



**CENTURY VILLAGES AT CABRILLO SPECIFIC PLAN PROJECT
UTILITY INFRASTRUCTURE TECHNICAL REPORT: WASTEWATER
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1. INTRODUCTION

1.1. PROJECT DESCRIPTION

The Century Villages at Cabrillo campus, known herein as the “Project” was developed in the 1960’s as part of the former Cabrillo/Savannah Naval Housing development which consisted of 135 acres of housing units. The Naval Housing development was in operation until the mid-1990s, after which the Navy abandoned the development and the land was broken up and transferred to the City of Long Beach, California State University of Long Beach, The Long Beach Job Corps, and the Long Beach Unified School District. In 1997, under the McKinney Act, a 26 acre portion of the formal Naval Housing development was transferred to Century Villages at Cabrillo for the purpose of providing transitional and permanent housing to those in need. Since the transfer of the 26 acres, the campus acquired an additional acre from the City of Long Beach bringing the area of the campus to 27 acres total.

Century Villages at Cabrillo (CVC) is engaged in a 20-year development of its property, where existing multi-family housing units will be replaced by larger, multi-story mixed use buildings. These buildings will have housing for low-income families, veterans, and seniors on the upper levels, and amenities like community centers, gymnasiums, and parking on the lower levels. Similarly, new administration buildings are planned to be built for CVC staff to work on-site with residents, visitors, and others who use the campus. Part of the campus’ existing streets will be reconfigured to promote better traffic flow, more public transportation options, and ease of access for residents on site.

The City of Long Beach maintains a public easement for the streets throughout the CVC campus. Within these streets are multiple utilities, some of which are public, and some being private. The water lines under the streets are public lines belonging to Long Beach Water Department, and the storm drain and sewer lines under the streets and within the campus are privately owned and maintained by CVC.

1.2. SCOPE OF WORK

As a part of the Environmental Impact Report for the Project, the purpose of this report is to analyze the potential impact of the Project to the City’s wastewater infrastructure systems.

2. EXISTING CONDITIONS

The project's existing sewer infrastructure was constructed in the 1960's consisting of two private sanitary sewer main lines which tied into Public point of connections (POC) along Technology Pl. Each private main line separately branches off to buildings serving the West and East portions of the campus. Based on available record data provided by the Long Beach Water Department (LBWD), the sewer main connected to the public POC West of River Ave is a 10 inch vitrified clay pipe (VCP) and has a calculated capacity of 0.300 cubic feet per second (cfs) (193,895 gallons per day (gpd)). The sewer mains connected to the public POC East of River Ave are two (2) 8 inch vitrified clay pipes (VCP) with a total calculated capacity of 0.864 cubic feet per second (cfs) (558,418 gallons per day (gpd)).

Wastewater Flow Analysis at the Public points of connection have been prepared using d/D Ratio Parameters from King's Hydraulics Hand Book as summarized in Table 1 below.

Table 1 - Flow Analysis using d/D Ratio Parameters from King's Hydraulic's Hand Book

D= Diameter of pipe in inches ; d = depth of flow; Slope =S								
Public SS Main Line	D	S	Manning's n	d/D	Ca	Cr	Q	V
West	10	0.001	0.015	0.50	0.393	0.250	0.300	1.100
East 1	8	0.007	0.015	0.50	0.393	0.250	0.432	2.473
East 2	8	0.007	0.015	0.50	0.393	0.250	0.432	2.473

Where:

$$Q = \text{Flowrate (cfs)}$$

$$Q = VA$$

$$Q = \frac{(1.486)(r^{2/3})(s^{1/2})(A)}{n}$$

$$Q = \frac{(1.486)(Cr * D)(s^{1/2})(Ca * D^2)}{n}$$

V = Velocity (ft/s)

A = Area (SF)

r = Hydraulic Radius

Ca = Area Coefficient (King's)

Cr = Circ. Pipe Hydraulic Radius Coefficient (King's)

3. SIGNIFICANCE THRESHOLDS

Appendix G of the CEQA Guidelines provides a set of sample questions that address impacts with regard to wastewater. These questions are as follows:

Would the project:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects?
- Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

These thresholds are applicable to the Project and as such are used to determine if the Project would have significant wastewater impacts.

4. METHODOLOGY

This report analyzes the potential impacts of the Project on the existing public sewer infrastructure by comparing the estimated Project wastewater generation with the calculated available capacity of the utility provider's existing mainline pipes at 50% depth over diameter, (or otherwise known as 50% full), which is the local agency requirement for sewer pipe capacity.

5. PROJECT IMPACTS

5.1. CONSTRUCTION

Wastewater generation would occur incrementally throughout construction of the Project as a result of construction workers on-site. However, construction workers would utilize portable restrooms, which would not contribute to wastewater flows to the City's wastewater system. Thus, wastewater generation from Project construction activities is not anticipated to cause any increase in wastewater flows. In other words, Project impacts associated with construction-period wastewater generation would be less than significant.

Furthermore, Project impacts on wastewater associated with construction activities would be less than significant.

5.2. OPERATION

In accordance with the publically available sewer generation rates provided by LA County Sanitation the estimated sewer flows were based on the sewer generation factors for the Project's uses. Based on the type of use and generation factors, the Project will generate a net increase of approximately 79,280 gallons per day (gpd) of wastewater in which 53,455

gpd is collected from the West private main line and 25,825 gpd from the East private main line. Wastewater generation estimates have been prepared based on the LA County Sanitation factors for Sewer Capacity Availability Requests (SCAR) for residential and commercial categories, and are summarized in Table 2 below.

Table 2 - Proposed Sewer Generation

Project Phase	Sewer Generation (GPD)	Sewer Mainline	Total GPD West	Total GPD East
6A	3,905	East	-	3,905
6B	3,080	East	-	3,080
7	10,500	West	10,500	-
8A	2,900	East	-	2,900
8B	15,940	East	-	15,940
9A	7,630	West	7,630	-
9B	9,690	West	9,690	-
10A	20,715	West	20,715	-
10B	4,200	West	4,200	-
A	720	West	720	-
Proposed Generation			53,455	25,825
Total Net Increase	79,280			

- a. Sewage Generation Factors are based on LA County Sanitation factors for Sewer Capacity Availability Requests (SCAR) (latest version as of 2019).
- b. For residential credits, assume residential apartment-1 bedroom per LA County SCAR

As stated within the *Existing Conditions* section of this report, the existing capacity of the 10 inch vitrified clay pipe (VCP) at the public POC West of River Ave is approximately 0.300 cfs (193,895 gpd). The existing capacity of the two (2) 8 inch vitrified clay pipes (VCP) sewer mains connected to the public POC's East of River Ave is approximately 0.864 cfs (558,418 gpd). The aforementioned public sewer mains serve only the CVC property and no other development, since CVC is the most upstream development on this particular public system.

The Project's net increase in sewage generation is approximately 0.12 cfs (79,280 gpd). The private sewer main line in the West portion of the campus will contribute approximately 0.08 cfs (53,455 gpd) of sewage into the public sewer system West of River Ave, which results in approximately 27% of the pipe's capacity at 50% full. Similarly, the private sewer main line in the East portion of the campus will contribute approximately 0.04 cfs (25,825 gpd) of sewage into the public sewer system East of River Ave, which results in approximately 5% of the pipe's capacity at 50% full. Due to this fact, impacts on wastewater infrastructure would be less than significant.

5.3. CUMULATIVE IMPACTS

The Project will result in the additional generation of sewer flow, but the impacts would be less than significant.

6. LEVEL OF SIGNIFICANCE

Based on the analysis contained in this report no significant impacts have been identified to wastewater infrastructure for this Project.