

In review of the draft, sustainability plan one aspect of the plan that I found of interest was Chapter 3.4 Land Use.

Table 3-1 listed the land use categories, 10 in total, ranging from Citrus, deciduous fruits and nuts, Vineyard, Urban, Grain, Pasture etc.

The table listed the number of acres as of 2014 that were planted in the Paso Robles Basin. What was missing was the amount of water typically applied to these categories on a yearly basis.

In order to be able to manage water usage, a reliable means of determining how much water the basin is using needs to be determined. Since the draft did not include this data, I utilized the average acre-feet per year from Table 9 that was published in the Agricultural Water Offset Program of 2014.

Based on Table 3-1 in the Draft and Table 9, the total that I was able to estimate was just under 100,000 acre feet per year for the basin. No water allowance was given for idle or native vegetation. My urban estimate methodology is flawed in that it is based in acres and not residential units. Having said that, at .75 per acre the urban allowance was 16,649ac ft., so hopefully it is in the ballpark.

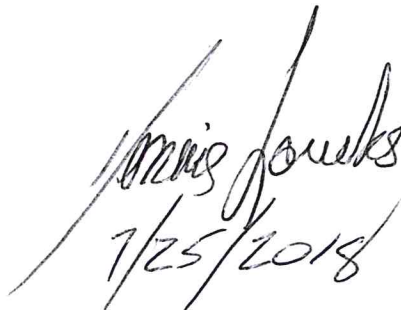
My estimate is that the 438,000 acres in the basin utilizes approx. 100,000 acre-feet per year.

It is vitally important that the methodology in estimating water use totals be well scrutinized. A case in point is when you examine the Engineer's report for the EPC Water District (2016), their methodology estimated that their water use for 41,000 acres would be 59,000 acre feet per year. Their estimates did not breakout the various land use categories as listed in Table 3-1, they just averaged all water use factors for seven Ag uses and came up with 3.5 acre feet per Irrigated acre in their district. This resulted in a grossly inflated figure.

So, as you can see Methodology is very important, 100,000 acre-feet for 438,000 acres verses 59,000 acre-feet for 41,000 acres.

My suggestion is the following:

1. Compare 2014 Land Use Summary to a current Land Use Summary, acres planted as well as estimated water use.
2. Add Cattle operations to Land Use Summary
3. Urban category needs more itemization; residential, industrial, hotel.

  
7/25/2018



### 3.4 LAND USE

Land use planning authority in the Subbasin is the responsibility of the County of San Luis Obispo and the City of Paso Robles. Land use information for the Subbasin was collected Department of Water Resources, the County of San Luis Obispo's Agricultural Commissioner Offices and from other County departments. Current land use in the Subbasin is shown on Figure 3-4 and is summarized by group in Table 3-1. All land use categories except native vegetation listed on Table 3-1 are the land use categories provided by DWR (2014). The balance of the approximately 438,000 acres in the GSP Plan Area is largely native vegetation and could include dry farmed land.

Table 3-1: Land Use Summary

Land Use Category	Acres		
Citrus and subtropical	304	2.3	699.-
Deciduous fruits and nuts	2,339	3.5	8,186 -
Grain and hay crops	266	4.5	1,197
Idle	10,096	∅	
Pasture	3,254	4.8	15,619
Truck nursery and berry crops	955	2.5	2,387
Urban	22,199	.75	16,649
Vineyard	32,076	1.7	54,529
Young perennial	71	1.9	1,134
Native vegetation	366,440	∅	
<b>Total</b>	<b>438,000</b>		

99,400  
ac ft/year  
total

Source: DWR, 2014

- 1) LAND USE - 438,000 / 99,400 ac ft  
what is it now four years later?
- 2) EPC 41,000 ac - 59,360 ac ft



### 3. Possible Sources of Offset Credits

Credits for the Ag Water Offset Program, within the PRGWB, may come from a combination of sources. As technology, information, practices, and irrigation efficiencies evolve and improve, other forms and sources of credits may become available to offset new water use in the PRGWB. Below is a list of potential sources of credits available from current documented practices.

- Fallowing of irrigated land resulting in less pumping;
- Crop conversion(s) to less water intensive crops as designated by the adopted program water use charts (e.g. alfalfa to olives, irrigated pasture to dryland range, water intense deciduous crops to less intensive deciduous, grain or vegetable crops, etc).

#### 3.1 Water available from crop conversion

Calculating the amount of water that is made available by switching from a specific crop to one requiring less water can be done by using the annual crop-specific applied water calculated for each Crop Group within each WPA (SLO 2012). However, as noted above, the methodology used to derive the listed numbers is a standardized accepted approach. This information for the Salinas/Estrella WPA, using the medium value, is shown in Table 9.

<b>Crop Group</b>	<b>Applied Water (AF/Ac/Yr)</b>
Alfalfa	4.5
Citrus	2.3
Deciduous	3.5
Strawberries	2.3 <sup>(1)</sup>
Nursery	2.5
Pasture	4.8
Small Grain	1.2 <sup>(1)</sup>
Vegetables	1.9
Vineyard	1.7

1. Information obtained from Current Cost and Return Studies, UCCE, UC Davis (Small grains 2013 data, Strawberries 2011 data), see section "Strawberries" and "Small Grains" in this report to understand how these crop requirement numbers were derived using the methodology of the Master Water Report



being directly represented in the SGMA process as non-irrigated lands do have overlying groundwater rights and, in the future may rely on groundwater to a greater degree than now. Also as outlined above in addressing the rotation of parcels, or portions of parcels, in and out of irrigation, a database will be maintained to modify assessments accordingly. So even though there may be irrigation facilities (pipes etc.) available to a parcel or portion of the parcel, if no irrigation is applied, then that acreage will be treated as non-irrigated.

**Residential**

**Residential development** depends upon a potable, adequate water supply for household needs and therefore will receive an assessment. The PRGWB studies provided research to estimate the average water usage for rural homesteads.<sup>3</sup> However, because the District is focused on the agricultural operations/properties, it is not foreseen that the District will have the capability to serve small lot rural subdivisions

**Commercial Operations**

**Commercial operations** depend upon a potable supply for workers and customers alike, similar to residential uses associated with agricultural operations. However, the water usage for these land uses will need to be determined on a case by case basis. For initial funding purposes, commercial uses are proposed to be assessed as if they were a residential use.

*Winters?*

**4.2 Water Use Factors**

The following provides a discussion on the water use factors identified for each assessment class.

**Irrigated Agriculture**

The Estrella, El Pomar, Creston Water District is home to hundreds of acres of farmed land with a variety of crops. The water use for these crops varies and thus an average water use has been determined for Irrigated Agriculture. The water use for the crops that are typically farmed in the District are as follows:

Land Use Category	Ave. Water Use Factor (AF/acre/yr)	
Alfalfa	4.5	4.8
Citrus	2.3	2.3
Deciduous	3.5	4.1
Nursery	2.5	2.4
Irrigated Pasture	4.8	5.0
Vegetables	1.9	3.9
Vineyards	1.7	1.8
Total	21.2	24.3
Average	3.03	3.5

\*Source: applied water factors, SLO County, Paso Robles Groundwater Basin Model Update, 2014, Table 10<sup>4</sup>

The water usage of 1.0 AFY will be utilized as one benefit unit for the purposes of establishing an assessment spread.

**Non-Irrigated Agriculture**

<sup>3</sup> Ibid, PRGWB Model Update, December 19, 2014

<sup>4</sup> Ibid, PRGWB Model Update, December 19, 2014, Table 10





Depending on the terrain and carrying capacity of the land, non-irrigated agriculture can be dry farmed for hay, other non-irrigated crops, and for grazing. These uses are minimal and are best evaluated as a cattle grazing operation. These operations typically utilize between 0.03 and 0.003 AFY/ac and therefore are minimal users. However, the project proponents have provided an estimate of local non-irrigated water usage as a percentage of irrigated usage; ie. 1.69% of Irrigated Agriculture Usage. This results in 0.06 AFY/ac ( $1.69\% \times 3.5 \text{ AFY/ac} = 0.06 \text{ AFY/ac}$ ) for a benefit unit to calculate an assessment to be applied to non-irrigated agriculture.

### Residential

Residences nominally use 0.29 AFY indoor and 0.46 AFY outdoor for a total of 0.75 AFY per residence in rural hot areas of the county<sup>5</sup>. Therefore, it is assumed that a rural residence is equivalent to: (0.75 AFY/3.5AFY) or 21.4% of water usage for an acre of irrigated crop.

### Commercial Operations

Commercial Operation uses will be evaluated as a resident if a small operation on a small lot. Larger commercial users will need to be evaluated on a case by case basis.

## 4.3 Voluntary Funding

The District will be formed on a voluntary basis. All the voluntary members of the District will be asked to agree to a maximum funding assessment not to exceed \$35.00/acre for irrigated agriculture. Non-irrigated agriculture parcels will be assessed at 1.69% of irrigated agriculture's cost, or \$0.59/acre. Each residence or commercial operation will be assessed at \$7.50 (maximum) for each unit ( $0.75\text{AFY}/3.5\text{AFY} = 21.4\%$  of an irrigated acre assessment =  $21.4\% \times \$35 = \$7.50$ ). However, as a basic minimum cost, all ownerships, whether made up of one parcel or many parcels will have a minimum assessment of up to \$50 per ownership, depending on the overall administrative costs to service the GSA. These rates are within the same order of magnitude of the data developed above and are proportional to the special benefit received by each category of parcel based on water usage per parcel. It is noted that one parcel may be assessed for all three classes.

## 4.4 Benefit Units

A benefit unit is a method of calculating a property's proportional share of the assessment costs. One benefit unit (BU) is equivalent to the use of 1.0 Acre-foot of water/year. Table 2 identifies the total number of benefit units assigned to each Assessment Class utilizing the target acreages in each category petitioning at this time. These acreages will vary until District formation is approved.

Table 2-Assessment Class and Total Benefit Units

Assessment Class	Total Acreage or Units (estimated)		Water Use Factor AFY	Benefit Units (rounded)
Irrigated Agriculture	16,500	Acres	3.50	57,750
Non-irrigated Agriculture	24,300	Acres	0.06	1,460
Residential and Commercial Operations	200	Each	0.75	150
<b>Total Benefit Units</b>	<u>41,000</u>			<b>59,360</b>

<sup>5</sup> Ibid, PRGWB Model Update, December 19, 2014, Table 13 Rural Residential Water Demand, SLO County, WG Project 1360-0001  
Estrella, El Pomar, Creston Water Dist A CA Water Dist (WC 34000 et seq)  
Engineer's Report-Benefit Assess Eval

