



Estimate of Annual Landscape Water Demand

* Based on WUCOLS 2000 CIMIS, & UC CE guide

Project Name:
Project #:

UCD Brewery Winery
83008

Date: 7/7/2009

POC: n/a

Location of ET₀ Data: Davis

55.77 in/year

Hydrozone #1

9,999 sqft

0.23 acres

Description: Shrubs/grndcvr/trees (low, sub-surface c

Species factor (k_s): 0.2 Low

Landscape Coefficient (K_L) = (k_s × k_d × k_{mc}) = 0.160

Density factor (k_d): 0.8 Low

Microclimate factor (k_{mc}): 1 Average

Landscape Evapotranspiration (ET_L) = (K_L × ET₀) = 8.92 in/year

Irrigation Efficiency (IE): 0.9 Drip

Total Water Applied (TWA) / year = (ET_L / IE) = 9.91 in/year

Gallons per year (GPW) = (TWA × H_A × 0.62) = 61,465 gal/year

Hydrozone #2

Area (H_A): 6,626 sqft

0.15 acres

Description: Trees (low, bubblers)

Species factor (k_s): 0.2 Low

Landscape Coefficient (K_L) = (k_s × k_d × k_{mc}) = 0.160

Density factor (k_d): 0.8 Low

Microclimate factor (k_{mc}): 1 Average

Landscape Evapotranspiration (ET_L) = (K_L × ET₀) = 8.92 in/year

Irrigation Efficiency (IE): 0.9 Drip

Total Water Applied (TWA) / year = (ET_L / IE) = 9.91 in/year

Gallons per year (GPW) = (TWA × H_A × 0.62) = 40,731 gal/year

Hydrozone #3

Area (H_A): 6,091 sqft

0.14 acres

Description: Trees (med., edge of site, bubblers)

Species factor (k_s): 0.5 Medium

Landscape Coefficient (K_L) = (k_s × k_d × k_{mc}) = 0.400

Density factor (k_d): 0.8 Low

Microclimate factor (k_{mc}): 1 Average

Landscape Evapotranspiration (ET_L) = (K_L × ET₀) = 22.31 in/year

Irrigation Efficiency (IE): 0.9 Drip

Total Water Applied (TWA) / year = (ET_L / IE) = 24.79 in/year

Gallons per year (GPW) = (TWA × H_A × 0.62) = 93,605 gal/year

Hydrozone #4

Area (H_A): 5,538 sqft

0.13 acres

Description: Native grasses/subsurface drip

Species factor (k_s): 0.3 Low

Landscape Coefficient (K_L) = (k_s × k_d × k_{mc}) = 0.300

Density factor (k_d): 1 Average

Microclimate factor (k_{mc}): 1 Average

Landscape Evapotranspiration (ET_L) = (K_L × ET₀) = 16.73 in/year

Irrigation Efficiency (IE): 0.9 Drip

Total Water Applied (TWA) / year = (ET_L / IE) = 18.59 in/year

Gallons per year (GPW) = (TWA × H_A × 0.62) = 63,830 gal/year

ET₀ by month

ET ₀ /Mo.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	0.99	1.73	3.37	5.47	6.89	8.12	8.49	7.48	5.79	4.24	2.04	1.16

Water Use by Month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hydrozone #1 gal.	1,091	1,907	3,714	6,029	7,594	8,949	9,357	8,244	6,381	4,673	2,248	1,278
Hydrozone #2 gal.	723	1,263	2,461	3,995	5,032	5,930	6,201	5,463	4,229	3,097	1,490	847
Hydrozone #3 gal.	1,662	2,904	5,656	9,181	11,564	13,629	14,250	12,554	9,718	7,116	3,424	1,947
Hydrozone #4 gal.	1,133	1,980	3,857	6,261	7,886	9,294	9,717	8,561	6,627	4,853	2,335	1,328
Interior Flushing	1,860	1,860	1,860	1,860	1,860	1,860	1,860	1,860	1,860	1,860	1,860	1,860
Winery	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	6,469	9,914	17,549	27,325	33,936	39,662	41,384	36,682	28,815	21,599	11,357	7,260

Yearly Total (gal.): 281,950

Available Water Input by Month

Watershed Area (sf) (only impermeable area is used for this calculation,

58,167