



# Water Demand Calculations

## Arrowleaf Development

7895-01 9/19/2023 KHH

The following water requirement calculations are based on the indoor and outdoor water usage requirements for the planned Arrowleaf development in Eden, Utah. Calculated outdoor irrigation requirements are for the for the peak demand month of July.

### Indoor Use

9	Lots
800	Daily Usage <sup>1</sup> (gpd)
<b>7,200</b>	<b>Total Indoor Day Requirement (gpd)</b>
<i>1) Water flow demands as per Utah R309-510 Tables 1 "Source Demand for Indoor Use"</i>	
0.56	Average Day Indoor Flow Demand per Lot (gpm)
1.39	Peak Day Indoor Flow Demand per Lot (gpm, with 2.5 peaking factor)
<b>5.00</b>	<b>Total Indoor Average Flow Demand</b>
<b>12.50</b>	<b>Total Indoor Peak Flow Demand</b>

### Outdoor Use

9	Lots
0.75	Acres Irrigated/lot
6.75	Total Irrigated Acreage
6.21	Eto (in) / Lawn requirement peak month (in)
Water Requirement = Eto x 1.0 x 0.62 x A	
1,132,074	Total Month Requirement (gal)
<b>36,519</b>	<b>Total Outdoor Day Requirement (gal)</b>
3.39	Peak Day Outdoor Flow Demand in Zone 3 <sup>2</sup> (gpm/irrigated acre)
<b>22.88</b>	<b>Total Outdoor Peak Flow Demand</b>
<i>2) Flow demands as listed per Utah R309-510 Table 3 "Source Demand for Irrigation"</i>	

### Fire Storage

**60,000** Fire Storage (gal, provided by Weber County Fire Marshall, homes sprinkled)

### Equalization Storage

9	Lots
400	Indoor Storage Volume Required per lot <sup>3</sup> (gpd)
<b>3,600</b>	<b>Indoor Volume Storage Requirement (gal)</b>
<i>3) Storage demands as listed per Utah R309-510 Table 4 "Storage Volume for Indoor Use"</i>	
2,528	Outdoor Volume Required per irrigated acre in Zone 3 <sup>4</sup> (gal)
<b>17,064</b>	<b>Outdoor Volume Storage Requirement</b>
<i>4) Storage demands as listed per Utah R309-510 Table 5 "Storage Volume for Outdoor Use"</i>	

### SUMMARY:

<b>43,719</b>	<b>Total Day Requirement (gpd)</b>
<b>35.00</b>	<b>Flow Provided by Existing Wells (gpm)</b>
<b>50,400</b>	<b>Total Daily Flow Provided by Existing Wells (gal)</b>
<b>80,664</b>	<b>Total Storage Volume Requirement (gallons)</b>
<b>100,000</b>	<b>Total Storage Provided (gallons)</b>
<b>5.00</b>	<b>Average Day Demand Combined Indoor &amp; Outdoor Flow (gpm)</b>
<b>35.38</b>	<b>Peak Combined Indoor &amp; Outdoor Flow (gpm)</b>
<b>375</b>	<b>Approximate Pump Static Head (ft)</b>
<b>4"</b>	<b>Minimum Tank Supply Pipe Size</b>