

1 WATER

1.1 INTRODUCTION

This water system technical appendix provides information to support the proposed 25-acre Palomino Place Community Centered Housing by Dave Taormino. The proposed site is adjacent to the City of Davis municipal water system and will connect to the City system for potable water supply.

1.2 EXISTING WATER INFRASTRUCTURE

The City of Davis water system is comprised of above ground storage tanks, underground wells and surface water supply from the Sacramento River via the Davis-Woodland Water Supply Project (DWWSP). The DWWSP in addition to existing ground water wells provide water supply for the City of Davis.

The City infrastructure system includes a 12" main on the south side of E Covell Blvd and an 8" main within Caravaggio Dr and Bonnard St intersection. Connections would be made to both mains, creating a closed loop as required by City standards.

1.3 WATER DEMAND

The City of Davis Average Day Unit Water Demand factors are summarized below:

1991 Unit Water Demand Factors		
Type of Use	Unit Water Demands	Unit of Measure
Single Family Residential	612	Gallons per DU-day
Cottages	260	Gallons per DU-day
Retail, Commercial and Industrial	2500	Gallons per Acre-day

Table 1-1: City of Davis Public Works Design Standards - September 1991

However, based on the 2023 SB 610 Water Supply Assessment that was prepared as a part of the Village Farms Davis project, water demands are significantly lower than the values in Table 1-1. This is a result of the expected water use in new residential dwelling units being lower due to the use of high efficiency water fixtures that are compliant with current standards.

2023 Unit Water Demand Factors		
Type of Use	Unit Water Demands	Unit of Measure
Single Family Residential	345	Gallons per DU-day
Multiple Family Residential	174	Gallons per DU-day
Commercial/Institutional/Industrial	2,400	Gallons per Acre-day
Landscape	2,712	Gallons per Acre-day

Table 1-2 – 2023 SB 610 Water Supply Assessment

The project is not planning for a non-potable water source for irrigation of public green spaces with initial development however this may be considered in the future. The City of Davis has long term planning goals to provide the City with non-potable water from the waste water



treatment plant for irrigation of public green spaces. With the treatment plant about 3 miles to the northeast of the project, it is feasible to use recycled waste water for irrigation of the site in the future, but would require further study.

1.3.1 POTABLE WATER DEMAND SUMMARY

The proposed unit demand factors identified above represent the Average Day Demand for the proposed project. The Maximum Day peaking factor is 1.8¹ and the peak hour peaking factor is 1.8 in accordance with the City of Davis Public Works Design Standards. Assuming that the proposed landscaping within the development is served by the City of Davis water system, the potable water demand is summarized in Table 1.3 below.

Land Use Designation	Acres	Units	Average Day Demand (gpd)	Maximum Day Demand (gpd)	Peak Hour Demand (gpd)
Cottages	0.97	19	6,600	11,880	21,384
Half-Plex Townhomes	2.53	29	10,000	18,000	32,400
First Move-Up	3.58	31	10,700	19,260	34,668
Second Move-Up	7.27	51	17,600	31,680	57,024
Update Ranch Style Home	0.48	1	300	540	972
Apartments	0.72	45	7,800	14,040	25,272
Pentathlon Center	1.40	-	4,400	7,920	14,256
Public Streets	5.42	-	-	-	-
Covell Blvd ROW	0.46	-	-	-	-
Open Space	2.76	-	7,500	13,500	24,300
Trail Connections	0.46	-	1,200	2,160	3,888
Total	25.80		65,500	117,900	212,220

Table 1-3 - Potable Water Demand

The proposed Palomino Place Community will increase the maximum daily demand on the City of Davis water system by 237.7 ac-ft/yr (~0.212 MGD). The City of Davis estimates the total water supply demand based on the existing water service area will be 9,790 ac-ft/yr (~8.7 MGD) in 2025, increasing to 10,290 ac-ft/yr (~9.2 MGD) by 2045. In a normal year the total projected water supply is estimated to be 23,320 ac-ft/yr using both surface water and ground water supply; in a single dry year that projected water supply falls to 15,260 ac-ft/yr. Based on the anticipated water demand of the project and the projected water supply in either a normal year or a dry year, there is adequate water supply to serve the project.

The City of Davis is currently preparing a cumulative water supply analysis that will evaluate the projected water supply with additional demands of the proposed Palomino Place and the other currently active project applications with the City.

¹ Based on the 2023 SB 610 Water Supply Assessment



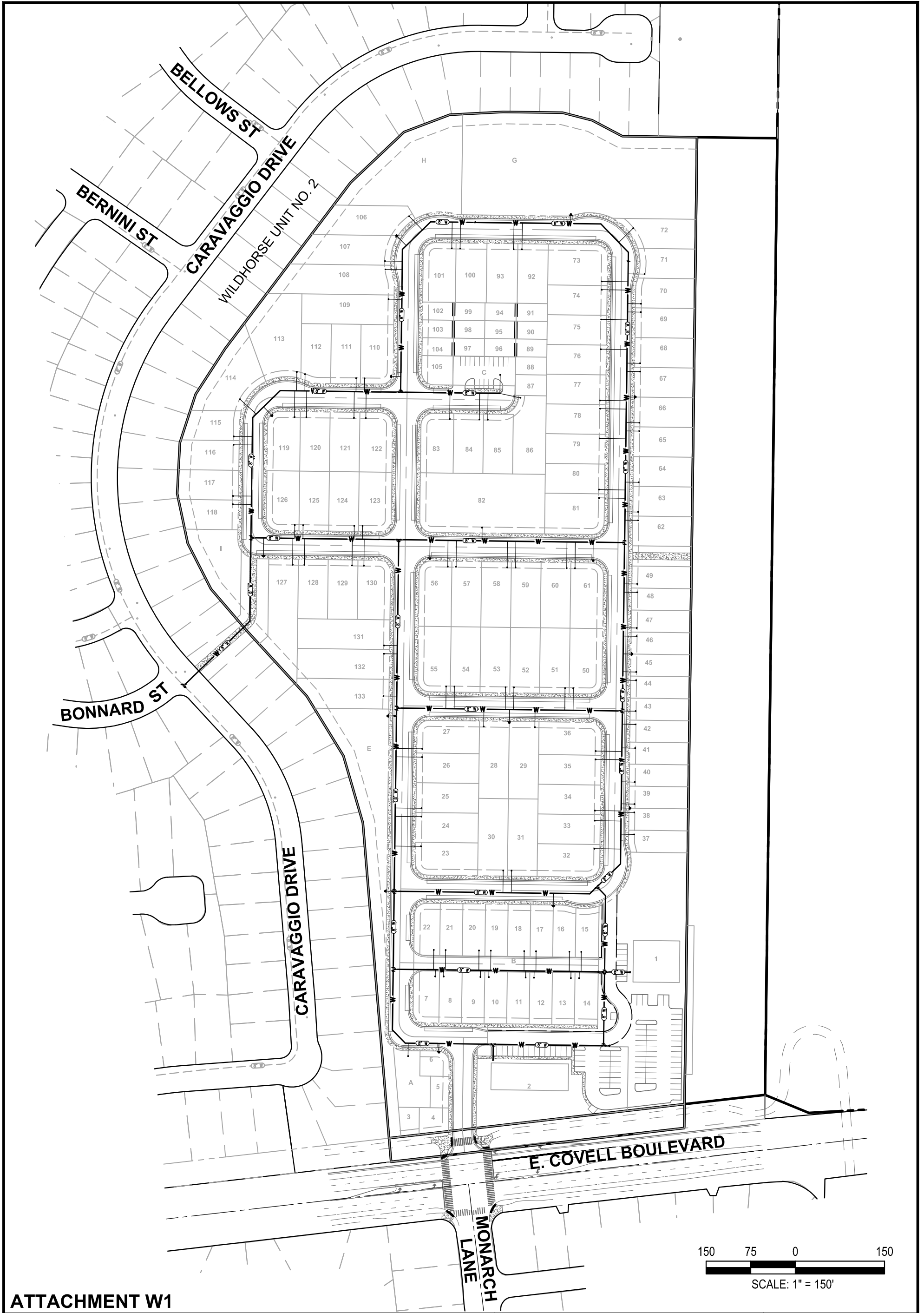
1.4 WATER INFRASTRUCTURE

Figure W1 attached identifies the potential water infrastructure layout for the proposed Palomino Place Community. The preliminary water infrastructure onsite is estimated at 8" pipes to serve the development. A future study will need to be conducted to further refine the proposed pipe sizes throughout the development to meet the domestic demands and the fire flow demands. The triggers for the proposed infrastructure will also be defined in this future study to confirm adequate flow can be provided with each phase of the development. The project proposes connection points to the existing system at the intersection of Caravaggio Dr and Bonnard St, and in E Covell Blvd at the proposed entrance off E Covell Blvd.

Attachments:

- Figure W1 – Utility Infrastructure – Water
- Table W1 – Potable Water Demand





ATTACHMENT W1

DESIGNED	BF
DRAWN	BF
CHECKED	BF
JOB No:	1807.00.06

**PALOMINO PLACE
WATER SYSTEM EXHIBIT**

DAVIS CALIFORNIA

CUNNINGHAM ENGINEERING

Project Planning ■ Civil Engineering ■ Landscape Architecture

Sacramento Office 2120 20th Street, Suite Three Sacramento, CA 95818 (916) 455-2026	Davis Office 2940 Spafford Street, Suite 200 Davis, CA 95618 (530) 758-2026
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SCALE 1"=150' 	DATE 04/19/2024 SHEET 1 OF 1
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TABLE W1 Potable Water Demand

Land Use Designation	Land Use	Acres	Building Footprint		Office Unit Demand Factors	Unit Water Demand ⁽¹⁾ (gallons per unit/acre per day)	Unit Fire Flow Demand ⁽²⁾ (gpm)	Average Day Demand (gpd)	Maximum Day Peaking Factor	Maximum Day Demand (gpd)	Peak Hour Peaking Factor	Peak Hour Demand (gpd)
			(sf)	Dwelling Units								
Single Family Residential	Cottages	0.97	-	19	-	345	1,000	6,600	1.8	11,880	1.8	21,384
	Half-Plex Townhomes	2.53	-	29	-	345	1,000	10,000	1.8	18,000	1.8	32,400
	First Move-Up	3.58	-	31	-	345	1,000	10,700	1.8	19,260	1.8	34,668
	Second Move-Up	7.27	-	51	-	345	1,000	17,600	1.8	31,680	1.8	57,024
	Update Ranch Style Home	0.48	-	1	-	345	1,000	300	1.8	540	1.8	972
	Apartments	0.72	-	45	-	174	1,000	7,800	1.8	14,040	1.8	25,272
Recreation	Pentathlon Center	1.4	10,200	-	15 gpd/employee	2,400	4,000	4,400	1.8	7,920	1.8	14,256
Street	Public Streets	5.42	-	-	-	-	-	-	-	-	-	-
	Covell Blvd ROW Dedication	0.46	-	-	-	-	-	-	-	-	-	-
Open Space/ Landscaping	Open Space	2.76	-	-	-	2,712	-	7,500	1.8	13,500	1.8	24,300
	Trail Connections	0.22	-	-	-	2,712	-	600	1.8	1,080	1.8	1,944
Total		25.80		176				65,500		117,900		212,220

(1) Based on 2024 SB 610 Water Supply Assessment for Village Farms Davis, SFR at 345 gpd/unit and MFR at 174 gpd/unit (cottages, ADUs), plus 20% reduction.

(2) Based on City of Davis Design Standards, Section VIII.B.3

Revised: 2024-04-30