

**SEWER CAPACITY STUDY FOR THE  
PROPOSED DEVELOPMENT AT  
8899 BEVERLY BOULEVARD  
(ROSEWOOD AVE AND BEVERLY BLVD SEWER)  
WEST HOLLYWOOD, CALIFORNIA**



This report has been prepared by the staff of DCI Engineers under the direction of the undersigned professional engineer whose stamp and signature appears hereon.

Prepared by:



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DCI Job No.: 12072-0002  
Date: November 22, 2013  
Revised: November 26, 2013

*The methods, descriptions, and design calculations shown in this design report conform to the City of West Hollywood Department of Public Works Engineering Division, Sewer Capacity Study Requirements based on the user categories found in the Sanitation District No. 4 of Los Angeles County mean loading table.*



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## **8899 Beverly Boulevard Sewer Capacity Analysis**

### **1.0 Introduction**

The proposed development at 8899 Beverly Boulevard consists of mixed-use residential housing in a previously developed urban area of Los Angeles County, California. The site is located on approximately 1.73 acres and is located between Rosewood Avenue and Beverly Boulevard in the City of West Hollywood.

The project site was formerly used as a commercial office building with restaurant on the lower level. The proposed development consists of the adaptive re-use of the existing building to provide 8 apartments and 56 condominium units. Commercial storefront properties will be located on the street level along Beverly Boulevard with a total retail floor area of 19,875 square feet. Adjacent to the tower will be 13 units of residential townhomes, each varying from 2-3 bedrooms, and 4 apartment units.

This sewer capacity study has been prepared by DCI Engineers to examine the existing sanitary sewer system and verify that the proposed development will not adversely impact the flow capacity of the existing sewer infrastructure. The Study includes an analysis of an existing 8 inch vitrified clay (VCP) sewer line along Rosewood Avenue as well as a 10 inch VCP sewer mainline running along Beverly Boulevard.

### **2.0 Existing Sewer System and Design Concept**

The proposed development will be served by either of two existing Sanitary Sewer Pipelines located along Rosewood Avenue or Beverly Boulevard, respectively. An 8 inch Vitrified Clay Pipe, located along Rosewood Avenue as well as an existing 10 inch Vitrified Clay Pipe located in Beverly Boulevard, convey sewer outfalls in an easterly direction towards the Los Angeles County Sanitation District Trunk Lines to the Hyperion Wastewater Treatment Plant in Playa Del Rey. Both sewer mainlines serving the proposed development are owned and operated by the City of West Hollywood.

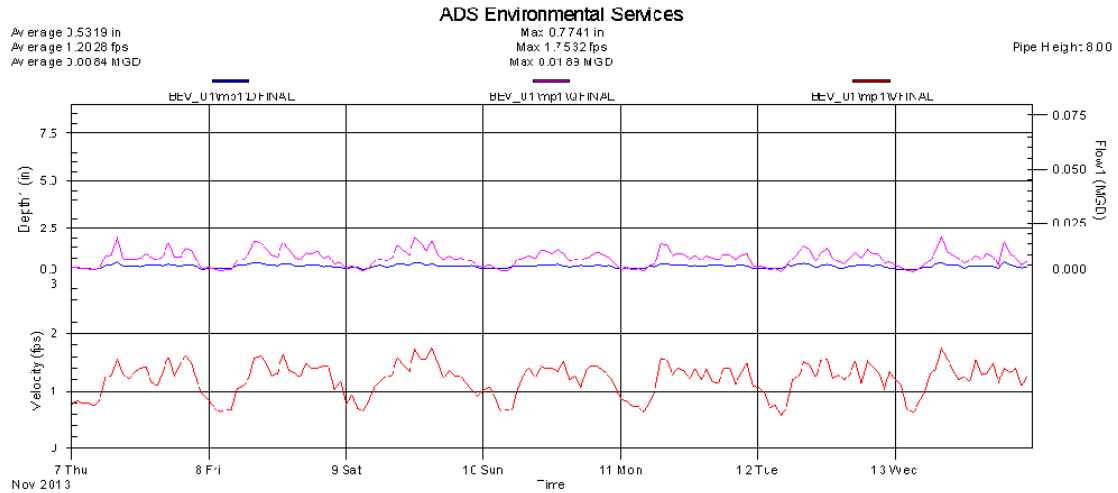
The project design will split the sewer flows to each of the two sewers based on location of the proposed units. The northern half of the site, comprising the residential townhomes and apartments shall connect to the existing sanitary sewer on Rosewood Avenue. The southern portion of the site, containing the mixed use residential, commercial, retail, and restaurant space will connect to the existing system in Beverly Boulevard. This report analyses the existing capacity of both sewer lines and calculates the effects of the new development on the overall system capacity.

### **3.0 Existing Sewer Pipe Capacity Analysis**

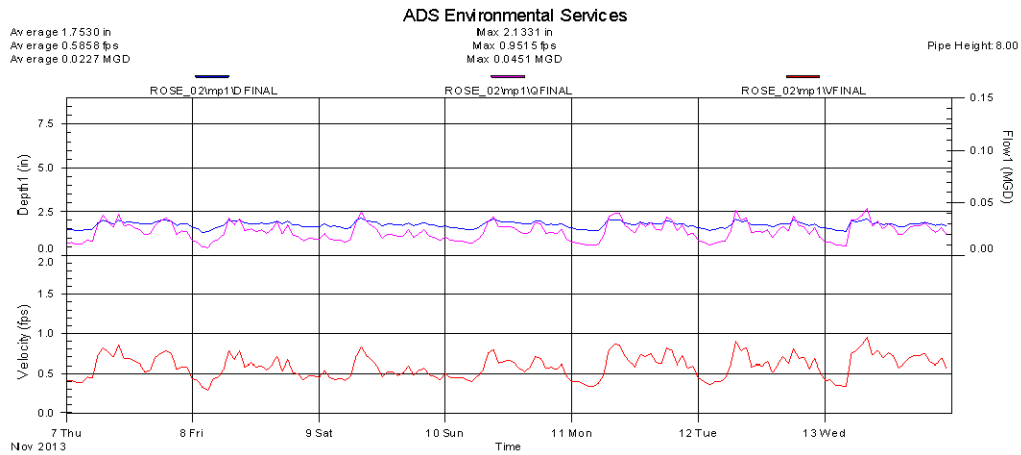
A 7 day flow monitoring study was conducted by ADS Environmental Services to analyze the existing flow capacity of the sewer mainlines serving the proposed development. Separate flow tests were conducted on the sanitary sewer lines within Beverly Boulevard and Rosewood Avenue, respectively. During the study, which was conducted between November 7<sup>th</sup> and November 13<sup>th</sup>, 2013, sewers were tested with Peak Doppler Monitors at two locations downstream of the potential sewer lateral. The first test was conducted at a Sewer Manhole “Bev01”, located in Beverly Boulevard, just east of North Swall Drive. A second testing location, “Rose02”, was located along Rosewood Avenue between North Almont Drive and North Robertson Boulevard.



### 3.1 Graphical Summary of Beverly Boulevard Sewer Flow Monitoring



### 3.2 Graphical Summary of Rosewood Avenue Sewer Flow Monitoring



## 4.0 Proposed Flow Generation

The proposed development at 8899 Beverly Boulevard includes a combination of 12 residential apartments, 56 residential condominiums, a 125 seat full-service restaurant, 19,875 square feet of commercial storefront, 10,562 square feet of office space, and 13 units of townhomes. The following table, taken from the Los Angeles County Sanitation District No. 4 Mean Loading List, summarizes the appropriate user categories and mean loading for the mixed use structure.

4.1 Tabular Summary of User Categories and Mean Loading

No. of Units	Unit Type	User Category	Flow Per Unit (Gallons Per Day)	Total (GPD)
<b>Outflow to Rosewood Avenue</b>				
Residential Units				
11	EA	Residential Townhome – 3 bedroom	230	2,530.00
2	EA	Residential Townhome – 2 bedroom	180	360.00
4	EA	Residential Apartments (Affordable)– 2 bedroom	160	640.00
39.638	1,000 SF	Auto Parking	20	792.76
<b>Total Flow From Proposed Development</b>				<b>4,322.76</b>
<b>Outflow to Beverly Boulevard</b>				
Residential Units				
18	EA	Residential Condo – 1 Bedroom	120	2,160.00
22	EA	Residential Condo – 2 Bedroom	160	3,520.00
16	EA	Residential Condo – 3 Bedroom	200	3,200.00
7	EA	Residential Apartment – 1 Bedroom	120	840.00
1	EA	Residential Apartment – Studio	80	80.00
Commercial Units				
125	Seats	Restaurant: Full Service Indoor Seating ( Per Seat)	30	3,750.00
19.875	1,000 SF	Total Commercial	80	1590
10.562	1,000 SF	Total Office	150	1584.3
14.009	1,000 SF	Auto Parking	20	280.18
<b>Total Flow From Proposed Development</b>				<b>17,004.48</b>

Based on the Criteria set forth by the City of West Hollywood, the sewer capacity analysis has been conducted based on the design of sewer pipes for peak flow. For existing sewer conveyances with diameters smaller than 15 inches, the pipes shall be designed to flow at a maximum of 50% capacity. For sewers with a diameter greater than 15 inches, the pipe design shall be limited to 75% of capacity. Based on the City of West Hollywood Standards, the Manning’s Roughness Coefficient of  $n=0.013$  was utilized in the analysis. In order to account for the Peak Flow in the sanitary sewer, a peaking factor of 2.5 has been allotted to the average flow for the two conveyances, each of which is under 15 inches in diameter.

**5.0 Summary of Sewer Capacity Calculations**

The 7 day Flow Monitoring Study by ADS Environmental Services obtained data regarding the current condition and flows in each of the two sewer pipes. The information was collected and analyzed to produce average flows through the pipelines, average depth, and average velocity in the sanitary sewer system. The LA County Sanitation District’s Mean Loading List was utilized to determine an approximation for the proposed sewer loading from the new development. Based on the number of residential units, the commercial floor-space, and the proposed uses within the building, the average proposed sewer flow to the Beverly Boulevard system is 17,005 gallons per day, or 0.026 CFS. The average proposed flow into the Rosewood Avenue sewer is anticipated to be 4,323 gallons per day or 0.007 CFS. The maximum design capacity of the sewer was calculated using a factor of 0.5 to ensure that the pipeline run at 50% of capacity.

Proposed flow was then added to the existing average sewer flow at each of the two pipelines and a peaking factor was applied to account for the maximum demand into the system. Based on the existing data and the results of the Sewer Capacity Calculations, the proposed development is expected to utilize just 12% of the design capacity within Rosewood Avenue, or just 6% of the design capacity in the Beverly Boulevard Sewer (See Appendix III for Detailed Sewer Capacity Calculations).

**5.1 Tabular Summary of Sewer Capacity Analysis**

Sewer Line	Size (In.)	Maximum Capacity (CFS)	Design Capacity	Existing Avg. Flow (CFS)	Proposed Flow (CFS)	Total Flow Post-Development (CFS)	Peak Flow (Factor-2.5) (CFS)	Percentage of Design Capacity
Beverly Blvd	10	3.10	1.553	0.013	0.026	0.039	0.098	6%
Rosewood Avenue	8	1.71	0.857	0.035	0.007	0.042	0.105	12%

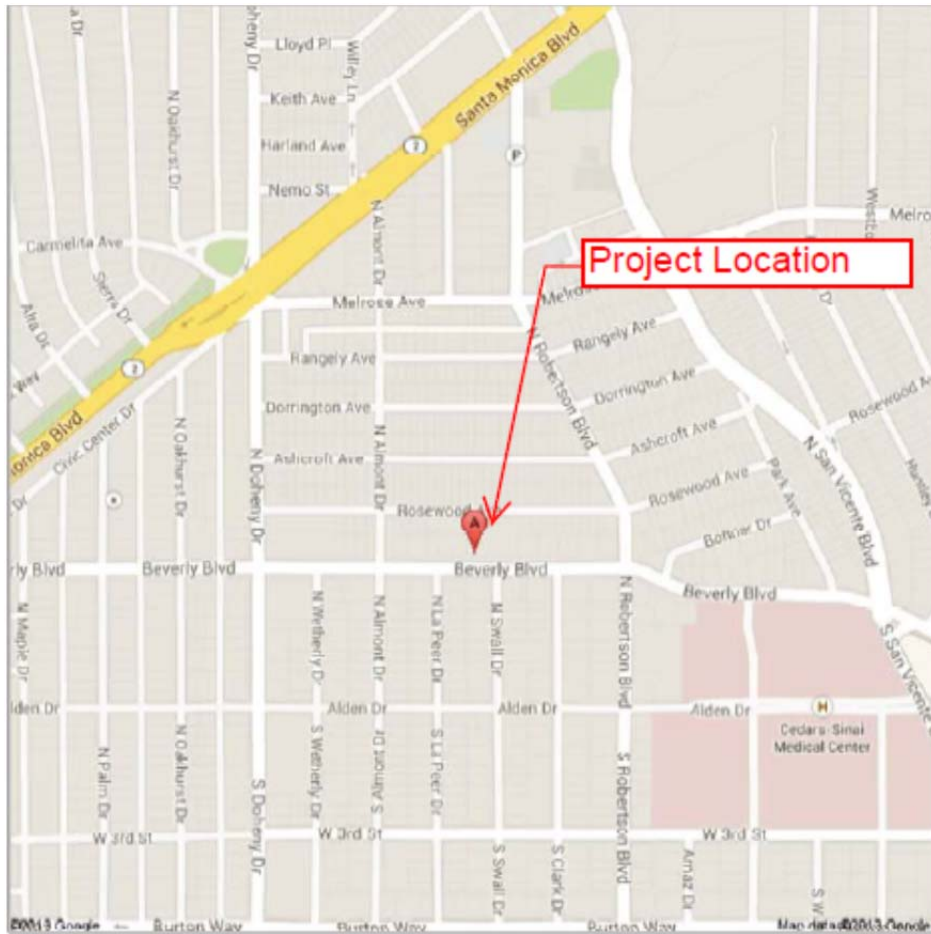
**6.0 Results and Conclusions**

Based on the results of the Sewer Capacity Analysis Calculations for the proposed development, the existing sanitary sewer system serving the property is adequately sized to handle the peak flows generated by the new development. Along Rosewood Avenue, the proposed mixed use structure will slightly increase the current flow in the system, reaching a maximum capacity of just 12% of the maximum design capacity. In Beverly Boulevard, the existing 10 inch sewer is more than sufficient to handle the additional sewer outflows with a maximum utilization of just 6% of the maximum design sewer capacity.

Despite the increase in sewer flows coming from the property, the existing sanitary sewer system owned and operated by the City of West Hollywood will not be detrimentally affected by the proposed development. The existing sewer system is adequately sized to handle peak flows into either the Rosewood Avenue or the Beverly Boulevard Sewer Systems without impacting the existing sewer capacity.



## Appendix I: Project Vicinity Map



**Vicinity Map**  
**8899 Beverly Boulevard**  
**West Hollywood, CA**





Appendix II: Los Angeles County Bureau of Sanitation District User  
Categories and Loading

**AN ORDINANCE PRESCRIBING THE CONNECTION FEE RATE  
AND MEAN LOADINGS PER UNIT OF USAGE FOR  
COUNTY SANITATION DISTRICT NO. 4 OF LOS ANGELES COUNTY**

**THE BOARD OF DIRECTORS OF COUNTY SANITATION DISTRICT NO. 4 OF LOS ANGELES COUNTY ORDAINS AS FOLLOWS:**

**SECTION 1.0 - USER CATEGORIES AND MEAN LOADINGS**

Pursuant to Section 3.03(2) of the *Master Connection Fee Ordinance for County Sanitation District No. 4 of Los Angeles County*, the following shall constitute the User Categories and mean loadings per Unit of Usage for flow, Biochemical Oxygen Demand (BOD), and Suspended Solids:

<u>USER CATEGORY</u>	<u>UNIT OF USAGE</u>	<u>FLOW (Gallons per Day)</u>	<u>BOD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
Acupuncture Office/Clinic	1000 Sq.Ft.	150	0.16	0.10
Arcade - Video Games	1000 Sq.Ft.	80	0.10	0.10
Auditorium	Seat	4	0.01	0.01
Auto Parking	1000 Sq.Ft.	20	0.03	0.03
Auto Body/Mech. Repair Shop	1000 Sq.Ft.	80	0.12	0.19
Bakery	1000 Sq.Ft.	280	2.34	1.40
Bank: Headquarters	1000 Sq.Ft.	150	0.16	0.10
Bank: Branch	1000 Sq.Ft.	80	0.10	0.10
Banquet Room/Ballroom	1000 Sq.Ft.	800	6.67	4.00
Bar: Cocktail, Fixed Seat	Seat	18	0.03	0.03
Bar: Juice, No Baking Facilities	1000 Sq.Ft.	120	0.20	0.20
Bar: Juice, With Baking Facilities	1000 Sq.Ft.	280	2.34	1.40
Bar: Cocktail, Public Table Area	1000 Sq.Ft.	500	4.17	2.50
Barber Shop	1000 Sq.Ft.	100	0.13	0.13
Beauty Parlor	1000 Sq.Ft.	280	0.35	0.35
Bldg. Const/Field Office	Office	150	0.19	0.19
Bowling Alley: Alley, Lanes & Lobby Area	1000 Sq.Ft.	80	0.10	0.10
Cafeteria: Fixed Seat	Seat	30	0.25	0.15
Car Wash: Wand Type	1000 Sq.Ft.	700	3.00	1.58
Car Wash: Tunnel - Recycling Type	1000 Sq.Ft.	2700	11.74	6.16
Car Wash: Tunnel - Non-Recycling Type	1000 Sq.Ft.	3700	15.86	8.33
Chapel: Fixed Seat	Seat	4	0.01	0.01
Chiropractic Office	1000 Sq.Ft.	150	0.16	0.10

<u>USER CATEGORY</u>	<u>UNIT OF USAGE</u>	<u>FLOW (Gallons per Day)</u>	<u>BOD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
Church: Fixed Seat	Seat	4	0.01	0.01
Church School: Day Care/Elem	Occupant	8	0.01	0.01
Church School: One Day Use	1000 Sq.Ft.	200	0.22	0.17
Cocktail Lounge: Fixed Seat	Seat	18	0.03	0.03
Coffee House: No Pastry Baking & No Food Preparation	1000 Sq.Ft.	120	0.20	0.20
Coffee House: Pastry Baking Only	1000 Sq.Ft.	280	2.34	1.40
Coffee House: Serves Prepared Food	Seat	30	0.25	0.15
Cold Storage: No Sales	1000 Sq.Ft.	20	0.03	0.03
Cold Storage: Retail Sales	1000 Sq.Ft.	80	0.10	0.10
Comfort Station: Public	Fixture	100	0.13	0.13
Commercial Use	1000 Sq.Ft.	80	0.10	0.10
Community Center	Occupant	4	0.01	0.01
Counseling Center	1000 Sq.Ft.	150	0.16	0.10
Credit Union	1000 Sq.Ft.	150	0.19	0.19
Dairy: Retail Area	1000 Sq.Ft.	80	0.10	0.10
Dancing Area (of Bars or Nightclub)	1000 Sq.Ft.	600	1.00	1.00
Dance Studio	1000 Sq.Ft.	80	0.10	0.10
Dental Office/Clinic	1000 Sq.Ft.	250	0.27	0.17
Doughnut Shop	1000 Sq.Ft.	280	2.34	1.40
Drug Rehabilitation Center	1000 Sq.Ft.	150	0.16	0.10
Equipment Booth	1000 Sq.Ft.	20	0.03	0.03
Film Processing - 1 Hour Photo, Etc.	1000 Sq.Ft.	100	0.13	0.13
Gas Station: Self Service	Fixture	100	0.15	0.23
Gas Station: Four Bays Max	Station	430	0.65	1.00
Gymnasium - Basketball, Volleyball	1000 Sq.Ft.	250	0.31	0.31
Hanger (Aircraft)	1000 Sq.Ft.	80	0.12	0.19
Health Club/Spa	1000 Sq.Ft.	800	1.00	1.00
Homeless Shelter	Bed	75	0.13	0.13
Hospital: Convalescent	Bed	75	0.16	0.06
Hospital: Animal	1000 Sq.Ft.	280	0.35	0.35
Hotel: Use Guest Rooms Only	Room	130	0.34	0.13
Jail	Inmate	85	0.22	0.09
Kennel: Dog Kennel/Open	1000 Sq.Ft.	100	0.13	0.13
Laundromat	Machine	170	0.21	0.16
Library: Public Area	1000 Sq.Ft.	80	0.10	0.10

<u>USER CATEGORY</u>	<u>UNIT OF USAGE</u>	<u>FLOW (Gallons per Day)</u>	<u>BOD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
Library: Stacks, Storage	1000 Sq.Ft.	25	0.03	0.03
Lobby Of Retail Area	1000 Sq.Ft.	80	0.10	0.10
Lodge Hall	Seat	4	0.01	0.01
Lounge	1000 Sq.Ft.	80	0.13	0.13
Machine Shop	1000 Sq.Ft.	80	0.10	0.10
Manufacturing (Dry) Facility	1000Gr.Sq.Ft.	80	0.10	0.10
Massage Parlor	1000 Sq.Ft.	275	0.34	0.34
Medical Building	1000 Sq.Ft.	250	0.27	0.17
Medical: Lab In Hospital	1000 Sq.Ft.	250	0.69	0.31
Medical Office/Clinic	1000 Sq.Ft.	250	0.27	0.17
Mini-Mall	1000 Sq.Ft.	80	0.40	0.27
Mortuary: Chapel	Seat	4	0.01	0.01
Mortuary: Embalming	1000 Sq. Ft.	715	4.77	4.77
Mortuary: Living Area	1000 Sq.Ft.	80	0.14	0.14
Motel: Use Guest Rooms Only	Room	130	0.34	0.13
Museum: All Area	1000 Sq.Ft.	20	0.03	0.03
Museum: Office Over 15%	1000 Sq.Ft.	150	0.19	0.19
Museum: Sales Area	1000 Sq.Ft.	80	0.10	0.10
Office Building	1000 Sq.Ft.	150	0.16	0.10
Office Bldg W/ Cooling Tower	1000 Sq.Ft.	180	0.16	0.10
Pool Hall (No Alcohol)	1000 Sq.Ft.	80	0.10	0.10
Post Office: Full Service	1000 Sq.Ft.	150	0.19	0.19
Post Office: Private Mail Box Rental	1000 Sq.Ft.	80	0.10	0.10
Prisons	Inmate	175	0.45	0.18
Residential Dorm: College Or Residential	Student	75	0.13	0.13
Residential: Boarding House	Bed	75	0.13	0.13
Residential: Apt - Bachelor	Dwelling Unit	80	0.14	0.14
Residential: Apt - 1 Bedroom	Dwelling Unit	120	0.22	0.21
Residential: Apt - 2 Bedroom	Dwelling Unit	160	0.29	0.27
Residential: Apt - 3 Bedroom	Dwelling Unit	200	0.36	0.34
Residential: Apt - >3 Bedroom	Additional Bedroom	40	0.07	0.07
Residential: Condo - 1 Bedroom	Dwelling Unit	120	0.22	0.21
Residential: Condo - 2 Bedroom	Dwelling Unit	160	0.29	0.27
Residential: Condo - 3 Bedroom	Dwelling Unit	200	0.36	0.34

<u>USER CATEGORY</u>	<u>UNIT OF USAGE</u>	<u>FLOW (Gallons per Day)</u>	<u>BOD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
Residential: Condo - >3 Bedroom	Additional Bedroom	40	0.07	0.07
Residential: Duplex/Townhouse/SFD - 1 Bedroom	Dwelling Unit	130	0.23	0.22
Residential: Duplex/Townhouse/SFD - 2 Bedroom	Dwelling Unit	180	0.32	0.31
Residential: Duplex/Townhouse/SFD - 3 Bedroom	Dwelling Unit	230	0.41	0.39
Residential: Duplex/Townhouse/SFD - >3 Bedroom	Additional Bedroom	50	0.09	0.09
Residential Room Addition: Bedroom	Bedroom	50	0.09	0.09
Residential Room Conversion: Into A Bedroom	Bedroom	50	0.09	0.09
Residential: Mobile Home	Dwelling Unit	160	0.29	0.27
Residential: Artist (2/3 Area)	Dwelling Unit	250	0.45	0.43
Residential: Artist Residence	Dwelling Unit	80	0.14	0.14
Residential: Guest Home w/ Kitchen	Same as Residential Apt			
Residential: Guest Home w/o Kitchen	Bedroom	50	0.06	0.06
Rest Home	Bed	75	0.16	0.06
Restaurant: Drive-In	Stall	40	0.33	0.20
Restaurant: Drive-In	Seat	20	0.17	0.10
Restaurant: Fast Food - Indoor Seat	Seat	20	0.17	0.10
Restaurant: Fast Food - Outdoor Seat	Seat	12	0.10	0.06
Restaurant: Full Service - Indoor Seat	Seat	30	0.25	0.15
Restaurant: Full Service - Outdoor Seat	Seat	18	0.15	0.09
Restaurant: Take-Out	1000 Sq.Ft.	300	2.50	1.50
Retail Area	1000 Sq.Ft.	80	0.10	0.10
Rifle Range: Shooting Stalls, Shooting Lanes, Lobby Area	1000 Sq.Ft.	80	0.10	0.10
School: Arts/Dancing/Music	1000 Sq.Ft.	80	0.09	0.07
School: Day Care Center	Child	8	0.01	0.01
School: Elementary/Jr. High	Student	8	0.01	0.01
School: High School	Student	12	0.01	0.01
School: Kindergarten	1000 Sq.Ft.	200	0.22	0.17
School: Martial Arts	1000 Sq.Ft.	80	0.09	0.07
School: Nursery-Day Care	Child	8	0.01	0.01

<u>USER CATEGORY</u>	<u>UNIT OF USAGE</u>	<u>FLOW (Gallons per Day)</u>	<u>BOD (Pounds per Day)</u>	<u>SUSPENDED SOLIDS (Pounds per Day)</u>
School: Special Class	Student	8	0.01	0.01
School: Trade Or Vocational	Student	12	0.01	0.01
School: Training	Student	12	0.01	0.01
School: University/College	Student	18	0.02	0.02
School: Dormitory	Student	75	0.13	0.13
School: Stadium, Pavilion	Seat	4	0.01	0.01
Storage: Building/Warehouse	1000 Sq.Ft.	20	0.03	0.03
Storage: Self Storage Bldg.	1000 Sq.Ft.	20	0.03	0.03
Store: Ice Cream/Yogurt	1000 Sq.Ft.	80	0.67	0.40
Store: Retail	1000 Sq.Ft.	80	0.10	0.10
Studio: Film/TV - Audience Viewing Room	Seat	4	0.01	0.01
Studio: Film/TV - Regular Use - Indoor Filming Area	1000 Sq.Ft.	80	0.10	0.10
Studio: Film/TV - Industrial Use (Domestic)	1000 Sq.Ft.	80	0.00	0.00
Studio: Recording	1000 Sq.Ft.	80	0.10	0.10
Tanning Salon: Independent, No Shower	1000 Sq.Ft.	80	0.10	0.10
Tanning Salon: Within A Health Spa/Club	1000 Sq.Ft.	800	1.00	1.00
Theater: Drive-In	Vehicle	10	0.01	0.01
Theater: Live/Music/Opera	Seat	4	0.01	0.01
Theater: Cinema	Seat	4	0.01	0.01
Tract: Commercial/Residential	Acre	1	0.00	0.00
Trailer - Const/Field Office	Office	150	0.19	0.19
Veterinary Clinic/Office	1000 Sq.Ft.	280	0.30	0.19
Warehouse	1000 Sq.Ft.	20	0.03	0.03
Waste Dump: Recreational	Station	430	0.54	0.54
Wine Tasting Room: Kitchen	1000 Sq.Ft.	215	0.27	0.27
Wine Tasting Room: All Area	1000 Sq.Ft.	80	0.10	0.10

SECTION 2.0 - CONNECTION FEE RATE

Pursuant to Section 3.02 of the *Master Connection Fee Ordinance for County Sanitation District No. 4 of Los Angeles County*, the Connection Fee Rate shall be \$1,710.00 per capacity unit.

SECTION 3.0 - COST ALLOCATION FACTORS

Pursuant to Section 3.03(2) of the *Master Connection Fee Ordinance for County Sanitation District No. 4 of Los Angeles County*, the proportions of the capital improvement component of the connection fee rate which are attributable to flow, BOD, and Suspended Solids, designated as X, Y, and Z, respectively, shall be:

$$X = 0.6567$$

$$Y = 0.1992$$

$$Z = 0.1441$$

SECTION 4.0 - BASIC RESIDENTIAL UNIT

Pursuant to Section 3.03(2) of the *Master Connection Fee Ordinance for County Sanitation District No. 4 of Los Angeles County*, the loadings from a basic residential unit shall be:

Flow<sub>bru</sub> = 260 gallons per day of Wastewater flow  
BOD<sub>bru</sub> = 0.466 pounds per day of BOD  
SS<sub>bru</sub> = 0.445 pounds per day of Suspended Solids.

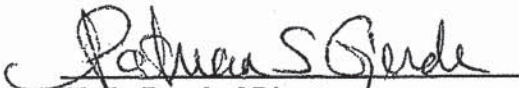
SECTION 5.0 - EFFECTIVE DATE

This Ordinance shall become effective on July 1, 1999.



Chairperson, Board of Directors  
County Sanitation District No. 4  
of Los Angeles County

ATTEST:



Clerk, Board of Directors  
County Sanitation District No. 4  
of Los Angeles County



## Appendix III: Sewer Capacity Calculations



**Project:** 8899 Beverly Boulevard  
**Project Number:** 12072-0002  
**Developer:** Beverly Blvd Associates, L.P.

**4.1 Tabular Summary of User Categories and Mean Loading**

No. of Units	Unit Type	User Category	Flow Per Unit (Gallons Per Day)	Total (GPD)
<b>Outflow to Rosewood Avenue</b>				
Residential Units				
11	EA	Residential Townhome – 3 bedroom	230	2530
2	EA	Residential Townhome – 2 bedroom	180	360
4	EA	Residential Apartments (Affordable)– 2 bedroom	160	640
39.638	1,000 SF	Auto Parking	20	792.76
<b>Total Flow From Proposed Development</b>				4322.76
<b>Outflow to Beverly Boulevard</b>				
Residential Units				
18	EA	Residential Condo – 1 Bedroom	120	2160
22	EA	Residential Condo – 2 Bedroom	160	3520
16	EA	Residential Condo – 3 Bedroom	200	3200
7	EA	Residential Apartment – 1 Bedroom	120	840
1	EA	Residential Apartment – Studio	80	80
Commercial Units				
125	Seats	Restaurant: Full Service Indoor Seating ( Per Seat)	30	3750
19.875	1,000 SF	Total Commercial	80	1590
10.562	1,000 SF	Total Office	150	1584.3
14.009	1,000 SF	Auto Parking	20	280.18
<b>Total Flow From Proposed Development</b>				17004.48

**Project:** 8899 Beverly Boulevard  
**Project Number:** 12072-0002  
**Developer:** Beverly Blvd Associates, L.P.

**Beverly Boulevard Sewer Manhole Capacity Calculations**

Manhole Location: Beverly Boulevard  
 Existing Pipe Size: 10 inches  
 Existing Material: Vitrified Clay Pipe  
 Pipe Area: 0.545415 SF  
 Date of Flow test: 11/7/2013 - 11/13/2013  
 Maximum Sewer Capacity: 3.106877 CFS  
 2007888 CFS

**Existing Sewer Capacity**

Calculated Average Flow (Gallons/Day):

$$8400 \text{ gal/day} \times 0.13369 \text{ ft}^3/\text{gal} \times 1.15741\text{E-}05 \text{ sec/day} = \mathbf{0.012998 \text{ CFS (Existing Flow)}}$$

**Proposed Sewer Flow**

Total Sewer Capacity Demand: 15804 gal/day

$$17005 \text{ gal/day} \times 0.13369 \text{ ft}^3/\text{gal} \times 1.15741\text{E-}05 \text{ sec/day} = \mathbf{0.026312 \text{ CFS (Proposed Flow)}}$$

**Total Sewer Flow**

Total Peak Flow = Existing Sewer Flow + Proposed Sewer Flow

$$= 0.012997623 \text{ CFS} + 0.02631245 \text{ CFS}$$

Total Peak Flow = 0.039310074 CFS

\*Apply Peaking Factor of 2.5 per City of West Hollywood for d < 15"

$$0.0393101 \text{ CFS} \times 2.5 \text{ P.F.} = \mathbf{0.098275184 \text{ CFS}}$$

2646.354167 gal/day

**Percentage of Maximum Design Capacity**

Maximum Design Capacity: (Based on City of West Hollywood 50% Maximum for d<15")

Maximum Sewer Capacity x 50 % = Design Capacity (gal/day)

$$3.106877 \times 50 \% = 1.553438684 \text{ CFS}$$

1003943.925 Gal/Day

Percentage = 0.098275 / 1.553439

$$= \mathbf{6.3263 \% \text{ of Maximum Design Capacity}}$$

**Project:** 8899 Beverly Boulevard  
**Project Number:** 12072-0002  
**Developer:** Beverly Blvd Associates, L.P.

**Rosewood Avenue Sewer Manhole Capacity Calculations**

Manhole Location: Rosewood Avenue  
 Existing Pipe Size: 8 inches  
 Existing Material: Vitrified Clay Pipe  
 Pipe Area: 0.349066 SF  
 Date of Flow test: 11/7/2013 - 11/13/2013  
 Maximum Sewer Capacity: 1.713552 CFS  
 1107421 gal/day

**Existing Sewer Capacity**

Calculated Average Flow (Gallons/Day):

$$22700 \text{ gal/day} \times 0.13369 \text{ ft}^3/\text{gal} \times 1.15741\text{E-}05 \text{ sec/day} = \mathbf{0.03512453 \text{ CFS (Existing Flow)}}$$

**Proposed Sewer Flow**

Total Sewer Capacity Demand: 4450 gal/day

$$4323 \text{ gal/day} \times 0.13369 \text{ ft}^3/\text{gal} \times 1.15741\text{E-}05 \text{ sec/day} = \mathbf{0.006689134 \text{ CFS (Proposed Flow)}}$$

**Total Sewer Flow**

Total Peak Flow = Existing Sewer Flow + Proposed Sewer Flow

$$= 0.03512453 \text{ CFS} + 0.006689134 \text{ CFS}$$

Total Peak Flow = 0.041813664 CFS

\*Apply Peaking Factor of 2.5 per City of West Hollywood for d < 15"

$$0.0418137 \text{ CFS} \times 2.5 \text{ P.F.} = \mathbf{0.104534159 \text{ CFS}}$$

67557.5 gal/day

**Percentage of Maximum Design Capacity**

Maximum Design Capacity: (Based on City of West Hollywood 50% Maximum for d<15")

Maximum Sewer Capacity x 50 % = Design Capacity (CFS)

$$1.713552 \times 50 \% = 0.85677624 \text{ CFS}$$

553710.4945 Gal/Day

Percentage = 0.104534 / 0.856776

= **12.20087 % of Maximum Design Capacity**