

SECTION 5

EXISTING WASTEWATER COLLECTION SYSTEM

5-1 GENERAL DESCRIPTION

The City of Manhattan Beach's existing sewer collection system is made up of a network of gravity sewers, pump stations, and force mains. The gravity system consists of approximately 81.6 miles (430,784 ft) of pipe and 2,086 manholes and cleanouts. The system also includes eight pump stations and 5,114 feet of associated forcemains.

The majority of the local sewers tie into one of the Los Angeles County Sanitation District (LACSD) trunk sewers crossing through the City. The sewage is then transported to LACSD's Joint Water Pollution Control Plant (JWPCP) in the City of Carson.

The sewers are primarily constructed of vitrified clay pipe with sizes ranging from 6-inches to 21-inches in diameter. Approximately 78 percent of the pipes are 8-inches in diameter. Figure 5-1 shows the length of gravity sewers (feet) in the existing system by pipe size. The majority of the City's sewer system was constructed between 1920 and 1960 as shown on Figure 5-2.

Figure 5-1
Total Length of Gravity Sewer by Size

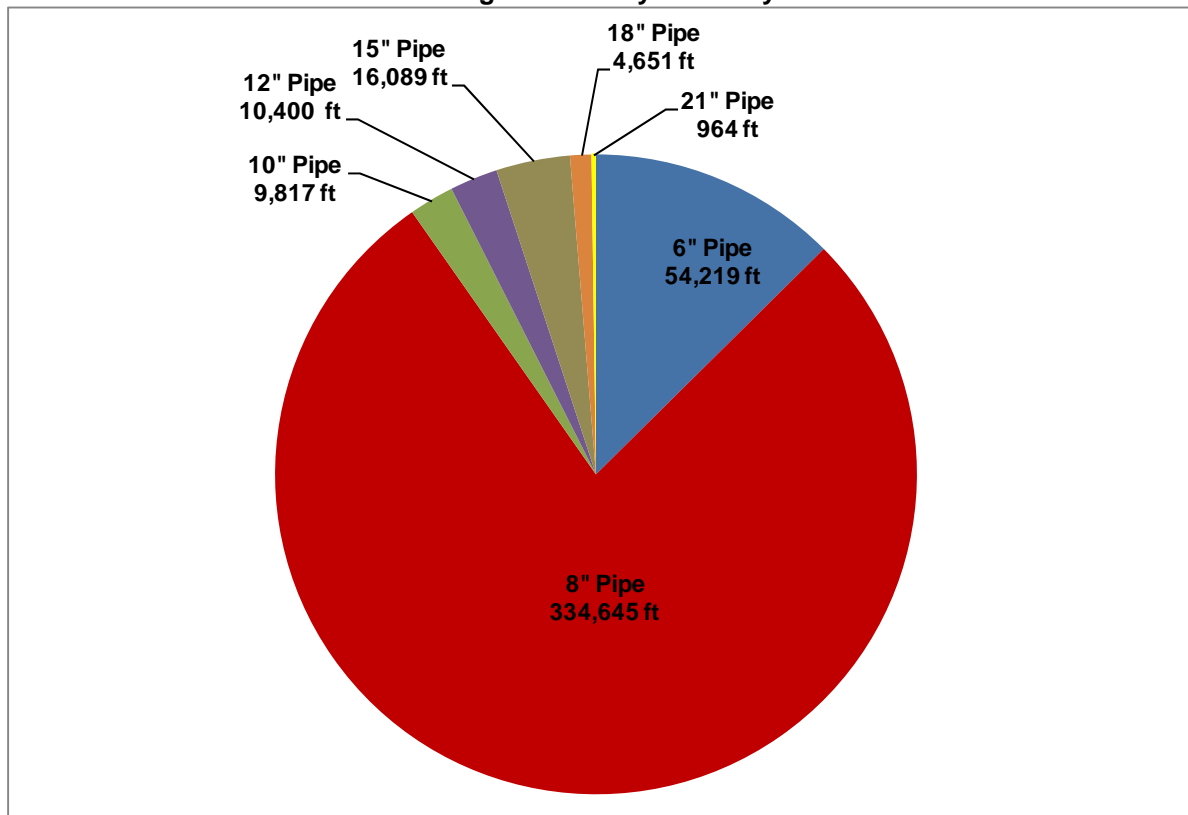
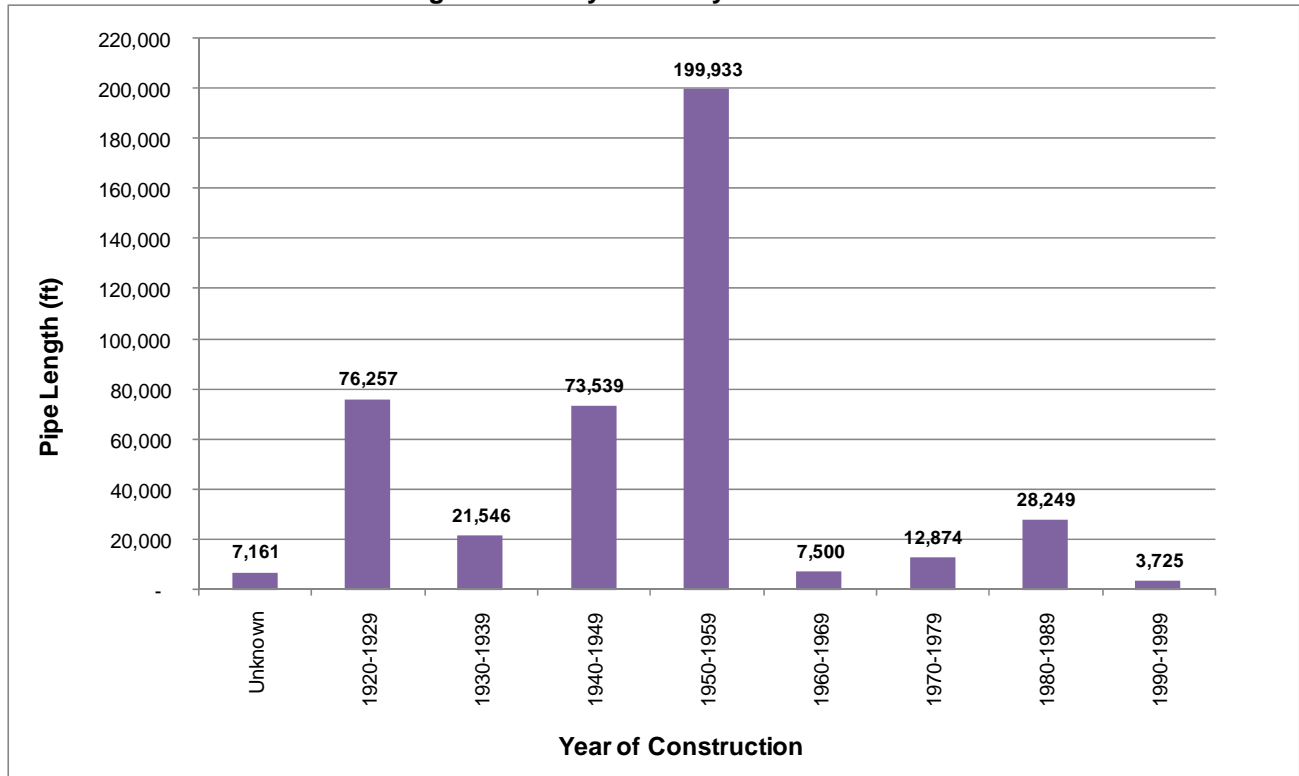


Figure 5-2
Total Length of Gravity Sewer by Year of Construction



5-2 SEWERSHEDS

For this study, City has been divided into two major sewersheds, as shown on Figure 5-3. Descriptions of each sewershed are as follows:

Sewershed 1

Sewershed 1 covers approximately 620 acres located on the western portion of the City. The sewage generated in this sewershed discharges to the LACSD trunk sewer that parallels The Strand along the beachfront. The Civic Center Pump Station and Pier Pump Station are located within Sewershed 1.

Sewershed 2

Sewershed 2 covers approximately 1,905 acres located on the eastern portion of the City. Wastewater generated in this sewershed is conveyed to the LACSD trunk sewer on 26th Place, Bell Avenue, 25th Street and Marine Avenue. Pacific Avenue Pump Station, Palm Avenue Pump Station, Poinsettia Avenue Pump Station, Meadows Avenue Pump Station and Voorhees Avenue Pump Station are all located within Sewershed 2.

5-3 MANHOLE DISTRICTS

The City's wastewater collection system is geographically broken up into 25 separate manhole districts. Each district represents an area that drains to one particular connection point with the LACSD trunk sewer or an

area tributary to a City pump station. The manhole district boundaries and identification numbers are shown on Figure 5-4.

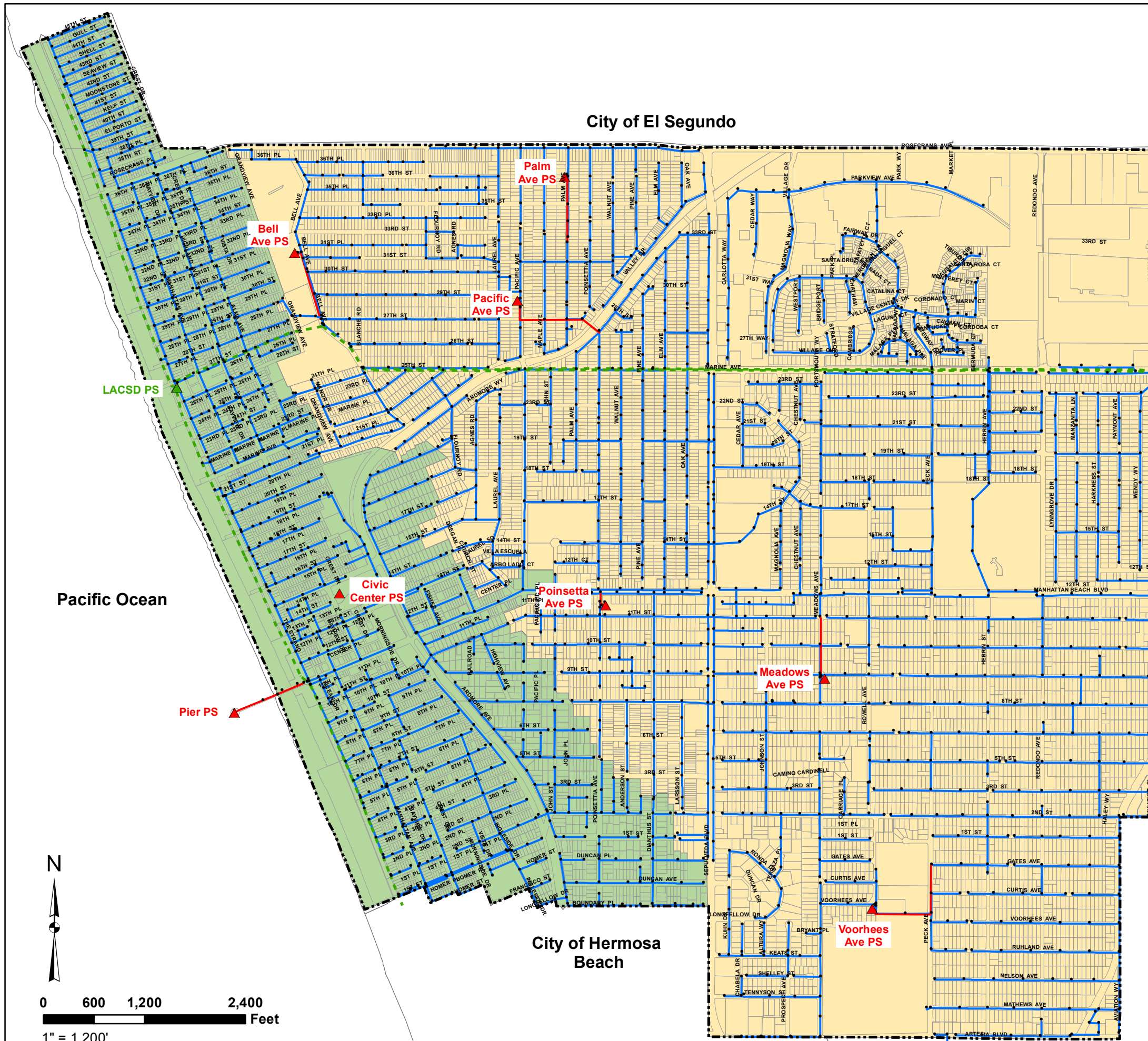
5-4 REGIONAL FACILITIES AND POINTS OF CONNECTION

Regional wastewater services are provided to the City and neighboring agencies by the Los Angeles County Sanitation District (LACSD). The City is a part of LACSD's South Bay Cities District. Regional trunk sewers collect the sewage generated in the service area and transport it to LACSD's Joint Water Pollution Control Plant (JWPCP) for treatment. The JWPCP is located in the southwest corner of City of Carson just east of I-110 freeway. It has been active since 1928. The JWPCP is one of the largest wastewater treatment plants in the world and is the largest of the LACSD's wastewater treatment plants. It provides primary and secondary treatment and has a capacity of 400 million gallons per day. Currently, approximately 300 million gallons of wastewater per day is treated at the JWPCP. Prior to discharge, the treated wastewater is disinfected with hypochlorite and sent to the Pacific Ocean through a network of outfalls. These outfalls extend two miles off the Palos Verdes Peninsula to a depth of 200 feet.

There are 22 existing regional connection locations where City sewers discharge into LACSD trunk sewers. These locations are listed in Table 5-1.

**Table 5-1
Regional Connection Locations**

No.	Manhole ID	Dia (ft)	Rim El (ft)	Invert El (ft)	Depth (ft)	City Sewer Size at Connection Location (in)	Average Flow (mgd)	Peak Flow (mgd)	Location	LACSD Sewer Size at Connection Location (in)
1	02-0L1	4	88.30	61.04	27.26	18	0.500	1.243	Marine Ave & Herrin St	30
2	03-0L1	4	78.39	62.51	15.88	15	0.291	0.756	Marine Ave & Peck Ave	30
3	06-0L1	4	103.94	89.68	14.26	15	0.602	1.474	Marine Ave & Elm Ave	30
4	07-0L2	4	74.94	69.53	5.41	8	0.010	0.035	Bell Ave & 26th St	30
5	07-0L3	4	84.75	70.11	14.64	10	0.110	0.308	Bell Ave & 27th St	30
6	07-0L4	4	80.72	70.47	10.25	10	0.092	0.261	Blanche Rd & 25th St	30
7	08-0L4	4	22.81	15.28	7.53	6	0.048	0.143	The Strand & 23rd St	30
8	080-P1	4	-	18.11	-	15	0.110	0.307	The Strand & 27th St - LACSD PS	-
9	09-0L1	4	29.88	21.08	8.80	10	0.084	0.240	The Strand & 28th St	10
10	10-0L1	4	26.85	20.80	6.05	10	0.096	0.272	The Strand & 39th St	10
11	12-0L1	4	24.82	21.66	3.16	8	0.101	0.285	The Strand & 21st St	30
12	13-074	4	25.22	19.41	5.81	6	0.000	0.000	The Strand & Manhattan Beach Blvd	30
13	13-0L1	4	25.57	17.88	7.69	15	0.072	0.208	The Strand & Manhattan Beach Blvd	30
14	13-0L2	4	27.04	19.44	7.60	8	0.003	0.011	The Strand & Manhattan Beach Blvd	27
15	14-0L4	4	26.45	21.27	5.18	6	0.006	0.020	The Strand & 2nd St	27
16	14-0L5	4	76.87	40.58	36.29	12 & 15	0.181	0.487	The Strand & 1st St	27
17	16-006	4	80.18	73.16	7.02	8	0.006	0.022	Bell Ave & 25th St	10
18	85-053	4	27.40	20.34	7.06	8	0.012	0.039	The Strand & 3rd St	27
19	85-056	4	38.41	26.99	11.42	8	0.085	0.243	The Strand & Seaview St	10
20	85-058	4	29.35	11.90	17.45	12	0.183	0.494	The Strand & 6th St	27
21	85-065	4	78.41	68.58	9.83	15	0.272	0.708	Marine Ave & Gateway Dr	36
22	LA-100	4	76.87	59.18	17.69	8	0.082	0.236	Marine Ave & Aviation Blvd	30



City of Hawthorne

City of Redondo Beach

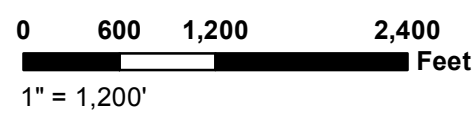
City of El Segundo

City of Hermosa Beach

Pacific Ocean

Legend

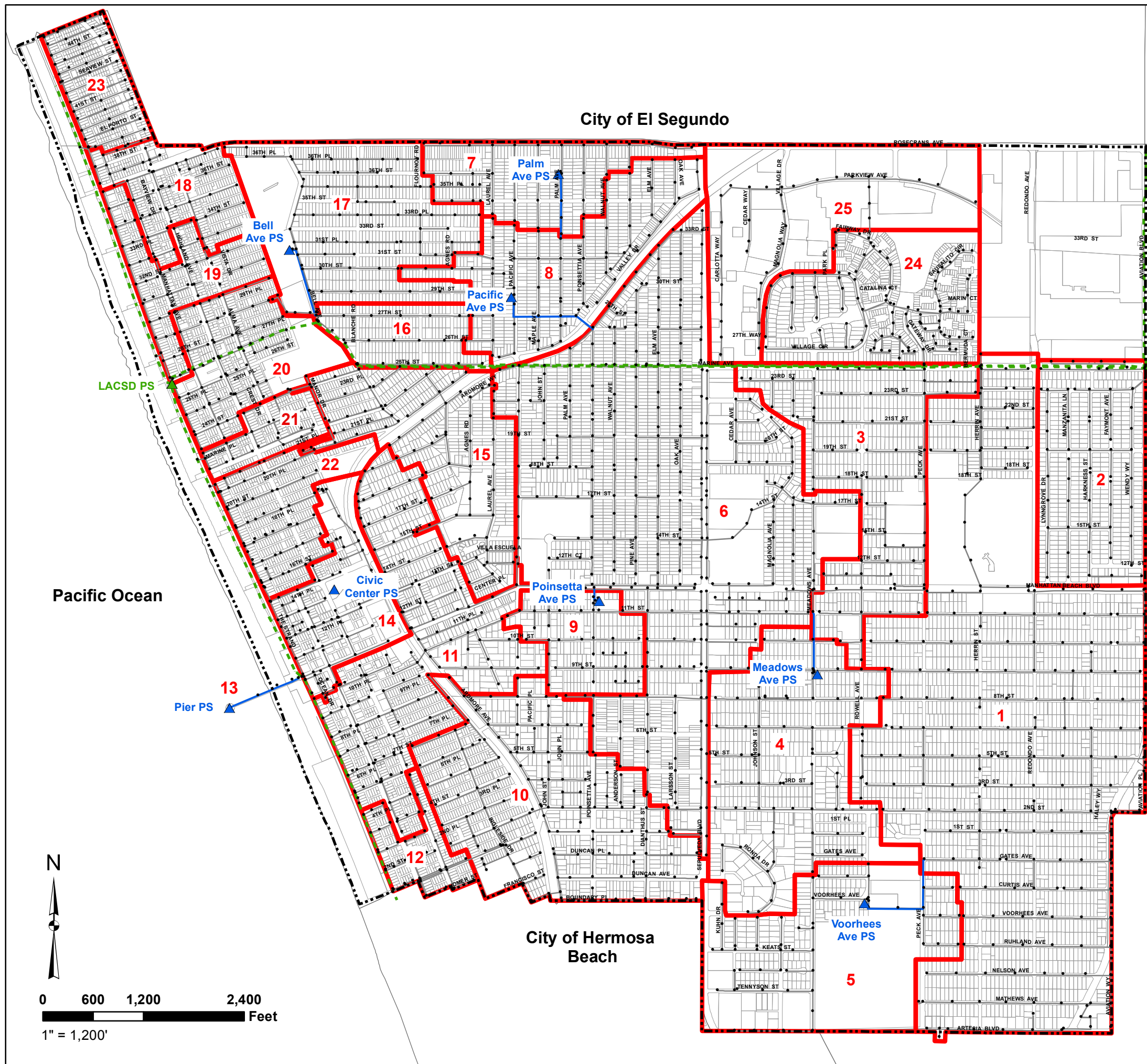
- Sewer Manholes
- ▲ Manhattan Beach Sewage Pump Station
- ▲ LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- - - LACSD Trunk Sewer
- - - City Boundary
- Sewershed 1
- Sewershed 2



AKM
 PROJECT NO: 1640901.10
 DATE: September 2009

CITY OF MANHATTAN BEACH
 WASTEWATER MASTER PLAN

Existing Wastewater System



City of El Segundo

City of Hawthorne

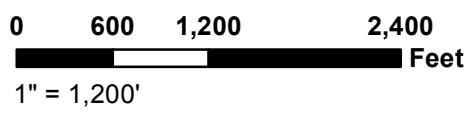
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Legend

- Sewer Manholes
- ▲ Manhattan Beach Sewage Pump Station
- ▲ LACSD Sewage Pump Station
- Manhattan Beach Forcemain
- Manhattan Beach Sewer
- - - LACSD Trunk Sewer
- - - City Boundary
- Manhole District Boundary
- ## Manhole District Number



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CITY OF MANHATTAN BEACH
 WASTEWATER MASTER PLAN

Manhole Districts

Figure 5-4

5-5 EXISTING AND PROJECTED SEWAGE GENERATION

The total existing average sewage generated within the City is estimated at 3.0 mgd. This is equivalent to about 82 gpd per person with an existing population of 36,718. Typically, total sewage generation per person averages 100 gpd. The lower value of 82 gpd per person can be attributed to the fact that 70 percent of the City's land use is residential, which is greater than most southern California cities. Also, water conservation efforts can be affecting the lower sewage generation seen.