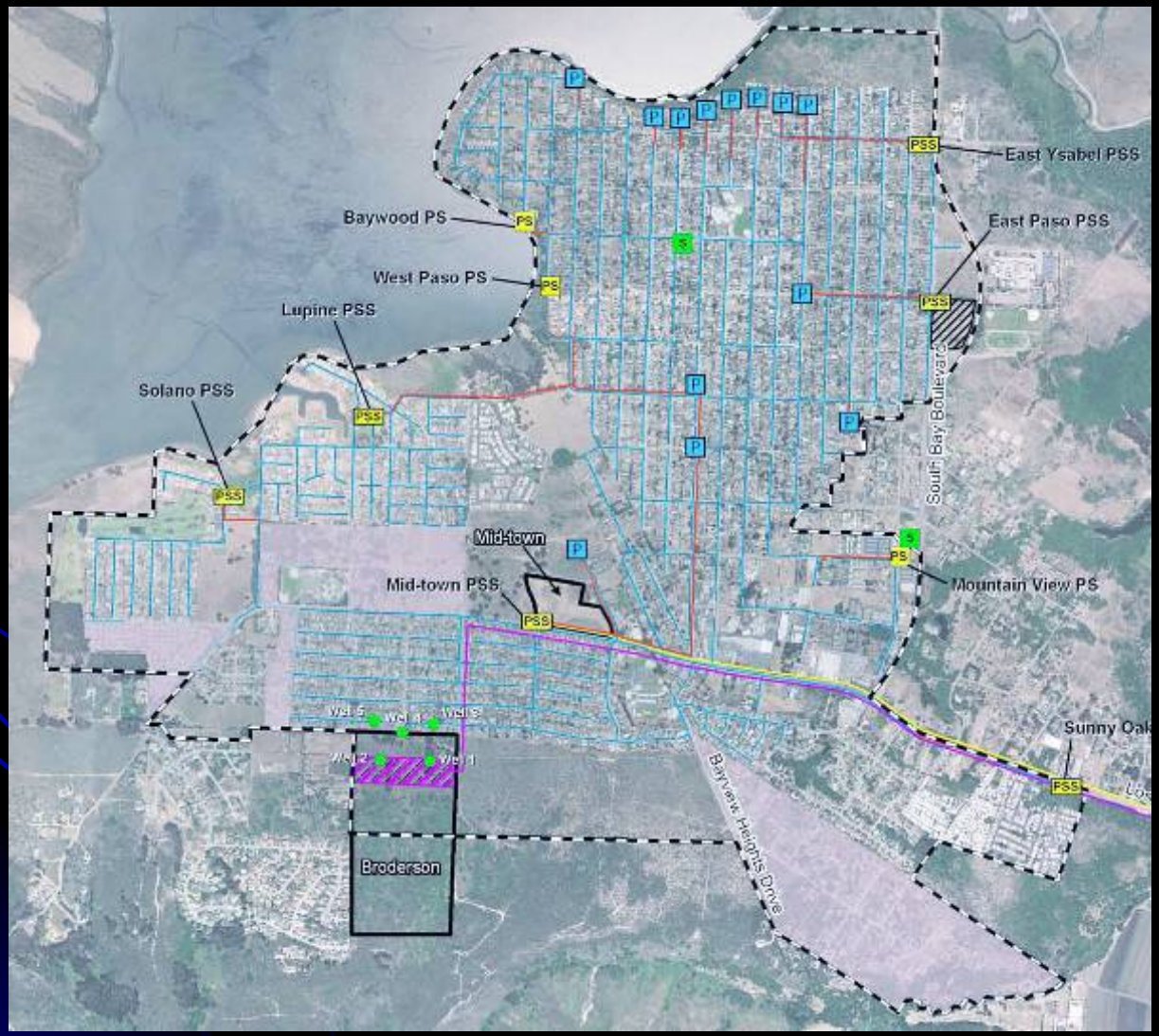
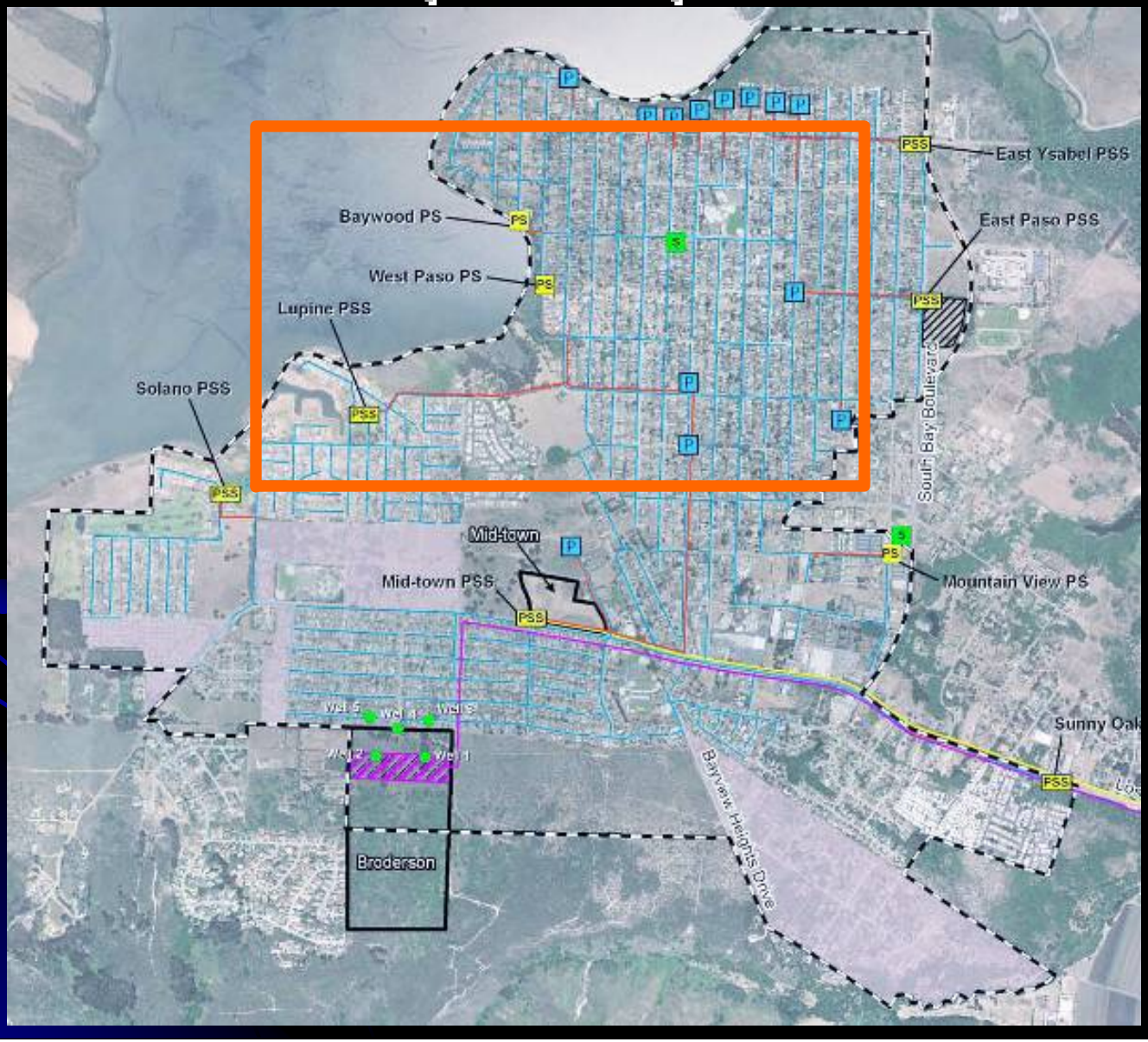
Pump Stations – Gravity Hybrid



Pocket Pump Station Storage

Pocket PS	Pump Station Storage Volume (gallons)	PHWW Flowrate (gpm)	ADWW Flowrate (gpm)	PHWW Storage Time (hours)	ADWW Storage Time (hours)
04A	2340	24.5	13.72	1.59	2.84
07A	2340	7	3.92	5.57	9.95
08A	2340	10	5.6	3.90	6.96
09A	2340	12.5	7	3.12	5.57
09B	2340	34	19.04	1.15	2.05
09C	2340	16.5	9.24	2.36	4.22
10A	2340	17.5	9.8	2.23	3.98
11A	2340	14	7.84	2.79	4.97
12A	2340	15.75	8.82	2.48	4.42
13A	2340	13.5	7.56	2.89	5.16
15B	2340	13	7.28	3.00	5.36

Pipe Depths


East Ysabel PSS
East Paso PSS
Baywood PS
West Paso PS
Lupine PSS
Solano PSS
South Bay Boulevard
Mid-town
Mid-town PSS
Mountain View PS
Sunny Oak
Bayview Heights Drive
Broderson

Pipe Depths

Total Length of Pipe at Various Depths

Pipe Diameter	Depth: 0-8 ft	Depth: 9-12 ft	Depth: 13-15 ft	Depth: 16-18 ft
8-inch	159,256 ft	45,849 ft	2,240 ft	80 ft
10-inch	0	1,190 ft	1,300 ft	0
12-inch	0	2,413 ft	654 ft	654 ft
15-inch	0	3,561 ft	709 ft	0
18-inch	0	860 ft	600 ft	0

Source: Los Osos Wastewater Project Draft EIR, Nov. 2008: Appendix B, Table 3-2

Pipes at Depths greater than 16 ft

- Ramona & 13th: ~250 ft
- Ramona & 8th : ~350 ft
- Pismo & 8th: ~ 50 ft
- Mitchell & Doris: ~ 80 ft

- Maximum depth ~22 ft at Pismo & 8th

Pipes at invert elevation less than 2-ft above sea level

- Baywood Pump Station Area (Santa Maria & 2nd): ~ 750 ft
- Lupine Pump Station Area (Lupine, Donna, Doris & Binscarth): ~1,600 ft

- <u>No pipes below sea level</u>

Minimum Scouring Velocity

- Velocity = $(1.49/n)\ R^{2/3}\ S^{1/2}$
  - n: friction factor (PVC=0.009)
  - R: hydraulic radius (area of flow/wetted perimeter)
  - S: slope of pipe
- Recommended design velocity for self-cleaning = 2.0 ft/sec during peak flows