City of West Hollywood
California 1984

City of West Hollywood
Department of Public Works
Engineering Division

Sewer Capacity Study Requirements

1. The sewer capacity study shall be signed and stamped by a California licensed Civil Engineer.

2. Project Description: The study shall describe the project's location, including the approximate acreage of the project site. The study shall describe what is being proposed on the development site. The current land uses and proposed land uses of the development shall be identified.

3. Existing & Proposed Sewer System: The study shall identify the existing site's connections to the public sewer system, including the number of laterals, the lateral sizes, and their location. The study shall identify the proposed site's connections to the public sewer system, including the number of laterals, the lateral sizes, their location, and the flow discharging through each. (A copy of the development's plumbing plans and site utility plans documenting the proposed sewer system shall be included in the report's appendix.) The study shall identify the location, size, and flow direction of the public sewer mains, including street names, of where the site discharges to. A vicinity map shall be included showing the surrounding region sewer network, including street names, manhole locations and i.d. numbers, main diameters, and flow direction arrows. Applicant shall contact the Engineering Division Planchecker for the extent of the map delineation required.

4. Existing Sewer System Flow Monitoring: A 14-day flow monitoring study shall be required to obtain the existing flow performance. Applicant shall contact the Engineering Division Planchecker for identification of the downstream sewer manhole(s) where monitoring shall be conducted. Pending the results of the Sewer Capacity Study, additional flow monitoring may be required by the City. (The City of Los Angeles sewers located downstream may be impacted by the proposed development project. Therefore, the sewer study may need to include monitoring locations within the City of Los Angeles.) The existing average daily flow shall be determined in cubic feet per second (a copy of the monitoring study shall be included in the report's appendix).

5. Proposed Flow Generation: The study shall include the proposed development land use(s). (A copy of the development's architectural plans documenting the proposed land use(s) shall be included in the report's appendix.) Expected average daily flow generation in cubic feet per second shall be determined from the closest matching user category(s) in the City of West Hollywood's Waste Water Master Plan Wastewater Flow Factor Table. (a copy is provided herein)

6. Conclusion: The study shall identify the effect of the proposed development on the entire downstream existing sewer system. Applicant shall contact the Engineering Division Planchecker for identification of the sewer reach(es) that shall be modeled. (a copy

of the asbuilt record plan of the sewer reach(es) shall be included in the report appendix.) Depending on the results of the Sewer Capactiy Study, additional sewer reaches may be required to be modeled.

The existing average daily flow reported in the monitoring study shall be added to the proposed average daily flow from the new development, to arrive at the total average daily flow (QAF) to be studied. The peak flow (QPF) for this study shall be calculated in cubic feet per second (cfs) by QPF = 2.0 x QAF where 2.0 is the peaking factor used to determine the maximum peak flow rate.

Modeling shall utilize the following design criteria:

$n = 0.013$
$D/d < 0.75$ for $d \leq 15$”
$D/d < 0.90$ for $d > 15$”

The study shall state the D/d resulting from the QPF for each downstream existing sewer system segment. The study shall demonstrate that the discharge does not exceed the design criteria of the sewer reach(es).

The study shall also demonstrate that the combined discharge results in a velocity value that is no greater than 10 fps.

If the study results in a violation of either of these requirements, the study shall identify the proposed mitigation necessary to comply, such as the upsizing of deficient sewer reach(es). The report shall include the calculations of this section in the appendix.

Table 3-4. Wastewater Flow Factors

Land Use Category		Land Use Code[a]	Description[a]	Wastewater Flow Factor[b]		Equivalent Sewer Units Factor[b,c]
Non-residential	Bank	2300	Bank/Savings and Loan	8,710 gpd/acre	0.2 gpd/sf	37.1 ESU/acre
	Car Wash	2630	Car Wash	21,780 gpd/acre	0.5 gpd/sf	92.7 ESU/acre
		2640	Car Wash/Self service			
	Commercial	2400	Service Shop/Paint/Laundry	10,890 gpd/acre (23,960 gpd/acre for Laundry)	0.25 gpd/sf (0.55 gpd/sf for Laundry)	46.3 ESU/acre (102.0 ESU/acre for Laundry)
		2500	Service Station/Full Service			
		2600	Auto Service/Body and Fender			
	General Commercial	1100	Store [d]	5,450 gpd/acre	0.125 gpd/sf	23.2 ESU/acre
		1010	Miscellaneous Commercial	10,890 gpd/acre	0.25 gpd/sf	46.3 ESU/acre
		1500	Neighborhood Shopping			
		1600	Regional Shopping			
		2800	Animal Kennel			
		2900	Nursery/Greenhouse			
		7710	Mortuary/Funeral Home			
	Government Facility	8800	Government Owned	Government facility parcels are to be reviewed and assigned a flow factor based on use type (e.g., City Hall would be designated as an Office)		
	Gym, Health Spas	6530	Gym/Health Spa	15,250 gpd/acre	0.35 gpd/sf	64.9 ESU/acre
	Hotel and Home for the Aged	1800	Hotel/Under 50 Rooms	125 gpd/room		0.53 ESU/room
		1810	Hotel/50 Rooms and Over			
		1820	Motel/Under 50 Rooms			
		1830	Motel/50 Rooms and Over			
		1840	Motel or Hotel/Apt Under 50 Units			
		1850	Motel or Hotel/Apt 50 Units and Up			
		7500	Home for Aged and Others			
	Manufacturing and Utility	3100	Light Manufacturing/Printing	8,710 gpd/acre	0.2 gpd/sf	37.1 ESU/acre
		3200	Heavy Manufacturing			
		3700	Mineral Processing			
		8100	Utility/Pump Plant/State Prop			
	Office	1700	Office Building [d]	6,530 gpd/acre	0.15 gpd/sf	27.8 ESU/acre
		1720	Office Building/Residential [d]			
		1900	Professional Building [d]			

Table 3-4. Wastewater Flow Factors

Land Use Category		Land Use Code[a]	Description[a]	Wastewater Flow Factor[b]		Equivalent Sewer Units Factor[b,c]
Non-residential	Private Schools, Lodge Halls, Frat Clubs, Churches, Theaters	6100	Indoor Cinema	4,360 gpd/acre	0.1 gpd/sf	18.6 ESU/acre
		6400	Club/Lodge Hall/Fraternal Organization			
		7100	Church			
		7200	Private School			
	Restaurant	2100	Restaurant/Lounge/Tavern	13,070 gpd/acre	0.3 gpd/sf	55.6 ESU/acre
		2110	Fast Food-Walkup			
	Store Combo	1200	Store and Office Combination [d]	4,360 gpd/acre	0.1 gpd/sf	18.6 ESU/acre
		1210	Store and Residential Combo [d]			
		1330	Home Furnishings [d]			
	Supermarket	1400	Supermarket	13,070 gpd/acre	0.3 gpd/sf	55.6 ESU/acre
	Vet Hospital, Clinic, Medical Building	1912	Medical/Dental Bldg. 2-5 Stories	13,070 gpd/acre	0.3 gpd/sf	55.6 ESU/acre
		1920	Veterinary Hospital/Clinic			
		7400	Hospital			
	Warehousing, Lumber Yard	2200	Wholesale/Manufacturing Outlet	6,530 gpd/acre	0.15 gpd/sf	27.8 ESU/acre
		3600	Lumber Yard			
Vacant	Vacant/Parking Lot	1000	Commercial	0.5 ESU per parcel for vacant parcels		
		2700	Parking Lot/Parton or Employee			
		2710	Parking Lot/Commercial			
		2720	Parking Structure- Patron or Employee			
		010V	Vacant Land			
		100V	Vacant Land - Commercial			
		300V	Vacant Land - Industrial			
		3800	Parking Lot-Industrial Use			
Residential	Single Family Residential	100	Single Family Residence [d]	235 gpd/dwelling unit		1 ESU/dwelling unit
		101	Single Residence with Pool [d]			
	Multi-Unit Residential	010C	Single Residence/Condo [d]	141 gpd/dwelling unit		0.6 ESU/dwelling unit
		010E	Single Residence/Condo Conversion [d]			
		010F	Single Residence/Cooperative [d]			
		0200	Two Units/4 Stories or Less [d]			
		0300	Three Units/4 Stories or Less [d]			
		0400	Four Units/4 Stories or Less [d]			
	Multi-Family Residential	0500	5+ Units/4 Stories or Less [d]	141 gpd/dwelling unit		0.6 ESU/dwelling unit

a. Land use code and description per Los Angeles County.

b. Unless otherwise noted, flow factors (gpd/acre or gpd/sf) are unchanged from previous City approach, which was to use County factors. ESU factor has been updated based on changes to the value of an ESU.

c. ESU factor developed by dividing the calculated per-dwelling unit or acre factor by the flow factor for a single-family home (235 gpd).

d. Flow factor has been adjusted from County factors based on review of available water use data and model calibration. Adjustments to the flow factors from what had previously been used were limited to 50 percent as a conservative approach to avoid over-adjustments from a limited data set