additional deliveries
  - 40,000 AF + capacity per month for 6 months

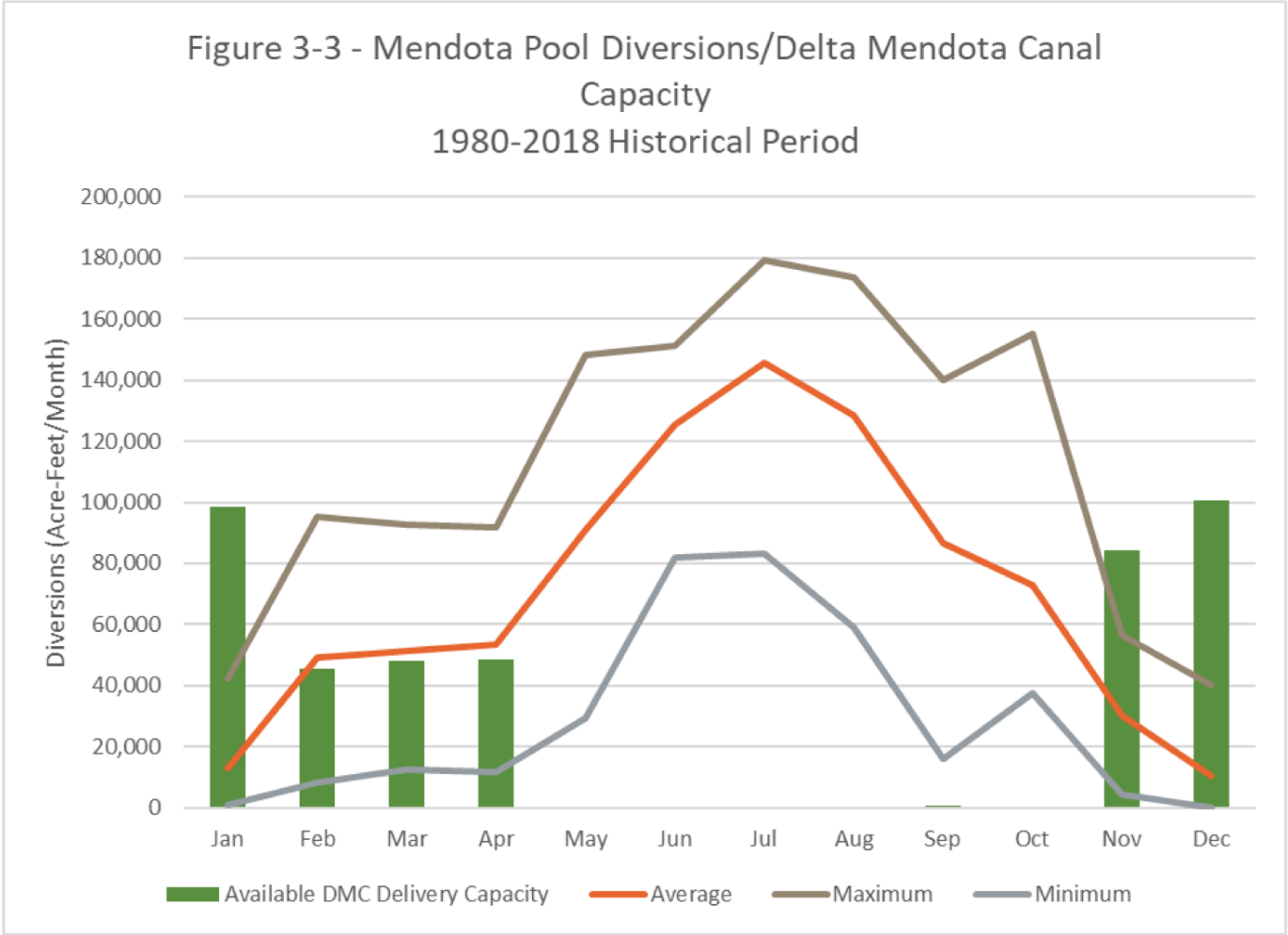


Figure 3-3 Mendota Pool Diversions/Delta-Mendota Canal Capacity

Delta-Mendota Canal Availability (Moderate)

- Figure shows 10-percentile wettest monthly diversions and 90-percentile driest monthly diversions (rather than absolute max and min)
- Moderately conservative available capacity assumption:
  - Minimum 40,000 AF recharge conveyance capacity for 7 months (April – Oct)
  - Shows no recharge conveyance capacity during summer peak irrigation months (June – Aug)
- This analysis is used for the project definition in the Water Bank Feasibility Study

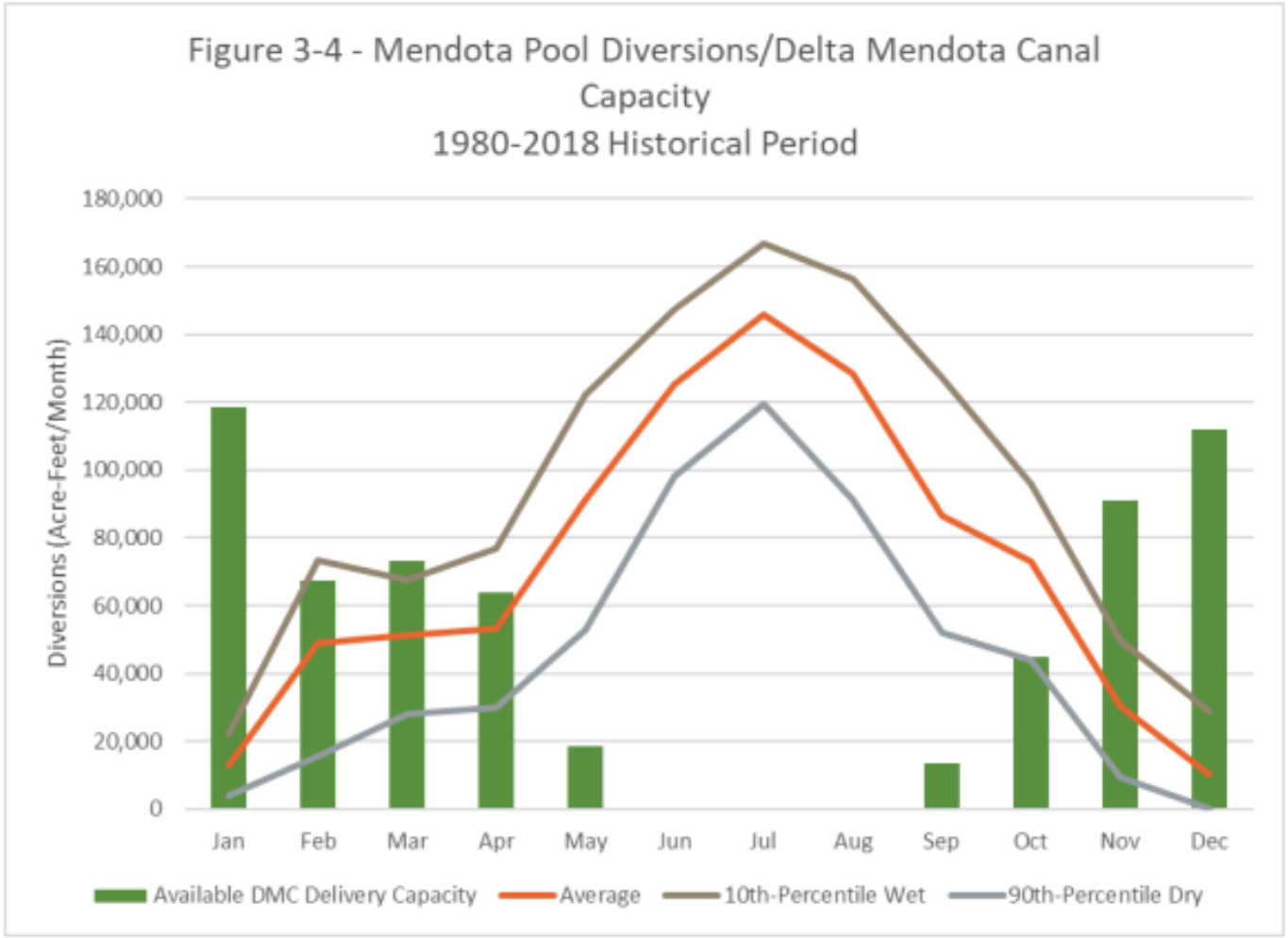


Figure 3-4 Mendota Pool Diversions/Delta-Mendota Canal Capacity- Historical Period

Annual Recharge Operations

- Two available recharge periods
  - February – March (Temporary Water: SWP Article 21, CVP Section 215, Carryover Water)
  - October – December (allocated SWP and CVP exceeding annual demands)
- 208,000 AF total annual recharge
- Conservative proposed operation based on very wet flow scenario on DMC

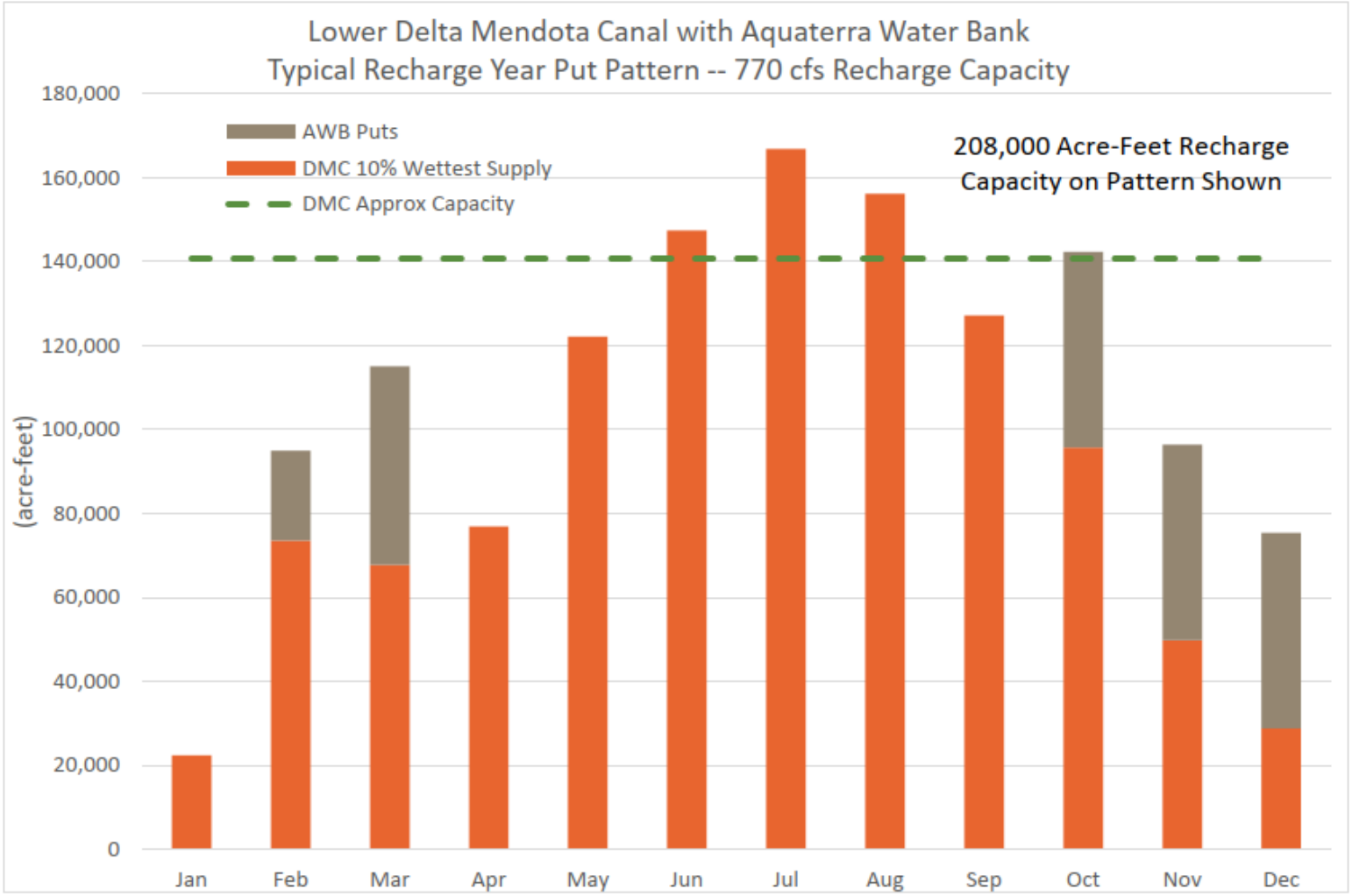


Figure 3-5 Lower Delta-Mendota Canal with Aquaterra Groundwater Bank Typical Recharge Year Put Pattern

Annual Extraction Operations

- 28,600 AF pumping per month (May – Sept)
- 146,000 AF total annual pumping (extraction)
- Compares extractions to lower Delta-Mendota Canal deliveries in dry years
    - Maximum physical extraction amount while maintaining ability to exchange with DMC flows upstream at O'Niell Forebay
- Conservative proposed operation

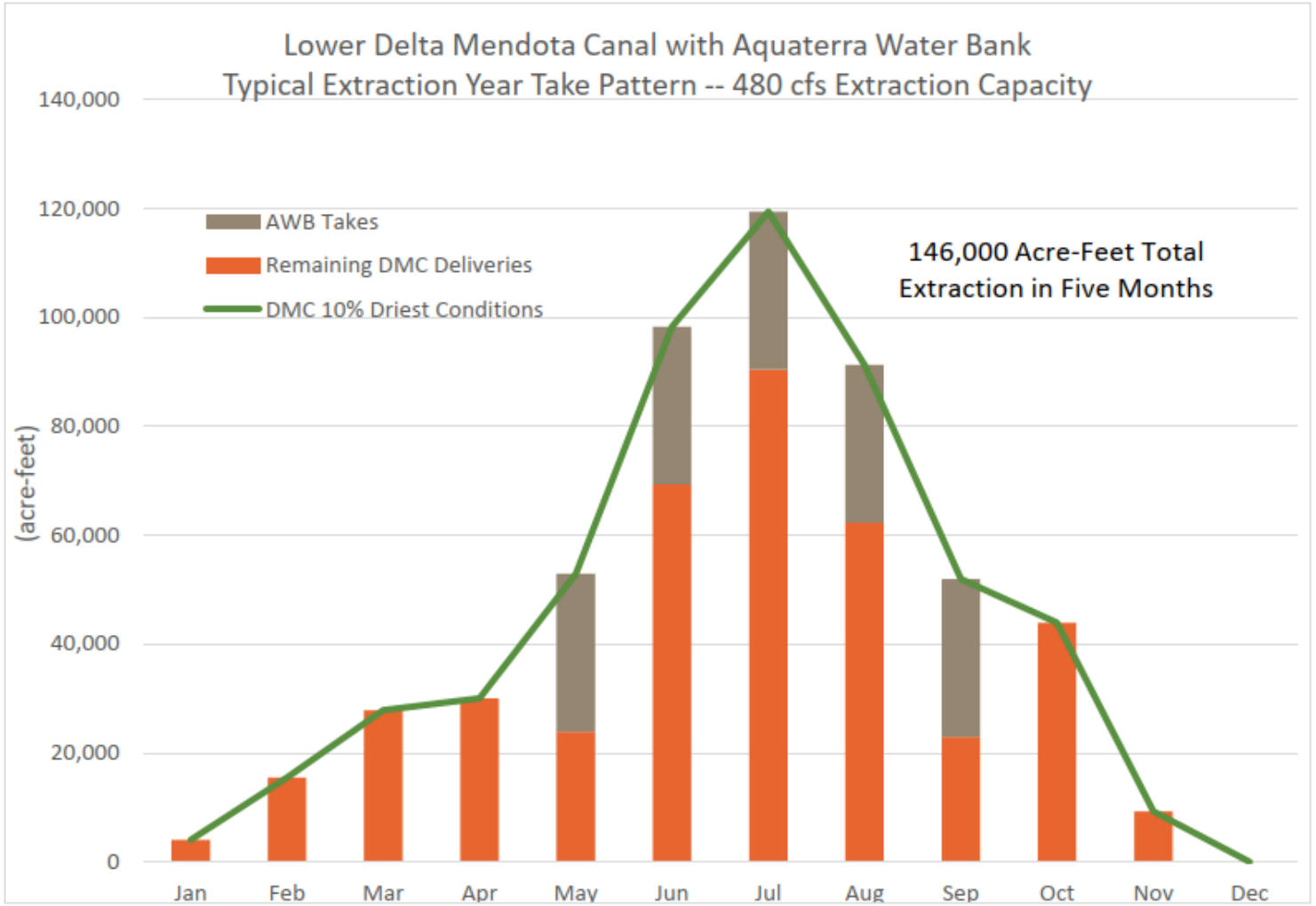


Figure 3-6 Lower Delta-Mendota Canal with Aquaterra Groundwater Bank Typical Extraction Year Take Pattern

Water Quality