



Memorandum

To: Pete Johnson, Esq.
From: Stephanie Luce, P.E.
Date: May 29, 2024
Project: Forest View Acres Water District
Subject: Water Supply Review

LRE Water (LRE) has been asked to prepare an analysis of the water supplies available to the Forest View Acres Water District (FVAWD, District) to serve the existing water service demands and evaluate if additional taps can reasonably be served.

Background

FVAWD provides water service for residents within its District using a combination of surface water and groundwater supplies. Currently, the District serves approximately 342 homes (single-family equivalents, or SFEs), and may serve as many as 358 SFEs in the future. Figure 1, attached, is a general location map illustrating the extent of the FVAWD boundaries, the location of water supply sources and infrastructure supporting FVAWD water service.

Water Demands Served

Current System

Currently, the District relies on its Arapahoe Well (Permit No. 39865-F), and to a lesser extent on its Monument Ditch surface water supply. The Arapahoe Well withdrawals are limited by an existing permit to 85 acre-feet per year (AF/yr). As noted in Table 1, above, the water rights owned by the District can legally provide a significant supply of water; and with the necessary permitting and infrastructure may produce more water than the District may need on an annual basis.

Water service data provided by the District shows that currently there are 342 taps served and the annual demand met in 2022 was 76.7 acre-feet (AF/yr). The District's current annual demand averages approximately 80 AF/yr. This results in an average per-capita demand factor for the District of approximately 210 gallons per day per SFE (gpd/SFE), which is consistent with the average demand factor used by the District.

Again, the District has a large supply of water that is either unpermitted and/or inaccessible with current infrastructure (new wells would be required). The District currently utilizes less than half of its permitted supply from the Arapahoe Well, on average, but in a dry year the District could use the full permitted supply from the Arapahoe Well.

If the District were to serve 2 additional SFEs, the average annual water demands for the District would increase by 0.47 AF. The total water demands served by FVAWD would be around 81 AF/yr.

Water Supplies

With water supply planning it is critical to evaluate the water supplies available in dry times, and to rely upon those supplies that will be available in all years. The water supplies owned by the District include surface water and groundwater, and the estimated firm yield of these supplies is also summarized in Table 1, below. Because the Monument Ditch surface water supply may not be reliable in drought years, firm yield water supply is zero. The Arapahoe Well currently has a permitted annual limit of 85 AF/yr, which could be increased to 402.8 AF/yr.

Table 1 - Firm Yield of Primary Water Supplies for FVAWD

| Water Supply | Average Annual Supply | Firm Yield |
|---------------------|------------------------------|-------------------|
| Monument Ditch | 51 AF/yr | 0 AF/yr |
| Arapahoe Well | 40 AF/yr | 85 AF/yr |

Conclusions

LRE reviewed the water supplies currently operated to serve the FVAWD's 342 SFEs. The average annual water demand to serve these SFEs is approximately 80 AF/yr. If the District were to serve 344 SFEs, this demand would likely increase to less than 81 AF/yr. Based on the firm supply available from the District's currently permitted Arapahoe Well, 85 AF/yr can reasonably be served by the available water supplies.

Monument Creek Instream Flow Right
Appropriation Date: May 7, 1980
Rate: 1.5 cfs

Monument Ditch

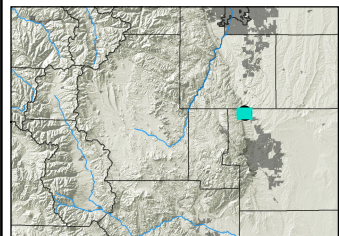
Monument Creek

Forest View Acres NT Arapahoe Well

MONUMENT CREEK
AT PALMER LAKE, CO

Monument Lake

MONUMENT CREEK
BELOW MONUMENT LAKE
NEAR MONUMENT



- Ditch Headgates
- Forest View Acres NT Arapahoe
- Streamflow Gages
- Monument Creek Instream Flow Reach
- Monument Lake
- Rivers
- Forest View Acres Water District Boundary

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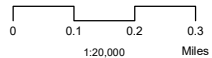


FIGURE 1
FOREST VIEW ACRES
WATER DISTRICT
GENERAL LOCATION MAP



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