

1 WATER

1.1 INTRODUCTION

This water system technical appendix provides information to support the proposed 75 acre West Davis Active Adult Community development 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 in the near future will include surface water supply from the Sacramento River via the Davis-Woodland Water Supply Project (DWWSP). Currently, the City of Davis water system is supplied by the existing groundwater wells. The DWWSP will deliver up to 12 million gallons per day (MGD) with approximately 1.8 MGD allocated to the University at California Davis. The remaining 10.2 MGD is available to offset the City's supply from groundwater wells.

The City of Davis currently maintains and operates an above ground water tank and pump station immediately adjacent to the project site (West Area Tank & Pump Station). The City also has two active deep wells within the vicinity of the project site, one immediately east of the Sutter Davis Hospital and one immediately west of the University Retirement Community. The City also operates an intermediate well east of State Route 113 near the Davis Waldorf School.

The City infrastructure system includes a 14" main extending from John Jones Road to the West Area Water Tank and Pump Station; a 12" main in John Jones Road and West Covell Blvd. and a 12" main up Risling court, extending around the hospital and tying into John Jones Road.

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 |
| Multiple Family Residential | 260 | Gallons per DU-day |
| Mobile Home Parks | 270 | Gallons per DU-day |
| Institutional (Schools and Hospitals) | 1800 | Gallons per Acre-day |
| Retail, Commercial and Industrial | 2500 | Gallons per Acre-day |
| Other Uses | As Approved | N/A |

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

However, based on the 2015 SB 610 Water Supply Assessment that was prepared as a part of the recent Davis Innovation Center, Mace Ranch Innovation Center and Nishi Property, 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 efficient water fixtures that are compliant with current standards.

| 2015 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 | 2400 | Gallons per Acre-day |
| Landscape | 2712 | Gallons per Acre-day |

Table 1-2 – 2015 SB 610 Water Supply Assessment

The project is not currently planning for a non-potable water source for irrigation of public green spaces. 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. Due to the location of the proposed West Davis Active Adult Center, delivery of non-potable water west of State Route 113 is not feasible and will not be a potential source for irrigation water.

1.3.1 POTABLE WATER DEMAND SUMMARY

The proposed unit demand factors identified above represents 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 (total water demand of 2000gpd/ac) the potable water demand is summarized in Table 1.5 below.

| Land Use Designation | Acres | Average Day Demand (gpd) | Maximum Day Demand (gpd) | Peak Hour Demand (gpd) |
|------------------------------------|-----------|--------------------------|--------------------------|------------------------|
| Single Family Residential | 5.8 | 14,100 | 25,380 | 45,684 |
| | 43.72 | 98,000 | 176,400 | 317,520 |
| | 3.95 | 10,400 | 18,720 | 33,696 |
| Multiple Family Residential | 5.11 | 26,100 | 46,980 | 84,564 |
| Recreation | 3.72 | 8,900 | 16,020 | 28,836 |
| Ag Buffer | 4.1 | 11,100 | 19,980 | 35,964 |
| Community Green | 8.6 | 23,300 | 41,940 | 75,492 |
| Total | 75 | 195,700 | 352,260 | 634,068 |

Table 1-3 - Potable Water Demand

The proposed West Davis Active Adult Community will increase the maximum daily demand on the City of Davis water system by 0.352 MGD. The City of Davis estimates that the proposed ground water supply will be 13,100 ac-ft/yr (~11.7 MGD) in 2015 and will drop to 1,000 ac-ft/yr (0.89 MGD) in 2020 after the surface water project comes online. Based on the historical City of Davis water supply, it is anticipated that the project can be adequately served by the City of Davis water system

¹ Based on the 2015 SB 610 Water Supply Assessment

1.4 WATER INFRASTRUCTURE

Figure W1 attached identifies the potential water infrastructure layout for the proposed Davis Innovation Center. 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 in order 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 existing water tank northeast of the project, at the existing Risling Court cul-de-sac and in Covell Blvd at the proposed entrance off Covell Blvd.

Attachments:

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

TABLE W1 Potable Water Demand

| Land Use Designation | Land Use | Acres | Dwelling Units | Unit water Demand ⁽¹⁾ (gallons per unit 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) |
|-----------------------------|-------------------|-------|----------------|--|---|-----------------------------|----------------------------|-----------------------------|--------------------------|---------------------------|
| Single Family Residential | Attached | 5.8 | 41 | 345 | 1,000 | 14,100 | 1.8 | 25,380 | 1.8 | 45,684 |
| | Detached | 43.72 | 284 | 345 | 1,000 | 98,000 | 1.8 | 176,400 | 1.8 | 317,520 |
| | URC | 3.95 | 30 | 345 | 1,000 | 10,400 | 1.8 | 18,720 | 1.8 | 33,696 |
| Multiple Family Residential | Senior Affordable | 5.11 | 150 | 174 | 2,500 | 26,100 | 1.8 | 46,980 | 1.8 | 84,564 |
| Recreation | Club House | 3.72 | - | 2,400 | 4,000 | 8,900 | 1.8 | 16,020 | 1.8 | 28,836 |
| Open Space/Landscaping | Ag Buffer | 4.10 | - | 2,712 | 0 | 11,100 | 1.8 | 19,980 | 1.8 | 35,964 |
| | Community Green | 8.6 | - | 2,712 | 0 | 23,300 | 1.8 | 41,940 | 1.8 | 75,492 |
| Total | | 75 | 505 | | | 191,900 | | 345,420 | | 621,756 |

(1) Based on 2015 SB 610 Water Supply Assessment, SFR at 345 gpd/unit and MFR at 174 gpd/unit and club house at 2,500 gpd/gross acre, plus 20% reduction

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

(3) One third of Ag Buffer will be irrigated (50' x west and north edge)

