

# Appendix I

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Preliminary Sewer Study

# Sewer Area Study

Cameron II  
City of West Covina  
TRACT MAP 83216  
1600 W. Cameron Avenue

**February 12, 2021**

**PREPARED FOR:**

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## SECTION 100 – SEWER AREA STUDY

### 100.1 Introduction

The proposed Cameron II Development (“Project”), owned and developed by MLC Holdings (“Owner”) proposes the construction of multi-family attached homes. There will be 6 lots and 8 buildings total for multi-family attached homes. The multi-family lots will contain a total of 84 units. Open space and landscaping is spread through the project.

The total proposed project site is approximately 3.25 acres is located at the southwest corner of West Cameron Avenue and Toluca Avenue within the City of West Covina in the County of Los Angeles. The site is bordered to the southwest by single-family homes, to the Northwest by Office buildings, to the Northeast by West Cameron Avenue, and to the Southeast by Cameron I.

Figure 1-1

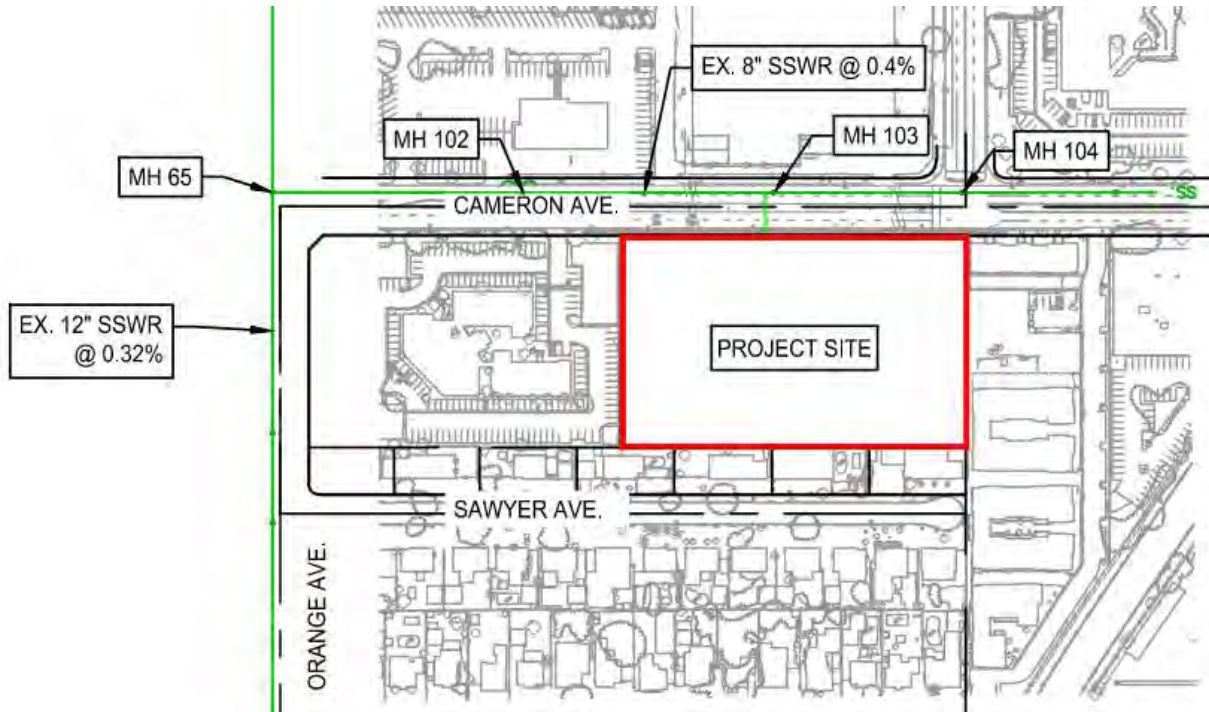


**SITE MAP**

### 100.2 Existing Conditions

An existing 8-inch sewer main line runs from east to west along West Cameron Avenue. The only upstream flows are from an 8-inch line that flows south along Toluca Avenue. The main sewer line connects into a 12-inch sewer main line that runs south along South Orange Avenue. The sewer line meets with a 33-inch sewer trunk line running east to west along West Merced Avenue to continue running south along South Orange Avenue as a 30-inch sewer trunk line.

Figure 1-2



### 100.3 Proposed Project

The proposed multi-family residential project consists of a 3.25-acre site that lies adjacent to West Cameron Avenue. This site will consist of eight (8) buildings with a total of 84 condominiums. The proposed site will be connecting into the existing 8-inch sewer line running west along West Cameron Avenue.

See Exhibit 1 for the Proposed Site Plan and Exhibit 2 for the Conceptual Sanitary Sewer Layout.

### 100.4 Sewer Analysis

Based on the project uses described above the proposed flows were generated using a peaking factor of 2.5 in Table 1 below. Refer to Appendix 3 for Los Angeles County Public Works Sewer Pipe loading table for the source of the proposed flows assumed.

**Table 1**

<b>Existing</b>						
<b>Land Use</b>	<b>Flow (gpd)</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Total Flow (gal/day)</b>	<b>Total Flow (cfs)</b>	<b>Total Flow w/ 2.5 Peak (cfs)</b>
Bank	200	1000 sq ft gross floor area	23	4,600	0.007	0.018
Office Building	200	1000 sq ft gross floor area	16	3,200	0.005	0.012
<b>Total</b>			<b>39</b>	<b>7,800</b>	<b>0.012</b>	<b>0.030</b>

<b>Proposed</b>						
<b>Land Use</b>	<b>Flow (gpd)</b>	<b>Unit of Measure</b>	<b>Quantity</b>	<b>Total Flow (gal/day)</b>	<b>Total Flow (cfs)</b>	<b>Total Flow w/ 2.5 Peak (cfs)</b>
2 Bedroom	250	Dwelling Unit	24	6,000	0.009	0.023
3 Bedroom	300	Dwelling Unit	60	18,000	0.028	0.070
<b>Total</b>			<b>84</b>	<b>24,000</b>	<b>0.037</b>	<b>0.093</b>

The project site will be connecting into the 8-inch sewer line along the south side of Cameron Avenue as shown in Exhibit 2. As built drawings for the line indicate the line is sloping at 0.4%. Using Kutter's Formula the existing capacity of the line is 0.38 cfs, with a d/D of 0.5. The 8-inch sewer line along Cameron Avenue receives upstream flows from another 8-inch sewer line that flows south along Toluca Avenue. The existing line doesn't have the capacity for the existing contributing flows nor the multi-family residential use, which generates a total of 0.093 cfs. The proposed line connects to the section of sewer line between manhole 103 and manhole 102. The existing flows generated are 0.82 cfs, causing the existing line to flow at a capacity of 216%. Mitigation will be required from manhole 103 to manhole 65. The table for the Sewer Capacity Analysis can be found in Appendix A for more information.

### 100.5 Mitigation Measures

In order to mitigate the impacts from the proposed development installation, larger diameter sewer pipes will be needed to carry the proposed flows. As mentioned above, the sewer line between manhole 103 to manhole 65 will need to be up sized. It was determined that upsizing the line to be a 12-inch pipe will carry the proposed flows at a d/D of 50%. This would allow for the proposed replacement line to operate at a design capacity of 78% before connecting into the existing 12-inch main sewer line. The proposed 12-inch will maintain the existing slope in the existing line. Increasing the pipe size will provide the necessary capacity associated with the proposed project. The table for the Sewer Capacity Analysis can be found in Appendix A for more information.

### 100.6 Conclusions

The proposed project site will utilize the existing 8-inch sewer line on the south side of Cameron Avenue to capture the sewer flows for the proposed multi-family residential site. The existing line does not have capacity for entire proposed project and to mitigate this, the existing line will need to be upsized to a 12-inch sewer line to carry all the proposed flow from the project site. The intent would be for the proposed pipe to be installed in the same alignment as the existing line matching the slope of the existing pipe. Based past president within the city, the owner will should be required to pay for a portion of the cost to upsize the line. But not be responsible for the complete replacement of the line. The proposed site is approximately 10% of the total flow in the line that requires upsizing and the proposed flow is approximately 24% of design capacity of the existing 8" line in Cameron Avenue. The total length of replacement from the connection pipe to Orange Ave. is estimated to be 740 linear feet.

**EXHIBIT 1: Proposed Site Plan**