

Technical Memorandum

To: Falcon Highlands Metropolitan District, c/o Clifton Larson Allen LLP
From: JDS-Hydro Consultants, Inc.
Date: February 5, 2020
Subject: Re-Purpose of Lot 1 Rolling Thunder Business Park – Water Impact Evaluation

As we understand the issue, the El Paso County Planning Department has calculated that the potential re-purposing of 10610 Maltese Point would jeopardize the original water allotment for the Rolling Thunder Business Park. We do not have El Paso County's calculations, so we are unable to address those directly, but we do have access to all of the actual use records for Rolling Thunder Business Park as currently developed and can accurately project extended use from those records.

Since the question posed does not really entail a Water Report, but simply considers how a former Water Report is functioning for the existing development, we will present our evaluation in a Technical Memorandum Report.

The Rolling Thunder Business Park as originally platted, covered approximately 12.4 gross acres and included a Utility Tract and 12 commercial/industrial type lots. Some of the lots have been re-configured but the actual net developable "lotted" land remains roughly 9.898 acres and now on 11 buildable lots. When platted, the original water demand was projected as 8.0 annual acre-feet for both irrigation and domestic use. This total was set aside and is 2,606,800 gallons per year allotted for the entire subdivision.

Of those eleven lots, five have been developed with a sixth lot being developed as of 2020. In order to address what we understand the question to be, we have evaluated development to date, what water is actually used, by that development and projected that likely use against the originally estimated water. We have also considered what if any implications might be realized with the re-purposing of Lot 1.

The District's metering mechanisms include measurement of all water use which includes both irrigation and domestic in total. The table on the following page shows the actual metered water use for the last few years on the five developed lots.

TABLE of Existing and Projected Water Use					
Rolling Thunder Business Park					
Falcon Highlands Metropolitan District					
<i>Full year use records up through August 31, 2019</i>					
Address	Lot #	Lot SF	Lot in Acres	Actual Metered Annual Water Use	Representing Actual Acres
10778 Maltese Point	8		1.050	63870	1.05
Undeveloped	7	19711	0.453		
Undeveloped	6	20677	0.475		
10682 Maltese Point	5	22116	0.508	56120	0.508
10706 Maltese Point	4	22116	0.508	12460	0.508
Undeveloped	3	22115	0.508		
Undeveloped	2	22115	0.508		
10610 Maltese Point	1		1.110	154440	1.11
10611 Maltese (New-- No records Yet)	9A		1.610		
Undeveloped	11		2.000		
10707 Maltese Point ^{Note 1}	12		1.170	110627	1.170
Denotes Existing Developed Lots				Actual Metered Water	Actual Developed Acreage
<i>Total Acres</i>			9.898	397517	4.35
<i>Total Water Allotment (8 AF/Year)</i>			2,606,800	15.25%	43.90%
Projected Full Buildout					
Projected Gallons			905462		
Projected Acre-Feet			2.78	Entire Subdivision	
Projected Buildout if entire subdivision was re-purposed as Lot 1					
Projected Gallons			1932252		
Projected Acre-Feet			5.93	Entire Subdivision	
<p><i>Note 1. A metering inconsistency was discovered at Lot 12 (10707 Maltese Point) but since the lot use is almost identical to Lots, 4, 5, and 8, we were easily able to conservatively estimate the use as 1.5 X the relative Building SF ratio for Lots, 4, 5, and 8</i></p>					
<i>JDS-Hydro Consultants Inc.</i>					

From the table we can see the water used by 5 of the 11 lots that have been developed. The sixth recently developed lot is not considered as we do not have any historic water use yet. Based on the Table, we can see that historic annual use on the five developed lots is a total of 397,517 gallons per year (1.22 annual acre-feet) which represents 15.25 % of the original allotment. The table also shows that the existing 5 developed lots represent 4.345 acres of the developable 9.898 total developable acres, or 43.9 %. Water use from lot to lot will vary somewhat, but one would reasonably expect that continued development in this area would reasonably be consistent on an average basis with the development that has already occurred.

Projecting the same general use through buildout of the subdivision, we would project that the ultimate total use would be 905,462 gallons per year or 2.78 annual acre-feet. This conclusion suggests that original water was dramatically over-estimated.

However, the question is that the proposed tiny brewery being implemented in one of the facilities might out-pace the originally projected water use.

The proposed brewery is a 1.5 barrel system which is extremely small by commercial micro-brewery standards. While the brewer represents that beer would be brewed roughly two to three days week, we tend to size facilities based on the barrel capacity on a five day/week basis even though 2-3 days is the more common use ratio.

The average amount of water used to brew beer is estimated at a 5:1 ratio and therefore the amount of water used on a weekly and annual basis is as follows;

$$1.5 \times 32 \text{ gallons} \times 5 \text{ water/beer ratio} \times 5 \text{ days/week} = 1200 \text{ gallons/week which results in } \mathbf{62,400 \text{ gallons of water /year.}}$$

The prior use of the proposed facility (10610 Maltese) was 154,440 gallons/year. Even if the new brewery load is directly added to the historic use without any offset, the expected use at 10610 Maltese moves to 216,840 gallons/year or 0.665 annual Acre-feet. Even if the entire subdivision were re-purposed as proposed at Lot 1, the projected actual demand would be only 0.665 AF divided by 1.11 acres X 9.898 acres = 5.93 annual acre-feet which is still significantly less than the 8.0 acre-feet allotted.

Our conclusion:

The proposed re-purposing of 10610 Maltese Point to include a 1.5 Barrel Beer brewing operation would not increase water loads to anywhere near the 8.0 acre-feet allotted for the Rolling Thunder Business Park.

Respectfully,
JDS-Hydro Consultants, Inc.



John P. McGinn, P.E.

The memo provided only addresses the proposed brewing use. Please update to address the proposed water that would be utilized by the bar/taproom and restroom components of the use. It appears to seat quite a few folks. Will food be served at the brewery? If food trucks will serve the facility, will water hookup be provided for them?