
Appendix L



Technical Memorandum

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

To: Gyan Kalwani, Sheldon Business Park

From: Tom Balbierz, PE **CC:** Bryan Wilson, Sheldon Business Park

Date: February 20, 2025

Subject: Summer Villas at Waterman Road
Domestic Water Demand Analysis

Introduction

The purpose of this analysis is to confirm that proposed project water demand is suitably met by the proposed water infrastructure and further supported by the land use demand assumed by the Zone 40 Water Supply Master Plan dated September 2016.

The project site is located on the southeast corner of Waterman Road and Sheldon Road in the City of Elk Grove. The property encompasses approximately 111 acres and is bounded by Sheldon Road to the north, Waterman Road to the west, an existing rural residential lot to the east, and Laguna Creek and existing rural residential/industrial development to the south. Laguna Creek bisects the site north to south. Multiple existing overhead power lines also traverse the site north to south along Waterman Road. The site is proposed for development of a medium density residential retirement community occupying developable area both east and west of Laguna Creek.

The project site is located within Service Area 2 of the Elk Grove Water District (EGWD). The EGWD provides water through a series of groundwater wells and a treatment and storage facility on Railroad Street. In addition, EGWD also has a long term agreement with Sacramento County Water Agency (SCWA) to purchase additional water supplies. Existing backbone water infrastructure in the area is limited to an existing SCWA 18" transmission main stub at the intersection of Waterman Road and Elliott Springs Drive near the southwest corner of the project site. Consistent with the Zone 40 Water Supply Master Plan, backbone water infrastructure in support of the project includes extending this 18" transmission main north in Waterman Road to tie into existing water facilities at/near Calvine Road (approximately 8,000 linear feet). Additionally, an SCWA 24" water transmission will be installed in Sheldon Road across the norther project frontage (approximately 2,600 linear feet) connecting to the 18" transmission main in Waterman Road.

Water Demand Factors

The SCWA transmission main network is based upon the Zone 40 Water Supply Master Plan dated September 2016. Water demands for the proposed system are based on the area of land to be served multiplied by a demand factor which is based on a known/assumed land use. The applied water demand factors are summarized in Table 3-11 Buildout Unit Water Demand Factors within the Zone 40 Water Supply Master Plan and included within Table 1 below.

Water Demand Comparison

In order to compare the overall project water demand, the acreage for each land use is multiplied by the appropriate water demand factor. The 2016 Zone 40 master plan identifies the entire project area as Public Recreation.

Table 1: Summer Villas Water Demand Comparison (per SCWA Water Supply Master Plan)

Land Use	Gross Unit Water Demand Factor (ac-ft/acre/yr) ¹	2016 SCWA WSMP		Summer Villas (Proposed)	
		Area (acres)	Water Demand (ac-ft/yr)	Area (acres)	Water Demand (ac-ft/yr)
Rural Estate	1.37	111	152		
Single Family	2.13				
Multi Family – Low Density	2.44			71.3	174
Multi Family – High Density	3.33				
Commercial	2.02				
Industrial	2.02				
Public	0.81			19.4 ²	16
Public Recreation	2.8				
Mixed Land Use	2.15				
Right of Way	0.18				
Self Suppt./Supp. by Others					
Non-Irrigated	--			20.3 ³	0
Industrial- Unutilized	--				
Agricultural	--				
Total Area & Demand		111	152	111	190

As Table 1 above indicates, the proposed Summer Villas project, when assessed independently from other adjacent development, produces a demand increase over and above that assumed by the Zone 40 Water Supply Master Plan. As such, we need to assess further outside the project boundaries to assess whether regional demands are truly increasing.

Sheldon Park Estates is an existing rural residential development located immediately north of Summer Villas on the north side of Sheldon Road. Units 1 through 3 of Sheldon Park includes 36 rural residential lots occupying approximately 79 acres. The residences are served by individual on site water wells and septic systems. Drainage is provided by roadside ditches and related drainage culverts.

The Zone 40 Water Supply Master Plan's projected water demand for Sheldon Park is also based on a rural estate demand factor. However, since this project is being developed with individual on-site wells, the net demand on the proposed Zone 40 backbone network can be assumed to be zero. As such, we can quantify the reduction in demand for Sheldon Park and compare it to the estimated Summer Villa increases to determine if a regional increase is present. These calculations are summarized in Table 2 below.

- 1 Water demand factors per Zone 40 Water Supply Master Plan dated September 2016.
- 2 Open space located beneath existing power lines.
- 3 Laguna Creek

Table 2: Sheldon Park Water Demand Comparison (per SCWA Water Supply Master Plan)

Land Use	Gross Unit Water Demand Factor (ac-ft/acre/yr) ⁴	2016 SCWA WSMP		Sheldon Park Units 1-3 (Proposed)	
		Area (acres)	Water Demand (ac-ft/yr)	Area (acres)	Water Demand (ac-ft/yr)
Rural Estate	1.37	79	108		
Single Family	2.13				
Multi Family – Low Density	2.44				
Multi Family – High Density	3.33				
Commercial	2.02				
Industrial	2.02				
Public	0.81				
Public Recreation	2.8				
Mixed Land Use	2.15				
Right of Way	0.18				
Self Suppt./Supp. by Others				79 ⁵	0
Non-Irrigated	--				0
Industrial- Unutilized	--				
Agricultural	--				
Total Area & Demand		79	108	79	0

Conclusions

As clearly depicted by the Table 1 and 2 Summaries, the total combined project water demands for Summer Villas and Sheldon Park Units 1 through 3 (190+0=190 ac-ft/yr) is significantly less than assumed by the Zone 40 Water Supply Master Plans (152+108=260 ac-ft/yr). Previously modeled demands associated with the Zone 40 Water Supply Master Plan more than compensate for the demands associated with Summer Villas and Sheldon Park Units 1-3 projects.

Attachments

- Summer Villas Subzone Exhibit

4 Water demand factors per Zone 40 Water Supply Master Plan dated September 2016.

5 Water supply for Sheldon Park provided by on site wells

