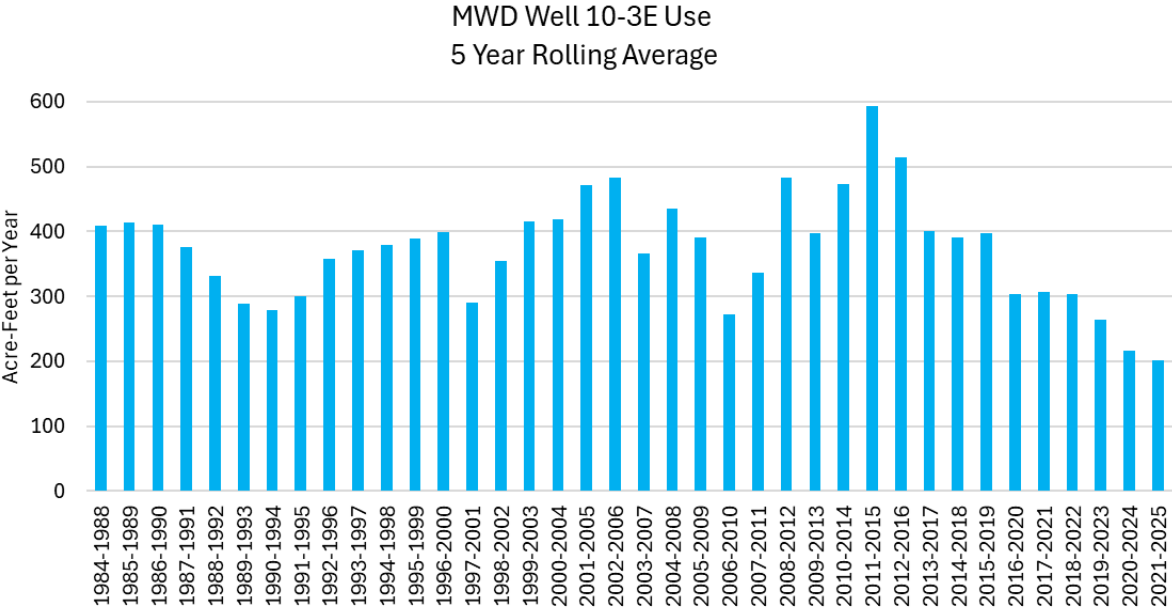


# Drought Contingency Plan Groundwater Conservation Grant Contract No. 2020-3115 IGA Northern Avenue Lateral Restoration

## FINAL GROUNDWATER SAVINGS MONITORING REPORT – Q2 2025

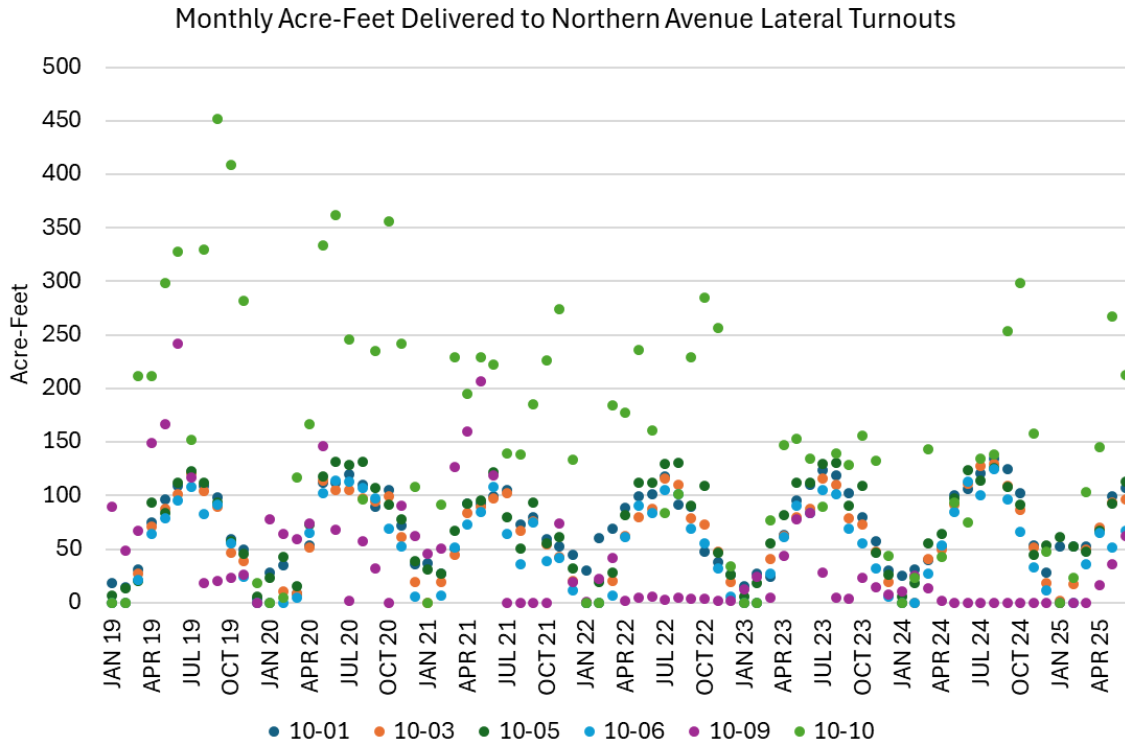
PREPARED BY ANDREW FRASER, PROJECT ENGINEER, MARICOPA WATER DISTRICT

The improved capacity to the Northern Avenue Lateral over the last five years has led to a decreased reliance on groundwater sourced from MWD Well 10-3E (ADWR Well Registry Number 55-613005). Since 1984, the average annual use from Well 10-3E was 370 acre-feet/year. Over the last 5 years, that use has fallen to an average of 201 acre-feet/year due in part to the capacity improvements made possible through this grant project. The graph below depicts the 5-year rolling average of annual acre-feet of groundwater pumped by Well 10-3E. As noted in the initial grant application, MWD began to experience significant capacity issues around 2010 along the Northern Avenue Lateral due to the degraded conditions of aging Corrugated Metal Pipe (CMP) Culverts used at most roadway crossings. The data below clearly depicts the increased reliance on Well 10-3 E during the years that followed. Through this grant, replacement of aging culverts began in late 2022 and the subsequent decrease in use of Well 10-3E is shown in the last three 5-Year rolling averages depicted in the chart below. While there are exogenous factors that also influence water demand, it is estimated that this project has reduced groundwater use by approximately 100 acre-feet/year since 2022 for a total savings of 350 acre-feet at present.



Since the initial submittal of the grant application in 2020, there has been considerable development within MWD's service territory including on lands served by the Northern Avenue Lateral. One of the overall effects of the transformation from irrigated farmland to residential and commercial development is decreased water demand and subsequently the increasing availability of renewable surface water. Historically, MWD's overall demand exceeded the supply of surface water and that imbalance led to the development of MWD's well field. Baring a significant drought that impacts the Agua Fria River watershed, MWD anticipates that an increasing proportion of the overall water demand can be met with surface water and will lead to groundwater use reductions across the district.

Since 2019, total demand along MWD's Northern Avenue Lateral has fallen from 6,520 acre-feet/year to 4,650 in 2024 due to development of former agricultural lands. This is illustrated in the declining monthly demand associated with MWD Deliveries 10-09 and 10-10 in the graph below. It is anticipated that demand will continue to decrease for these deliveries over the next 5-10 years as development absorbs the remaining agricultural lands along the SR 303 corridor. Conversely, it is predicted that demand for deliveries 10-01, 10-03, 10-05, & 10-06 will remain stable for the foreseeable future. These deliveries are associated with established homes and hobby farms and are unlikely to experience redevelopment. The area is bounded by Perryville Rd, Northern Avenue, Cotton Lane and Glendale Avenue. It can be predicted that the combined effect of declining overall demand district wide, a currently stable and sufficient supply of surface water, and the restored capacity of the Northern Avenue Lateral that all demand along the Northern Avenue Lateral will be met utilizing surface water (when available) rather than groundwater from Well 10-3E. The exception being MWD's annual Beardsley Canal dry-up which occurs between mid-December and mid-February every year when surface water is unavailable. During the annual dry-up. Over the last 5 years, the average total water demand for deliveries 10-01, 10-03, 10-05, 10-06, and 10-9 during the annual dry-up period was 179 acre-feet and is sourced exclusively from groundwater (Note: Delivery 10-10 is the Adaman Water District, and it is ineligible to receive MWD groundwater due to existing statutes and regulations). Over the next 5-10 years it is predicted that annual groundwater use from Well 10-3E will continue to average around 200 acre-feet/year due primarily to the annual dry-up period. When the remaining agricultural lands served at delivery 10-09 are developed it is expected that the annual use will fall an additional 20-30 acre-feet to 170-180 acre-feet/year



In addition to the groundwater savings from the reduced use of MWD’s 10-3E Well, the increased capacity of the Northern Avenue Lateral has increased MWD’s ability to deliver surface water to the Adaman Water District. Beginning in late summer 2024, Adaman began to increase its surface water delivery compared to the previous year. While MWD does not monitor Adaman’s ground water use, it is anticipated that this increase in surface water delivered is supplanting Adaman’s use of their own wells and groundwater leading to additional groundwater savings in the West Valley. (Adaman Water Districts resources are limited to MWD surface water and groundwater from the Adaman Well Field).

### Summary

- Through the funding provided by the Drought Contingency Plan Groundwater Savings Grant and ADWR, Maricopa Water District was able to replace five aging culverts along Northern Avenue that had created capacity restrictions.
- After replacement, the capacity of the Northern Avenue Lateral to deliver surface water significantly increased and led to a corresponding reduction of groundwater use from MWD’s Well 10-3E.
- Since the initiation of construction in 2022, the five-year rolling average use of Well 10-3E has declined to 200 acre-feet/year (2021-2025) from a five-year rolling average of 300 acre-feet/year in the period preceding culvert replacement (2018-2022).
- MWD estimates that the project has produced direct groundwater savings of 350 Acre-Feet to date.

- In the short- to mid-term, it is estimated that the annual use of Well 10-3E will continue to be around 200 acre-feet/year due to MWD's annual dry-up period and result in an expected groundwater savings of approximately 100 acre-feet/year. This is approximately 170 acre/feet less than the historical average from 1984-2024.
- In the long term, use is expected to continue to fall to around 170-180 acre-feet/year for savings of 120-130 acre-feet/year.