



MEMO

To: Kari Parsons, El Paso County
From: Greg Panza, HR Green
Subject: El Paso County Water Master Plan
Project Number: 201662
Date: August 13, 2021

El Paso County’s Water Master Plan goals and implementation strategies were referenced with the initial planning to incorporate efficiency and conservation, especially since the area that Grandview Reserve is proposed is within the **Denver Basin aquifers system, Region 3 of the EPC Master Plan**. The proposed Grandview Reserve plan increases density and maximizes open space surrounding the natural tributary areas, thus decreasing irrigation consumption and discouraging individual wells. The landform grading is focused on limiting excavation within shallow ground water levels to deter ground water surfacing and associated groundwater re-introductions. Swales will be utilized within the individual planning areas to promote groundwater recharge.

Large capacity wells, mostly in the Arapahoe and Laramie-Fox Hills formations, will provide water for the Grandview Reserve subdivision.

- The total annual water demand for 3,338.8 SFE’s is calculated to be 1,178.67 AF.
- 4 Site Investments, the property owner, owns 1,400 AF of Arapahoe non-tributary water.
- The adjoining 4 Way Ranch owns 2,023 AF of Laramie-Fox Hills non-tributary water, and 1,011 AF of Arapahoe non-tributary water.
- Any additional water, should it be needed, will be derived from the 4 Way Ranch water.
- Water from the Arapahoe and Laramie-Fox Hills formations is Non-Tributary, Non- Renewable water.
- A breakdown of demand vs. supply is below:

Table 1 below summarizes the overall water supply available for GRMD.

Table 1: Water Supply Summary

Entity	Water Available (AF)
4 Site Water	1,400
4 Way Ranch Water	3,034
Total Supply	4,434

Grandview Demand: 1,178.67 AF
300-Year Quantity: 3,536.01 AF (<4,434; therefore, adequate supply for the entire project is available)



Potential future interconnections may be made with neighboring districts to foster conjunctive use and better accommodate water supply emergencies. All districts in this area rely on the same water, and all are required to meet CDPHE potable water regulations. Possible water connections to other districts could be in the form of full interconnectivity (water flowing both directions, all the time) or in the form of an emergency connection (normally closed, only opened to flow one way during an emergency).

As with neighboring districts, Grandview will likely implement tiered water rates to help reduce water usage. In addition, multiple stages of water restrictions can be implemented during drought years and when infrastructure repairs are required (i.e., well pumps need to be replaced in the middle of the summer).

The potential of wastewater reuse lies with the regional wastewater treatment provider in the area – Cherokee Metropolitan District (CMD). Currently, CMD's wastewater treatment plant treats the wastewater effluent and recharges the alluvial aquifer with the treated discharge. Alluvial wells within the basin ultimately pump the treated effluent (after many months of passing through the alluvial) and pumps the groundwater upstream for reuse.

In addition to the regional water resource perspective, local efforts by the end-users will be analyzed pertaining to the following elements to help promote sustainable use of the aquifer shares that are currently allocated for Grandview:

- Plumbing systems requiring low flow fixtures meeting or exceeding standards
- Local water re-use systems
- Low impact irrigation/low flow irrigation or xeriscape
- Smart watering and usage meters
- Home-owner water conservation landscape incentives
- Climate and elevation restricted plantings
- Community-wide rain gardens and bio-retention

