

Memorandum

To: Jim Boulton, Classic Homes
From: John McGinn, PE
Date: May 4, 2020—**Update March 2, 2022**
Subject: Unit Water Demand Estimate—Mid Town Collection at Hannah Ridge Filing No. 3

This project is an extenuation of previous Hannah Ridge low /no maintenance single family homes developed by Classic Homes. The project includes 42 single family low maintenance lots on a total of 2.148 acres. See the attached plan which show the typical lot layouts anticipated.

Unit/Lot Land Use Descriptions.

The units are being placed on very compact lots having an average lot size of 2,228 square feet per lot. Side set-backs are only 3 and/or 5 feet which does not allow for active landscaping due to the standard foundation set-backs for irrigation. The rear of the lot is primarily covered by an 18 foot wide concrete driveway which also overlies the MVEA 10 foot easements.

The lots do indicate between 280 and 320 sf of private open space, however that space is also partially occupied by concrete sidewalk. The lots do easily lend themselves to maintenance of any active landscaping and are designed to discourage active landscaping.

Water Use Demand Projection:

1. **Indoor use:** Analysis of prior similar products produced by this developer resulted in an average living area of 1824 sf and 2.7 bedrooms. Based on house size, bedroom number and bathroom number, we project the occupancy to 2.16 persons per household, which as expected will be lower than the current El Paso County average of 2.6 persons per single family house.

The indoor typical use for single family housing is 0.171 AF/SFE to 0.212 AF/SFE. Given the reduced occupancy, we expect the average indoor use to be **0.185 AF/SFE.** **The El Paso County prescribed Indoor Use is 0.20 AF/Unit which is 178.5 GPD per unit.**

2. **Outdoor use:** Landscaping of the lots will be minimal. The small 280 to 320 sf area that could potentially be used for irrigation is unlikely to have substantial watering needs. Covenants will further limit the nature and style of any landscaping

Using the higher figure of 320 SF of possible irrigation, we estimate a conservative outdoor water use of 0.0195 AF /SFE using 32 inches per year for effective irrigation, rounded to 0.02 AF/SFE.

3. Actual total water use; The combined indoor and outdoor use projected is a total of 0.185 plus 0.02 = 0.205 AF/SFE. This would be in terms of “water delivered to the doorstep”. But a public water entity must consider the relative amount of raw water needed to deliver the above. Although Cherokee has a rather efficient treatment and delivery system (very little wasted water making water), we will still use a 7.5% raw water factor yielding 0.205 times 1.075 = 0.22 AF/SFE.

If one uses either our estimate or the El Paso County’s Indoor Use prescribed use, the total is the same 9.24 Acre -Feet Total Use as that originally reported in 2020.