

# SEWER CAPACITY STUDY

**For:**

Lomita Blvd Sewer  
(between Crenshaw and Garner)

**Prepared by:**

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**Date:**

08/19/08



**Submittal To:**

City of Torrance Community Development Department  
Engineering Division



## **MH (15" Discharge)**

### EXISTING AVERAGE TOTAL FLOW PER DAY AT MH (15" Discharge)

Per LACSD data 2007

$$900,000 \text{ gal/day} = 1.3925 \text{ ft}^3 / \text{sec}$$

### ADD FLOW FOR NEW SITE

#### PHASE I

$$210,066 \text{ sf} \times 200 \text{ gal/day} / 1000 \text{ sf} = 42,013 \text{ gal/day}$$

#### PHASE II

$$141,261 \text{ sf} \times 200 \text{ gal/day} / 1000 \text{ sf} = 28,252 \text{ gal/day}$$

#### Total Flow

$$42,013 + 28,252 \text{ gal/day} = 70,265 \text{ gal/day}$$

$$Q = 70,265 \text{ gal/day} \times 1 \text{ ft}^3 / 7.4805 \text{ gal} \times 1 \text{ day} / 86,400 \text{ sec} = 0.1087 \text{ ft}^3 / \text{sec}$$

### APPLY PEAKING FACTOR FOR PROPOSED PROJECT

$$2.65 \times (\text{Avg. Flow})^{0.906}$$

$$Q_{\text{peak}} = 2.65 \times (0.1087)^{0.906} = 0.3549 \text{ ft}^3 / \text{sec} = 229,377 \text{ gal/day}$$

### TOTAL FLOW

$$Q_{\text{total}} = 1.3925 + 0.3549 = 1.7474 \text{ ft}^3 / \text{sec} = 1,229,371 \text{ gal/day} = 1.13 \text{ MGD}$$

TABLE 1  
LOADINGS FOR EACH CLASS OF LAND USE

<u>DESCRIPTION</u>	<u>UNIT OF MEASURE</u>	<u>FLOW (Gallons per Day)</u>	<u>COD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
<b>RESIDENTIAL</b>				
Single Family Home	Parcel	260	1.22	0.59
Duplex	Parcel	312	1.46	0.70
Triplex	Parcel	468	2.19	1.05
Fourplex	Parcel	624	2.92	1.40
Condominiums	Parcel	195	0.92	0.44
Single Family Home (reduced rate)	Parcel	156	0.73	0.35
Five Units or More	No. of Dwlg. Units	156	0.73	0.35
Mobile Home Parks	No. of Spaces	156	0.73	0.35
<b>COMMERCIAL</b>				
Hotel/Motel/Rooming House	Room	125	0.54	0.28
Store	1000 ft <sup>2</sup>	100	0.43	0.23
Supermarket	1000 ft <sup>2</sup>	150	2.00	1.00
Shopping Center	1000 ft <sup>2</sup>	325	3.00	1.17
Regional Mall	1000 ft <sup>2</sup>	150	2.10	0.77
→ Office Building	1000 ft <sup>2</sup>	200	0.86	0.45
Professional Building	1000 ft <sup>2</sup>	300	1.29	0.68
Restaurant	1000 ft <sup>2</sup>	1,000	16.68	5.00
Indoor Theatre	1000 ft <sup>2</sup>	125	0.54	0.28
Car Wash				
Tunnel - No Recycling	1000 ft <sup>2</sup>	3,700	15.86	8.33
Tunnel - Recycling	1000 ft <sup>2</sup>	2,700	11.74	6.16
Wand	1000 ft <sup>2</sup>	700	3.00	1.58
Financial Institution	1000 ft <sup>2</sup>	100	0.43	0.23
Service Shop	1000 ft <sup>2</sup>	100	0.43	0.23
Animal Kennels	1000 ft <sup>2</sup>	100	0.43	0.23
Service Station	1000 ft <sup>2</sup>	100	0.43	0.23
Auto Sales/Repair	1000 ft <sup>2</sup>	100	0.43	0.23
Wholesale Outlet	1000 ft <sup>2</sup>	100	0.43	0.23
Nursery/Greenhouse	1000 ft <sup>2</sup>	25	0.11	0.06
Manufacturing	1000 ft <sup>2</sup>	200	1.86	0.70
Dry Manufacturing	1000 ft <sup>2</sup>	25	0.23	0.09
Lumber Yard	1000 ft <sup>2</sup>	25	0.23	0.09
→ Warehousing	1000 ft <sup>2</sup>	25	0.23	0.09
Open Storage	1000 ft <sup>2</sup>	25	0.23	0.09
Drive-in Theatre	1000 ft <sup>2</sup>	20	0.09	0.05

TABLE 1

(continued)

## LOADINGS FOR EACH CLASS OF LAND USE

<u>DESCRIPTION</u>	<u>UNIT OF MEASURE</u>	<u>FLOW (Gallons per Day)</u>	<u>COD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
<b>COMMERCIAL</b>				
Night Club	1000 ft <sup>2</sup>	350	1.50	0.79
Bowling/Skating Club	1000 ft <sup>2</sup>	150	1.76	0.55
Auditorium, Amusement Golf Course, Camp, and Park (Structures and Improvements)	1000 ft <sup>2</sup>	125	0.54	0.27
	1000 ft <sup>2</sup>	350	1.50	0.79
	1000 ft <sup>2</sup>	100	0.43	0.23
Recreational Vehicle Park	No. of Spaces	55	0.34	0.14
Convalescent Home	Bed	125	0.54	0.28
Laundry	1000 ft <sup>2</sup>	3,825	16.40	8.61
Mortuary/Cemetery	1000 ft <sup>2</sup>	100	1.33	0.67
Health Spa, Gymnasium With Showers	1000 ft <sup>2</sup>	600	2.58	1.35
Without Showers	1000 ft <sup>2</sup>	300	1.29	0.68
Convention Center, Fairground, Racetrack, Sports Stadium/Arena	Average Daily Attendance	10	0.04	0.02
<b>INSTITUTIONAL</b>				
College/University	Student	20	0.09	0.05
Private School	1000 ft <sup>2</sup>	200	0.86	0.45
Church	1000 ft <sup>2</sup>	50	0.21	0.11

## Tim Delehanty

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**From:** Symons, Ted [TSymons@Tornet.com]  
**Sent:** Monday, March 24, 2008 4:25 PM  
**To:** Tim Delehante (tim@thieneseng.com)  
**Subject:** FW: sewer flows on Lomita

**From:** Symons, Ted  
**Sent:** Wednesday, March 19, 2008 9:43 AM  
**To:** Santana, Danny  
**Cc:** Wong, Chui; Balaguer, Daniel; Semaan, Ted  
**Subject:** sewer flows on Lomita

Hi Danny,

As per Ruth of LA Co. Sanitation Districts, the following sewer flow measurements and capacities from the sewer trunk lines on Lomita near the Rockefeller project are the most current:

<u>Size</u>	<u>capacity</u>	<u>measured flow</u>	<u>year measured</u>
15"	1.3	.9	2007
21"	2.1	1	2007
42"	20.4	10.7	2006

Capacities and measured flows are in units of MGD (Million Gallons per Day)

Let me know if you need more info.

Ted Symons