

**West Canyon Subdivision
 Irrigation Design Report
 Fruita, CO 81521
 Parcel 2697-162-21-001**

The source of irrigation water for the West Canyon Subdivision is from the Grand Valley Irrigation. The delivery is a low head, pressurized line. This irrigation water has been available historically to the proposed development and surrounding area for decades.

The property owner currently holds 18 shares for the development, with a legal supply rate of 84 gallons per minute. Since this development is 9.1 acres, which results in a ratio of nearly 2 shares per acre, storage will not be required per the City of Fruita Design Criteria and Construction Specifications Manual. In addition, the pressurized supply provides consistent delivery, which also eliminates the need for storage. A booster pump will be installed.

Each lot will be allowed 33% of the total area to have turf equivalent plantings. Water requirements for a 2.6-hour water window, 3 days per week per lot, at a gross application rate of 3 inches of water / week (City of Fruita standards), result in a flow rate of 7 gallons per minute per lot required and no need for storage. This water window is conservative, with a legal flow rate of 11 gpm per lot available. If users from other properties pull water at disproportionate rates, irrigation water may be unavailable from time to time at this location. Drought tolerant plantings and xeriscape are recommended to accommodate the potential for intermittent water availability. See attached summary of design calculations.

Design Calculations

Item	Description				
1	Irrigation System Supply Pressure (estimated)	15	psi		
2	Flow Per Lot		11	gpm	
3	Average Lot Size	5375	sf		
4	Average Irrigated Area Per Lot	1773.75	sf	0.04	acres
5	Weekly Peak Use Per Lot	443	cubic feet	3317	gallons
6	Days Watering (5)	3	days		
7	Hours Watering (5)	2.6	hours		
8	Flow Required	7	gpm/lot		
10	Lots Watering Concurrently	8	lots		
11	Flow Required	57	gpm total		
12	Flow provided	20	93	shares/gpm	
13	Flow deficiency/Storage Required	-37	gpm	-32851	gallons

Irrigation water enters the property in the northwest corner of the proposed subdivision. The existing ditch paralleling K Road will be piped to the subdivision. West Canyon water will be conveyed from the connection point on the northwest corner of the property in a new PVC pipeline to a new or relocated flowmeter in a structure piping directly to a booster pump.

Irrigation water will be conveyed to the lots from the pump station through a filtered and pressurized system. The pumphouse will reside on the structure and will convey pressurized irrigation water to a distribution pipeline that will run to each lot in a looped system in the back of each lot in. Common areas will also be irrigated by this system on separate controls that operate when lots are not being watered. Due to the closed nature of this system, irrigation tailwater/wastewater from the supply will not exist and will not need conveyance from the subdivision or through other subdivisions. Isolation valves, air vents, and a drain valve allow for flushing, maintenance, and seasonal drainage of the mainline.

There are no recorded easements or known wastewater crossings on the proposed subdivision property.

Irrigation water will be paid by the HOA directly to the Grand Valley Irrigation Company through annual billings.

The proposed irrigation system will be maintained by the HOA of the West Canyon Subdivision.