

CITY OF SAN MATEO
STORM DRAIN MASTER PLAN
APPENDIX

STORM DRAIN MASTER PLAN

Job # CSMT.58

July 2026

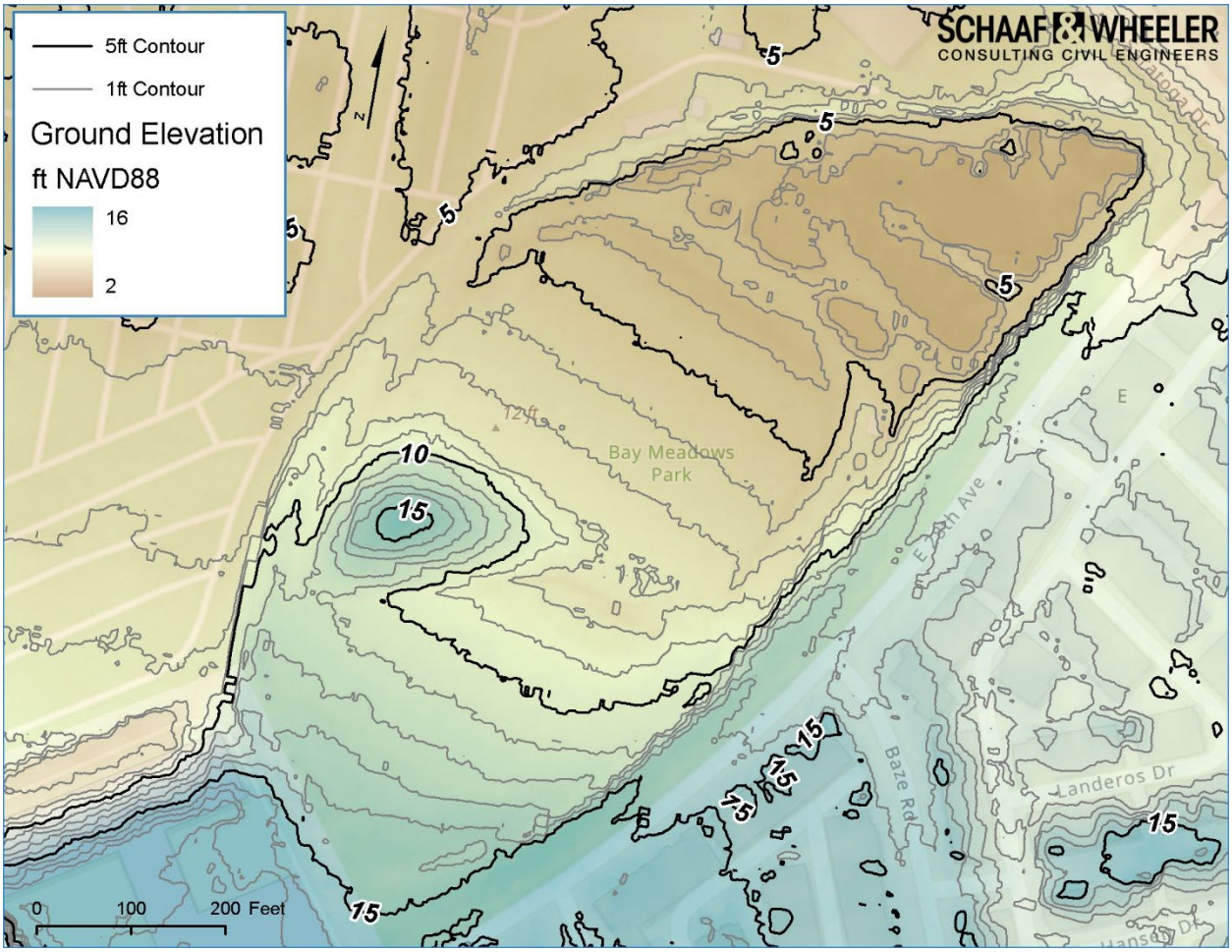
PREPARED FOR:

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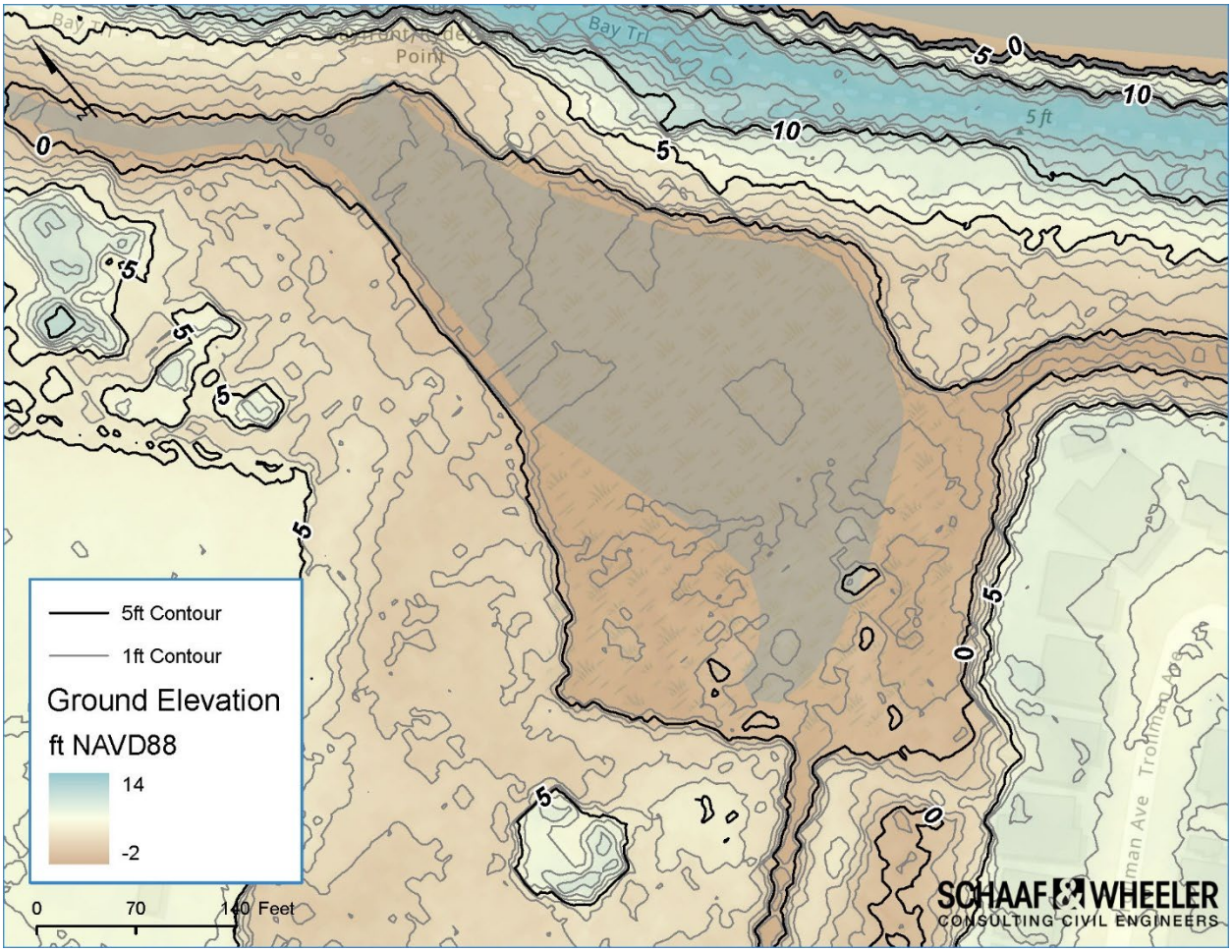
Appendix A: Detention and Flood Control Facilities

Bay Meadows Detention Basin



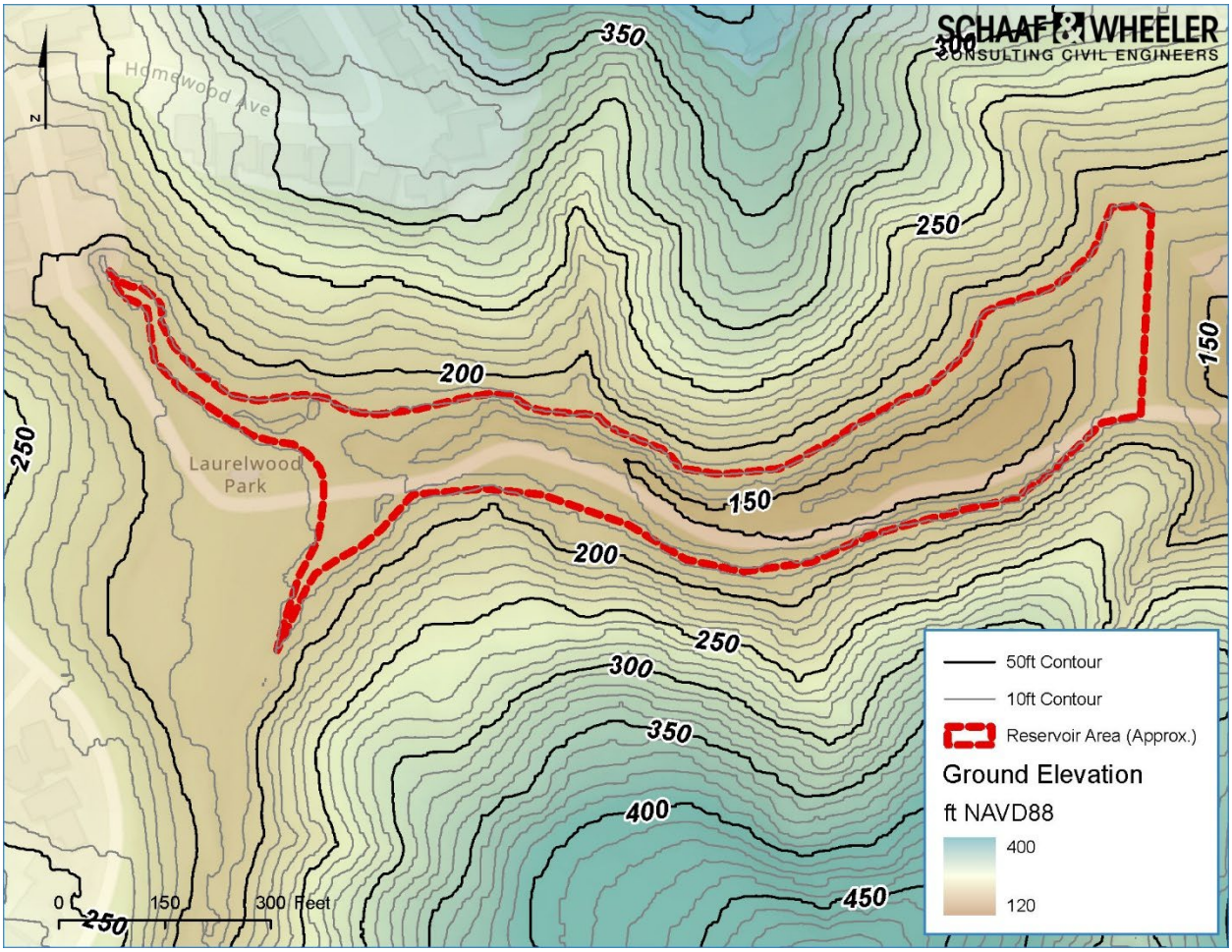
Elevation (ft NAVD)	Surface Area (sq ft)	Volume (ac-ft)	Note
2.17	5,573	0	
2.67	29,973	0.23	
3.17	50,080	0.70	
3.67	67,552	1.36	
4.0	***85,500***	***1.95***	***Dead storage***
4.17	96,449	2.30	
4.67	122,527	3.56	
5.17	150,973	5.15	
5.67	173,243	7.01	
5.75	***176,690***	***7.33***	***Max level (1 ft freeboard)***
6.17	196,986	9.13	
6.67	219,837	11.52	
7.17	240,386	14.17	
7.67	258,428	17.03	
8.17	265,485	20.05	

Poplar Forebay



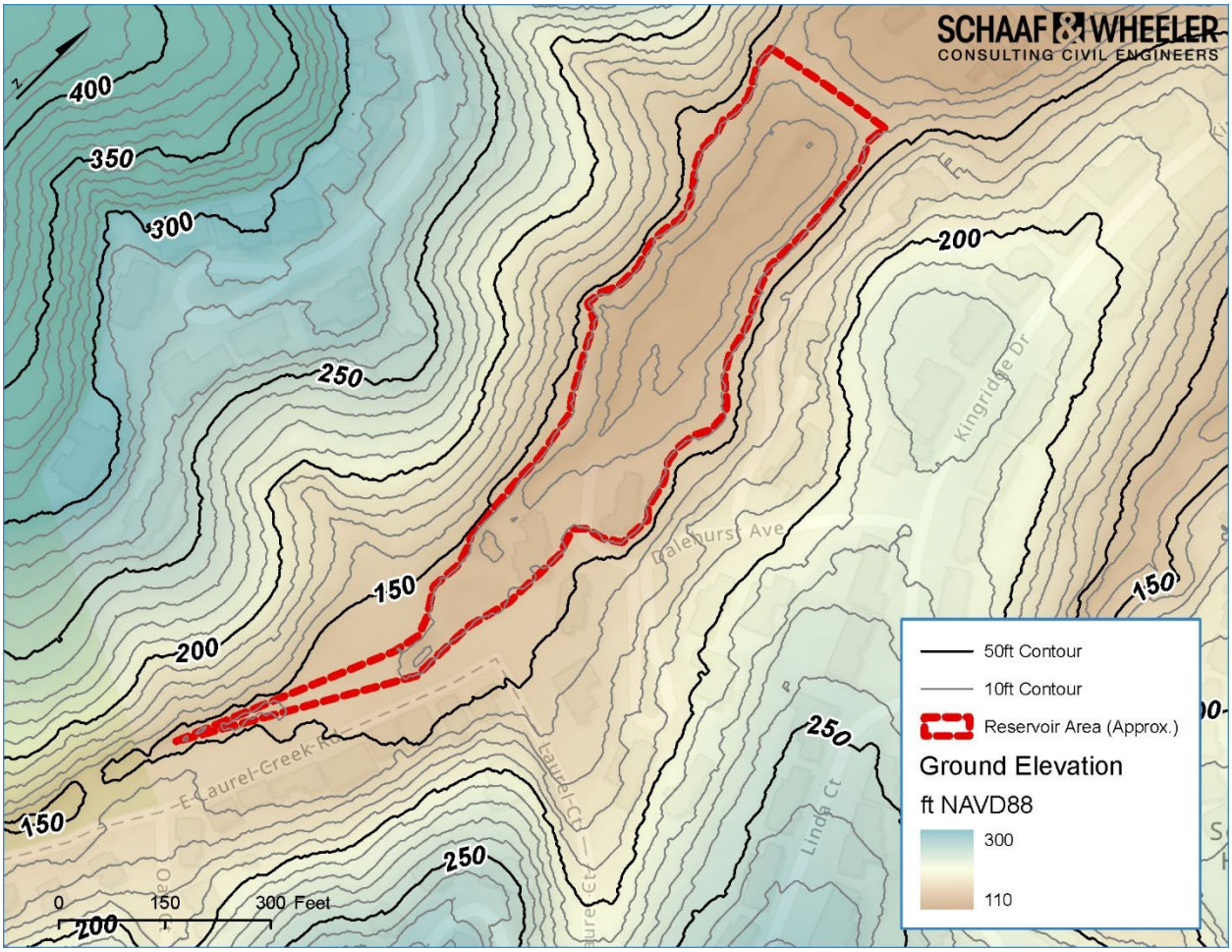
Elevation (ft NAVD)	Surface Area (sq ft)	Volume (ac-ft)	Note
-3.5	80,000	0	Values beneath LiDAR water surface from prior modeling
-2.4	87,120	2.11	
-1.4	122,222	4.51	
-1.19	134,444	5.13	Water surface during LiDAR flight
-0.64	146,168	6.90	
0.05	153,547	9.28	
0.74	160,492	11.76	
1.19	172,734	13.49	
1.52	195,213	14.88	
1.89	214,399	16.62	
2.26	231,666	18.51	

Laurel Creek Dam (West)



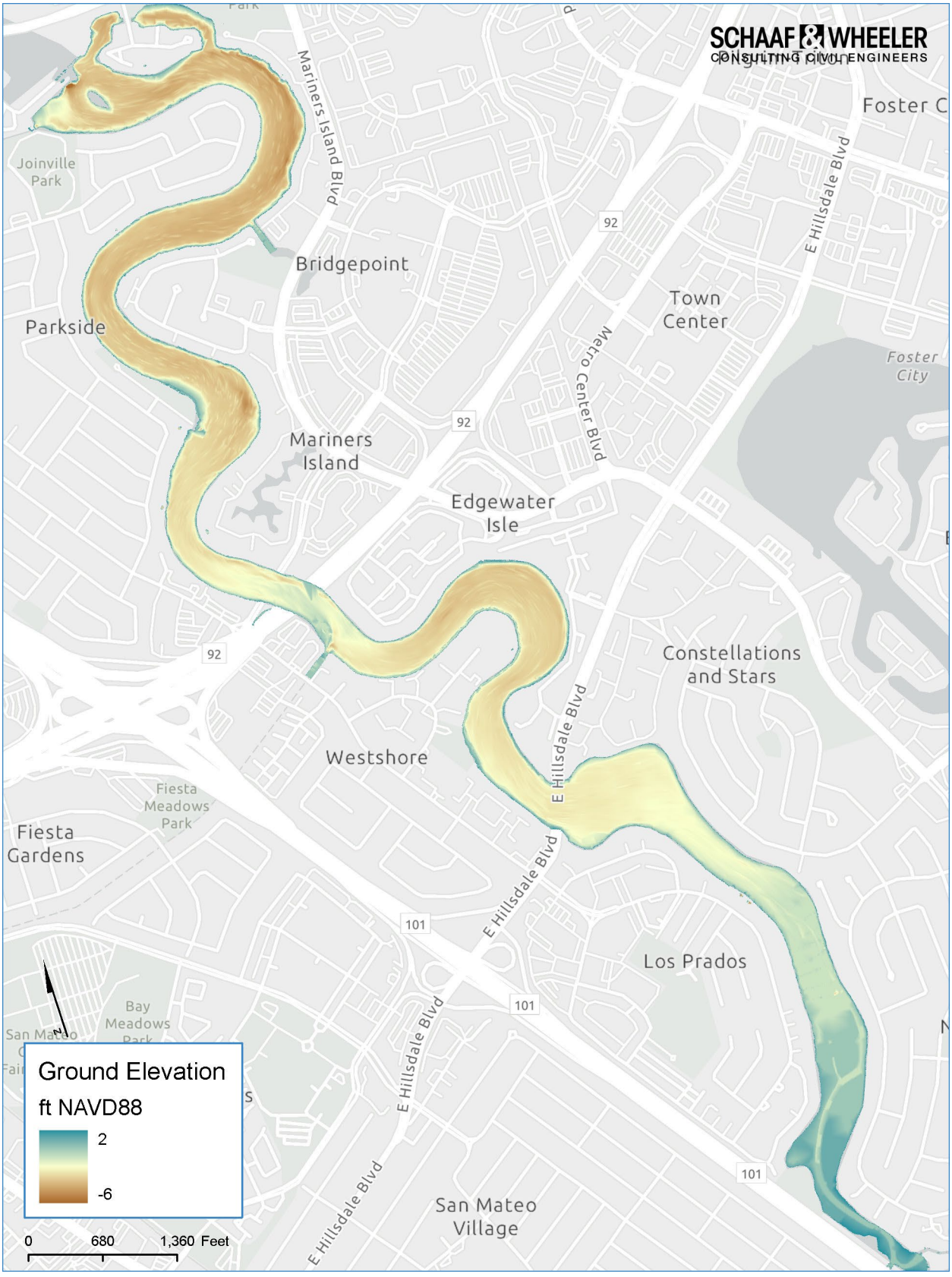
Elevation (ft NAVD)	Surface Area (sq ft)	Volume (ac-ft)	Note
129.5	***0***	***0***	***30" outlet pipe***
131.7	430	0.01	
134.7	3,174	0.12	
138.7	11,189	0.77	
142.7	22,227	2.28	
146.7	35,288	4.94	
150.7	51,221	8.89	
154.7	65,347	14.2	
158.7	81,334	21.0	
162.7	99,558	29.2	
166.7	126,508	39.7	
169.8	***147,299***	***49.6***	***Glory hole spillway***
170.7	153,232	52.4	
174.7	190,919	68.2	

Laurel Creek Dam (East)



Elevation (ft NAVD)	Surface Area (sq ft)	Volume (ac-ft)	Note
108.0	***0***	***0***	***30" Outlet Pipe***
110.5	151	0.004	
113.5	3,012	0.11	
117.5	24,282	1.25	
121.5	47,498	4.56	
125.5	64,174	9.67	
129.5	83,614	16.4	
132.5	***102,063***	***23.1***	***Spillway***
133.5	108,025	25.2	
137.5	146,131	36.9	
141.5	173,006	51.6	

Marina Lagoon



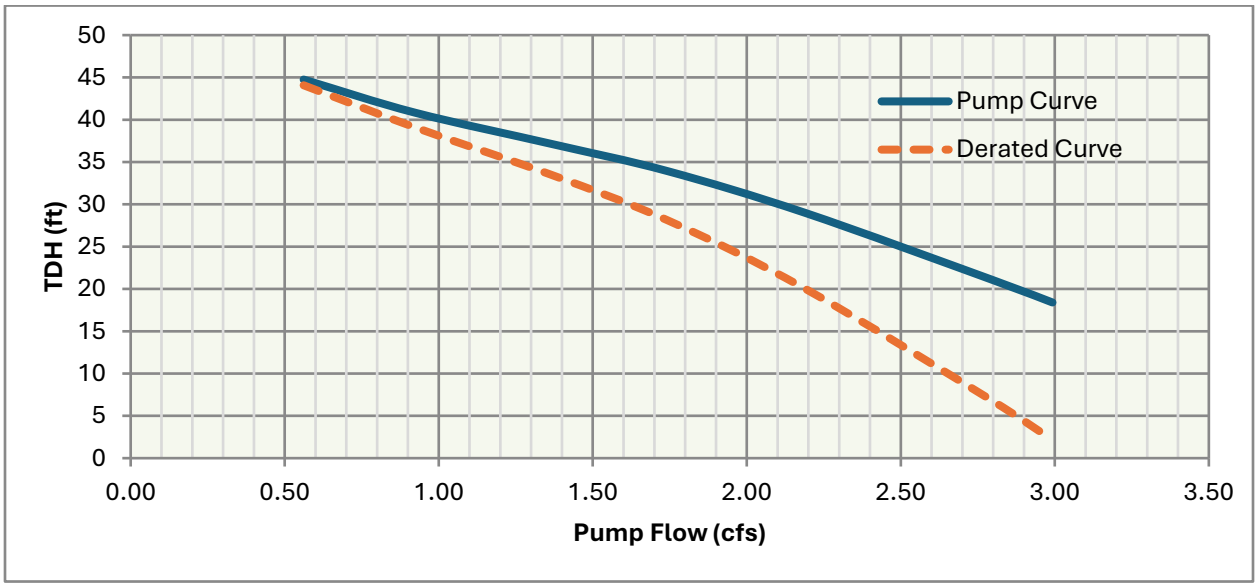
Elevation (ft NAVD)	Area (SF)	Volume (AF)
-5.8	676	0.0
-5.6	2,688	0.0
-5.4	8,864	0.0
-5.2	46,040	0.2
-5	123,316	0.5
-4.8	266,744	1.4
-4.6	536,976	3.3
-4.4	938,676	6.7
-4.2	1,319,900	11.9
-4	1,714,276	18.8
-3.8	2,189,124	27.8
-3.6	2,625,408	38.8
-3.4	3,165,088	52.1
-3.2	3,807,016	68.1
-3.0	4,392,968	87.0
-2.8	4,880,264	108.3
-2.6	5,163,596	131.3
-2.4	5,435,296	155.6
-2.2	5,652,156	181.1
-2.0	5,886,024	207.6
-1.8	6,118,208	235.1
-1.6	6,318,404	263.7
-1.4	6,543,472	293.2
-1.2	6,725,784	323.7
-1.0	6,879,244	354.9
-0.8	7,085,304	387.0
-0.6	7,210,984	419.8
-0.4	7,329,184	453.2
-0.4	7,329,184	453.2
-0.2	7,420,976	466.0
0.0*	7,534,712	487.5
0.2	7,611,164	522.3
0.4	7,681,608	557.4
0.6	7,760,776	592.8
0.8	7,859,880	628.7
1	7,957,476	665.0
1.2	8,030,056	701.7
1.4	8,088,952	738.7
1.6	8,138,108	776.0
1.8	8,181,440	813.4
2	8,223,196	851.1
2.2	8,266,716	888.9
2.4	8,307,588	927.0
2.6	*8,352,992*	*965.2*
2.8	*8,395,684*	*1,003.7*
3	*8,441,908*	*1,042.3*
3.2	*8,496,032*	*1,081.2*
3.4	*8,549,152*	*1,120.4*
3.6	*8,611,316*	*1,159.8*
3.8	*8,667,256*	*1,199.4*
4	*8,727,352*	*1,239.4*
4.2	*8,804,276*	*1,279.6*
4.4	*8,878,356*	*1,320.2*
4.6	*8,970,460*	*1,361.2*
4.8	*9,058,700*	*1,402.6*
5	*9,152,912*	*1,444.4*

*Note: Area/volume for elevation 0 ft NAVD and above uses 2017 LiDAR. Below 0 ft NAVD uses survey acquired for this SDMP effort

Rows highlighted in red are above the base flood elevation (BFE) and are only provided for informational purposes

Appendix B: De-Rated Pump Curves

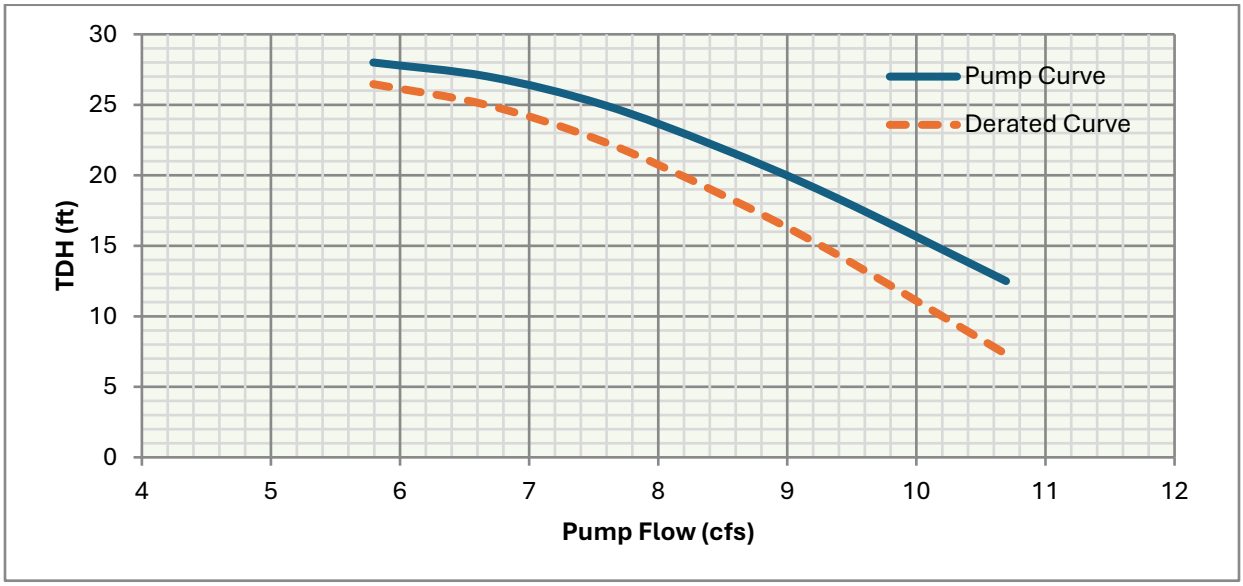
31st Avenue Pump Station



	Pump Discharge	Force main
Diameter (in)	8	10
Length (ft)	25	250
C Value	130	130

Pump TDH (ft)	Pump Flow (cfs)	Discharge Velocity (ft/s)	Force main Velocity (ft/s)	Total Friction Loss (ft)	Discharge H_L K=3.05	Force main H_L K=1.25	Total Loss (ft)	Derated TDH (ft)
44.75	0.56	1.61	2.06	0.47	0.12	0.08	0.68	44.07
40.83	0.92	2.65	3.39	1.19	0.33	0.22	1.74	39.09
37.13	1.37	3.92	5.01	2.45	0.73	0.49	3.66	33.47
33.92	1.74	4.99	6.39	3.84	1.18	0.79	5.81	28.11
29.01	2.19	6.27	8.02	5.84	1.86	1.25	8.96	20.06
21.09	2.80	8.01	10.25	9.20	3.04	2.04	14.28	6.81
18.4	2.99	8.57	10.97	10.43	3.48	2.34	16.25	2.15

42nd Avenue Pump Station

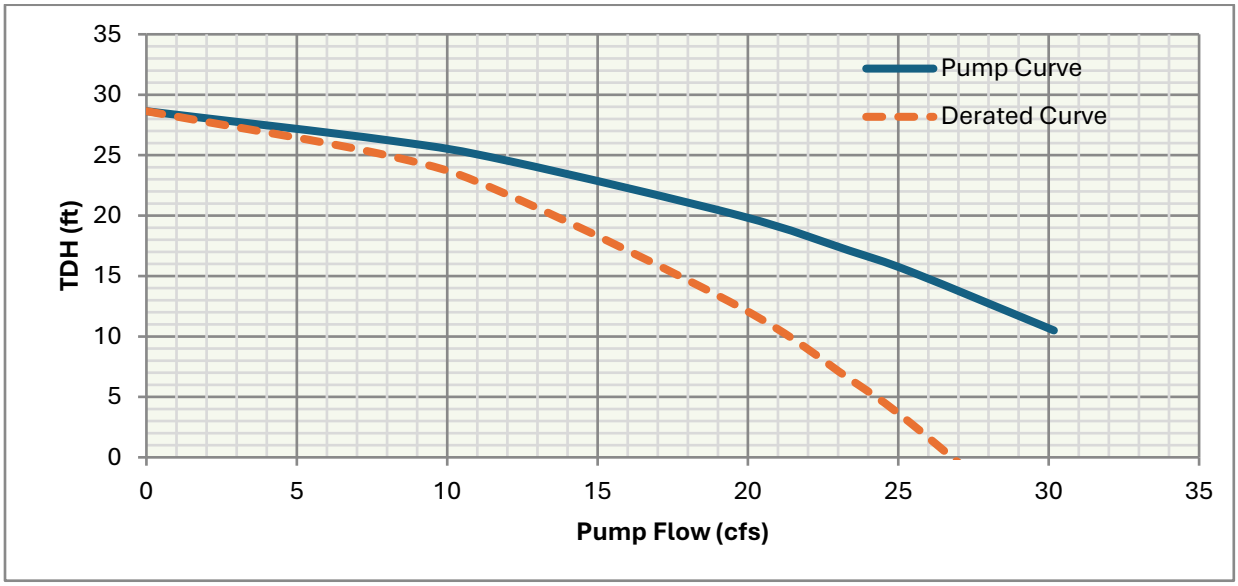


	Pump Discharge	Force main
Diameter (in)	15.25	14.1
Length (ft)	28	N/A*
C Value	130	130

*Shared force main included in model geometry

Pump TDH (ft)	Pump Flow (cfs)	Discharge Velocity (ft/s)	Force main Velocity (ft/s)	Total Friction Loss (ft)	Discharge H_L K=4.33	Force main H_L K=0	Total Loss (ft)	Derated TDH (ft)
28.00	5.79	4.57	10.68	0.13	1.40	0.000	1.53	26.47
27.00	6.68	5.27	12.33	0.17	1.87	0.000	2.04	24.96
25.00	7.58	5.97	13.97	0.21	2.40	0.000	2.61	22.39
22.00	8.47	6.68	15.62	0.26	3.00	0.000	3.26	18.74
18.50	9.36	7.38	17.26	0.32	3.66	0.000	3.98	14.52
12.50	10.69	8.43	19.73	0.40	4.78	0.000	5.18	7.32

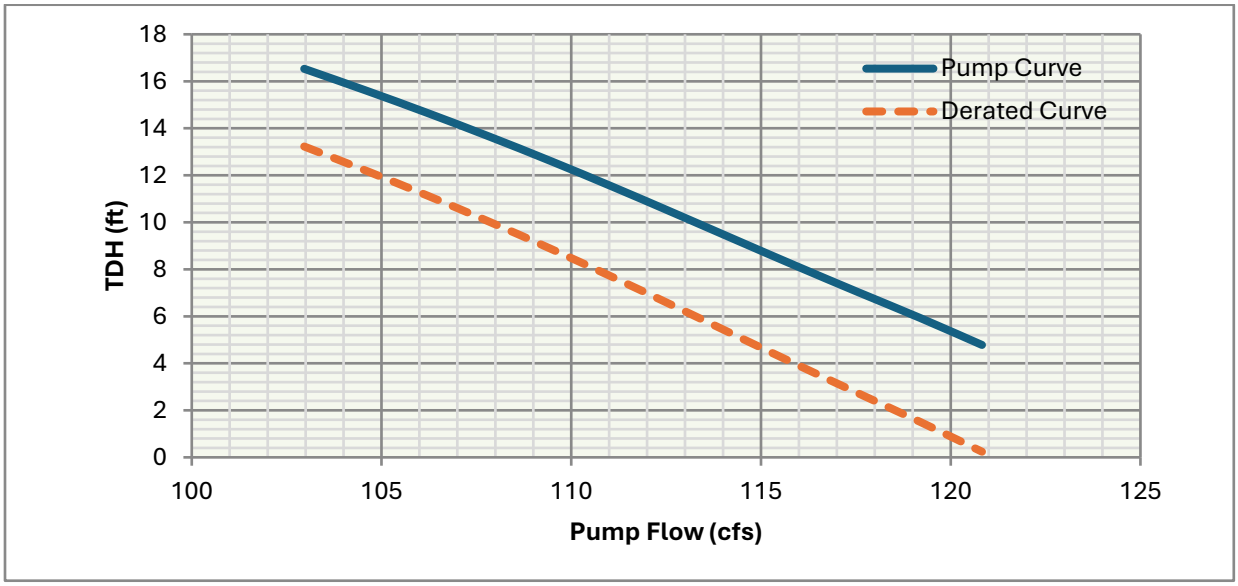
Casanova Pump Station



	Pump Column	Discharge
Diameter (in)	19.75	N/A
Length (ft)	30	N/A
C Value	130	N/A

Pump TDH (ft)	Pump Flow (cfs)	Column Velocity (ft/s)	Discharge Velocity (ft/s)	Total Friction Loss (ft)	Column H_L K=5.38	Discharge H_L K=0	Total Loss (ft)	Derated TDH (ft)
28.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.64
26.21	8.10	3.81	2.29	0.07	1.21	0.00	1.29	24.92
24.50	12.08	5.68	3.42	0.15	2.69	0.00	2.85	21.65
20.00	19.72	9.27	5.58	0.38	7.18	0.00	7.56	12.44
17.12	23.35	10.98	6.61	0.52	10.07	0.00	10.59	6.53
15.37	25.40	11.94	7.19	0.61	11.91	0.00	12.52	2.85

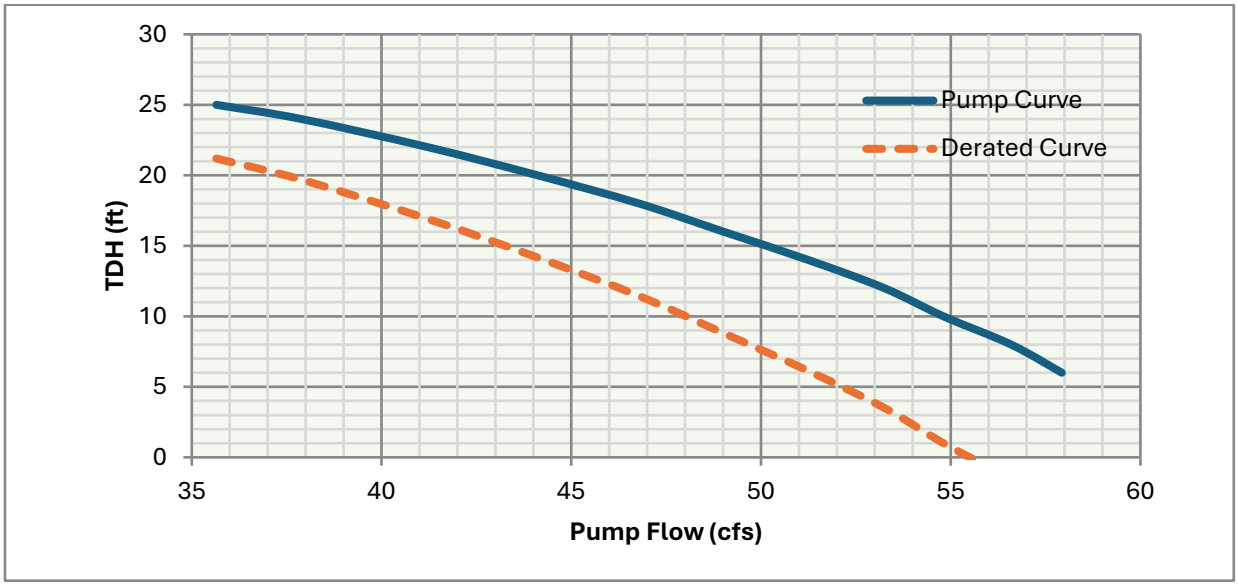
Coyote Pump Station



	Pump Column	Discharge
Diameter (in)	47.25	44.9
Length (ft)	12	60
C Value	140	140

Pump TDH (ft)	Pump Flow (cfs)	Column Velocity (ft/s)	Discharge Velocity (ft/s)	Total Friction Loss (ft)	Column H_L K=0.75	Discharge H_L K=1.6	Total Loss (ft)	Derated TDH (ft)
16.53	16.53	8.46	9.35	0.30	0.83	2.17	3.31	13.23
15.61	15.61	8.59	9.50	0.31	0.86	2.24	3.41	12.20
14.65	14.65	8.72	9.65	0.32	0.89	2.31	3.52	11.14
13.65	13.65	8.86	9.79	0.33	0.91	2.38	3.62	10.03
12.61	12.61	8.99	9.94	0.34	0.94	2.46	3.73	8.87
11.52	11.52	9.12	10.09	0.35	0.97	2.53	3.84	7.68
10.40	10.40	9.26	10.24	0.36	1.00	2.60	3.96	6.44
9.26	9.26	9.39	10.38	0.36	1.03	2.68	4.07	5.19
8.13	8.13	9.52	10.53	0.37	1.06	2.76	4.19	3.94
7.02	7.02	9.66	10.68	0.38	1.09	2.83	4.30	2.71
5.93	5.93	9.79	10.83	0.39	1.12	2.91	4.42	1.51
4.78	4.78	9.92	10.97	0.40	1.15	2.99	4.54	0.24

Detroit Pump Station

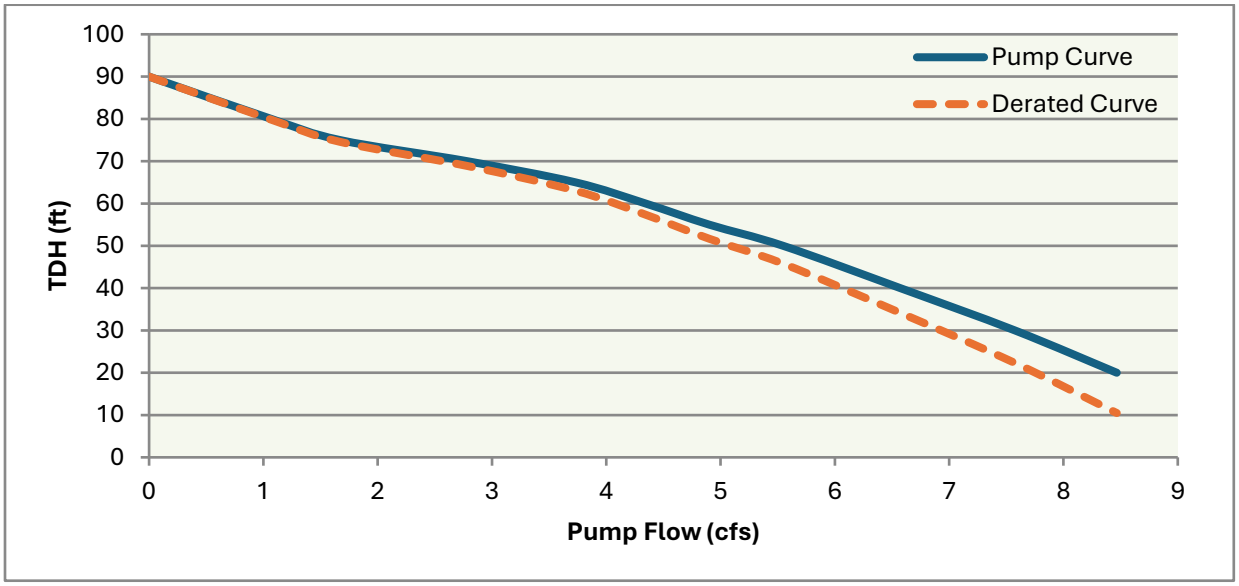


	Pump Column	Discharge
Diameter (in)	36	36
Length (ft)	10	5
C Value	130	130

Pump TDH (ft)	Pump Flow (cfs)	Column Velocity (ft/s)	Discharge Velocity (ft/s)	Total Friction Loss (ft)	Column H_L K=1.5	Discharge H_L K=2	Total Loss (ft)	Derated TDH (ft)
25.00	35.65	5.04	10.09	0.06	0.59	3.16	3.81	21.19
24.00	37.88	5.36	10.72	0.06	0.67	3.57	4.30	19.70
22.00	41.22	5.83	11.66	0.08	0.79	4.22	5.09	16.91
20.00	44.11	6.24	12.48	0.09	0.91	4.84	5.83	14.17
18.00	46.79	6.62	13.24	0.10	1.02	5.44	6.56	11.44
16.00	49.02	6.93	13.87	0.10	1.12	5.97	7.20	8.80
14.00	51.24	7.25	14.50	0.11	1.22	6.53	7.87	6.13
12.00	53.25	7.53	15.07	0.12	1.32	7.05	8.49	3.51
10.00	54.81	7.75	15.51	0.13	1.40	7.47	9.00	1.00
8.00	56.59	8.01	16.01	0.14	1.49	7.96	9.59	-1.59*
6.00	57.93	8.20	16.39	0.14	1.56	8.34	10.05	-4.05*

*Negative flows are omitted from model inputs

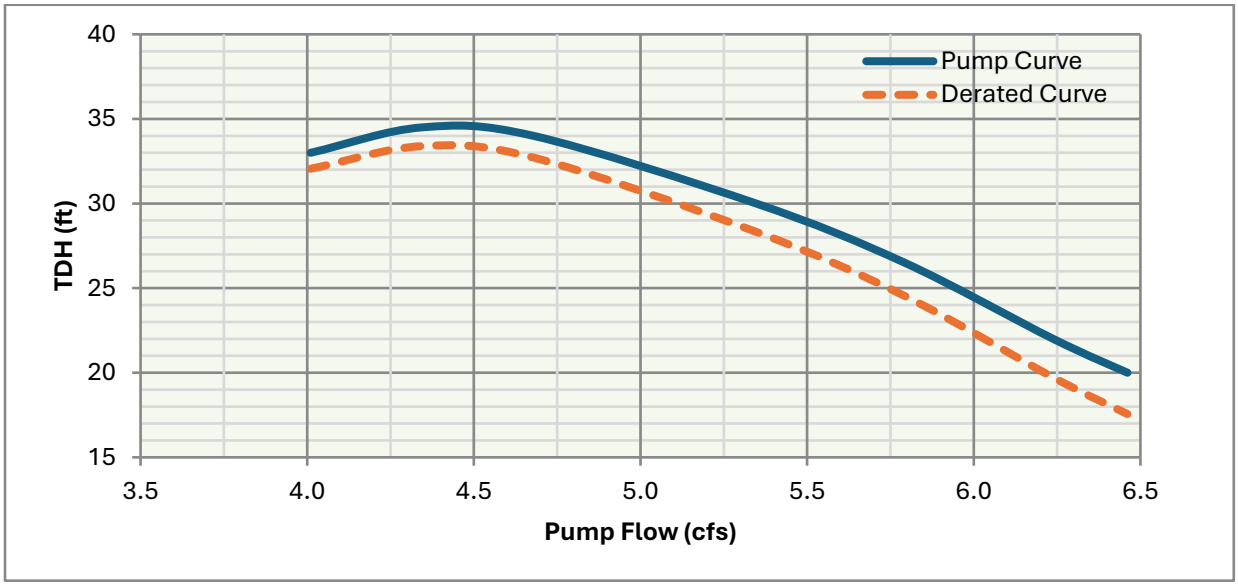
El Camino Real Pump Station (CalTrans owned/operated)



	Pump Discharge	Force main
Diameter (in)	12	20
Length (ft)	20	480
C Value	130	130

Pump TDH (ft)	Pump Flow (cfs)	Column Velocity (ft/s)	Discharge Velocity (ft/s)	Total Friction Loss (ft)	Discharge H_L K=1.5	Force main H_L K=2.0	Total Loss (ft)	Derated TDH (ft)
90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.00
80.00	1.07	1.36	0.98	0.11	0.04	0.03	0.18	79.82
75.00	1.67	2.13	1.53	0.25	0.11	0.07	0.42	74.58
70.00	2.79	3.55	2.55	0.63	0.29	0.20	1.13	68.87
65.00	3.73	4.75	3.42	1.09	0.53	0.36	1.98	63.02
60.00	4.34	5.53	3.98	1.44	0.71	0.49	2.65	57.35
55.00	4.90	6.24	4.49	1.80	0.91	0.63	3.34	51.66
50.00	5.55	7.06	5.09	2.26	1.16	0.80	4.23	45.77
40.00	6.57	8.37	6.03	3.10	1.63	1.13	5.86	34.14
30.00	7.58	9.65	6.94	4.03	2.17	1.50	7.69	22.31
20.00	8.47	10.78	7.76	4.95	2.71	1.87	9.53	10.47

Hillsdale Pump Station

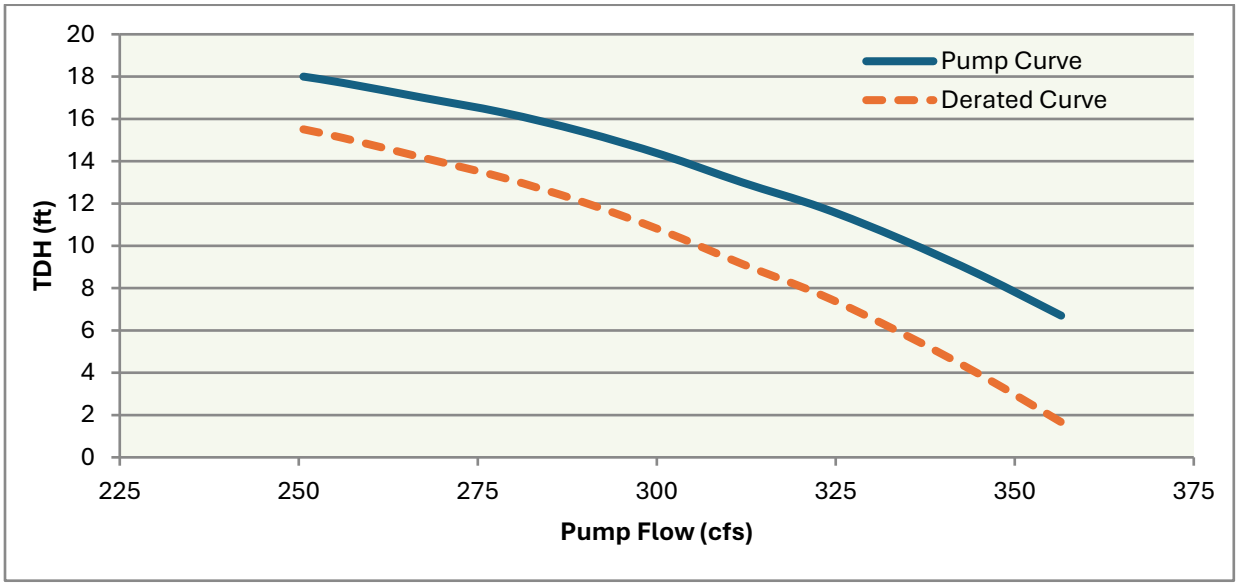


	Pump Discharge	Force main
Diameter (in)	14	20
Length (ft)	20	N/A*
C Value	130	130

*Shared force main included in model geometry

Pump TDH (ft)	Pump Flow (cfs)	Column Velocity (ft/s)	Discharge Velocity (ft/s)	Total Friction Loss (ft)	Discharge H_L K=4	Force main H_L K=0	Total Loss (ft)	Derated TDH (ft)
33.00	4.01	3.75	3.68	0.07	0.87	0.00	0.95	32.05
34.50	4.34	4.06	3.98	0.08	1.03	0.00	1.11	33.39
34.00	4.68	4.38	4.29	0.10	1.19	0.00	1.28	32.72
30.00	5.35	5.00	4.90	0.12	1.55	0.00	1.68	28.32
26.50	5.79	5.42	5.31	0.14	1.82	0.00	1.97	24.53
22.00	6.24	5.84	5.72	0.16	2.12	0.00	2.28	19.72
20.00	6.46	6.04	5.92	0.17	2.27	0.00	2.44	17.56

Marina Lagoon Pump Station

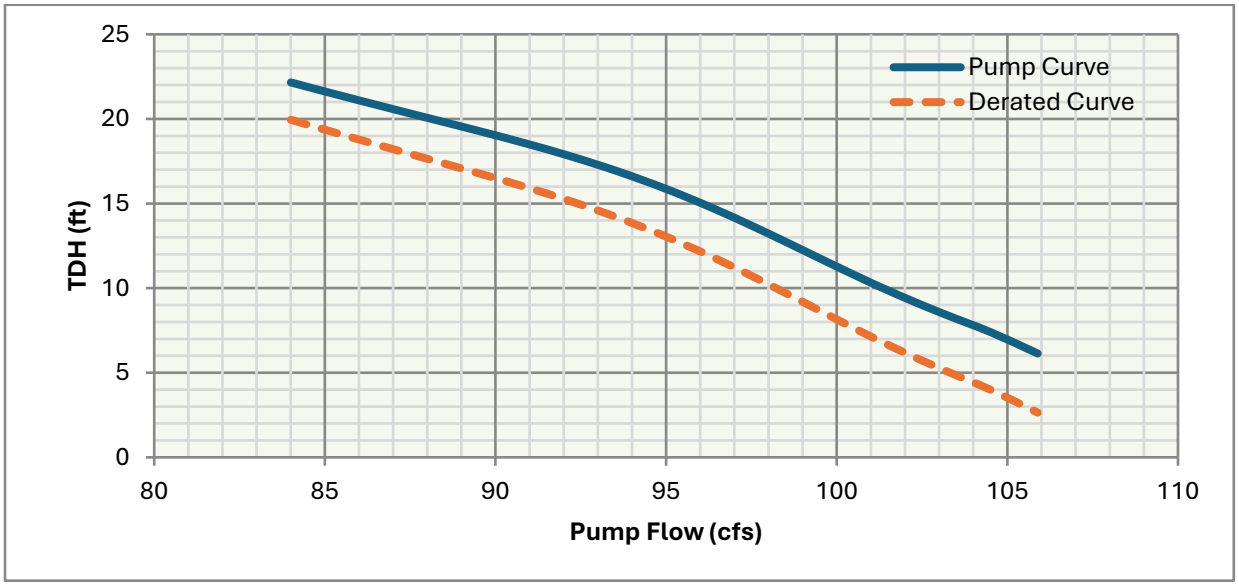


	Pump Column	Discharge
Diameter (in)	72	72
Length (ft)	28.27	N/A*
C Value	150	130

*Discharge lines added to the model

Pump TDH (ft)	Pump Flow (cfs)	Column Velocity (ft/s)	Discharge Velocity (ft/s)	Total Friction Loss (ft)	Column H_L K=2	Discharge H_L K=0	Total Loss (ft)	Derated TDH (ft)
18.0	250.65	8.86	70.92	0.05	2.44	0.00	2.49	15.51
17.7	256.22	9.06	72.50	0.05	2.55	0.00	2.60	15.10
17.0	267.36	9.46	75.65	0.06	2.78	0.00	2.83	14.17
16.3	278.50	9.85	78.80	0.06	3.01	0.00	3.08	13.22
15.4	289.64	10.24	81.95	0.07	3.26	0.00	3.33	12.07
14.3	300.78	10.64	85.10	0.07	3.51	0.00	3.59	10.71
13.0	311.92	11.03	88.26	0.08	3.78	0.00	3.86	9.14
11.8	323.06	11.43	91.41	0.08	4.05	0.00	4.14	7.66
10.3	334.20	11.82	94.56	0.09	4.34	0.00	4.43	5.87
8.6	345.34	12.21	97.71	0.09	4.63	0.00	4.73	3.87
6.7	356.48	12.61	100.86	0.10	4.94	0.00	5.03	1.67

Poplar Pump Station



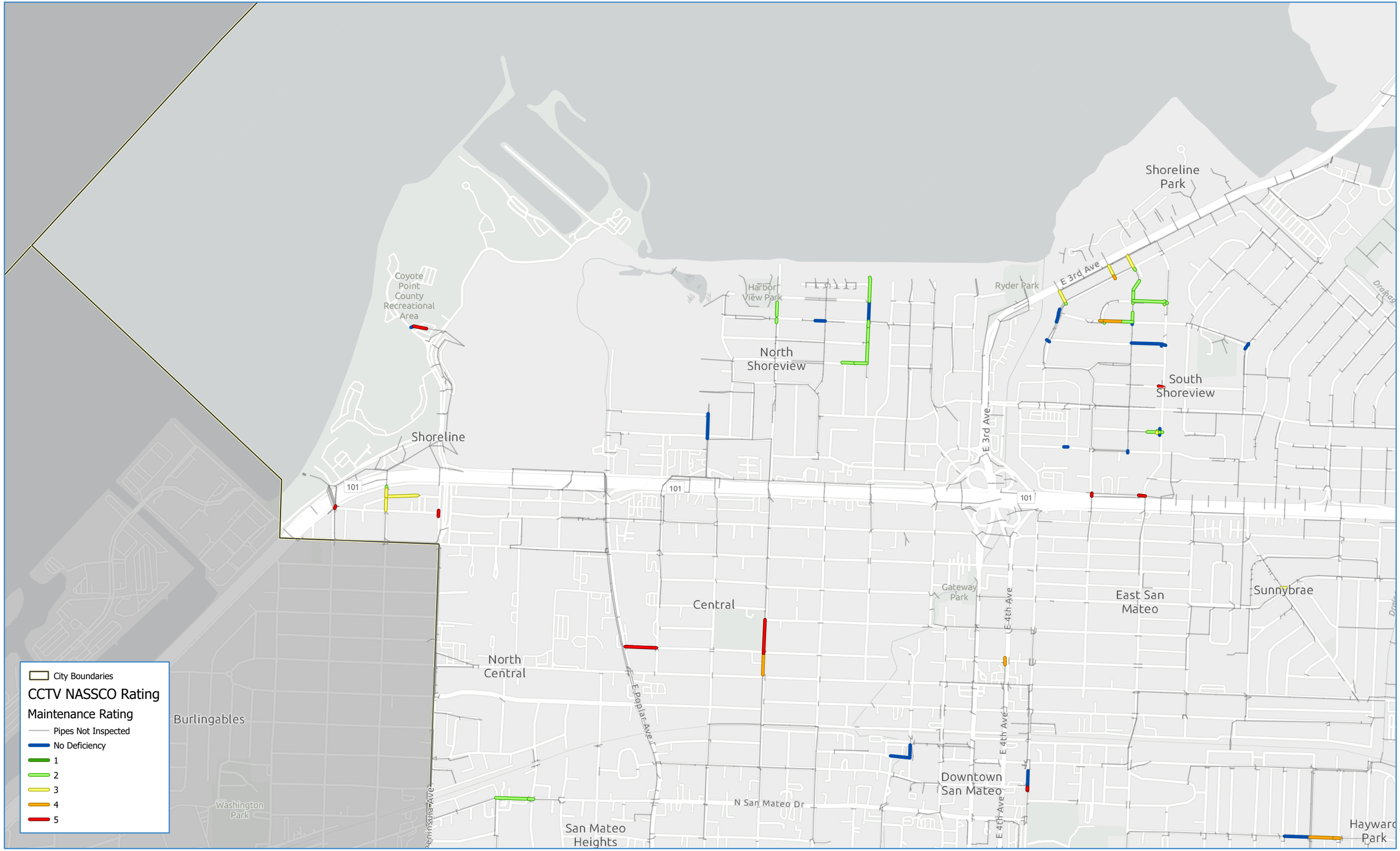
	Pump Discharge	Force main
Diameter (in)	47.25	44.9
Length (ft)	12	60
C Value	140	140

Pump TDH (ft)	Pump Flow (cfs)	Column Velocity (ft/s)	Discharge Velocity (ft/s)	Total Friction Loss (ft)	Discharge H_L K=0.75	Force main H_L K=1.6	Total Loss (ft)	Derated TDH (ft)
22.15	84.01	6.90	7.63	0.21	0.55	1.45	2.21	19.95
21.43	85.37	7.01	7.75	0.21	0.57	1.49	2.28	19.15
20.71	86.74	7.12	7.88	0.22	0.59	1.54	2.35	18.36
20.01	88.11	7.24	8.00	0.23	0.61	1.59	2.43	17.58
19.31	89.48	7.35	8.13	0.23	0.63	1.64	2.50	16.80
18.58	90.85	7.46	8.25	0.24	0.65	1.69	2.58	16.00
17.79	92.21	7.57	8.38	0.25	0.67	1.74	2.66	15.13
16.90	93.58	7.69	8.50	0.25	0.69	1.79	2.73	14.17
15.90	94.95	7.80	8.62	0.26	0.71	1.85	2.81	13.09
14.77	96.32	7.91	8.75	0.27	0.73	1.90	2.90	11.88
13.52	97.69	8.02	8.87	0.27	0.75	1.96	2.98	10.54
12.20	99.05	8.13	9.00	0.28	0.77	2.01	3.06	9.14
10.87	100.42	8.25	9.12	0.29	0.79	2.07	3.15	7.72
9.61	101.79	8.36	9.24	0.29	0.81	2.12	3.23	6.37
8.46	103.16	8.47	9.37	0.30	0.84	2.18	3.32	5.14
7.38	104.53	8.58	9.49	0.31	0.86	2.24	3.41	3.98
6.14	105.89	8.70	9.62	0.32	0.88	2.30	3.50	2.64

Appendix C: Condition Assessment and Mapping

Pipe Material Abbreviations List

Abbreviation	Material
AC	Asbestos cement
CMP	Corrugated metal pipe
PE	Polyethylene
PVC	Polyvinyl chloride
RCP	Reinforced concrete pipe
VCP	Vitrified Clay Pipe

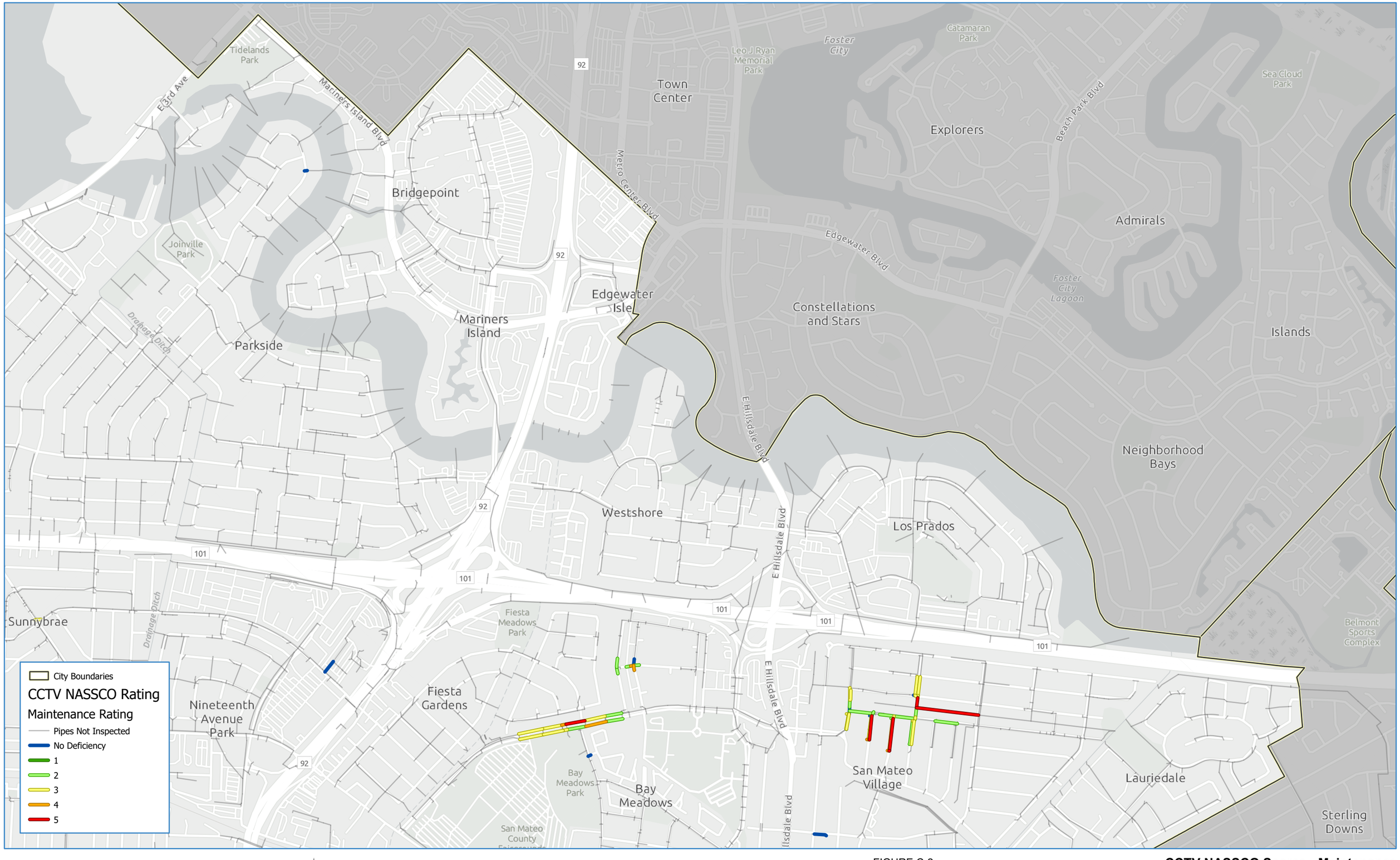


SCHAAF & WHEELER
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0 500 1,000 Feet

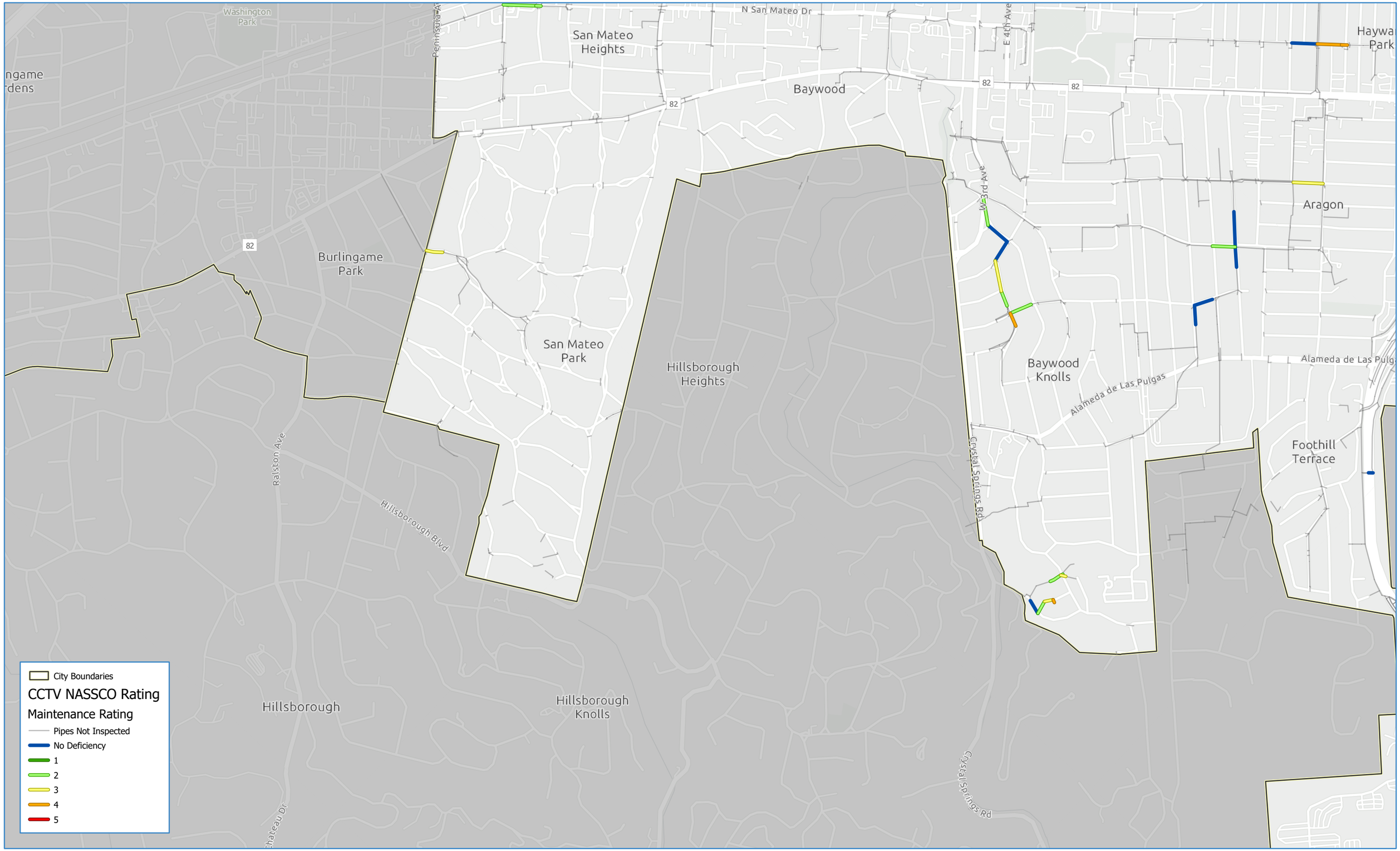
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FIGURE C-1: **CCTV NASSCO Scores - Maintenance**



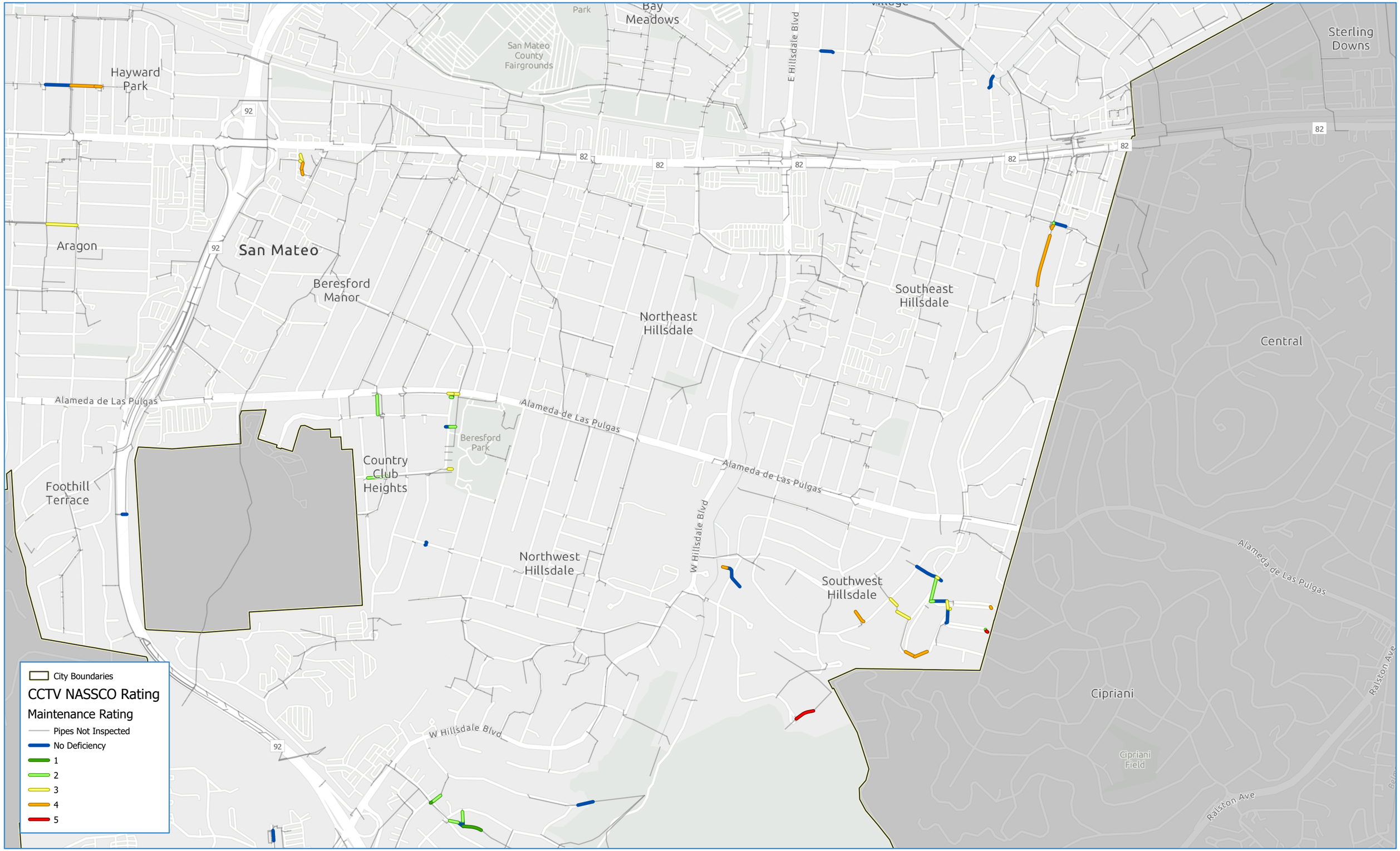
SCHAAF & WHEELER
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FIGURE C-2: **CCTV NASSCO Scores - Maintenance**



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FIGURE C-3: **CCTV NASSCO Scores - Maintenance**

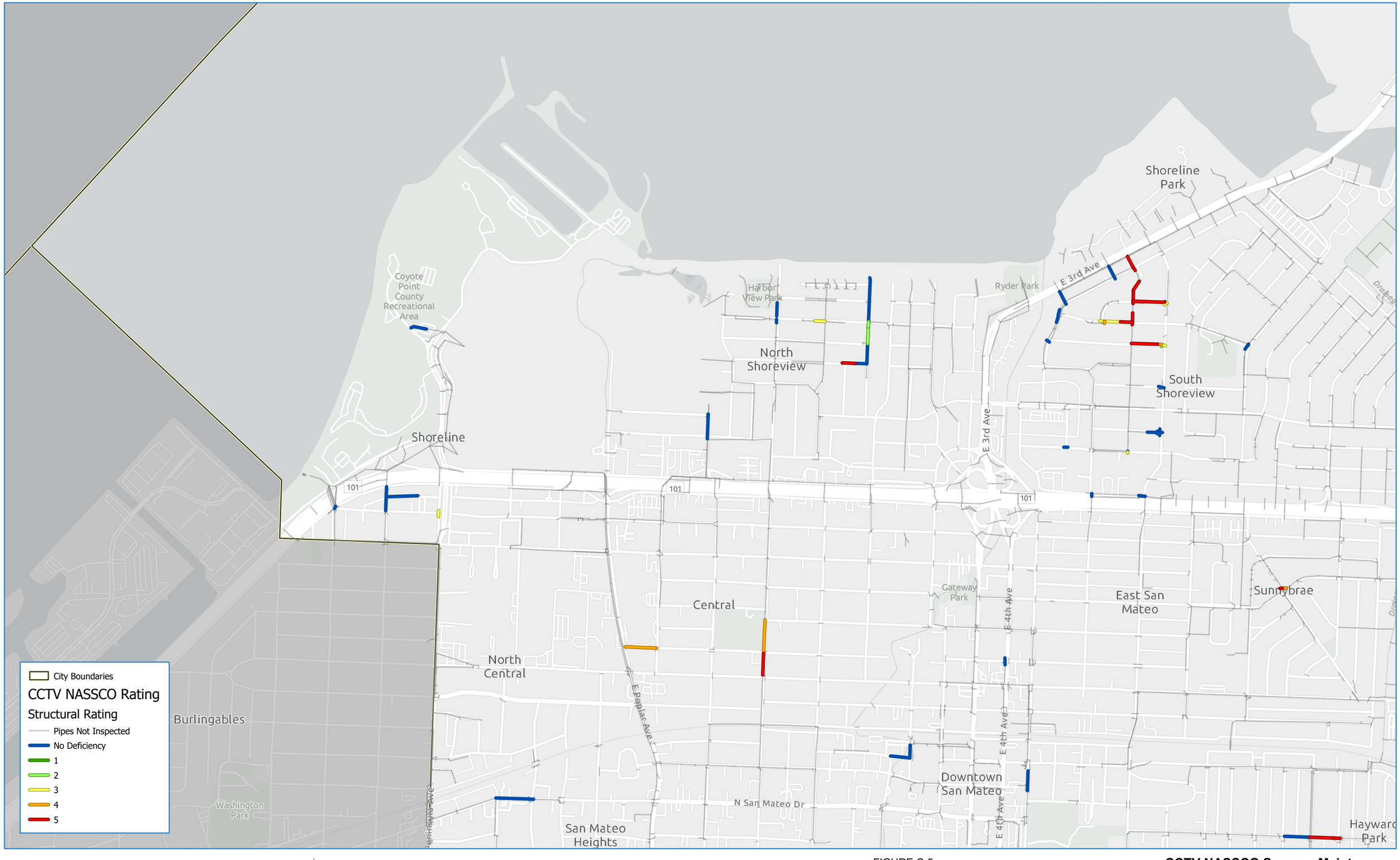


SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

N

FIGURE C-4: **CCTV NASSCO Scores - Maintenance**

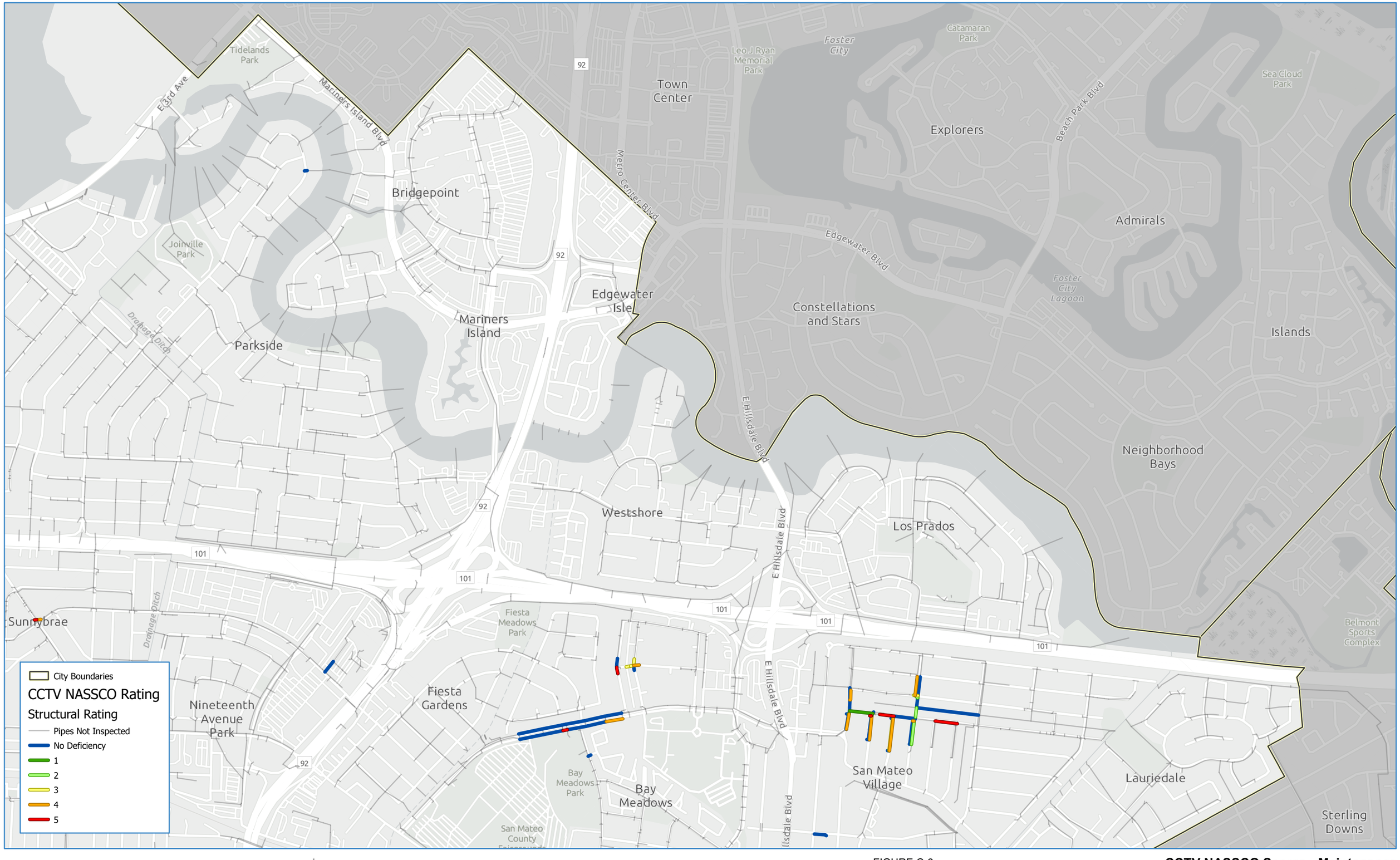


SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

N

FIGURE C-5: **CCTV NASSCO Scores - Maintenance**

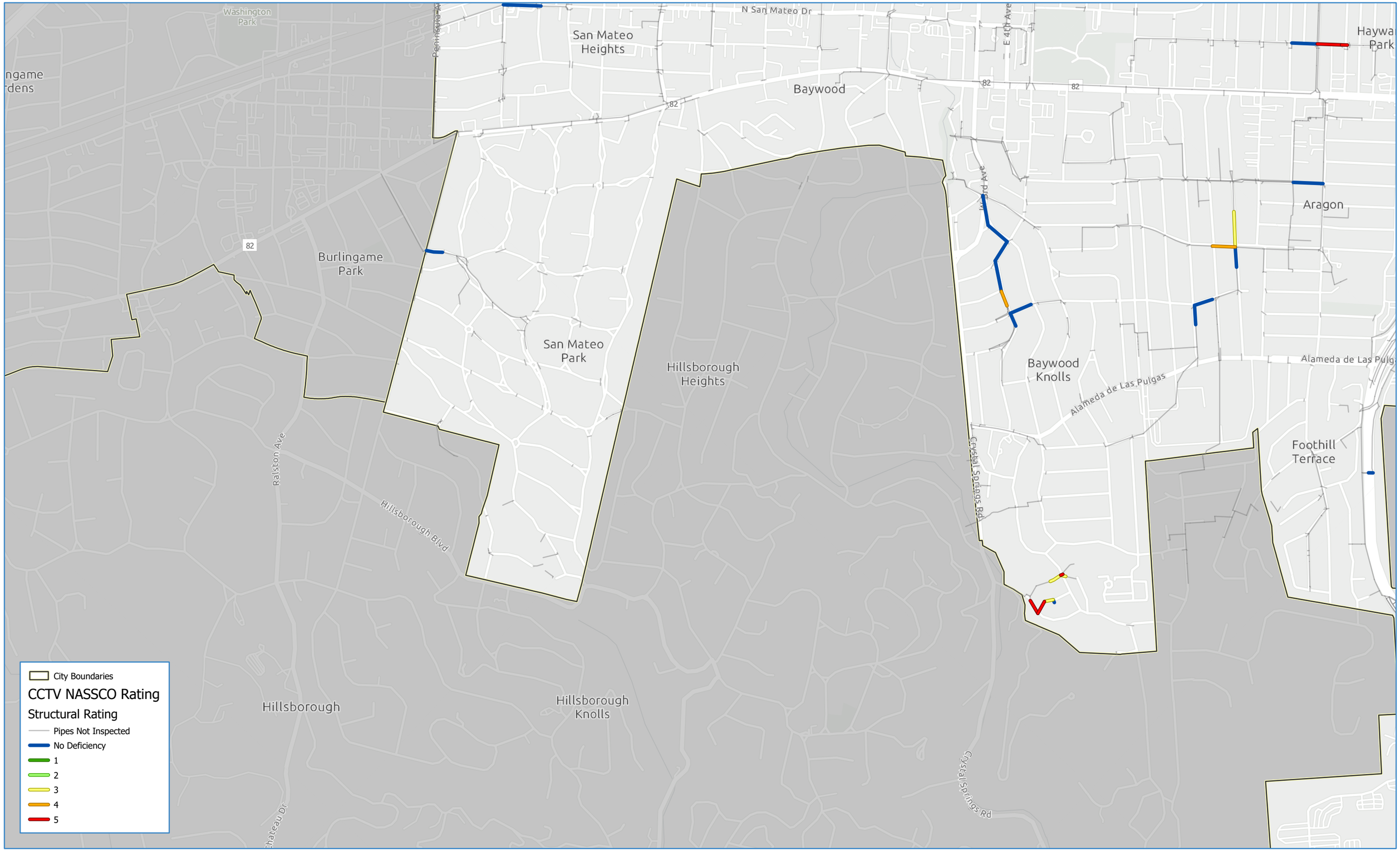


SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

N

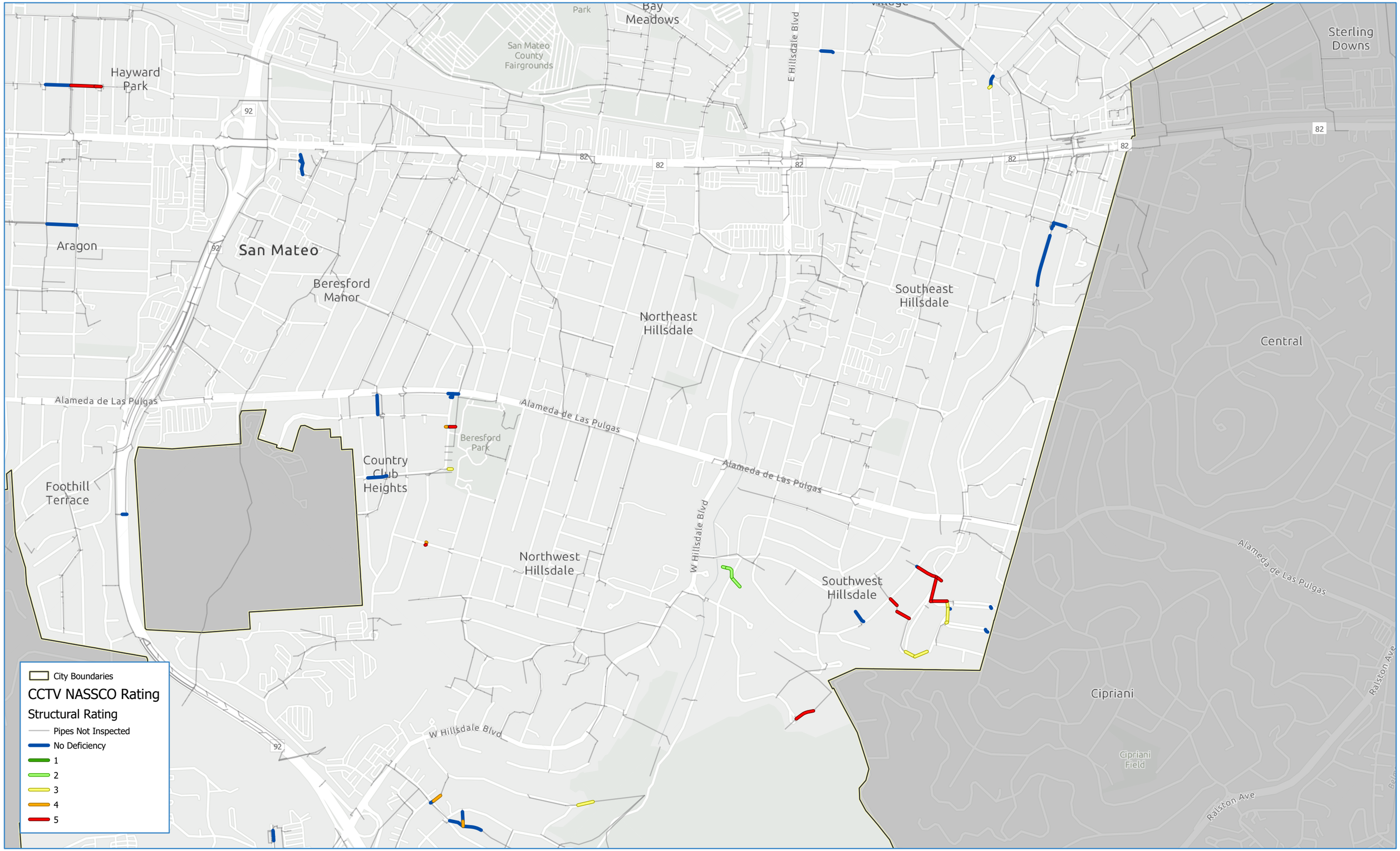
FIGURE C-6: **CCTV NASSCO Scores - Maintenance**



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0 500 1,000 Feet

FIGURE C-7: **CCTV NASSCO Scores - Maintenance**



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0 500 1,000 Feet

N

FIGURE C-8: **CCTV NASSCO Scores - Maintenance**

Table C-1: CCTV Condition Assessment Data Summary

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
SD-7040-2	14th Avenue	SD-74C2 To SD-74DA	782	8/14/2024	5	4	5	tv5	View Session: 18		AAR-SD-74C2-To-SD-74DA--09-09-2024--153001-5725	--
SD-7040	14th Avenue	SD-74C2 To SD-74DA	782	8/14/2024	5	4	5	tv5	View Session: 18		AAR-SD-74C2-To-SD-74DA--09-09-2024--153001-5725	RCP
SD-12E3E	42nd Avenue	SD-12FA8 To SD-12F81	3	8/13/2024	0	4	4	rausch	View Session: 2	(3.0) LR - Line Right	aab-sd-12fa8-to-sd-12f81--09-10-2024--051035-8615	RCP
SD-12E45	42nd Avenue	SD-12F81 To SD-12EF4	8	8/13/2024	0	4	4	rausch	View Session: 3	(7.2) LL - Line Left	aac-sd-12f81-to-sd-12ef4--09-10-2024--051116-1823	PVC
SD-15DB2	42nd Avenue	SD-15CC5 To SD-15CBF	208	8/14/2024	5	2	5	rausch	View Session: 15	(24.5) HSV - Hole Soil Visible - Position: 3	aao-sd-15cc5-to-sd-15cbf--09-10-2024--051942-3071	CMP
SD-15DBF	42nd Avenue	SD-15CC2 To SD-15CBF	30	8/16/2024	5	3	5	tv5	View Session: 19		AAS-SD-15CC2-To-SD-15CBF--09-09-2024--153043-4293	CMP
SD-15DC0	42nd Avenue	SD-15AEE To UNKNOWN	14	8/16/2024	5	0	5	tv5	View Session: 22		AAV-SD-15AEE-To-UNKNOWN--09-09-2024--153210-8081	PVC
SD-15DC4	42nd Avenue	SD-15B09 To SD-15CBC	83	8/13/2024	3	4	4	rausch	View Session: 6	(74.6) LU - Line Up	aaf-sd-15b09-to-sd-15cbc--09-10-2024--051318-8589	CMP
SD-15D72	42nd Avenue	SD-15C56 To SD-15B2A	170	8/13/2024	5	3	5	rausch	View Session: 7	(156.9) DR - Deformed Rigid Remark: CRUSHED	aag-sd-15c56-to-sd-15b2a--09-10-2024--051401-2880	CMP
SD-15E02	42nd Avenue	SD-15B27 To SD-15C53	65	8/13/2024	5	3	5	rausch	View Session: 8	(20.4) HSV - Hole Soil Visible - Position: 6	aah-sd-15b27-to-sd-15c53--09-10-2024--051447-5763	CMP
SD-5C57	5th Avenue	SD-7594 To SD-753D	18	8/28/2024	0	5	5	tv3	View Session: 19	(18.0) DSZ - Deposits Settled Other - Position: 4 To 8 Remark: LARGE PIECE OF CONCRETE	aas-sd-7594-to-sd-753d--09-09-2024--084245-4309	RCP
SD-10905	Alameda de las Pulgas	SD-10D18 To MAINLINE	29	9/5/2024	0	0	0	rausch	View Session: 78		acz-sd-10d18-to-mainline--09-10-2024--060225-2612	RCP
SD-10C12	Alameda de las Pulgas	SD-10EA1 To SD-OBJ6323	66	9/5/2024	0	3	3	rausch	View Session: 76		acx-sd-10ea1-to-sd-obj6323--09-10-2024--060104-6868	RCP
SD-10C12-2	Alameda de las Pulgas	SD-10EA1 To SD-OBJ6323	66	9/5/2024	0	3	3	rausch	View Session: 76		acx-sd-10ea1-to-sd-obj6323--09-10-2024--060104-6868	RCP
SD-5D1C	Alderwood Court	SD-6306 To SD-635A	172	8/27/2024	0	2	2	tv5	View Session: 64		ACL-SD-6306-To-SD-635A--09-09-2024--155328-6710	RCP
SD-5D1D	Alderwood Court	SD-635A To SD-635D	58	8/27/2024	0	3	3	tv5	View Session: 65		ACM-SD-635A-To-SD-635D--09-09-2024--155358-8180	RCP
SD-183FE	Almaden Way	SD-18322 To SD-18328	281	8/23/2024	1	2	2	tv5	View Session: 57		ACE-SD-18322-To-SD-18328--09-09-2024--154940-9894	RCP
SD-1840F	Almaden Way	SD-1830D To SD-18325	22	8/26/2024	0	3	3	rausch	View Session: 24		aax-sd-1830d-to-sd-18325--09-10-2024--052554-5742	RCP
SD-18410	Almaden Way	SD-18391 To SD-18325	23	8/26/2024	5	0	5	rausch	View Session: 32	(7.3) BSV - Broken Soil Visible - Position: 9 To 11	abf-sd-18391-to-sd-18325--09-10-2024--053114-3188	RCP
SD-18411	Almaden Way	SD-18397 To SD-183C7	153	8/26/2024	4	5	5	rausch	View Session: 28	(83.8) OBI - Obstruction Intruding Through Wall - Position: 10 To 2 Remark: APPEARS TO BE A GAS LINE	abb-sd-18397-to-sd-183c7--09-10-2024--052830-3396	RCP
SD-18412	Almaden Way	SD-18394 To SD-1830D	22	8/26/2024	0	4	4	rausch	View Session: 25	(0.0) DSF - Deposits Settled Fine - Position: 6 - Cont Def: S01 Remark: DEBRIS/SILT	aay-sd-18394-to-sd-1830d--09-10-2024--052633-3726	RCP
SD-O5374	Almaden Way	SD-1830D To SD-18325	82	8/26/2024	0	3	3	rausch	View Session: 31		abe-sd-1830d-to-sd-18325--09-10-2024--053033-3718	RCP
SD-183E3	Almaden Way	SD-183C7 To SD-18325	4	8/26/2024	2	0	2	rausch	View Session: 29		abc-sd-183c7-to-sd-18325--09-10-2024--052916-5364	RCP
SD-183E4	Almaden Way	SD-1830D To SD-18397	5	8/26/2024	0	4	4	rausch	View Session: 26	(0.0) DSF - Deposits Settled Fine - Position: 6 Remark: DEBRIS/SILT	aaz-sd-1830d-to-sd-18397--09-10-2024--052712-4756	RCP
SD-5F8A	Amherst Avenue	SD-7480 To SD-7483	360	8/13/2024	0	3	3	tv5	View Session: 4		AAD-SD-7480-To-SD-7483--09-09-2024--152250-7645	PE

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
SD-2296	Amphlett Boulevard	SD-24C8A To SD-2870	3	8/16/2024	0	5	5	tv5	View Session: 29		ABC-SD-24C8A-To-SD-2870--09-09-2024--153518-5266	RCP
SD-5DAE	Aragon Boulevard	SD-754F To SD-7576	235	8/14/2024	0	0	0	tv5	View Session: 11		AAK-SD-754F-To-SD-7576--09-09-2024--152620-1498	PE
SD-5DC1	Avila Road	SD-756D To SD-7561	244	8/14/2024	0	0	0	tv5	View Session: 13		AAM-SD-756D-To-SD-7561--09-09-2024--152720-5180	PE
SD-OBJ10891	B Street	SD-814 To SD-OBJ1482	155	8/28/2024	0	0	0	tv3	View Session: 15		aao-sd-814-to-sd-obj1482--09-09-2024--084050-338	PE
SD-OBJ10892	B Street	SD-OBJ1482 To UNK	218	8/28/2024	0	0	0	tv3	View Session: 14		aan-sd-obj1482-to-unk--09-09-2024--084020-6143	PE
SD-2272	Bayswater Avenue	SD-24D7 To SD-OBJ1881	162	8/16/2024	0	3	3	tv5	View Session: 31		ABE-SD-24D7-To-SD-OBJ1881--09-09-2024--153619-9594	RCP
SD-OBJ11281	Bayswater Avenue	SD-OBJ6169 To SD-OBJ1881	277	8/16/2024	0	3	3	tv5	View Session: 30		ABD-SD-OBJ6169-To-SD-OBJ1881--09-09-2024--153547-8224	RCP
SD-OBJ11282	Bayswater Avenue	SD-OBJ1881 To SD-24DA	90	8/16/2024	0	3	3	tv5	View Session: 32		ABF-SD-OBJ1881-To-SD-24DA--09-09-2024--153648-157	RCP
SD-10C26	Beresford Creek	SD-409D0 To OUTFALL	10	9/4/2024	5	0	5	tv3	View Session: 37	(5.0) BSV - Broken Soil Visible - Position: 6	abk-sd-409d0-to-outfall--09-09-2024--085116-7530	VCP
SD-10BF8	Beresford Creek	SD-10D72 To MAINLINE	53	9/5/2024	5	2	5	rausch	View Session: 75	(41.7) BSV - Broken Soil Visible - Position: 4 To 7	acw-sd-10d72-to-mainline--09-10-2024--060022-8210	RCP
SD-10C1C	Beresford Creek	SD-10D6C To OUTFALL	40	9/5/2024	3	3	3	rausch	View Session: 72		act-sd-10d6c-to-outfall--09-10-2024--055825-2503	RCP
SD-12DDF	Beresford Street	SD-13164 To SD-13161	143	8/13/2024	0	0	0	rausch	View Session: 1		aaa-sd-13164-to-sd-13161--09-10-2024--050953-4752	PVC
SD-12DE7	Beresford Street	SD-12EF4 To SD-13161	27	8/13/2024	0	2	2	rausch	View Session: 4		aad-sd-12ef4-to-sd-13161--09-10-2024--051154-883	PVC
SD-15DA3	Bettina Avenue	SD-15CEC To SD-15CEF	4	8/16/2024	0	4	4	tv5	View Session: 26		AAZ-SD-15CEC-To-SD-15CEF--09-09-2024--153358-1158	RCP
SD-15DA7	Bettina Avenue	SD-15CCB To SD-15CC8	91	8/14/2024	3	3	3	rausch	View Session: 11		aak-sd-15ccb-to-sd-15cc8--09-10-2024--051653-5482	CMP
SD-15DB3	Bettina Avenue	SD-15CE3 To SD-15CC5	34	8/14/2024	5	2	5	rausch	View Session: 14	(11.6) HSV - Hole Soil Visible - Position: 5	aan-sd-15ce3-to-sd-15cc5--09-10-2024--051902-6312	CMP
SD-15DB4	Bettina Avenue	SD-15CC8 To SD-15CE3	162	8/14/2024	5	0	5	rausch	View Session: 13	(60.2) HSV - Hole Soil Visible - Position: 5 - Cont Def: F02	aam-sd-15cc8-to-sd-15ce3--09-10-2024--051815-7679	CMP
SD-B25C	Cary Avenue	SD-B0E7 To UNK	3	8/28/2024	0	0	0	tv3	View Session: 22		aav-sd-b0e7-to-unk--09-09-2024--084408-8327	PVC
SD-183F0	Casanova Drive	SD-183A3 To SD-18310A	7	8/27/2024	4	3	4	rausch	View Session: 48		abv-sd-183a3-to-sd-18310a--09-10-2024--054155-4051	RCP
SD-18B9D	Casanova Drive	SD-189C6 To SD-189A2	115	8/29/2024	0	5	5	tv5	View Session: 87		ADI-SD-189C6-To-SD-189A2--09-09-2024--160433-4970	AC
SD-18B9E	Casanova Drive	SD-189CC To SD-189C6	28	8/27/2024	2	3	3	rausch	View Session: 51		aby-sd-189cc-to-sd-189c6--09-10-2024--054354-5156	RCP
SD-18B9F	Casanova Drive	SD-1899F To SD-189C6	6	8/27/2024	2	3	3	rausch	View Session: 52		abz-sd-1899f-to-sd-189c6--09-10-2024--054434-1429	RCP
SD-18BA0	Casanova Drive	SD-189C3 To SD-1899F	13	8/27/2024	3	0	3	rausch	View Session: 53		aca-sd-189c3-to-sd-1899f--09-10-2024--054513-1572	RCP
SD-5BC9	Clearview Drive	SD-O1040 To SD-617A	32	9/5/2024	0	4	4	tv3	View Session: 40	(32.0) DAZ - Deposits Attached Other - Position: 4 To 8 Remark: CONCRETE AT BOTTOM OF PIPE		CMP
SD-5BCA	Clearview Drive	SD-O1040 To SD-617A	32	9/5/2024	0	4	4	tv3	View Session: 40	(32.0) DAZ - Deposits Attached Other - Position: 4 To 8 Remark: CONCRETE AT BOTTOM OF PIPE	abn-sd-o1040-to-sd-617a--09-09-2024--085236-3563	CMP
Link_378	Clearview Drive	SD-427B3 To SD427A2A	122	9/5/2024	0	0	0	tv3	View Session: 41		abo-sd-427b3-to-sd427a2a--09-09-2024--085306-1357	PVC
Link_379	Clearview Drive	SD427A2A To SD-427A2	17	9/5/2024	0	0	0	tv3	View Session: 42		abp-sd427a2a-to-sd-427a2--09-09-2024--085339-6592	PVC

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
Link_380	Clearview Drive	SD427A2A To SD-427A2	17	9/5/2024	0	0	0	tv3	View Session: 42		abp-sd427a2a-to-sd-427a2--09-09-2024--085339-6592	PVC
SD-12AD1	Countryside Drive	SD-161B5 To ACCESS POINT	183	8/28/2024	3	0	3	tv5	View Session: 79		ADA-SD-161B5-To-ACCESS POINT--09-09-2024--160037-3722	CMP
SD-21CC	Coyote Point Drive	SD-2999 To SD-3CB8A	31	8/20/2024	0	5	5	tv3	View Session: 4		aad-sd-2999-to-sd-3cb8a--09-09-2024--083535-2660	RCP
SD-21CD	Coyote Point Drive	SD-2996 To SD-2999	29	8/20/2024	0	0	0	tv3	View Session: 5		AAE-SD-2996-To-SD-2999--09-09-2024--083602-8861	RCP
SD-5CF7	Crystal Springs Bypass Tunnel	SD-6342 To SD-6348	130	9/5/2024	0	2	2	tv5	View Session: 153 & 154		AFX-SD-6342-To-SD-6342B--09-09-2024--163632-7269; AFW-SD-6342B-To-SD-6342A--09-09-2024--163606-3235	RCP
SD-3F55B	CSM Drive	SD-3F530 To SD-3F52B	34	8/27/2024	3	2	3	tv5	View Session: 70		ACR-SD-3F530-To-SD-3F52B--09-09-2024--155618-972	RCP
SD-3F55D	CSM Drive	SD-3F535 To SD-3F526	110	8/27/2024	5	0	5	tv5	View Session: 68		ACP-SD-3F535-To-SD-3F526--09-09-2024--155522-6098	CMP
SD-3F560	CSM Drive	SD-3F52B To SD-3F526	46	8/27/2024	0	2	2	tv5	View Session: 69		ACQ-SD-3F52B-To-SD-3F526--09-09-2024--155551-5725	RCP
SD-18B9C	CSM Drive	SD-189A2 To SD-189C9	105	8/27/2024	2	2	2	tv5	View Session: 71		ACS-SD-189A2-To-SD-189C9--09-09-2024--155645-1940	RCP
SD-18B9B	Cupertino Way	SD-1899F To SD-189CC	19	8/27/2024	3	3	3	rausch	View Session: 56		acd-sd-1899f-to-sd-189cc--09-10-2024--054712-432	RCP
SD-183FC	Cupertino Way	SD-1832B To SD-18331	258	8/23/2024	0	2	2	tv5	View Session: 55		ACC-SD-1832B-To-SD-18331--09-09-2024--154839-2299	RCP
SD-1840D	Cupertino Way	SD-1832E To SD-1839A	21	8/23/2024	4	3	4	tv5	View Session: 61		ACI-SD-1832E-To-SD-1839A--09-09-2024--155159-5995	PVC
SD-18B63	Cupertino Way	SD-18880 To SD-1899F	113	8/27/2024	4	3	4	rausch	View Session: 55	(3.1) MWLS - Miscellaneous Water Level Sag - Cont Def: S01	acc-sd-18880-to-sd-1899f--09-10-2024--054630-7603	RCP
SD-18B6A	Cupertino Way	SD-189DB To SD-189CC	215	8/27/2024	0	3	3	rausch	View Session: 57		ace-sd-189db-to-sd-189cc--09-10-2024--054751-6000	RCP
SD-18CEE	Cupertino Way	SD-18D51 To SD-1832E	290	8/23/2024	0	2	2	tv5	View Session: 62		ACJ-SD-18D51-To-SD-1832E--09-09-2024--155227-7651	RCP
SD-2E11E	David Street	SD-2FFD0 To SD-2FFCF	78	9/3/2024	5	2	5	tv5	View Session: 104		ADZ-SD-2FFD0-To-SD-2FFCF--09-09-2024--161300-346	CMP
SD-2E15D	David Street	SD-2FFD1 To SD-2FFD2	54	9/3/2024	3	2	3	tv5	View Session: 107		AEC-SD-2FFD1-To-SD-2FFD2--09-09-2024--161426-7573	CMP
SD-2E150	David Street	SD-2FFD6 To SD-2FFD4	8	9/3/2024	0	4	4	tv5	View Session: 108		AED-SD-2FFD6-To-SD-2FFD4--09-09-2024--161455-8784	CMP
SD-2E15B	David Street	SD-2FFD5 To SD-2FFD4	64	9/3/2024	4	2	4	tv5	View Session: 109		AEE-SD-2FFD5-To-SD-2FFD4--09-09-2024--161522-1872	CMP
SD-5CF8	De Anza Boulevard	SD-6348 To SD-634B	166	9/5/2024	0	0	0	tv5	View Session: 151		AFU-SD-6348-To-SD-634B--09-09-2024--163506-8462	RCP
SD-5CFE	De Anza Boulevard	SD-61FB To SD-634B	43	9/5/2024	2	0	2	tv5	View Session: 150		AFT-SD-61FB-To-SD-634B--09-09-2024--163438-4362	CMP
SD-1089E	Dolores St	SD-10F43 To SD-10CDC	227	9/5/2024	0	2	2	rausch	View Session: 71		acs-sd-10f43-to-sd-10cdc--09-10-2024--055740-16	RCP
SD-O853	East 28th Avenue	SD-2E003 To SD-2E012	242	8/30/2024	0	4	4	tv5	View Session: 103		ADY-SD-2E003-To-SD-2E012--09-09-2024--161228-2938	CMP
SD-2E719	East 28th Avenue	SD-2FFC2 To SD-2E003	81	8/30/2024	0	2	2	tv5	View Session: 102		ADX-SD-2FFC2-To-SD-2E003--09-09-2024--161200-52	CMP
SD-19242	East 39th Avenue	SD-189A2 To SD-1931F	6	8/27/2024	0	5	5	tv5	View Session: 63		ACK-SD-189A2-To-SD-1931F--09-09-2024--155259-8749	PVC
SD-19A76	East 40th Avenue	SD-19A65 To SD-19A68	42	9/5/2024	3	0	3	tv3	View Session: 44		abr-sd-19a65-to-sd-19a68--09-09-2024--085434-1311	RCP
SD-19A71	East 41st Place	SD-19A68 To OUTFALL	94	9/5/2024	0	0	0	tv3	View Session: 43		abq-sd-19a68-to-outfall--09-09-2024--085406-6368	RCP

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
Link_51	East 5th Avenue	SD-753 To SD-42B67	32	8/28/2024	0	0	0	tv3	View Session: 20		aat-sd-753-to-sd-42b67--09-09-2024--084313-967	RCP
Link_52	East 5th Avenue	SD-42B67 To SD-753A	159	8/28/2024	0	0	0	tv3	View Session: 21		aau-sd-42b67-to-sd-753a--09-09-2024--084339-7	RCP
SD-16B33	East Laurel Creek	ACCESS 1 To SD-14A0D	23	8/27/2024	2	0	2	tv5	View Session: 73		ACU-ACCESS 1-To-SD-14A0D--09-09-2024--155742-4463	RCP
SD-5DC4	Edinburgh Street	SD-755E To SD-7561	273	8/14/2024	4	2	4	tv5	View Session: 14		AAN-SD-755E-To-SD-7561--09-09-2024--152750-9716	PE
CCTV_P1	Edinburgh Street	SD-7561 To SD-SDMH 1	365	8/14/2024	3	0	3	tv5	View Session: 15		AAO-SD-7561-To-SD-SDMH 1--09-09-2024--152823-7617	PE
SD-108AF	Ensenada Drive	SD-10CDF To SD-10CE8	232	9/4/2024	0	2	2	tv3	View Session: 32		abf-sd-10cdf-to-sd-10ce8--09-09-2024--084850-9424	RCP
SD-5BE1	Fairfax Avenue	SD-7432 To SD-7480	293	8/13/2024	4	2	4	tv5	View Session: 3		AAC-SD-7432-To-SD-7480--09-09-2024--152216-4814	PE
SD-5BEA	Fairfax Avenue	SD-748C To SD-7432	271	8/13/2024	0	2	2	tv5	View Session: 1		AAA-SD-748C-To-SD-7432--09-09-2024--152112-3613	RCP
SD-5BF5	Fairfax Avenue	SD-7459 To SD-7432	166	8/13/2024	0	4	4	tv5	View Session: 2		AAB-SD-7459-To-SD-7432--09-09-2024--152145-2348	AC
SD-B321	Fallon Avenue	SD-AF6D To SD-AF70	27	8/28/2024	2	0	2	tv3	View Session: 23		aaw-sd-af6d-to-sd-af70--09-09-2024--084434-8282	CMP
SD-B322	Fallon Avenue	SD-AF70 To SD-AF6A	51	8/28/2024	4	0	4	tv3	View Session: 25	(0.0) SAM - Surface Damage Aggregate Missing - Position: 8 To 4 - Cont Def: S01	aay-sd-af70-to-sd-af6a--09-09-2024--084530-5824	CMP
SD-B323	Fallon Avenue	SD-AF6A To SD-AF94	214	8/28/2024	5	0	5	tv3	View Session: 26	(193.0) HSV - Hole Soil Visible - Position: 7 To 8	aaz-sd-af6a-to-sd-af94--09-09-2024--084558-6562	CMP
SD-B9DC	Fallon Avenue	SD-C2E5 To SD-C30B	31	8/20/2024	0	0	0	tv3	View Session: 11		aak-sd-c2e5-to-sd-c30b--09-09-2024--083853-4791	CMP
SD-B279	Fallon Avenue	SD-C30B To SD-B159	367	8/20/2024	0	0	0	tv3	View Session: 12		aal-sd-c30b-to-sd-b159--09-09-2024--083921-9084	RCP
SD-5F87	Franklin Street	SD-764B3 To SD-764B	14	8/13/2024	0	0	0	tv5	View Session: 8		AAH-SD-764B3-To-SD-764B--09-09-2024--152449-7382	PE
SD-104CF	Glendora Drive	SD-1059B To SD-1039B	106	9/5/2024	4	2	4	rausch	View Session: 69	(38.1) B - Broken - Position: 11 To 1	acq-sd-1059b-to-sd-1039b--09-10-2024--055617-2715	RCP
SD-12857	Glendora Drive	SD-1039B To SD-1287E	35	9/5/2024	0	1	1	rausch	View Session: 70		acr-sd-1039b-to-sd-1287e--09-10-2024--055700-1204	RCP
SD-144AE	Glendora Drive	SD-12C35 To SD-1447E	109	9/5/2024	5	2	5	rausch	View Session: 80	(29.5) BSV - Broken Soil Visible - Position: 5 To 7	adb-sd-12c35-to-sd-1447e--09-10-2024--060345-7484	CMP
SD-12C7D	Glendora Drive	SD-12C32 To SD-12C35	93	9/5/2024	0	0	0	rausch	View Session: 79		ada-sd-12c32-to-sd-12c35--09-10-2024--060304-8052	CMP
SD-3EC18	Grant Street	SD-3EC69 To SD-A459	182	9/4/2024	0	0	0	tv3	View Session: 35		abi-sd-3ec69-to-sd-a459--09-09-2024--085018-1110	RCP
SD-5FE61	Greenwood Avenue	NO ACCESS To SD-40F	181	8/20/2024	0	3	3	tv5	View Session: 54		ACB-NO ACCESS-To-SD-40F--09-09-2024--154809-5634	RCP
Link_26	Howe Street	SD-AD57 To SDMH 2	13	9/4/2024	0	2	2	tv5	View Session: 130		AEZ-SD-AD57-To-SDMH 2--09-09-2024--162506-533	PE
Link_33	Howe Street	SDMH 1 To SDMH 2	29	9/4/2024	0	2	2	tv5	View Session: 128		AEX-SDMH 1-To-SDMH 2--09-09-2024--162413-4579	PE
Link_41	Howe Street	SDMH 2 To SDMH 3	115	9/4/2024	0	2	2	tv5	View Session: 131		AFA-SDMH 2-To-SDMH 3--09-09-2024--162532-4054	PE
Link_73	Howe Street	SD-OBJ6277 To SDMH 2	12	9/4/2024	0	3	3	tv5	View Session: 129		AEY-SD-OBJ6277-To-SDMH 2--09-09-2024--162439-5746	PE
SD-2191	Indian Ave	SD-2555 To SD-2552A	115	8/16/2024	4	5	5	tv5	View Session: 35		ABI-SD-2555-To-SD-2552A--09-09-2024--153811-3426	RCP
SD-107F8	J Arthur Younger Freeway	SD-10FFD To OUTFALL	63	9/5/2024	0	0	0	tv3	View Session: 39		abm-sd-10ffd-to-outfall--09-09-2024--085209-4091	RCP
SD-B313	Kathryne Avenue	SD-AF85 To SD-AF82	28	9/3/2024	5	2	5	tv5	View Session: 118		AEN-SD-AF85-To-SD-AF82--09-09-2024--161937-4773	CMP

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
SD-B314	Kathryne Avenue	SD-AF82 To SD-CB59	137	9/3/2024	5	2	5	tv5	View Session: 119		AEO-SD-AF82-To-SD-CB59--09-09-2024--162005-3767	CMP
SD-B327	Kathryne Avenue	SD-AF79 To SD-AF7F	26	8/29/2024	3	2	3	rausch	View Session: 66		acn-sd-af79-to-sd-af7f--09-10-2024--055405-1916	CMP
SD-B328	Kathryne Avenue	SD-AF7F To SD-AF82	133	8/29/2024	5	2	5	rausch	View Session: 68	(0.0) BVV - Broken Void Visible - Position: 4 To 8	acp-sd-af7f-to-sd-af82--09-10-2024--055531-8796	CMP
SD-15DB8	Kingridge Drive	SD-15CBF To SD-15C59	1	8/16/2024	5	0	5	tv5	View Session: 24		AAX-SD-15CBF-To-SD-15C59--09-09-2024--153304-9329	CMP
SD-15DE6	Kingridge Drive	SD-15B30 To CB 1	101	8/28/2024	0	4	4	tv5	View Session: 76		ACX-SD-15B30-To-CB 1--09-09-2024--155905-8839	CMP
SD-15DF3	Kingridge Drive	SD-15C59 To SD-15C5C	20	8/16/2024	0	0	0	tv5	View Session: 25		AAY-SD-15C59-To-SD-15C5C--09-09-2024--153332-7293	RCP
SD-B733	Lake Street	SD-A7B4 To SD-A7B7	31	9/4/2024	0	0	0	tv3	View Session: 34		abh-sd-a7b4-to-sd-a7b7--09-09-2024--084951-7561	RCP
SD-18D04	Laurel Creek	SD-183C To OUTFALL	130	9/4/2024	0	0	0	tv3	View Session: 33		abg-sd-183c-to-outfall--09-09-2024--084922-1628	RCP
SD-14DB8	Laurelwood Drive	SD-14A0 To ACCESS 2	77	8/27/2024	2	4	4	tv5	View Session: 75		ACW-SD-14A0-To-ACCESS 2--09-09-2024--155837-5358	CMP
SD-16B37	Laurelwood Drive	SD-14A0D To SD-14A0	57	8/27/2024	2	0	2	tv5	View Session: 74		ACV-SD-14A0D-To-SD-14A0--09-09-2024--155809-6704	CMP
SD-53D7	Maple Street	SD-74EF To SD-SDMH1	358	8/14/2024	0	3	3	tv5	View Session: 16		AAP-SD-74EF-To-SD-SDMH1--09-09-2024--152856-4461	RCP
SD-703F	Maple Street	SD-759A To SD-74C2	303	8/14/2024	0	0	0	tv5	View Session: 17		AAQ-SD-759A-To-SD-74C2--09-09-2024--152929-6488	RCP
SD-409e7	Mason Lane	SD-409E1 To OUTFALL	10	9/4/2024	4	0	4	tv3	View Session: 36	(4.5) JSL - Joint Separated Large	abj-sd-409e1-to-outfall--09-09-2024--085049-4765	VCP
SD-1A91D	Monte Diablo Ave	SD-2429 To SD-2426	255	8/16/2024	5	4	5	tv5	View Session: 38		ABL-SD-2429-To-SD-2426--09-09-2024--153937-4942	RCP
SD-2413	Monte Diablo Ave	SD-242CA To SD-242C	295	8/16/2024	4	5	5	tv5	View Session: 39		ABM-SD-242CA-To-SD-242C--09-09-2024--154013-7685	RCP
SD-B319	Newbridge Avenue	SD-AF61 To SD-AF64	4	9/4/2024	0	5	5	tv5	View Session: 132		AFB-SD-AF61-To-SD-AF64--09-09-2024--162602-7218	CMP
SD-B320	Newbridge Avenue	SD-AF73 To SD-AF70	52	8/28/2024	3	0	3	tv3	View Session: 24		aax-sd-af73-to-sd-af70--09-09-2024--084501-3767	CMP
SD-B326	Newbridge Avenue	SD-AF7C To SD-AF7F	51	8/29/2024	3	2	3	rausch	View Session: 65		acm-sd-af7c-to-sd-af7f--09-10-2024--055324-7870	CMP
SD-B41F	Newbridge Avenue	SD-AD57 To SDMH 1	27	9/4/2024	0	2	2	tv5	View Session: 125		AEU-SD-AD57-To-SDMH 1--09-09-2024--162252-707	PE
Link_74	Newbridge Avenue	SD-OBJ6278A To SDMH 1	33	9/4/2024	0	0	0	tv5	View Session: 126		AEV-SD-OBJ6278A-To-SDMH 1--09-09-2024--162319-7470	PE
Link_76	Newbridge Avenue	SD-OBJ6278 To SDMH 1	37	9/4/2024	0	0	0	tv5	View Session: 127		AEW-SD-OBJ6278-To-SDMH 1--09-09-2024--162346-524	PE
SD-15DA6	Newlands Avenue	SD-15CCE To SD-15CCB	29	8/14/2024	0	3	3	rausch	View Session: 12		aal-sd-15cce-to-sd-15ccb--09-10-2024--051735-9268	RCP
SD-15DA8	Newlands Avenue	SD-15CD4 To SD-15CCB	156	8/14/2024	3	0	3	rausch	View Session: 10		aaj-sd-15cd4-to-sd-15ccb--09-10-2024--051608-5675	CMP
SD-15D70	Newlands Avenue	SD-15CB9 To SD-15B09	179	8/13/2024	3	4	4	rausch	View Session: 5	(80.2) LD - Line Down , (179.0) SCP - Surface Damage Corrosion - Position: 4 To 8 - Cont Def: F01	aae-sd-15cb9-to-sd-15b09--09-10-2024--051234-6082	CMP
SD-2271	North Amphlett Boulevard	SD-24DA To SD-24DD	34	8/16/2024	0	2	2	tv5	View Session: 33		ABG-SD-24DA-To-SD-24DD--09-09-2024--153716-5929	RCP
SD-22BD	North Kingston Street	SD-244A To SD-244D	302	8/19/2024	0	0	0	tv5	View Session: 40		ABN-SD-244A-To-SD-244D--09-09-2024--154050-2254	RCP
SD-O4176	North Quebec Street	SD-3F675 To SD-5172	105	8/19/2024	3	0	3	tv5	View Session: 43		ABQ-SD-3F675-To-SD-5172--09-09-2024--154232-1342	PE

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
SD-239A	North Quebec Street	SD-246B To SD-246E	241	8/19/2024	0	2	2	tv5	View Session: 42		ABP-SD-246B-To-SD-246E--09-09-2024--154154-9215	RCP
SD-239B	North Quebec Street	SD-2468 To SD-246B	256	8/19/2024	0	2	2	tv5	View Session: 41		ABO-SD-2468-To-SD-246B--09-09-2024--154122-8310	RCP
SD-5C12	Oak Valley Road	SD-743E To SD-70B2	182	9/4/2024	5	0	5	tv5	View Session: 135		AFE-SD-743E-To-SD-70B2--09-09-2024--162725-9900	CMP
SD-5C13	Oak Valley Road	SD-743B To SD-743E	20	9/4/2024	5	2	5	tv5	View Session: 136		AFF-SD-743B-To-SD-743E--09-09-2024--162756-9291	CMP
SD-12A18	Oakwood Drive	SD-1602F To SD-16032	114	8/20/2024	0	0	0	tv3	View Session: 6		aaf-sd-1602f-to-sd-16032--09-09-2024--083630-5085	CMP
SD-B310	Ocean View Avenue	SD-AF8E To SD-AF8B	26	8/29/2024	5	0	5	rausch	View Session: 58		acf-sd-af8e-to-sd-af8b--09-10-2024--054836-3431	CMP
SD-B311	Ocean View Avenue	SD-AF8B To SD-AF88	113	8/29/2024	5	2	5	rausch	View Session: 59		acg-sd-af8b-to-sd-af88--09-10-2024--054915-5768	CMP
SD-B3A8	Ocean View Avenue	SD-AE2C To SD-D37A	59	8/28/2024	0	0	0	tv3	View Session: 27		aba-sd-ae2c-to-sd-d37a--09-09-2024--084632-9693	RCP
SD-B29F	Ocean View Avenue	SD-B0C3 To SD-B0C6	26	8/29/2024	3	4	4	rausch	View Session: 61		aci-sd-b0c3-to-sd-b0c6--09-10-2024--055038-2984	CMP
SD-B2A0	Ocean View Avenue	SD-B0C6 To SD-B084	18	8/29/2024	3	4	4	rausch	View Session: 62	(0.0) DSF - Deposits Settled Fine - Position: 6 - Cont Def: S02 Remark: DEBRIS/SILT	acj-sd-b0c6-to-sd-b084--09-10-2024--055119-5709	CMP
SD-B2A1	Ocean View Avenue	SD-B084 To SD-AF8B	20	8/29/2024	5	2	5	rausch	View Session: 64	(1.0) BSV - Broken Soil Visible - Position: 4	acl-sd-b084-to-sd-af8b--09-10-2024--055241-1612	CMP
SD-B2A2	Ocean View Avenue	SD-B0C9 To SD-B0C6	44	8/29/2024	4	2	4	rausch	View Session: 63	(42.7) B - Broken - Position: 1 To 5	ack-sd-b0c9-to-sd-b0c6--09-10-2024--055200-1544	CMP
SD-O201	Ochoa Lane	SD-MH3 To SD-4478D	32	9/3/2024	0	0	0	tv5	View Session: 113		AEI-SD-MH3-To-SD-4478D--09-09-2024--161711-2976	PE
CCTV_SD-514E1	Ottawa Street	SD-5188 To SD-51CA	152	8/19/2024	5	2	5	tv5	View Session: 44		ABR-SD-5188-To-SD-51CA--09-09-2024--154303-1356	PE
CCTV_SD-514E	Ottawa Street	SD-51CA To SD-520A	140	8/19/2024	0	2	2	tv5	View Session: 45		ABS-SD-51CA-To-SD-520A--09-09-2024--154334-521	PE
SD-12A17	Overland Drive	SD-16032 To SD-16056A	99	8/20/2024	0	0	0	tv3	View Session: 8		aah-sd-16032-to-sd-16056a--09-09-2024--083730-3284	RCP
SD-12A19	Overland Drive	SD-1612B To SD-1618B	19	8/20/2024	0	4	4	tv3	View Session: 9	(19.0) DSZ - Deposits Settled Other - Position: 4 To 8 - Cont Def: F01 Remark: HEAVY DEBRIS/ROCKS	aai-sd-1612b-to-sd-1618b--09-09-2024--083758-9843	CMP
SD-12AA8	Overland Drive	SD-16056A To SD-16056	189	8/20/2024	0	3	3	tv3	View Session: 7		aag-sd-16056a-to-sd-16056--09-09-2024--083659-9299	CMP
SD-10903	Parkside Way	SD-10E9E To SD-10D18	29	9/5/2024	0	2	2	rausch	View Session: 77		acy-sd-10e9e-to-sd-10d18--09-10-2024--060147-8570	RCP
SD-10BF9	Parkside Way	SD-10D6F To SD-10D72	35	9/5/2024	0	0	0	rausch	View Session: 74		acv-sd-10d6f-to-sd-10d72--09-10-2024--055944-2743	RCP
SD-10BFA	Parkside Way	SD-10D6FA To SD-10D6F	15	9/5/2024	4	0	4	rausch	View Session: 73	(10.7) B - Broken - Position: 12 To 8	acu-sd-10d6fa-to-sd-10d6f--09-10-2024--055905-8788	RCP
SD-5BFD	Parrott Drive	SD-7438 To SD-70A6	48	9/4/2024	3	3	3	tv5	View Session: 139		AFI-SD-7438-To-SD-70A6--09-09-2024--162920-1989	RCP
SD-5BFE	Parrott Drive	SD-70A6 To SD-70A6A	101	9/4/2024	3	2	3	tv5	View Session: 141		AFK-SD-70A6-To-SD-70A6A--09-09-2024--163016-1687	CMP
SD-5C03	Parrott Drive	SD-70A9 To SD-70A6	33	9/4/2024	5	2	5	tv5	View Session: 140		AFJ-SD-70A9-To-SD-70A6--09-09-2024--162949-6843	CMP
SD-5BDE	Parrott Drive	SD-625B To SD-6258	32	8/27/2024	0	0	0	tv5	View Session: 66		ACN-SD-625B-To-SD-6258--09-09-2024--155425-912	RCP
SD-5BDF	Parrott Drive	SD-6258 To SD-6255	91	8/27/2024	2	5	5	tv5	View Session: 67		ACO-SD-6258-To-SD-6255--09-09-2024--155452-3674	RCP
SD-5F83	Parrott Drive	SD-764B To SD-7648	301	8/13/2024	0	0	0	tv5	View Session: 9		AAI-SD-764B-To-SD-7648--09-09-2024--152516-4937	PE

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
SD-183FD	Pasadena Drive	SD-1828 To SD-1832B	245	8/23/2024	5	2	5	tv5	View Session: 56		ACD-SD-1828-To-SD-1832B--09-09-2024--154909-7992	RCP
SD-18408	Pasadena Drive	SD-183CA To SD-18328	20	8/26/2024	0	2	2	rausch	View Session: 34		abh-sd-183ca-to-sd-18328--09-10-2024--053232-1731	RCP
SD-1840A	Pasadena Drive	SD-18325 To SD-18328	25	8/26/2024	0	0	0	rausch	View Session: 33		abg-sd-18325-to-sd-18328--09-10-2024--053153-6710	RCP
SD-1840B	Pasadena Drive	SD-1838B To SD-1832B	23	8/26/2024	0	3	3	rausch	View Session: 23		aaw-sd-1838b-to-sd-1832b--09-10-2024--052516-5691	RCP
SD-1840C	Pasadena Drive	SD-1839A To SD-18331	21	8/23/2024	0	2	2	tv5	View Session: 59		ACG-SD-1839A-To-SD-18331--09-09-2024--155052-7154	RCP
SD-17FF7	Pasadena Drive	SD-189C9 To SD-18331	17	8/27/2024	0	3	3	tv5	View Session: 72		ACT-SD-189C9-To-SD-18331--09-09-2024--155715-3087	RCP
SD-18CEC	Pasadena Drive	SD-18D4E To SD-1839A	289	8/23/2024	2	3	3	tv5	View Session: 60		ACH-SD-18D4E-To-SD-1839A--09-09-2024--155120-7017	RCP
SD-18C87	Pasadena Drive	SD-18331 To SD-19313	510	8/23/2024	5	2	5	tv5	View Session: 58		ACF-SD-18331-To-SD-19313--09-09-2024--155013-1313	RCP
SD-B2F8	Patricia Avenue	SD-AFD6 To SD-2F8ED	13	9/4/2024	3	0	3	tv5	View Session: 124		AET-SD-AFD6-To-SD-2F8ED--09-09-2024--162226-7869	CMP
SD-2F98C	Patricia Avenue	SD-2F8ED To SD-AFD9	11	9/4/2024	0	0	0	tv5	View Session: 123		AES-SD-2F8ED-To-SD-AFD9--09-09-2024--162159-4765	RCP
SD-2243	Peninsula Ave	SD-28D0 To SD-28D3	69	8/16/2024	3	5	5	tv5	View Session: 34		ABH-SD-28D0-To-SD-28D3--09-09-2024--153742-5671	RCP
SD-5CA3	Polhemus Road	SD-6225 To SD-62FA	79	8/28/2024	3	3	3	tv5	View Session: 85		ADG-SD-6225-To-SD-62FA--09-09-2024--160334-9387	CMP
SD-5CAD	Polhemus Road	SD-622B To SD-62FD	71	8/28/2024	5	3	5	tv5	View Session: 86		ADH-SD-622B-To-SD-62FD--09-09-2024--160404-8910	CMP
SD-18413	San Miguel Avenue	SD-1838E To SD-1838B	28	8/26/2024	0	2	2	rausch	View Session: 22		aav-sd-1838e-to-sd-1838b--09-10-2024--052438-7036	RCP
SD-18414	San Miguel Avenue	SD-18334 To SD-1838B	245	8/26/2024	3	4	4	rausch	View Session: 21	(6.5) LL - Line Left	aau-sd-18334-to-sd-1838b--09-10-2024--052355-6518	RCP
SD-1841F	San Miguel Avenue	SD-18385 To SD-1838B	17	8/26/2024	4	5	5	rausch	View Session: 20	(16.4) DSF - Deposits Settled Fine - Position: 6 - Cont Def: F02 Remark: MUD/DEBRIS	aat-sd-18385-to-sd-1838b--09-10-2024--052315-402	RCP
SD-183E2	San Miguel Avenue	SD-18334 To SD-18385	5	8/26/2024	0	5	5	rausch	View Session: 18	(0.0) DSF - Deposits Settled Fine - Position: 3 To 9 Remark: MUD/DEBRIS	aar-sd-18334-to-sd-18385--09-10-2024--052156-5124	RCP
SD-18420	San Miguel Avenue	SD-18388 To SD-18334	3	8/26/2024	0	4	4	rausch	View Session: 17	0.0) DSF - Deposits Settled Fine - Position: 4 To 8 Remark: MUD/DEBRIS	aaq-sd-18388-to-sd-18334--09-10-2024--052117-6759	RCP
SD-183FF	Santa Clara Way	SD-1831F To SD-18322	33	8/27/2024	0	0	0	rausch	View Session: 44		abr-sd-1831f-to-sd-18322--09-10-2024--053917-9635	RCP
SD-18400	Santa Clara Way	SD-183C4 To SD-18322	38	8/27/2024	0	0	0	rausch	View Session: 38		abl-sd-183c4-to-sd-18322--09-10-2024--053513-8708	RCP
SD-18401	Santa Clara Way	SD-18310 To SD-183C4	83	8/27/2024	0	2	2	rausch	View Session: 39		abm-sd-18310-to-sd-183c4--09-10-2024--053552-6909	RCP
SD-18402	Santa Clara Way	SD-183C1 To SD-1831F	27	8/27/2024	0	3	3	rausch	View Session: 41		abo-sd-183c1-to-sd-1831f--09-10-2024--053718-3739	RCP
SD-18403	Santa Clara Way	SD-1831C To SD-1831F	15	8/27/2024	0	3	3	rausch	View Session: 43		abq-sd-1831c-to-sd-1831f--09-10-2024--053837-7244	RCP
SD-18405	Santa Clara Way	SD-183BB To SD-1831F	3	8/27/2024	2	0	2	rausch	View Session: 42		abp-sd-183bb-to-sd-1831f--09-10-2024--053800-1311	VCP
SD-18406	Santa Clara Way	SD-183BE To SD-183BB	25	8/27/2024	4	3	4	rausch	View Session: 45	(1.5) B - Broken - Position: 7 To 11	abs-sd-183be-to-sd-183bb--09-10-2024--053955-8197	RCP
SD-183EE	Santa Clara Way	SD-18313 To SD-18310	21	8/27/2024	0	3	3	rausch	View Session: 49		abw-sd-18313-to-sd-18310--09-10-2024--054233-3332	RCP
CCTV_1831C-183BE	Santa Clara Way	SD-1831C To SD-183BE	5	8/26/2024	0	0	0	rausch	View Session: 37		abk-sd-1831c-to-sd-183be--09-10-2024--053436-5078	RCP

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
SD-2E316	Saratoga Drive	SD-2E316 To SD-2D365	236	8/30/2024	0	3	3	tv5	View Session: 97		ADS-SD-2E316-To-SD-2D365--09-09-2024--160926-6548	CMP
SD-2E71D	Saratoga Drive	SD-2D265 To END OF PIPE	113	8/30/2024	0	3	3	tv5	View Session: 98		ADT-SD-2D265-To-END OF PIPE--09-09-2024--160958-3442	CMP
SD-2E304	Saratoga Drive	SD-2E012 To SD-2EE03	206	8/29/2024	4	2	4	tv5	View Session: 90		ADL-SD-2E012-To-SD-2EE03--09-09-2024--160600-6847	CMP
SD-2E312	Saratoga Drive	SD-2E00F To SD-2E00C	206	8/29/2024	0	2	2	tv5	View Session: 91		ADM-SD-2E00F-To-SD-2E00C--09-09-2024--160632-4691	CMP
SD-2E313	Saratoga Drive	SD-2E00C To SD-2E009	59	8/29/2024	0	3	3	tv5	View Session: 93		ADO-SD-2E00C-To-SD-2E009--09-09-2024--160733-2081	CMP
SD-2E314	Saratoga Drive	SD-2E009 To SD-2E006	94	8/30/2024	0	5	5	tv5	View Session: 95		ADQ-SD-2E009-To-SD-2E006--09-09-2024--160830-9809	CMP
SD-2E315	Saratoga Drive	SD-2E006 To SD-2E000	49	8/30/2024	0	4	4	tv5	View Session: 96		ADR-SD-2E006-To-SD-2E000--09-09-2024--160859-5073	CMP
SD-2E717	Saratoga Drive	SD-2FFC2 To SD-2DFFD	113	8/29/2024	5	3	5	tv5	View Session: 89		ADK-SD-2FFC2-To-SD-2DFFD--09-09-2024--160531-8273	CMP
SD-2E30A	Saratoga Drive	SD-2DF87 To SD-2DFFD	99	8/30/2024	0	3	3	tv5	View Session: 101		ADW-SD-2DF87-To-SD-2DFFD--09-09-2024--161131-6770	CMP
SD-2E30B	Saratoga Entrance	SD-2DF81 To SD-2DF87	110	8/30/2024	0	3	3	tv5	View Session: 100		ADV-SD-2DF81-To-SD-2DF87--09-09-2024--161102-5200	CMP
Link_71	Seville Way	SD-7576 To SD-7570	227	8/14/2024	0	0	0	tv5	View Session: 12		AAL-SD-7576-To-SD-7570--09-09-2024--152650-1885	PE
SD-14494	Shasta Drive	SD-1452B To SD-1447B	111	8/28/2024	0	2	2	tv5	View Session: 80		ADB-SD-1452B-To-SD-1447B--09-09-2024--160108-1924	RCP
SD-14497	Shasta Drive	SD-14531 To SD-14475	112	8/28/2024	0	2	2	tv5	View Session: 82		ADD-SD-14531-To-SD-14475--09-09-2024--160207-8072	RCP
SD-14498	Shasta Drive	SD-14475 To SD-14478	72	8/28/2024	0	0	0	tv5	View Session: 83		ADE-SD-14475-To-SD-14478--09-09-2024--160236-2992	RCP
SD-1449A	Shasta Drive	SD-1447B To SD-14478	58	8/28/2024	4	0	4	tv5	View Session: 81		ADC-SD-1447B-To-SD-14478--09-09-2024--160138-9787	RCP
SD-1449B	Shasta Drive	SD-14478 To SD-14528	229	8/28/2024	0	1	1	tv5	View Session: 84		ADF-SD-14478-To-SD-14528--09-09-2024--160303-3510	RCP
SD-B315	Shoreview Avenue	SD-CB59 To SD-AEF8	39	9/5/2024	5	2	5	tv5	View Session: 143		AFM-SD-CB59-To-SD-AEF8--09-09-2024--163117-1353	CMP
SD-BA69	Shoreview Avenue	SD-AEF8 To SD-B189	181	9/5/2024	5	2	5	tv5	View Session: 142		AFL-SD-AEF8-To-SD-B189--09-09-2024--163046-891	CMP
SD-BA6A	Shoreview Avenue	SD-B189 To SD-B174	87	9/5/2024	5	3	5	tv5	View Session: 144		AFN-SD-B189-To-SD-B174--09-09-2024--163147-3244	RCP
SD-B284	Shoreview Avenue	SD-B159 To SD-B15C	39	8/20/2024	0	0	0	tv3	View Session: 13		aam-sd-b159-to-sd-b15c--09-09-2024--083952-6572	RCP
SD-B287	Shoreview Avenue	SD-B0A5 To SD-B0A2	23	9/5/2024	0	2	2	tv5	View Session: 147		AFQ-SD-B0A5-To-SD-B0A2--09-09-2024--163313-8150	RCP
SD-B288	Shoreview Avenue	SD-B0A2A To SD-B096	135	9/5/2024	0	3	3	tv5	View Session: 149		AFS-SD-B0A2A-To-SD-B096--09-09-2024--163408-674	RCP
SD-B9DE	Shoreview Avenue	SD-C2E2 To SD-C30B	8	8/20/2024	0	0	0	tv3	View Session: 10		aaj-sd-c2e2-to-sd-c30b--09-09-2024--083827-5167	CMP
SD-B2AB	Shoreview Avenue	SD-BO63 To SD-B16B	135	9/5/2024	0	3	3	tv5	View Session: 145		AFO-SD-BO63-To-SD-B16B--09-09-2024--163217-5152	RCP
SD-B2AA	Shoreview Avenue	SD-B066 To SD-B063	30	9/5/2024	0	4	4	tv5	View Session: 146		AFP-SD-B066-To-SD-B063--09-09-2024--163246-4626	RCP
SD-B2EA	South Bayshore Boulevard	SD-B006 To SD-O5468	77	9/4/2024	0	5	5	tv5	View Session: 122		AER-SD-B006-To-SD-O5468--09-09-2024--162131-2834	RCP
SD-B26D	South Bayshore Boulevard	SD-B0FF To SD-B0FC	28	9/4/2024	0	5	5	tv5	View Session: 121		AEQ-SD-B0FF-To-SD-B0FC--09-09-2024--162104-672	RCP
SD-B998	South Eldorado Street	SD-BEAA To SD-BDE4	229	8/28/2024	0	4	4	tv3	View Session: 16	(6.0) LR - Line Right	aap-sd-beaa-to-sd-bde4--09-09-2024--084118-1497	PE

Pipe ID	Location	CCTV Reach	CCTV Length (ft)	CCTV Date	NASSCO Score Structural	NASSCO Score O&M	Overall Rating	CCTV Group	CCTV Report ID	CCTV Comments	CCTV Report ID	Material*
SD-157	State Street	SD-7B4 To SD-7E1A	142	8/20/2024	0	2	2	tv5	View Session: 51		ABY-SD-7B4-To-SD-7E1A--09-09-2024--154635-2438	RCP
Link_67	Sunnybrae Boulevard	SD-AD8A To SD-O2292	33	9/4/2024	5	3	5	tv5	View Session: 133		AFC-SD-AD8A-To-SD-O2292--09-09-2024--162629-898	RCP
Link_68	Sunnybrae Boulevard	SD-O2292 To SD-ACB8	41	9/4/2024	4	3	4	tv5	View Session: 134		AFD-SD-O2292-To-SD-ACB8--09-09-2024--162658-3815	RCP
SD-15D75	Viewridge Drive	SD-3F4F7 To ACCESS POINT	253	8/28/2024	5	5	5	tv5	View Session: 78		ACZ-SD-3F4F7-To-ACCESS POINT--09-09-2024--160002-4178	CMP
SD-14D	Villa Terrace	SD-7B1 To SD-7B4	358	8/20/2024	0	2	2	tv5	View Session: 52		ABZ-SD-7B1-To-SD-7B4--09-09-2024--154703-7057	RCP
SD-42952	W 20th Avenue	SD-42978 To SD-4295F	64	9/4/2024	0	4	4	tv3	View Session: 31	(7.3) DSZ - Deposits Settled Other - Position: 4 To 8 - Cont Def: S01 Remark: HEAVY DEBRIS/ROCK/DIRT	abe-sd-42978-to-sd-4295f--09-09-2024--084823-2881	RCP
SD-42953	W 20th Avenue	SD-42979 To SD-42978	68	9/4/2024	0	4	4	tv3	View Session: 30	(15.9) DSZ - Deposits Settled Other - Position: 4 To 8 Remark: DIRT AND ROCK	abd-sd-42979-to-sd-42978--09-09-2024--084755-3787	RCP
SD-42954	W 20th Avenue	SD-4297B To SD-42979	5	9/4/2024	0	3	3	tv3	View Session: 28		abb-sd-4297b-to-sd-42979--09-09-2024--084659-3576	PE
SD-42957	W 20th Avenue	SD-4297A To SD-42979	50	9/4/2024	0	3	3	tv3	View Session: 29	(50.0) DSZ - Deposits Settled Other - Position: 4 To 8 - Cont Def: F01 Remark: HEAVY DEBRIS/ROCK/DIRT	abc-sd-4297a-to-sd-42979--09-09-2024--084726-1566	RCP
SD-2E114	Wayne Way	SD-2FFCF To SD-2FFCE	104	9/3/2024	0	2	2	tv5	View Session: 105		AEA-SD-2FFCF-To-SD-2FFCE--09-09-2024--161329-1064	CMP
SD-5F81	West 3rd Avenue	SD-7648 To SD-7645	371	8/13/2024	0	2	2	tv5	View Session: 10		AAJ-SD-7648-To-SD-7645--09-09-2024--152547-6062	PE
SD-5C14	Wildwood Drive	SD-70AF To SD-743B	40	9/4/2024	3	3	3	tv5	View Session: 137		AFG-SD-70AF-To-SD-743B--09-09-2024--162824-2510	CMP
CCTV_OBJ6292-70AF	Wildwood Drive	SD-OBJ6292 To SD-70AF	24	9/4/2024	0	4	4	tv5	View Session: 138		AFH-SD-OBJ6292-To-SD-70AF--09-09-2024--162854-78	PVC
SD-15DA4	Wooster Avenue	SD-15CE9 To SD-15CE6	2	8/16/2024	0	5	5	tv5	View Session: 27		ABA-SD-15CE9-To-SD-15CE6--09-09-2024--153425-1391	RCP
SD-15DA9	Wooster Avenue	SD-15CD4 To SD-15CD1	14	8/14/2024	3	0	3	rausch	View Session: 9		aai-sd-15cd4-to-sd-15cd1--09-10-2024--051529-8971	CMP
SD-41E80	Wooster Avenue	SD-15CE6 To SD-41E81	16	8/16/2024	0	2	2	tv5	View Session: 28		ABB-SD-15CE6-To-SD-41E81--09-09-2024--153452-9468	PE
SD-2E15C	Yates Way	SD-2FFD2 To SD-2FFD4	34	9/3/2024	3	4	4	tv5	View Session: 106		AEB-SD-2FFD2-To-SD-2FFD4--09-09-2024--161358-7172	CMP
SD-2E14F	Yates Way	SD-2FFD4 To SD-2FFD3	74	9/3/2024	3	0	3	tv5	View Session: 110		AEF-SD-2FFD4-To-SD-2FFD3--09-09-2024--161550-3652	PE
SD-514F-2	York Ave	UNKNOWN To SD-52F1	50	8/20/2024	0	0	0	tv5	View Session: 49		ABW-UNKNOWN-To-SD-52F1--09-09-2024--154536-1708	PE
SD-514F	York Ave	NO ACCESS POINT To SD-520A	156	8/19/2024	0	2	2	tv5	View Session: 46		ABT-NO ACCESS POINT-To-SD-520A--09-09-2024--154403-3832	PE
SD-514F-4	York Ave	SD-523B To SD-52AE	263	8/19/2024	2	2	2	tv5	View Session: 48		ABV-SD-523B -To-SD-52AE--09-09-2024--154503-281	PE
SD-514F-3	York Ave	SD-523B To SD-52AE	263	8/19/2024	2	2	2	tv5	View Session: 48		ABV-SD-523B -To-SD-52AE--09-09-2024--154503-281	PE
SD-514F-5	York Ave	SD-520A To SD-523B	255	8/19/2024	0	2	2	tv5	View Session: 47		ABU-SD-520A-To-SD-523B--09-09-2024--154432-87	PE

*Tabulated material types are reported based on CCTV inspection – these may differ from GIS data (e.g. where repairs or replacement have occurred)

Appendix D: Channel and Outfall Conditions

Laurel Creek



Node ID: N/A (Appears to be a private system outfall from the development north of the creek)

Location: Left Bank, 210' upstream of El Camino Real (RAS Station 7700)

Material: Unknown pipe material with metal flap gate

Condition: Metal flap gate is broken and requires replacement



Location: Downstream end of El Camino Real/Railroad Box culverts (RAS Station 7140)

Material/Type: End of existing concrete box culvert; toe of bank shows signs of erosion as the channel bed erodes and downcuts; bottom of culvert foundations is exposed

Condition: No risk of failure, but existing culvert requires upsizing. Bed has experienced downcutting, so deepening the existing crossing without changing its width may be a possible remedy. Bed may continue to scour without sufficient protection and continued lack of sediment supply from upstream watershed development and Laurel Creek dams.





Node ID: OF-LRL28 (MIKE+ Model, Upstream end of Culvert)

Location: Upstream end of George Hall Elementary culvert (RAS Station 7700)

Type: Concrete arch and double barrel pipe culverts

Condition: Trash rack bars are missing or bent







Location: Laurel Creek at 39th Ave Culvert outfall (RAS Station 3994-3971)

Type: Concrete banks, heavily vegetated bed

Condition: Vegetation requires management to reduce roughness and risk of flooding upstream



Node ID: OF-LRL38 (MIKE+ Model)

Location: Downstream of E 40th Ave (RAS Station 3320)

Type: Formed concrete slope at dual 4'-diameter pipe outfall

Condition: Concrete side slope is cracked and failing



Location: Upstream of Laurel Creek Drive (RAS Station 14273.78)

Type: Formed concrete U-shaped channel matches radius of culvert

Condition: Trash bars are missing or have been removed, but there is no apparent evidence of debris racking at this location

CIP: This culvert has been identified as undersized. The proposed CIP is medium priority

East Laurel Creek



Location: East Laurel Creek (near RAS Station 728.9438)

Type: Rectangular channel with hard walls and soil/vegetated bed

Condition: Concrete side slope is cracked and failing

Looking downstream at left bank



Looking upstream at bed transition



Location: East Laurel Creek (downstream of RAS Station 535.9524)

Type: Hardened channel banks with hardened bed transitioning to gravel/sediment bed

Condition: Banks are undercutting, and the creek bed has incised at the end of the hardened bed. Potential reasons include the dam upstream capturing sediment and interrupting natural supply in this reach of the channel



Upstream end of Laurelwood culvert



View of Channel from upstream of culvert



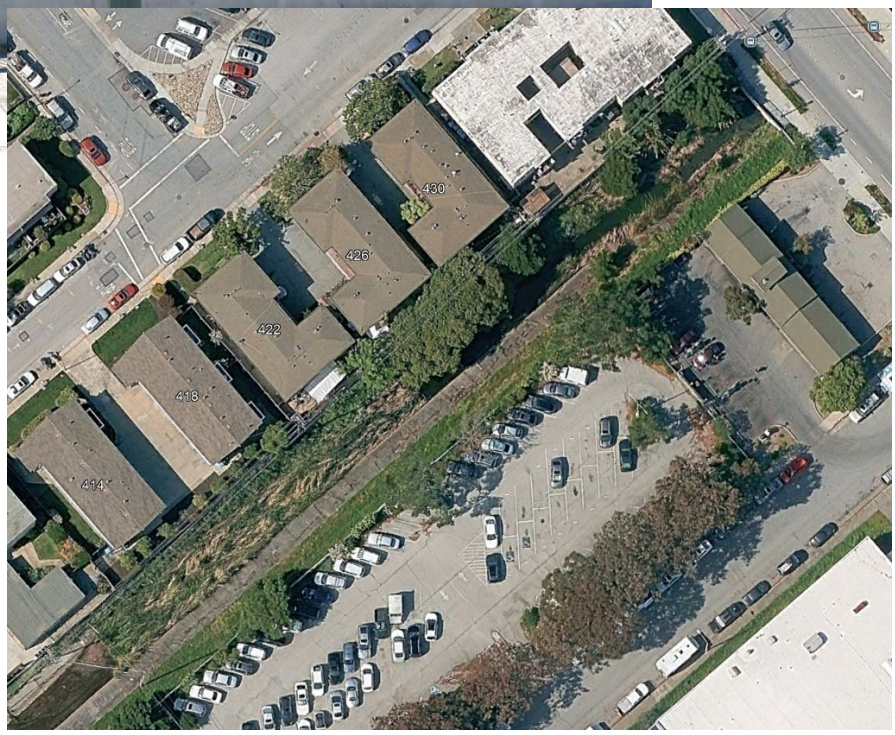
Location: East Laurel Creek at Laurelwood Drive (RAS Station 226)

Type: Hardened right channel bank with rocky bed; CMP culvert with triangular debris rack, exiting concrete headwall at an extreme angle eastward

Condition: CMP is aged but not failing. Stairs for maintenance access, trash rack, undersized culvert, and abrupt change of direction create unfavorable hydraulic conditions

16th Avenue Channel





Location: 16th Avenue Channel, looking upstream from S Delaware Street (RAS Station 7024)

Type: Trapezoidal channel, vegetated

Condition: Vegetation is extremely dense and requires management to ensure pipe systems upstream of the railroad are able to drain

Appendix E: Pump Station Site Visit Forms

Pump Station: 4000 Pacific Pump Station
Location: 4000 Pacific Blvd.
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present): Noel Padilla

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description: Stormwater Pump Station

Pump Info:

#1
Make: Peerless Pump | Model: 14MFAH | Capacity: 3300 GPM at 26 TDH | RPM: 1180 RPM
Serial #: 256517 | Date: 4/22/2025
Type: Axial | Date Installed: 1988 | Date Last Serviced:
Vibration During Operation: No | Seal Leakage Present: ☐ Yes ☑ No

#2
Make: Peerless Pump | Model: 14MFAH | Capacity: 3300 GPM at 26 TDH | RPM: 1180 RPM
Serial #: 256518 | Date: 4/22/2025
Type: Axial | Date Installed: 1988 | Date Last Serviced: 4/3/2025
Vibration During Operation: No | Seal Leakage Present: ☑ Yes ☑ No

#3
Make: Flygt | Model: CP 3085 | Size: 4" | RPM:
Serial #: Not accessible | Date: 4/22/2025
Type: Submersible sump pump | Date Installed: 1988 | Date Last Serviced:
Vibration During Operation: No | Seal Leakage Present: ☐ Yes ☑ No

Controls

Level control type: Hydroranger 200, Auto-alternating

Backup Level Control: Floats High/Low and Alarm only Control Pumps? ☐ Yes ☑ No

Pump control type (PLC, Analog, etc.):

Control Levels:

		On:	Off:	High Alarm:	Low Alarm:
Pump #1					
Pump #2:		On: 5	Off: 2.0	High Alarm:	Low Alarm:
Jockey Pump #3:		On: 3	Off: 2.0	High Alarm:	Low Alarm:

*Low flow pump stays in rotation, same levels summer and winter, pump 1/2/3 run signal

Control Schematic/Sequence:

# of Pumps that Run at a time: 2

Control and Monitoring System

Monitoring system with real-time data? ☑ Yes ☐ No Pump fail signal

Control panels user-friendly and accessible? ☑ Yes ☐ No Power fail signal

Water level monitoring in wet well? ☐ Yes ☐ No High/low wet well level signal, dry pit float level alarm

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: 8" dia EF-1 fan Inlet and Outlet Fan? ☑ Yes ☐ No

Fan Nameplate Info:

Drywell Ventilation Description: 9" dia EF-1 fan Inlet and Outlet Fan? ☑ Yes ☐ No

Fan Nameplate Info:

Control Room Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 16" PP SD force main

Discharge/inlet pipe free from bloackage? yes

Cathodic Protection?: no

Know Issues with Force Main? no

Check Valve: ☑ Yes ☐ No Type: swing Condition: fair

Isolation Valves: ☑ Yes ☐ No Condition: fair

Bypass Pumping Capability?: ☐ Yes ☑ No

Site Items (hose bib, eye wash, BFP, etc.) BFP

Electrical System

Components in good condition (panel, wiring, etc.)? ☑ Yes ☐ No
Signs of overheating or shorting? ☑ Yes ☐ No
Connection for Portable Backup Power? ☑ Yes ☐ No

Backup Generator No onsite backup generator

Make:	Model:	Size:
Serial #:	Nameplate Info:	Date:
Fuel Type:	Fuel Tank Size:	
ATS:		
Known Issues:		

Structural Condition

Foundation condition? fair
Visible water infiltration? ☐ Yes ☑ No
Structural components sealed? ☑ Yes ☐ No
Wetwell sealed from electrical room? ☑ Yes ☐ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☑ Yes ☐ No
Lighting for night operation? ☑ Yes ☐ No
Emergency stop system? ☑ Yes ☐ No
Signs of tampering? ☐ Yes ☑ No
Clear exit routes? ☑ Yes ☐ No
Evident safety issues? No

Environmental and Drainage

Flood Potential / Site Drainage: Significant flooding occurred December 2021, motors for axial pumps were replaced due to water damage
Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☐ Yes ☑ No
Room available for additional pumps? ☐ Yes ☑ No
Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☑ Yes ☐ No — evidence of corrosion on stairs and openings

Notes and Operator Comments:
Gets clogged easily because no trash rack, only rack in wetwell intake. O&M clears debris before and after storm, no able to do so during. If clogged during a storm, O&M uses submersible pump. There are floats for high and low water levels, but no automatic kick-on. O&M would like permanent standby generator and automatic kick-on ability when high float alarms. W/IN 30 min of fail, water at 2nd level. No site security issues noted.

Sketch:

Pump Station: Hillsdale
Location: 3397 Pacific Boulevard
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present): Noel Padilla

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description: Stormwater Pump Station

Pump Info:

#1	Make: Peerless Pump	Model:	Not accessible	Capacity:		RPM: 1,160 RPM
	Serial #: Not accessible					Date: 4/22/2025
	Type: Axial		Date Installed:	1964	Date Last Serviced:	3/13/2025
	Vibration During Operation:	no		Seal Leakage Present:	☑ Yes	☑ No
#2	Make: Peerless Pump	Model:	Not accessible	Capacity:		RPM: 1,160 RPM
	Serial #: Not accessible					Date: 4/22/2025
	Type: Axial		Date Installed:	1964	Date Last Serviced:	3/13/2025
	Vibration During Operation:	no		Seal Leakage Present:	☐ Yes	☑ No

Controls

Level control type: Hydroranger 200

Backup Level Control: Float alarm only Control Pumps? ☐ Yes ☑ No

Pump control type (PLC, Analog, etc.): Alarms on RTU

Control Levels: Pump #1 On: 4 Off: .5 High Alarm: Low Alarm:

Power fail, high alarm, low alarm, pump 1 run, pump 2 run — Pump #2: On: 5 Off: .5 High Alarm: Low Alarm:

Control Schematic/Sequence:

# of Pumps that Run at a time: 2

Control and Monitoring System

Monitoring system with real-time data? ☑ Yes ☐ No

Control panels user-friendly and accessible? ☑ Yes ☐ No

Water level monitoring in wet well? ☑ Yes ☐ No

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: exhaust only Inlet and Outlet Fan? ☑ Yes ☐ No

Fan Nameplate Info:

Drywell Ventilation Description: Louvers Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Control Room Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 20" AC force main

Discharge/inlet pipe free from bloackage? yes

Cathodic Protection?: no

Know Issues with Force Main? no

Check Valve: ☑ Yes ☐ No Type: swing Condition:

Isolation Valves: ☑ Yes ☐ No gate valve Condition:

Bypass Pumping Capability?: ☐ Yes ☑ No

Site Items (hose bib, eye wash, BFP, etc.)

Electrical System

Components in good condition (panel, wiring, etc.)? ☐ Yes ☑ No
Signs of overheating or shorting? ☐ Yes ☑ No
Connection for Portable Backup Power? ☑ Yes ☐ No

Backup Generator No onsite backup generator

Make:	Model:	Size:
Serial #:	Nameplate Info:	Date:
Fuel Type:	Fuel Tank Size:	
ATS:		
Known Issues:		

Structural Condition

Foundation condition?
Visible water infiltration? ☐ Yes ☐ No
Structural components sealed? ☐ Yes ☐ No
Wetwell sealed from electrical room? ☐ Yes ☑ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☐ Yes ☑ No
Lighting for night operation? ☑ Yes ☐ No
Emergency stop system? ☐ Yes ☑ No
Signs of tampering? ☐ Yes ☑ No
Clear exit routes? ☑ Yes ☐ No
Evident safety issues? confined space, using CO detector

Enviromental and Drainage

Flood Potential / Site Drainage: yes potential flood risk, axial pumps and motors are located below grade
Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☐ Yes ☑ No
Room available for additional pumps? ☑ Yes ☐ No
Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☐ Yes ☑ No

Notes and Operator Comments:
Both pumps can run at same time and don't starve of water. Weir wall in wetwell. No trash rack. Pumps have suction strainer. Trash stays on upsream side of weir. Old meter panel and main disconnect is active.

Sketch:

Pump Station: Casanova
Location: 4012 Casanova Drive
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present): Noel Padilla

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description:

Pump Info:

#1	Make: Flygt	Model:	3501/715	Capacity: 11,700 GPM at 15' TDH	RPM:	505 RPM
	Serial #: 0471036				Date:	4/22/2025
	Type: Submersible		Date Installed: 2004	Date Last Serviced:		2/25/2025
	Vibration During Operation: no			Seal Leakage Present:	☑ Yes	☑ No
#2	Make: Flygt	Model:	3501/715	Capacity: 11,700 GPM at 15' TDH	RPM:	505 RPM
	Serial #: 0471037				Date:	4/22/2025
	Type: Submersible		Date Installed: 2004	Date Last Serviced:		2/25/2025
	Vibration During Operation: no			Seal Leakage Present:	☐ Yes	☐ No
#3	Make: Flygt	Model:	3501/715	Capacity: 11,700 GPM at 15' TDH	RPM:	505 RPM
	Serial #: 0471044				Date:	4/22/2025
	Type: Submersible		Date Installed: 2004	Date Last Serviced:		2/25/2025
	Vibration During Operation: no			Seal Leakage Present:	☐ Yes	☑ No
#4	Make: Flygt	Model:	3501/715	Capacity: 11,700 GPM at 15' TDH	RPM:	505 RPM
	Serial #: 0471045				Date:	4/22/2025
	Type: Submersible		Date Installed: 2004	Date Last Serviced:		2/25/2025
	Vibration During Operation: no			Seal Leakage Present:	☐ Yes	☑ No
#5	Make: Flygt	Model: Not accessible		Capacity: 200 GPM at 12 TDH	RPM:	1,740 RPM
	Serial #: Not accessible				Date:	4/22/2025
	Type: Submersible sump pump		Date Installed: 2004	Date Last Serviced:		2/25/2025
	Vibration During Operation: no			Seal Leakage Present:	☐ Yes	☑ No

Controls

Level control type: Hydroranger 200

Backup Level Control: Floats high/low — Control Pumps? ☐ Yes ☐ No

Pump control type (PLC, Analog, etc.):

Control Levels:

	On:	Off:	High Alarm:	Low Alarm:
Pump #1	5	3.5		
Pump #2:	7.5	5.3		
Pump #3:	8.3	5.3		
Pump #4:	8.7	5.3		
Pump #5:				
Pump #6:				

*high/low level alarm, pump fail alarms, trash rack clogged alarm

Control Schematic/Sequence: # of Pumps that Run at a time: 4

Control and Monitoring System

Monitoring system with real-time data? ☑ Yes ☐ No

Control panels user-friendly and accessible? ☑ Yes ☐ No

Water level monitoring in wet well? ☑ Yes ☐ No

* additional float in trash rack for trash rack area water level

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: candy cane vent — Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Drywell Ventilation Description: N/A — Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Control Room Ventilation Description: N/A — Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition:

Discharge/inlet pipe free from bloackage? yes

Cathodic Protection?: straight to creek

Know Issues with Force Main?

Check Valve: ☑ Yes ☐ No Type: swing/ball check + duckbills at discharge

Isolation Valves: ☑ Yes ☐ No Condition:

Bypass Pumping Capability?: ☑ Yes ☐ No Bypass pipe directly to creek

Site Items (hose bib, eye wash, BFP, etc.) hosebib

Electrical System

Components in good condition (panel, wiring, etc.)? ☑ Yes ☐ No
Signs of overheating or shorting? ☐ Yes ☑ No
Connection for Portable Backup Power? ☑ Yes ☐ No

Backup Generator shares backup generator with other stations

Make:	Model:	Size:
Serial #:	Nameplate Info:	Date:
Fuel Type:	Fuel Tank Size:	
ATS:		
Known Issues:		

Structural Condition

Foundation condition? fair
Visible water infiltration? ☐ Yes ☑ No
Structural components sealed? ☑ Yes ☐ No
Wetwell sealed from electrical room? ☐ Yes ☑ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☑ Yes ☐ No
Lighting for night operation? ☑ Yes ☐ No
Emergency stop system? ☐ Yes ☑ No
Signs of tampering? ☐ Yes ☑ No
Clear exit routes? ☑ Yes ☐ No
Evident safety issues?

Enviromental and Drainage

Flood Potential / Site Drainage: No flood potential, one area drain, submersible pumps

Evidence of contamination (oil/fuel spills)? ☐ Yes ☐ No

Misc. Items

Trash rack? ☑ Yes ☐ No O&M noted not difficult to clean
Room available for additional pumps? ☐ Yes ☑ No
Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☑ Yes ☐ No pipe fittings show some corrosion

Notes and Operator Comments:

O&M wants a standby generator for this site. Pump 1 & 2 VFP's replaced. VFP's set @ constant speed 79.9% FS. Wet well level not transmitted to SCADA. Summer and winter levels are different. Pumps go to junction box at side of wet well. Pump junction box 3 feet from MSB. Conduits do not appear to have duct seal.

Sketch:

Pump Station: Marina Lagoon
Location: 2100 Detroit Drive
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present): Noel Padilla

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description: Stormwater Pump Station

Pump Info:

#1 Make: Patterson Pump | Model: 72x72 | Capacity: 150,000 GPM at 10 TDH | RPM: 275 RPM
Serial #: 85BT 8490 - G72
Type: Axial Flow | Date Installed: 1985 | Date Last Serviced: 3/31/2025
Vibration During Operation: no | Seal Leakage Present: ☐ Yes ☐ No

#2 Make: Patterson Pump | Model: 72x72 | Capacity: 150,000 GPM at 10 TDH | RPM: 275 RPM
Serial #: 85BT 8491 - G72
Type: Axial Flow | Date Installed: 1985 | Date Last Serviced: 3/31/2025
Vibration During Operation: no | Seal Leakage Present: ☐ Yes ☑ No

#3 Make: Patterson Pump | Model: 72x72 | Capacity: 150,000 GPM at 10 TDH | RPM: 275 RPM
Serial #: 85BT 8489-G72
Type: Axial Flow | Date Installed: 1985 | Date Last Serviced:
Vibration During Operation: no | Seal Leakage Present: ☐ Yes ☑ No

#4 Make: Patterson Pump | Model: 72x72 | Capacity: 150,000 GPM at 10 TDH | RPM: 275 RPM
Serial #: 85BT 8488-G72
Type: Axial Flow | Date Installed: 1985 | Date Last Serviced: 3/31/2025
Vibration During Operation: no | Seal Leakage Present: ☐ Yes ☑ No

#5 Make: Patterson Pump | Model: 72x72 | Capacity: 150,000 GPM at 10 TDH | RPM: 275 RPM
Serial #: 85BT 8487-G72
Type: Axial Flow | Date Installed: 1985 | Date Last Serviced: 3/31/2025
Vibration During Operation: no | Seal Leakage Present: ☑ Yes ☑ No

#5 Make: Patterson Pump | Model: 48x48 | Capacity: 75,000 GPM | RPM: 29 RPM
Serial #: Not found
Type: Axial Flow | Date Installed: 1985 | Date Last Serviced: 3/31/2025
Vibration During Operation: no | Seal Leakage Present: ☑ Yes ☑ No

Controls

Level control type: Automation Direct

Backup Level Control: High/Low Floats — Control Pumps? ☐ Yes ☑ No

Pump control type (PLC, Analog, etc.): PLC

Control Levels:

Pump #1	On: 95.9	Off: 95.40	High Alarm: 96.10	Low Alarm: 95.20
Pump #2:	On: 96	Off: 95.50	High Alarm: 96.10	Low Alarm: 95.20
Pump #3:	On: 96.10	Off: 95.60	High Alarm: 96.10	Low Alarm: 95.20
Pump #4:	On: 96.2	Off: 95.70	High Alarm: 96.10	Low Alarm: 95.20
Pump #5:	On: 96.3	Off: 95.80	High Alarm: 96.10	Low Alarm: 95.20
Pump #6:	On:	Off:	High Alarm:	Low Alarm:

Control Schematic/Sequence: # of Pumps that Run at a time: 5

Control and Monitoring System

Monitoring system with real-time data? ☑ Yes ☐ No

Control panels user-friendly and accessible? ☑ Yes ☐ No

Water level monitoring in wet well? ☑ Yes ☐ No

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: Grate Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Drywell Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Control Room Ventilation Description: Louvers Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 72" RCP force main

Discharge/inlet pipe free from bloackage? yes

Cathodic Protection?: yes, being serviced

Know Issues with Force Main? No

Check Valve: ☑ Yes ☐ No Type: Flapgates Condition: fair

Isolation Valves: ☑ Yes ☐ No Condition:

Bypass Pumping Capability?: ☑ Yes ☐ No

Site Items (hose bib, eye wash, BFP, etc.) BFP

Electrical System

Components in good condition (panel, wiring, etc.)? ☑ Yes ☐ No
Signs of overheating or shorting? ☐ Yes ☑ No
Connection for Portable Backup Power? ☑ Yes ☐ No

Backup Generator

Make: Onon	Model:	20.0DJC-3R/22646AC	Size:	40 kW
Serial #: J870746320				
Fuel Type: Diesel		Fuel Tank Size:		
ATS:				
Known Issues:	No			

Structural Condition

Foundation condition? fair
Visible water infiltration? ☐ Yes ☑ No
Structural components sealed? ☑ Yes ☐ No
Wetwell sealed from electrical room? ☑ Yes ☐ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☑ Yes ☐ No
Lighting for night operation? ☑ Yes ☐ No
Emergency stop system? ☑ Yes ☐ No
Signs of tampering? ☐ Yes ☑ No
Clear exit routes? ☑ Yes ☐ No
Evident safety issues?

Enviromental and Drainage

Flood Potential / Site Drainage: May be impacted by SLR

Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☑ Yes ☐ No
Room available for additional pumps? ☐ Yes ☑ No
Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☑ Yes ☐ No — Corrosion on exposed metal

Notes and Operator Comments:

O&M notes replaced engine parts are hard to source because they have to buy directly from Cummings which has long lead times. O&M notes effects of SLR, water raises above concrete wall on bayside.

Sketch:

Pump Station: Poplar Avenue
Location: Bayfront Levee near Monte Diablo Avenue
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present): Noel Padilla

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description: Stormwater Pump Station

Pump Info:

#1	Make: Flygt	Model: PL7105 1420	Capacity: 40,400 GPM at 14 TDH	RPM:	505 RPM
	Serial #: Not accessible				
	Type: Axial Flow	Date Installed:	2020	Date Last Serviced:	41/2025
	Vibration During Operation:	no	Seal Leakage Present:	☐ Yes	☐ No
#2	Make: Flygt	Model: PL7105 1420	Capacity: 40,400 GPM at 14 TDH	RPM:	505 RPM
	Serial #: Not accessible				
	Type: Axial Flow	Date Installed:	2020	Date Last Serviced:	41/2025
	Vibration During Operation:	no	Seal Leakage Present:	☐ Yes	☑ No
#3	Make: Flygt	Model: PL7105 1420	Capacity: 40,400 GPM at 14 TDH	RPM:	505 RPM
	Serial #: Not accessible				
	Type: Axial Flow	Date Installed:	2020	Date Last Serviced:	41/2025
	Vibration During Operation:	no	Seal Leakage Present:	☐ Yes	☑ No
#4	Make: Flygt	Model: PL7105 1420	Capacity: 40,400 GPM at 14 TDH	RPM:	505 RPM
	Serial #: Not accessible				
	Type: Axial Flow	Date Installed:	2020	Date Last Serviced:	41/2025
	Vibration During Operation:	no	Seal Leakage Present:	☐ Yes	☑ No
#5	Make: Flygt	Model: N3153.181	Capacity: 1,900 gpm	RPM:	1455
	Serial #: Not accessible				
	Type: Submersible sump pump	Date Installed:	2020	Date Last Serviced:	41/2025
	Vibration During Operation:	no	Seal Leakage Present:	☐ Yes	☑ No

Controls

Level control type: Automation Direct

Backup Level Control: High/Low Float — Control Pumps? ☐ Yes ☑ No

Pump control type (PLC, Analog, etc.): PLC

Control Levels:

Pump #1	On: 9.7	Off: 9.1	High Alarm: 95	Low Alarm: 90.5
Pump #2:	On: 10.5	Off: 9.1	High Alarm: 95	Low Alarm: 90.5
Pump #3:	On: 11	Off: 10	High Alarm: 95	Low Alarm: 90.5
Pump #4:	On: 11.50	Off: 10.5	High Alarm: 95	Low Alarm: 90.5

Control Schematic/Sequence: # of Pumps that Run at a time: 1 or 2

Control and Monitoring System

Monitoring system with real-time data? ☑ Yes ☐ No

Control panels user-friendly and accessible? ☑ Yes ☐ No

Water level monitoring in wet well? ☑ Yes ☐ No

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: Grate Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Drywell Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Control Room Ventilation Description: Louvers Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 48" HDPE force main

Discharge/inlet pipe free from bloackage? yes

Cathodic Protection?:

Know Issues with Force Main? no

Check Valve: ☑ Yes ☐ No Type: duckbill Condition: Sagging

Isolation Valves: ☐ Yes ☑ No Condition:

Bypass Pumping Capability?: ☐ Yes ☑ No

Site Items (hose bib, eye wash, BFP, etc.) HB, eye wash

Electrical System

☐ No water infiltration noted on through pump panel, corrosion

Components in good condition (panel, wiring, etc.)? ☑ Yes

Signs of overheating or shorting? ☐ Yes ☑ No

Connection for Portable Backup Power? ☑ Yes ☐ No

Backup Generator onsite

Make: Cummins	Model: DQFAD*2140138	Size:
Serial #: C220063416		
Fuel Type: Diesel	Fuel Tank Size: 1500 Gal	
ATS:		
Known Issues: No		

Structural Condition

Foundation condition? good, new

Visible water infiltration? ☐ Yes ☑ No

Structural components sealed? ☑ Yes ☐ No

Wetwell sealed from electrical room? ☑ Yes ☐ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☑ Yes ☐ No

Lighting for night operation? ☑ Yes ☐ No

Emergency stop system? ☑ Yes ☐ No

Signs of tampering? ☐ Yes ☑ No

Clear exit routes? ☑ Yes ☐ No

Evident safety issues?

Enviromental and Drainage

Flood Potential / Site Drainage: No submersible axial pumps

Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☑ Yes ☐ No

Room available for additional pumps? ☐ Yes ☑ No

Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☑ Yes ☐ No water infiltration noted on through pump panel, corrosion noted

Notes and Operator Comments:

The main breaker is tripping without generating an alarm, and operators hear popping sounds from the MCC panel. Each time this occurs, operators must manually reset the system by turning the main breaker off and on, cycling the control panel power, and disconnecting and reconnecting the UPS. Resetting power at the MCC resolves the popping sound issue.The generator has successfully started during power failures in the past. However, when the MCC experiences problems, the ATS and generator do not always provide a clear indication of power loss.Pump cable disconnect panels are experiencing water intrusion and corrosion problems. Pump discharge check valves (Tideflex) are sagging and not operating properly.

Sketch:

Pump Station: Coyote Point
Location: 20 Airport Boulevard
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present):

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description: Stormwater Pump Station

Pump Info:

#1	Make: Flygt	Model: PL7105 1440	Capacity: 51,000 GPM at 10 TDH	RPM:	505 RPM
	Serial #: Not accessible				
	Type: Axial Flow	Date Installed:	2020	Date Last Serviced:	4/1/2025
	Vibration During Operation:	no	Seal Leakage Present:	☐ Yes	☑ No
#2	Make: Flygt	Model: PL7105 1440	Capacity: 51,000 GPM at 10 TDH	RPM:	505 RPM
	Serial #: Not accessible			Date:	
	Type: Axial Flow	Date Installed:	2020	Date Last Serviced:	4/1/2025
	Vibration During Operation:		Seal Leakage Present:	☐ Yes	☐ No
#3	Make: Flygt	Model: PL7105 1440	Capacity: 51,000 GPM at 10 TDH	RPM:	505 RPM
	Serial #: Not accessible				
	Type: Axial Flow	Date Installed:	2020	Date Last Serviced:	4/1/2025
	Vibration During Operation:		Seal Leakage Present:	☐ Yes	☐ No
#4	Make: Flygt	Model: N3153.181	Capacity: 2,000 gpm	RPM:	1455
	Serial #: Not accessible				
	Type: Submersible Sump Pump	Date Installed:	2020	Date Last Serviced:	4/1/2025
	Vibration During Operation:		Seal Leakage Present:	☐ Yes	☐ No

Controls

Level control type: Automation Direct

Backup Level Control: High/Low Float — Control Pumps? ☐ Yes ☑ No

Pump control type (PLC, Analog, etc.): PLC

Control Levels:

Pump #1: On: 12.5 Off: 11.5 High Alarm: 14.5 Low Alarm: 10

Pump #2: On: 14.5 Off: 12 High Alarm: 14.5 Low Alarm: 10

Pump #3: On: 15.5 Off: 12.5 High Alarm: 14.5 Low Alarm: 10

Control Schematic/Sequence: # of Pumps that Run at a time: 1 to 2

Control and Monitoring System

Monitoring system with real-time data? ☑ Yes ☐ No SCADA

Control panels user-friendly and accessible? ☑ Yes ☐ No

Water level monitoring in wet well? ☑ Yes ☐ No

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: Grate Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Drywell Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Control Room Ventilation Description: Louvers Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 48" HDPE force main

Discharge/inlet pipe free from bloackage? No, sediment impacting outfall

Cathodic Protection?:

Know Issues with Force Main? Sediment impacting outfall

Check Valve: ☑ Yes ☐ No Type: Duckbill Condition: Sagging, sediment impacting

Isolation Valves: ☐ Yes ☑ No Condition:

Bypass Pumping Capability?: ☐ Yes ☑ No

Site Items (hose bib, eye wash, BFP, etc.) HB, eye wash

Electrical System

Components in good condition (panel, wiring, etc.)? ☐ Yes ☑ No — water infiltration noted on through pump panel, corrosion

Signs of overheating or shorting? ☐ Yes ☑ No

Connection for Portable Backup Power? ☐ Yes ☐ No

Backup Generator Onsite

Make: Cummins	Model: DQCB*2130113	Size:
Serial #: C220062062		Date:
Fuel Type: Diesel	Fuel Tank Size: 1000 Gal	
ATS:		
Known Issues: No		

Structural Condition

Foundation condition? good, new

Visible water infiltration? ☐ Yes ☑ No

Structural components sealed? ☑ Yes ☐ No

Wetwell sealed from electrical room? ☑ Yes ☐ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☑ Yes ☐ No

Lighting for night operation? ☑ Yes ☐ No

Emergency stop system? ☑ Yes ☐ No

Signs of tampering? ☐ Yes ☑ No

Clear exit routes? ☑ Yes ☐ No

Evident safety issues? no

Enviromental and Drainage

Flood Potential / Site Drainage: No submersible axial pumps

Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☑ Yes ☐ No — cleans in first few flushes, clogs pretty fast

Room available for additional pumps? ☐ Yes ☑ No

Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☑ Yes ☐ No — water infiltration noted on through pump panel, corrosion

Notes and Operator Comments:

Trash capture device get clogs pretty fast, vactored 2 times a year. Trash capture weir is often used because trash rack clogs and it's not clean until after storm. There are no issues with electrical panels losing power, and there are no problems with the SPD. Pump discharge check valves (Tideflex) are sagging and often remain open after pump shutdown, which allows backflow. Sand collects in the discharge box and around the valves, and sand can flow back toward the pumps if the valves are stuck open.

Sketch:

Pump Station: Fathom Drive
Location: 401 Fathom Drive
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present):

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description:

Pump Info:

#1	Make: Flygt	Model: **Not accessible**	Size:	RPM:	
	Serial #:	Nameplate Info:		Date:	
	Type: submersible	Date Installed:	Date Last Serviced:		
	Vibration During Operation:	Seal Leakage Present:	☐ Yes	☐ No	
#2	Make: Flygt	Model: **Not accessible**	Size:	RPM:	
	Serial #:	Nameplate Info:		Date:	
	Type: submersible	Date Installed:	Date Last Serviced:		
	Vibration During Operation:	Seal Leakage Present:	☐ Yes	☐ No	

* both run at half speed (30 Hz) normally run at 60 Hz

Controls

Level control type: Hydroranger 200 - replaced last summer during inspection (electrical failure)

Backup Level Control: Float — Control Pumps? ☐ Yes ☑ No

Pump control type (PLC, Analog, etc.)

Control Levels: Pump #1 On: 9 Off: 2.5 High Alarm: 10 Low Alarm: 2

Power outage alarm, high/low alarm, pump run visible, pump fail alarm: Pump #2: On: 9 Off: 2.5 High Alarm: 10 Low Alarm: 2

Control Schematic/Sequence: # of Pumps that Run at a time: 2

Control and Monitoring System

Monitoring system with real-time data? ☑ Yes ☐ No SCADA

Control panels user-friendly and accessible? ☑ Yes ☐ No

Water level monitoring in wet well? ☑ Yes ☐ No

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation NO Ventilation

Wetwell Ventilation Description: Holes in plates Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Drywell Ventilation Description: N/A Inlet and Outlet Fan? ☑ Yes ☐ No

Fan Nameplate Info:

Control Room Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 24" Conc force main

Discharge/inlet pipe free from bloackage? yes

Cathodic Protection?: No

Know Issues with Force Main? No

Check Valve: ☑ Yes ☐ No Type: ball Condition: good

Isolation Valves: ☐ Yes ☑ No Condition:

Bypass Pumping Capability?: ☐ Yes ☑ No

Site Items (hose bib, eye wash, BFP, etc.) N/A

Electrical System No transformer - likely fed from neighborhood

Components in good condition (panel, wiring, etc.)? ☑ Yes ☑ No 3 PH 240V, Pumps run at 30 Hz on VFD

Signs of overheating or shorting? ☐ Yes ☑ No

Connection for Portable Backup Power? ☑ Yes ☐ No plug

Backup Generator N/A

Make:	Model:	Size:
Serial #:	Nameplate Info:	Date:
Fuel Type:	Fuel Tank Size:	
ATS:		
Known Issues:		

Structural Condition

Foundation condition? Foundation cracked

Visible water infiltration? ☑ Yes ☐ No

Structural components sealed? ☑ Yes ☐ No

Wetwell sealed from electrical room? ☑ Yes ☐ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☐ Yes ☑ No

Lighting for night operation? ☐ Yes ☑ No dark in winter

Emergency stop system? ☑ Yes ☐ No

Signs of tampering? ☑ Yes ☐ No Chainlink fence

Clear exit routes? ☑ Yes ☐ No

Evident safety issues? No

Enviromental and Drainage

Flood Potential / Site Drainage: No, submersible pumps

Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☑ Yes ☐ No severly corroded

Room available for additional pumps? ☐ Yes ☑ No

Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☑ Yes ☐ No Exposed rebar from sawcut and trash rack show corrosion

Notes and Operator Comments:

O&M states PS runs very well. Seems to be retrofitted from axial to submersible (sawcut). Fed from dicth to lagoon, connected via SDDI in the street. Floats don't run pumps, only alarm. No water level in SCADA. Soda bottle stuck in pump once - only issue in last 5 years. Single flap gate 24", concrete structure 37" wide inside diameter. Orange sediment in wetwell (mud coming from ditch).

Sketch:

Pump Station: 3rd & Detroit
Location: 2002 Detroit Drive
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present):

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description:

Pump Info:

#1	Make: Peerless Pump	Model: 36MF	Capacity: 20,000 GPM at 19 TDH	RPM:	535 RPM
	Serial #: 245058				
	Type: Axial Flow	Date Installed:	1985	Date Last Serviced:	3/31/2025
	Vibration During Operation: no		Seal Leakage Present:	☐ Yes	☑ No
#2	Make: Peerless Pump	Model: 36MF	Capacity: 20,000 GPM at 19 TDH	RPM:	585 RPM
	Serial #: 245059				
	Type: Axial Flow	Date Installed:	1985	Date Last Serviced:	3/31/2025
	Vibration During Operation: no		Seal Leakage Present:	☐ Yes	☑ No

Controls

Level control type: Ultrasonic transducer (upstream trash rack + wetwell)

Backup Level Control: High/low floats — Control Pumps? ☐ Yes ☑ No

Pump control type (PLC, Analog, etc.)

Control Levels:	On:	Off:	High Alarm:	Low Alarm:
Pump #1	On: 9	Off: 6	High Alarm:	Low Alarm:
Pump #2:	On: 9	Off: 6.5	High Alarm:	Low Alarm:
Pump #3:	On:	Off:	High Alarm:	Low Alarm:
Pump #4:	On:	Off:	High Alarm:	Low Alarm:
Pump #5:	On:	Off:	High Alarm:	Low Alarm:
Pump #6:	On:	Off:	High Alarm:	Low Alarm:

Control Schematic/Sequence: # of Pumps that Run at a time: 2

Control and Monitoring System

Monitoring system with real-time data? ☑ Yes ☐ No

Control panels user-friendly and accessible? ☑ Yes ☐ No

Water level monitoring in wet well? ☑ Yes ☐ No

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Drywell Ventilation Description: Inlet and Outlet Fan? ☑ Yes ☐ No

Fan Nameplate Info:

Control Room Ventilation Description: Inlet and Outlet Fan? ☑ Yes ☐ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 2 outfalls, 66" RCP force main

Discharge/inlet pipe free from bloackage? yes

Cathodic Protection?:

Know Issues with Force Main? No

Check Valve: ☑ Yes ☐ No Type: Duckbill Condition: fair

Isolation Valves: ☐ Yes ☑ No Condition:

Bypass Pumping Capability?: ☐ Yes ☐ No

Site Items (hose bib, eye wash, BFP, etc.)

Electrical System

Components in good condition (panel, wiring, etc.)? ☐ Yes ☑ No SECCO panel out of service

Signs of overheating or shorting? ☐ Yes ☑ No

Connection for Portable Backup Power? ☐ Yes ☐ No N/A

Backup Generator Onsite

Make: Onon	Model:	Size:
Serial #:	Nameplate Info:	Date:
Fuel Type: Diesel	Fuel Tank Size:	
ATS:		
Known Issues:		

Structural Condition

Foundation condition? Cracking of wall near trash rack

Visible water infiltration? ☐ Yes ☑ No

Structural components sealed? ☑ Yes ☑ No

Wetwell sealed from electrical room? ☑ Yes ☐ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☑ Yes ☐ No

Lighting for night operation? ☑ Yes ☐ No

Emergency stop system? ☑ Yes ☐ No

Signs of tampering? ☐ Yes ☑ No

Clear exit routes? ☑ Yes ☐ No

Evident safety issues? no

Enviromental and Drainage

Flood Potential / Site Drainage: no flood potential

Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☐ Yes ☑ No does have a trash rack but in operable and don't make parts anymore

Room available for additional pumps? ☑ Yes ☐ No

Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☐ Yes ☑ No

Notes and Operator Comments:

Station was originally designed for 3 pumps. Outfalls originally had metal flapgates. Recently replaced with duckbills. Normally just run electric motor pump, with diesel pump used as backup. Last time operator used both was NYE. Pump station does not experience a significant amount of trash. An ultrasonic transducer is installed in the wetwell upstream of the trashrack, and alarm floats are also present in the wetwell. The generator only powers the station and not the pumps. The right-hand control cabinet is not in use, and the JFD is inoperable. The trash rakes are also not operational, although operators can manually operate the rake when needed. Pump 1 is engine-driven, while Pump 2 is powered by a 125 HP electric motor. The controls read both wetwell level and differential level. The electrical system at the pump station is old, and some of the panels are no longer in service. Drawings were found at the station, and photos were taken. The generator is in poor condition and requires replacement.

Sketch:

Pump Station: 16th Avenue
Location: 2055 Detroit Drive
Date: 4/22/2025
Evaluated By: SH/LC
Operator (if present):

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description:

Pump Info:

#1 Make: Model: Size: RPM:

Serial #: Nameplate Info:

Type: Date Last Serviced:

Vibration During Operation: Seal Leakage Present: ☑ Yes ☐ No

*Pump information not found. Pump station does not have an impact on the overall stormwater system capacity of the City.

Controls

Level control type: float

Backup Level Control Control Pumps? ☐ Yes ☑ No

Pump control type (PLC, Analog, etc.) Analog

Control Levels: Pump #1 On: Off: High Alarm: Low Alarm:

Control Schematic/Sequence: # of Pumps that Run at a time: 1

Control and Monitoring System

Monitoring system with real-time data? ☐ Yes ☑ No

Control panels user-friendly and accessible? ☐ Yes ☑ No

Water level monitoring in wet well? ☐ Yes ☑ No

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Drywell Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Control Room Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☐ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 24" force main

Discharge/inlet pipe free from bloackage? yes

Cathodic Protection?: no

Know Issues with Force Main? no

Check Valve: ☑ Yes ☐ No Type: duckbill Condition: sagging

Isolation Valves: ☐ Yes ☑ No Condition:

Bypass Pumping Capability?: ☐ Yes ☑ No

Site Items (hose bib, eye wash, BFP, etc.)

Electrical System

Components in good condition (panel, wiring, etc.)? ☑ Yes ☐ No
Signs of overheating or shorting? ☐ Yes ☑ No
Connection for Portable Backup Power? ☐ Yes ☑ No

Backup Generator no generator

Make:	Model:	Size:
Serial #:	Nameplate Info:	Date:
Fuel Type:	Fuel Tank Size:	
ATS:		
Known Issues:		

Structural Condition

Foundation condition? poor
Visible water infiltration? ☐ Yes ☑ No
Structural components sealed? ☑ Yes ☐ No
Wetwell sealed from electrical room? ☐ Yes ☑ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☑ Yes ☐ No
Lighting for night operation? ☑ Yes ☐ No
Emergency stop system? ☐ Yes ☑ No
Signs of tampering? ☐ Yes ☑ No
Clear exit routes? ☑ Yes ☐ No
Evident safety issues? Stairs are in need of repair, holes in station building not protected

Enviromental and Drainage

Flood Potential / Site Drainage: No

Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☑ Yes ☐ No
Room available for additional pumps? ☑ Yes ☐ No
Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☐ Yes ☑ No

Notes and Operator Comments:

The pumps are controlled by floats. Koffler rebuilt the pump within the last two years, including the motor, but the seal at the pump head is leaking. The force main is PVC. There is no SCADA system at this station. The pumps operate automatically with floats, maintaining water levels below the upstream concrete pipe as the target operation. The station is not operated during the winter.The structure of the station is in poor condition, and the City provided additional photos documenting its state.

Sketch:

Pump Station: 31st Avenue
Location: E 31st Avenue Railroad Underpass
Date: 1/30/2026
Evaluated By: Noel Padilla
Operator (if present):

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

City of San Mateo
Stormwater Pump Station Evaluation

Station Type / Description:

Pump Info:

#1	Make:	FLYGT	Model:	1	Size:	10 hp	RPM:	1720
	Serial #:	3127.07 1960120	Nameplate Info:				Date:	1/30/2026
	Type:		Date Installed:		Date Last Serviced:		12/3/2025	
	Vibration During Operation:	No			Seal Leakage Present:	☑ Yes	☑ No	
#2	Make:	FLYGT	Model:	1	Size:	10 hp	RPM:	1720
	Serial #:	3127.07 1960119	Nameplate Info:				Date:	1/30/2026
	Type:		Date Installed:		Date Last Serviced:		12/3/2026	
	Vibration During Operation:	No			Seal Leakage Present:	☐ Yes	☑ No	

Controls

Level control type: Hydroranger 200

Backup Level Control: No backup Control Pumps? ☐ Yes ☐ No

Pump control type (PLC, Analog, etc.)

Control Levels:
Operators could not confirm set levels, they note wet well level operates between 3.4 - 2.4

	On:	Off:	High Alarm:	Low Alarm:
Pump #1				
Pump #2:				
Pump #3:				
Pump #4:				
Pump #5:				
Pump #6:				

Control Schematic/Sequence: AH # of Pumps that Run at a time: 2

Control and Monitoring System

Monitoring system with real-time data? ☐ Yes ☐ No

Control panels user-friendly and accessible? ☐ Yes ☐ No

Water level monitoring in wet well? ☐ Yes ☐ No

Flow Measurement

Existing Flow Meter: ☐ Yes ☑ No Type: Date:

Pressure Gage on Discharge: ☐ Yes ☑ No Condition:

Notes:

Sketch:

Ventilation

Wetwell Ventilation Description: Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Drywell Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Control Room Ventilation Description: N/A Inlet and Outlet Fan? ☐ Yes ☑ No

Fan Nameplate Info:

Pipe System

Force Main Size, Type & Condition: 10" force main

Discharge/inlet pipe free from bloackage?

Cathodic Protection?:

Know Issues with Force Main?

Check Valve: ☑ Yes ☐ No Type: Swing Condition: Good

Isolation Valves: ☑ Yes ☐ No Gate Condition: Good

Bypass Pumping Capability?: ☐ Yes ☑ No

Site Items (hose bib, eye wash, BFP, etc.)

Electrical System

Components in good condition (panel, wiring, etc.)? ☑ Yes ☐ No
Signs of overheating or shorting? ☐ Yes ☑ No
Connection for Portable Backup Power? ☑ Yes ☐ No

Backup Generator No onsite generator

Make:	Model:	Size:
Serial #:	Nameplate Info:	Date:
Fuel Type: Diesel	Fuel Tank Size:	
ATS:		
Known Issues:		

Structural Condition

Foundation condition? Good
Visible water infiltration? ☐ Yes ☑ No
Structural components sealed? ☑ Yes ☐ No
Wetwell sealed from electrical room? ☑ Yes ☐ No

Safety and Security

Safety barriers, handrails, non slip surfaces? ☑ Yes ☐ No
Lighting for night operation? ☐ Yes ☑ No
Emergency stop system? ☐ Yes ☑ No
Signs of tampering? ☐ Yes ☑ No
Clear exit routes? ☑ Yes ☐ No
Evident safety issues? None

Enviromental and Drainage

Flood Potential / Site Drainage: no flood potential, submersible pumps

Evidence of contamination (oil/fuel spills)? ☐ Yes ☑ No

Misc. Items

Trash rack? ☐ Yes ☑ No
Room available for additional pumps? ☐ Yes ☑ No
Is there evidence of corrosion (pumps, electrical components, pipes and fittings, etc.)? ☐ Yes ☑ No

Notes and Operator Comments:

Sketch:

Appendix F: O&M Staff Questionnaire Responses

Storm Pump Assessment: O&M Questions for City of San Mateo

	4000 Pacific	Hillsdale	Casanova	Poplar Avenue
General Information				
When was the last maintenance or inspection performed?	Via maintenance log, SCADA check was performed 1/8/2025. Confirm this is the most recent inspection. Last maintnace was 4/3/25	Via maintenance log, preventative maintenance was performed 12/13/2024. Confirm this is the most recent inspection.last maintnace was 3/13/25	Via maintenance log, preventative maintenance was performed 12/26/2024. Confirm this is the most recent inspection. Last maintnace was 2/25/25.	Via maintenance log, SCADA check was performed 1/2/2025. Confirm this is the most recent inspection. Last maintnace was 4/1/25
Is the pump station experiencing frequent operational issues or breakdowns?	debris build up in suction cage	no	no	during a storm event pumps trip and need to reset
Does the station require frequent attendance during storm events?	yes need to clean debris	no	yes need to clean trash racks	yes need to clean trash racks
Pump and Motor Condition				
Are the pump motors operating efficiently and without unusual noise or vibration?	yes	yes	yes	yes
Are there any signs of overheating in the motors?	no	no	no	no
Are automatic controls working properly (if applicable)?	yes	yes	yes	yes
Are circuit breakers and overload protection devices functioning properly?	yes	yes	yes	yes
Can the generator (if applicable) start and run all pumps at the same time?	N/A	N/A	N/A	yes
Control and Monitoring Systems				
Are the control systems and sensors working as intended?	yes	yes	yes	yes
Are alarms or notifications triggered during system faults or failures?	yes	yes	yes	yes
Valves				
Are the check valves functioning properly to prevent backflow and are they free of leaks?	yes no leaks	yes no leaks	yes no leaks	duckbills are slightly open and water backflushes on high tides
Performance and Efficiency				
Can pump station keep up with demand?	yes if inlet is clear	yes	yes	yes
Has there been a decrease in the pumping efficiency or capacity over time?				
Can all pumps operate at the same time and not cause excessive cycling?	yes	yes	no	no
How often does the pump station need to be serviced or cleaned to maintain performance, including trash rack (if applicable)?	during winter once or twice a week ,for the rest of the year every 3 months	every 3 months	during winter once a week , for the rest of the year every 3 months	during winter once a week , for the rest of the year every 3 months
Maintenance and Spare Parts				
Are there adequate spare parts available for critical components?	no	no	no	no
Is a preventive maintenance schedule in place and being followed?	yes	yes	yes	yes
How quickly can replacement parts be obtained if needed?	1 month	1 month	1 month	1 month
Is there a history of parts or equipment becoming obsolete or hard to source?	yes	yes	no	no
Compliance and Regulatory				
Are regular safety audits or compliance checks performed on the station?	no	no	no	yes
Have there been any issues with discharge or stormwater quality related to the pump station?	no	no	no	no
Future Planning				
Are there plans for any upgrades or improvements to the pump station?	no	no	no	no

Storm Pump Assessment: O&M Questions for City of San Mateo

	Coyote Point	Fathom Drive	Marina Lagoon	3rd & Detroit
General Information				
When was the last maintenance or inspection performed?	Via maintenance log, SCADA check was performed 12/23/2024. Confirm this is the most recent inspection. Last maintnace was 4/1/25	Via maintenance log, preventative maintenance was performed 1/3/2025. Confirm this is the most recent inspection. Last maintnace was 3/7/25	Via maintenance log, preventative maintenance was performed 1/10/2025. Confirm this is the most recent inspection. Last maintnace was 3/31/25	Via maintenance log, preventative maintenace was performed 1/10/2025. Confirm this is the most recent inspection. Last maintnace was 3/31/25
Is the pump station experiencing frequent operational issues or breakdowns?	no	no	this station has older diesel motors and develop leaks or other malfunctions	self cleaning trash racks no longer work
Does the station require frequent attendance during storm events?	yes need to clean trash racks	no	yes	yes
Pump and Motor Condition				
Are the pump motors operating efficiently and without unusual noise or vibration?	yes	yes	yes	yes
Are there any signs of overheating in the motors?	no	no	no	no
Are automatic controls working properly (if applicable)?	yes	yes	yes	yes
Are circuit breakers and overload protection devices functioning properly?	yes	yes	yes	yes
Can the generator (if applicable) start and run all pumps at the same time?	yes	N/A	generator only power the electrical in the building	generator only powers the electrical in the building
Control and Monitoring Systems				
Are the control systems and sensors working as intended?	yes	yes	yes	yes
Are alarms or notifications triggered during system faults or failures?	yes	yes	yes	yes
Valves				
Are the check valves functioning properly to prevent backflow and are they free of leaks?	duckbills are slightly open and backflushes on high tides	yes no leaks	yes no leaks	installed new duckbills on dischrge pipe 3/11/25
Performance and Efficiency				
Can pump station keep up with demand?	yes	yes	yes	yes
Has there been a decrease in the pumping efficiency or capacity over time?				
Can all pumps operate at the same time and not cause excessive cycling?	no	yes	no	no
How often does the pump station need to be serviced or cleaned to maintain performance, including trash rack (if applicable)?	during winter once a week ,for the rest of the year evry 3 months	every 3 months	during winter dailey , for the rest of the yesr twice a week	during winter once a week ,for the rest of the year every 3 months
Maintenance and Spare Parts				
Are there adequate spare parts available for critical components?	no	no	we stock some parts for the motors	no
Is a preventive maintenance schedule in place and being followed?	yes	yes	yes	yes
How quickly can replacement parts be obtained if needed?	1 month	1 month	1 month	1 month
Is there a history of parts or equipment becoming obsolete or hard to source?	no	no	yes	yes
Compliance and Regulatory				
Are regular safety audits or compliance checks performed on the station?	yes	no	yes	yes
Have there been any issues with discharge or stormwater quality related to the pump station?	no	no	no	no
Future Planning				
Are there plans for any upgrades or improvements to the pump station?	no	no	no	no

Storm Pump Assessment: O&M Questions for City of San Mateo

	16th Avenue	31st Avenue
General Information		
When was the last maintenance or inspection performed?	Via maintenance log, preventative maintenace was performed 11/1/2024. Confirm this is the most recent inspection. Last maintnance was 2/12/25	12/3/2026
Is the pump station experiencing frequent operational issues or breakdowns?	pump runs good but the cement structure is failing	No
Does the station require frequent attendance during storm events?	no station doesn't run during winter	No
Pump and Motor Condition		
Are the pump motors operating efficiently and without unusual noise or vibration?	yes	Yes
Are there any signs of overheating in the motors?	no	No
Are automatic controls working properly (if applicable)?	yes	Yes
Are circuit breakers and overload protection devices functioning properly?	yes	Yes
Can the generator (if applicable) start and run all pumps at the same time?	N/A	N/A
Control and Monitoring Systems		
Are the control systems and sensors working as intended?	yes	Yes
Are alarms or notifications triggered during system faults or failures?	N/A	Yes
Valves		
Are the check valves functioning properly to prevent backflow and are they free of leaks?	yes no leaks	Yes
Performance and Efficiency		
Can pump station keep up with demand?	yes	Yes
Has there been a decrease in the pumping efficiency or capacity over time?		No
Can all pumps operate at the same time and not cause excessive cycling?	only 1 pump there	Yes
How often does the pump station need to be serviced or cleaned to maintain performance, including trash rack (if applicable)?	every 3 months	Every 6 months
Maintenance and Spare Parts		
Are there adequate spare parts available for critical components?	no	No
Is a preventive maintenance schedule in place and being followed?	yes	Yes
How quickly can replacement parts be obtained if needed?	1 month	1 month
Is there a history of parts or equipment becoming obsolete or hard to source?	yes	No
Compliance and Regulatory		
Are regular safety audits or compliance checks performed on the station?	no	Yes
Have there been any issues with discharge or stormwater quality related to the pump station?	no	No
Future Planning		
Are there plans for any upgrades or improvements to the pump station?	no	No

Appendix G: Pump Station Failure Depth Maps

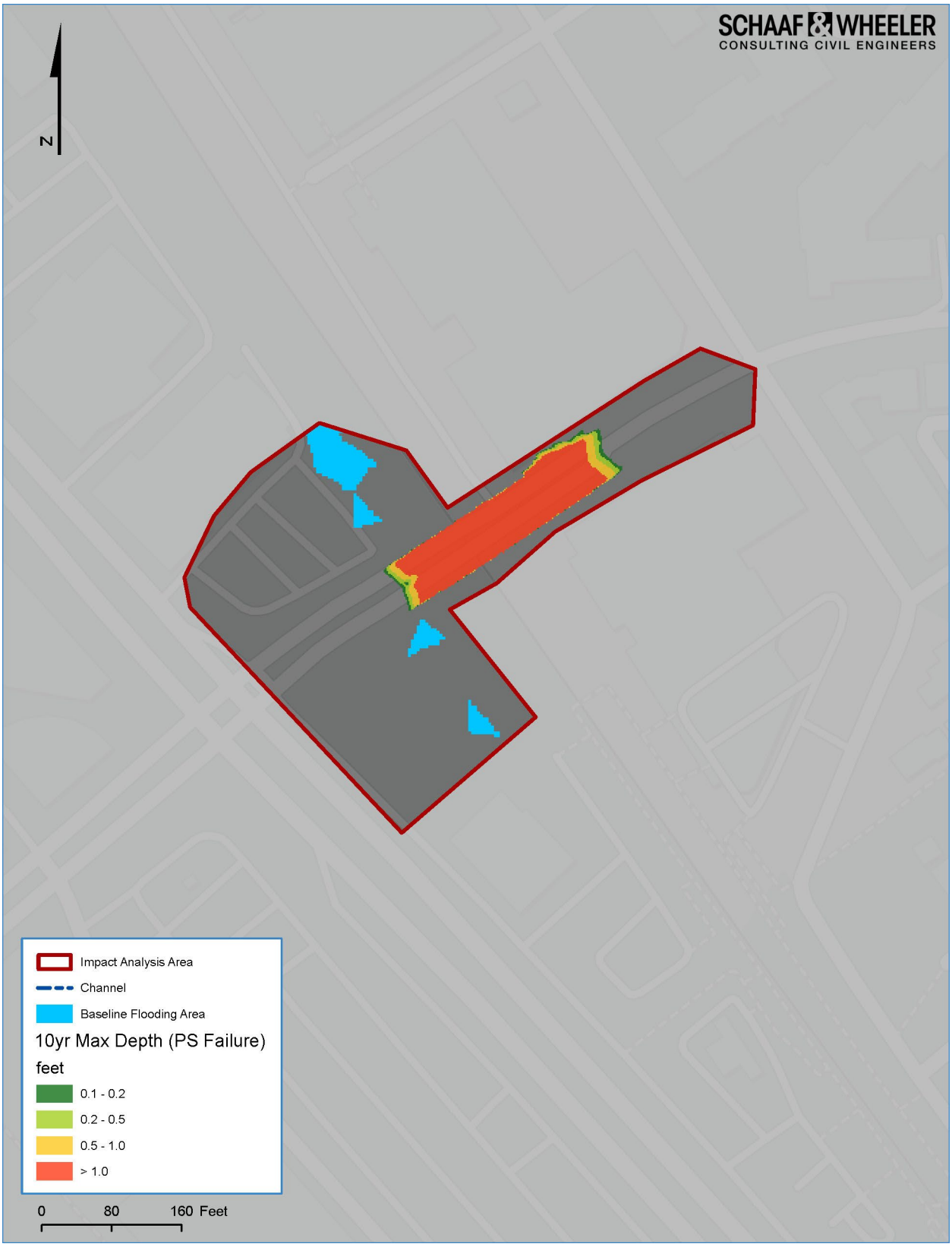


Figure G-1: 31th Avenue Pump Station Failure Depth Map (10-year Storm Event)

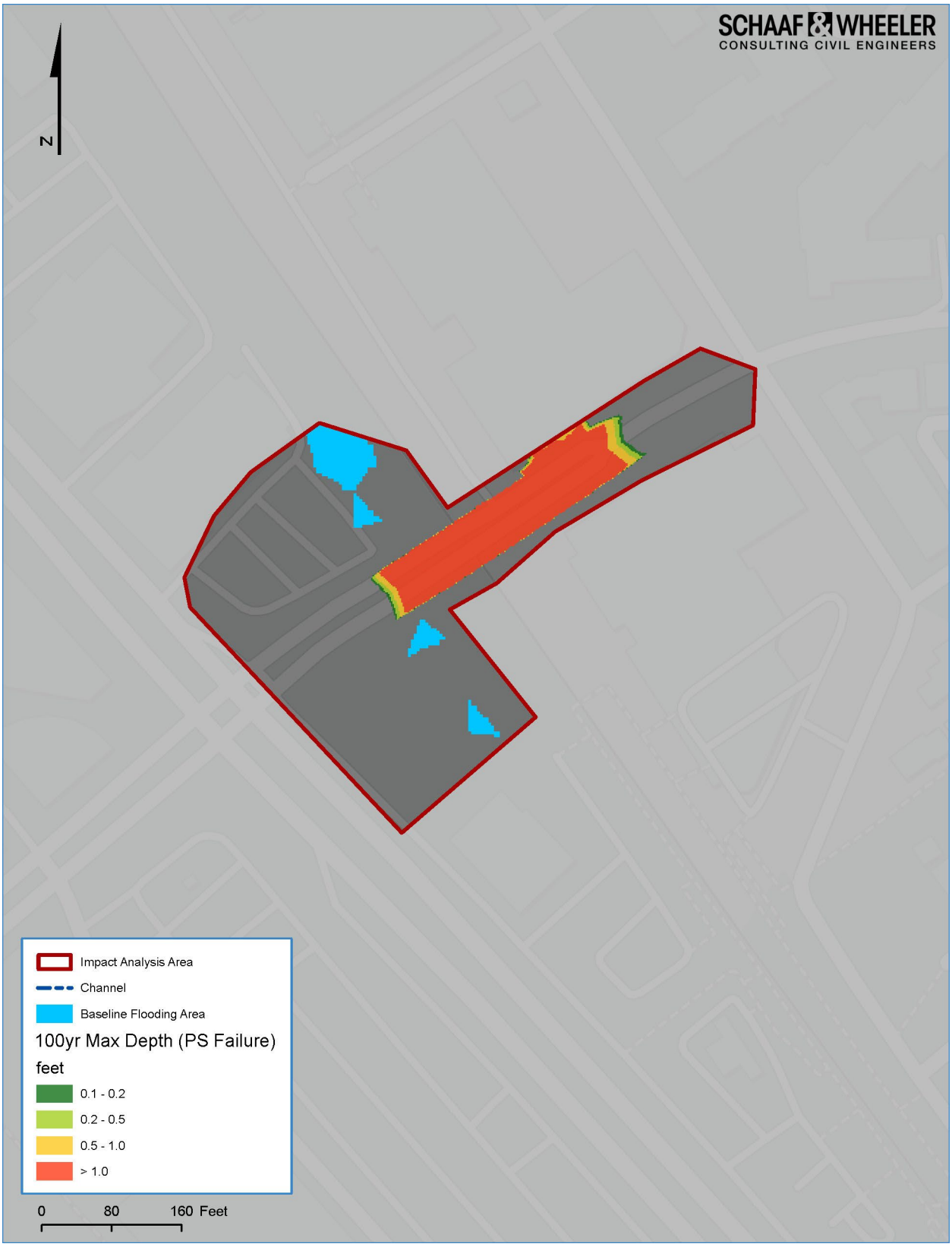


Figure G-2: 31st Avenue Pump Station Failure Depth Map (100-year Storm Event)

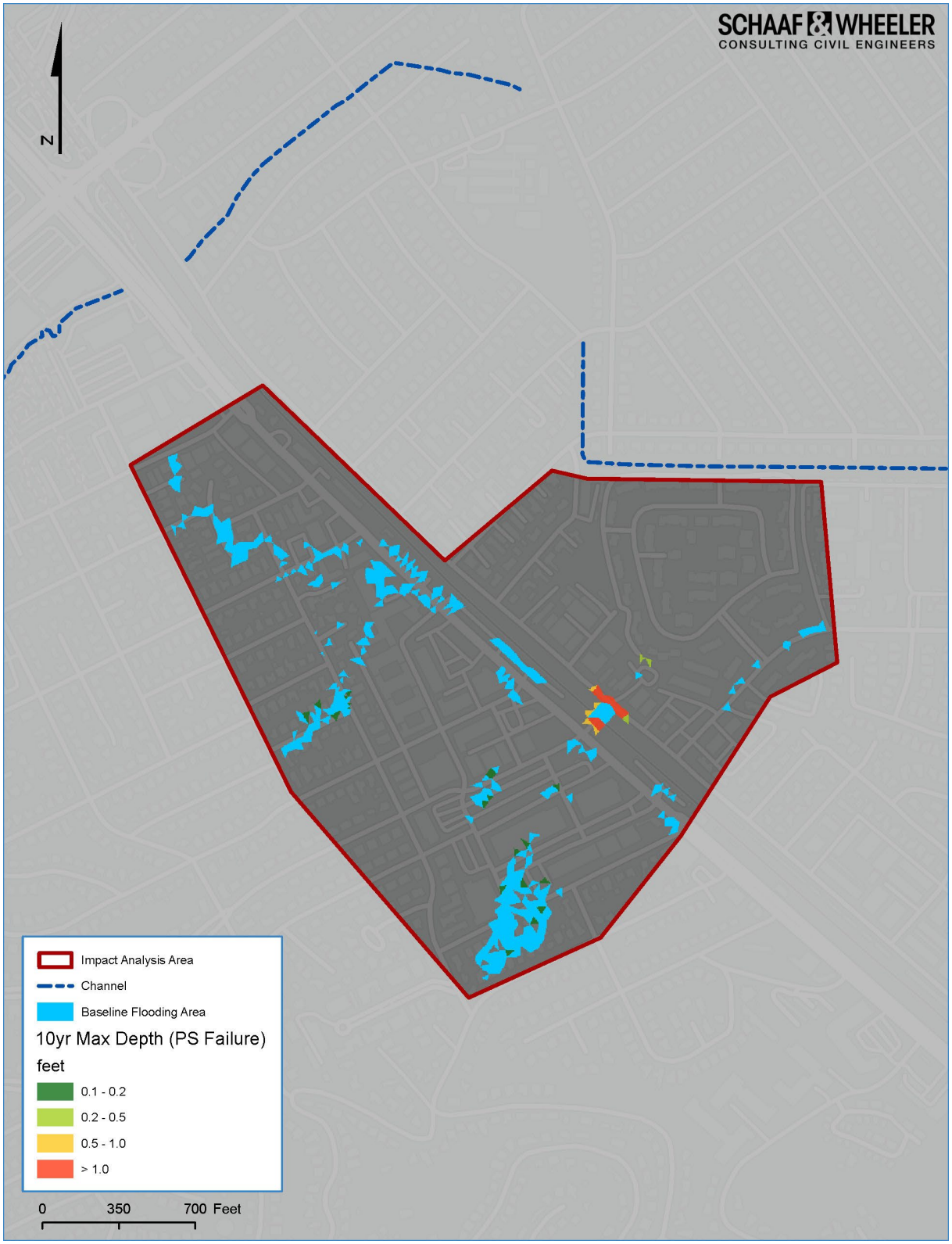


Figure G-3: 4000 Pacific Pump Station Failure Depth Map (10-year Storm Event)

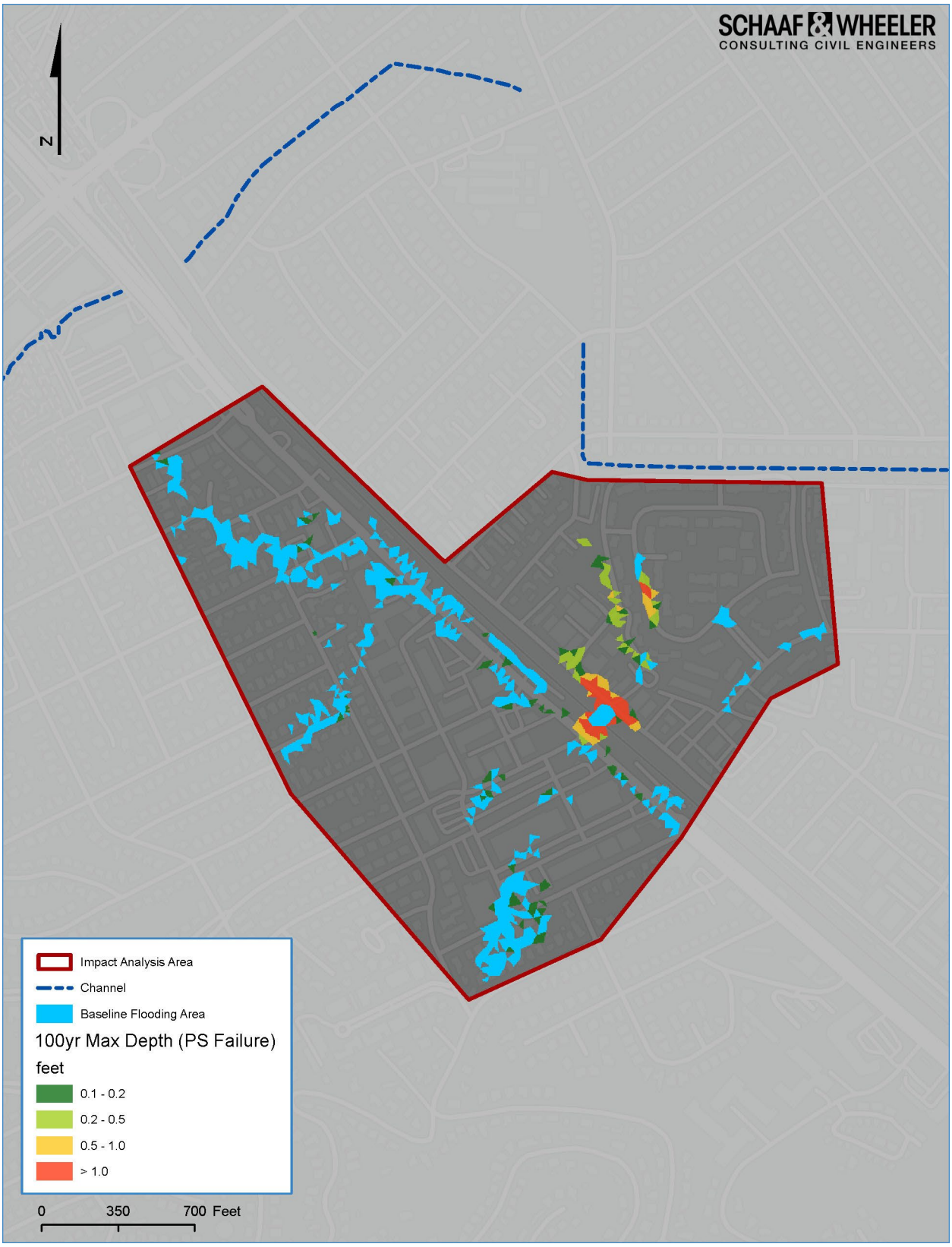


Figure G-4: 4000 Pacific Pump Station Failure Depth Map (100-year Storm Event)

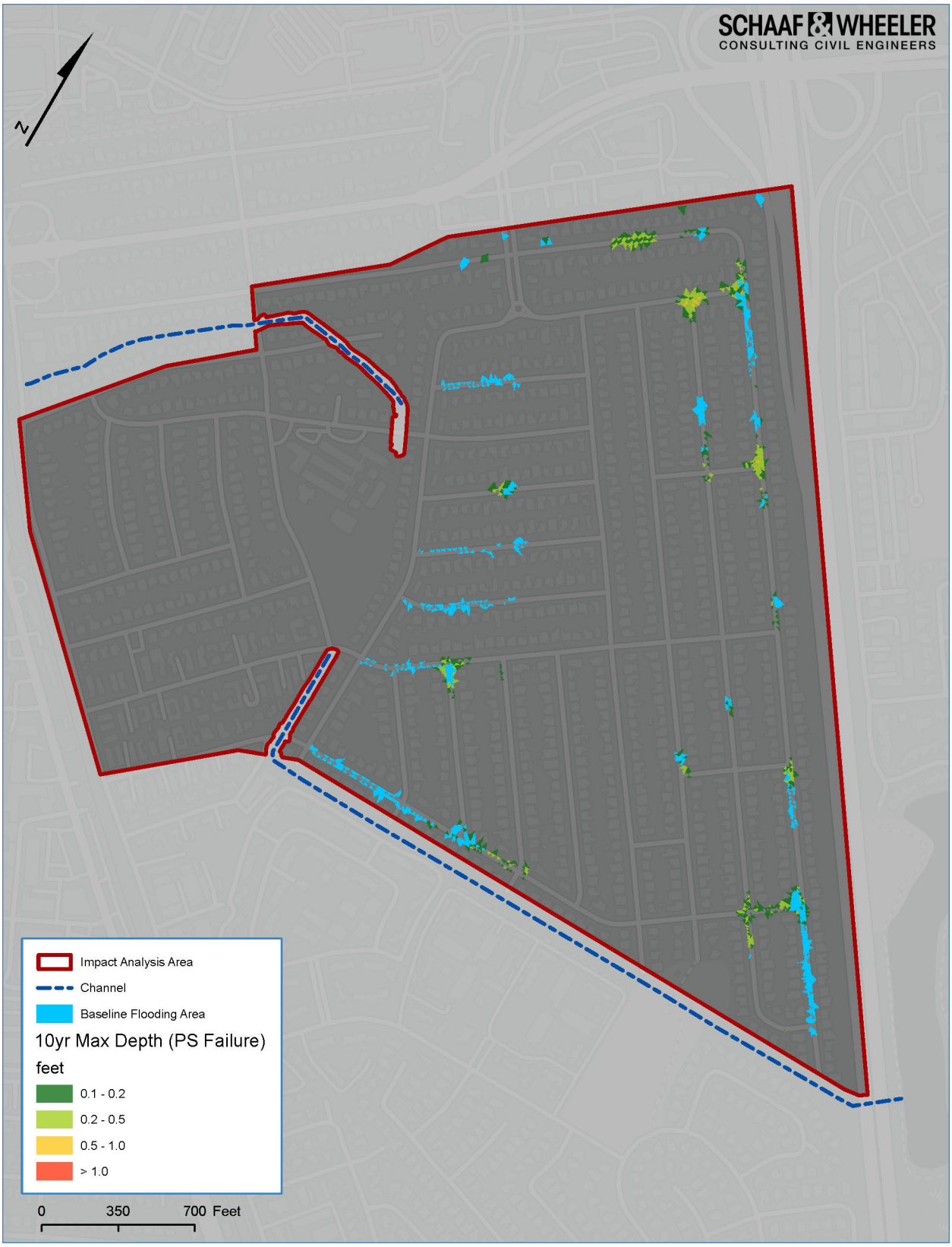


Figure G-5: Casanova Pump Station Failure Depth Map (10-year Storm Event)



Figure G-6: Casanova Pump Station Failure Depth Map (100-year Storm Event)

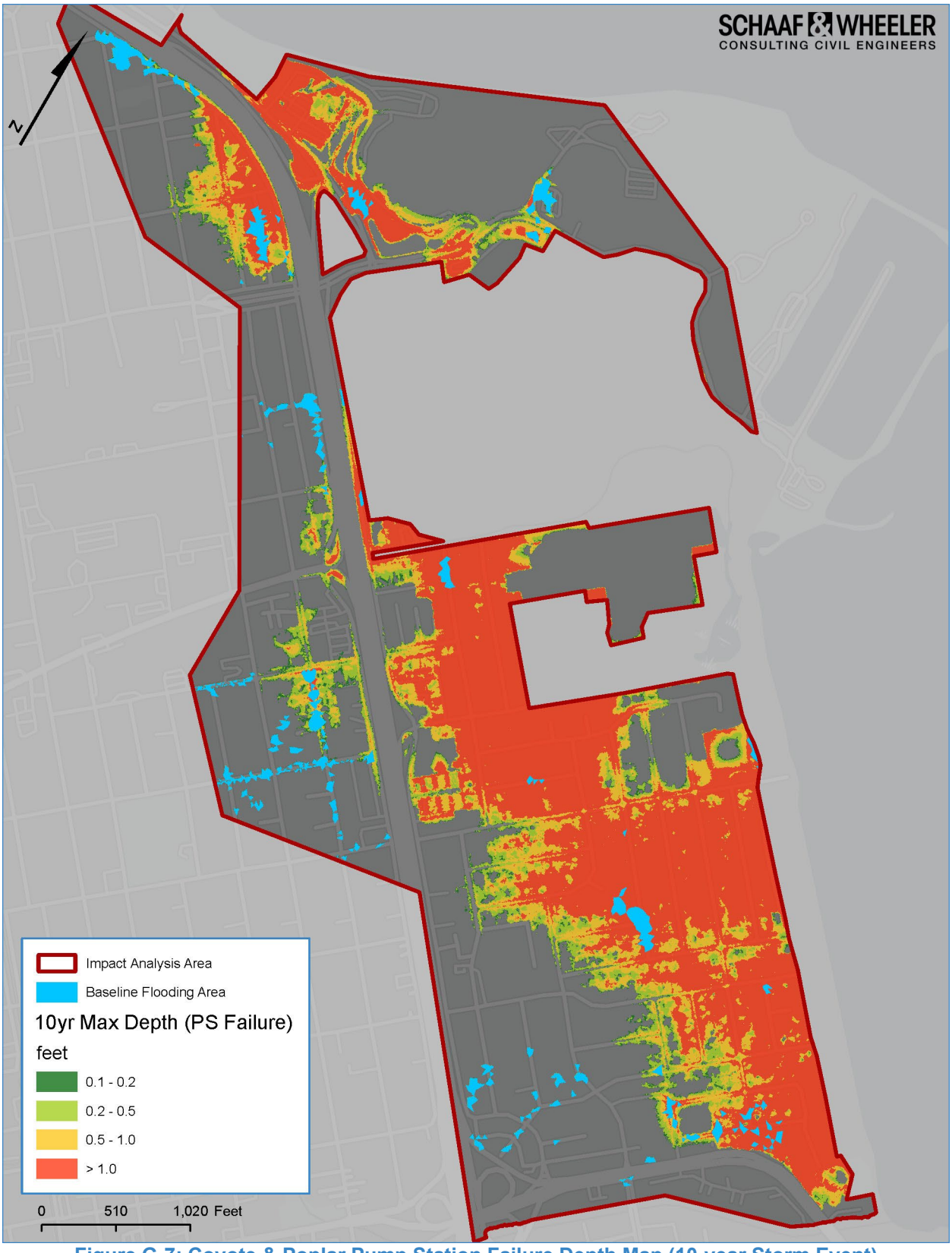


Figure G-7: Coyote & Poplar Pump Station Failure Depth Map (10-year Storm Event)

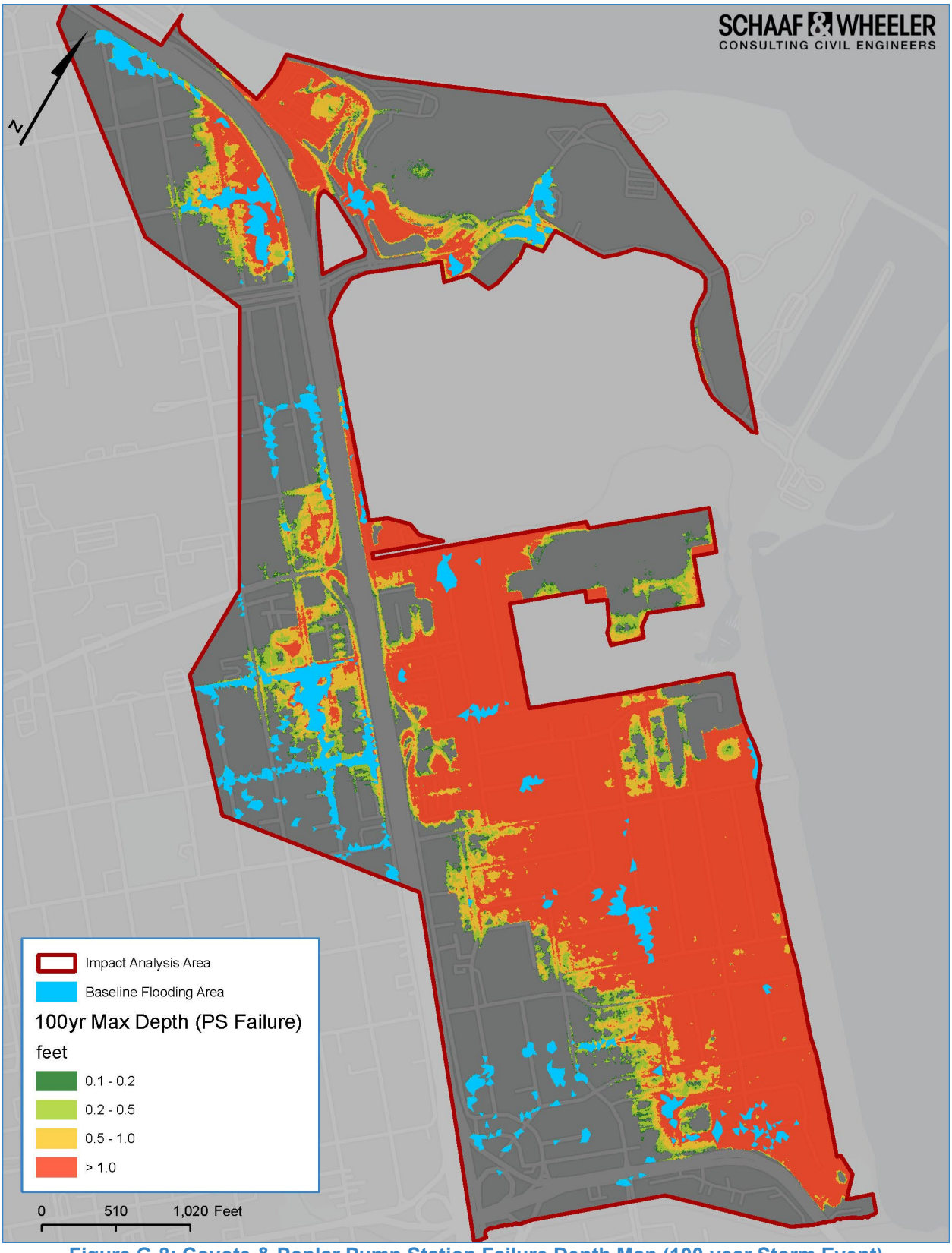


Figure G-8: Coyote & Poplar Pump Station Failure Depth Map (100-year Storm Event)

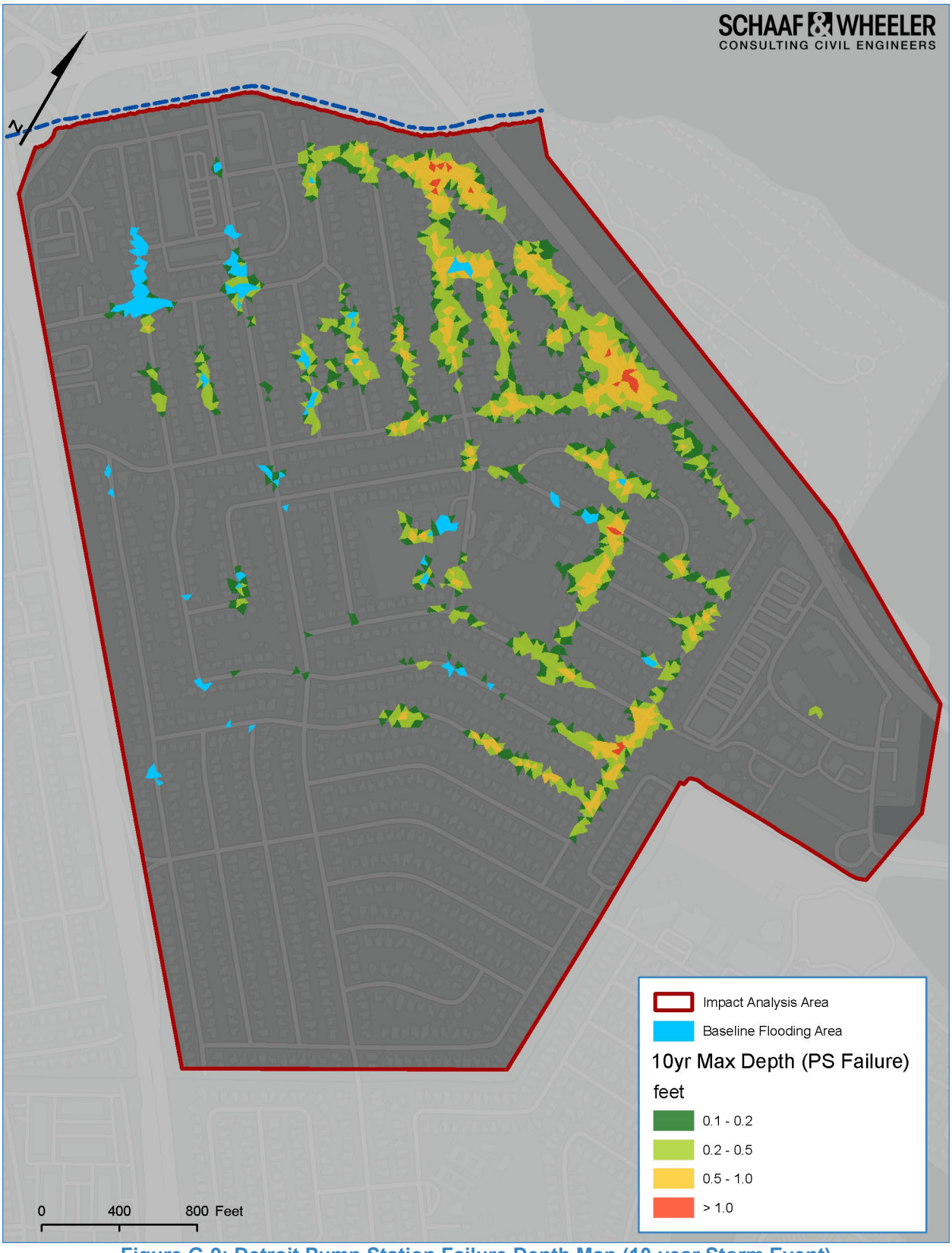


Figure G-9: Detroit Pump Station Failure Depth Map (10-year Storm Event)



Figure G-10: Detroit Pump Station Failure Depth Map (100-year Storm Event)

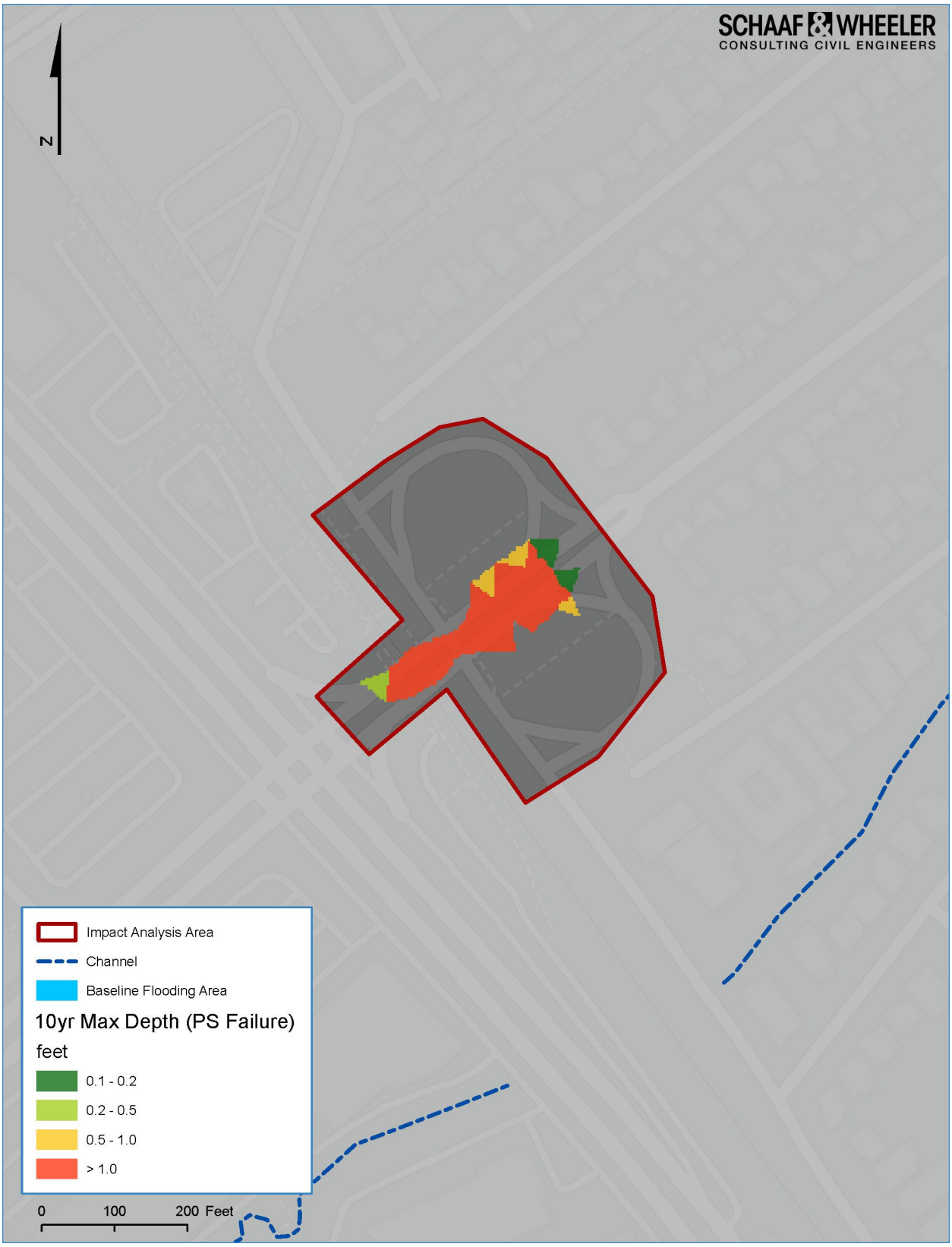


Figure G-11: Hillsdale Ave Pump Station Failure Depth Map (10-year Storm Event)

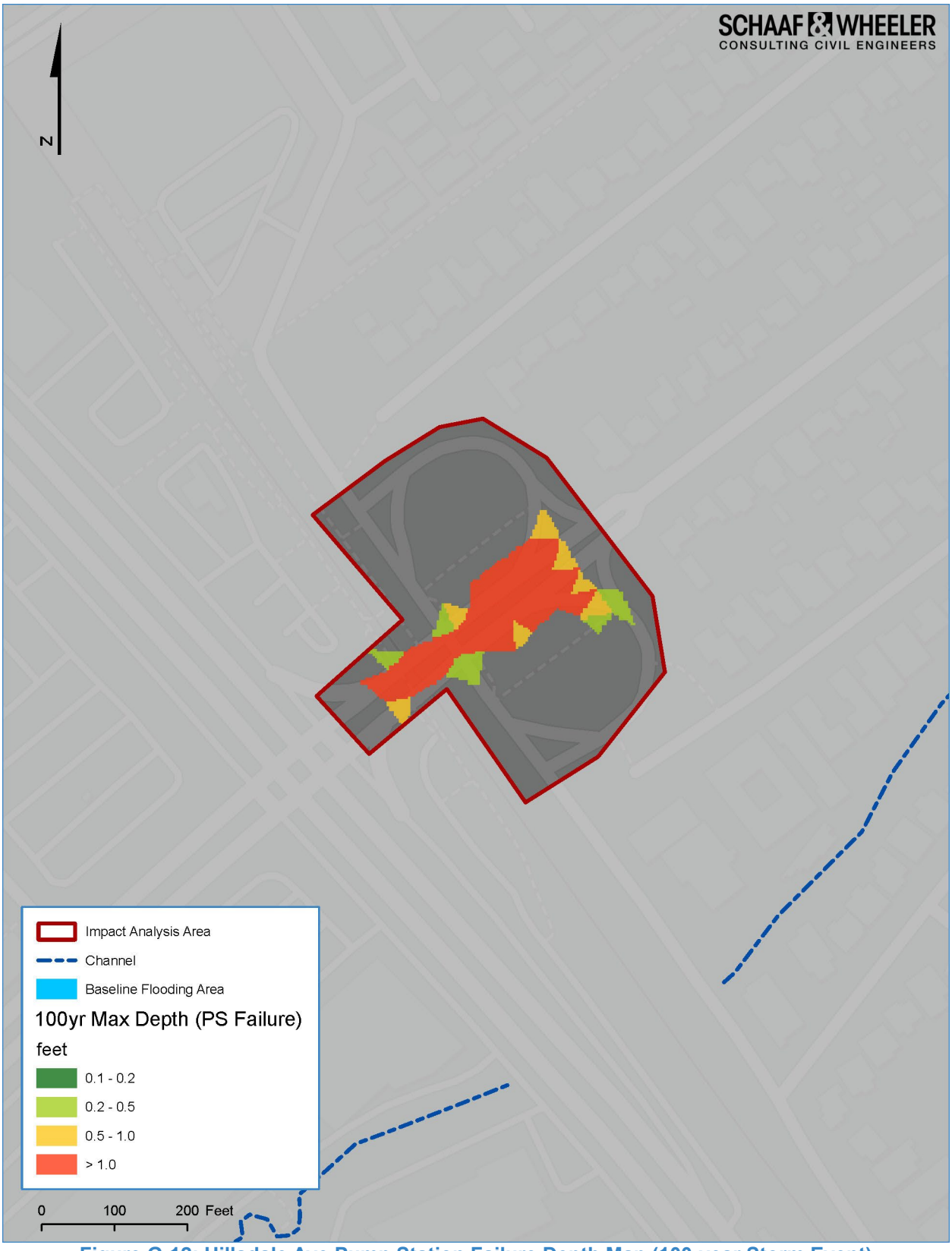


Figure G-12: Hillsdale Ave Pump Station Failure Depth Map (100-year Storm Event)

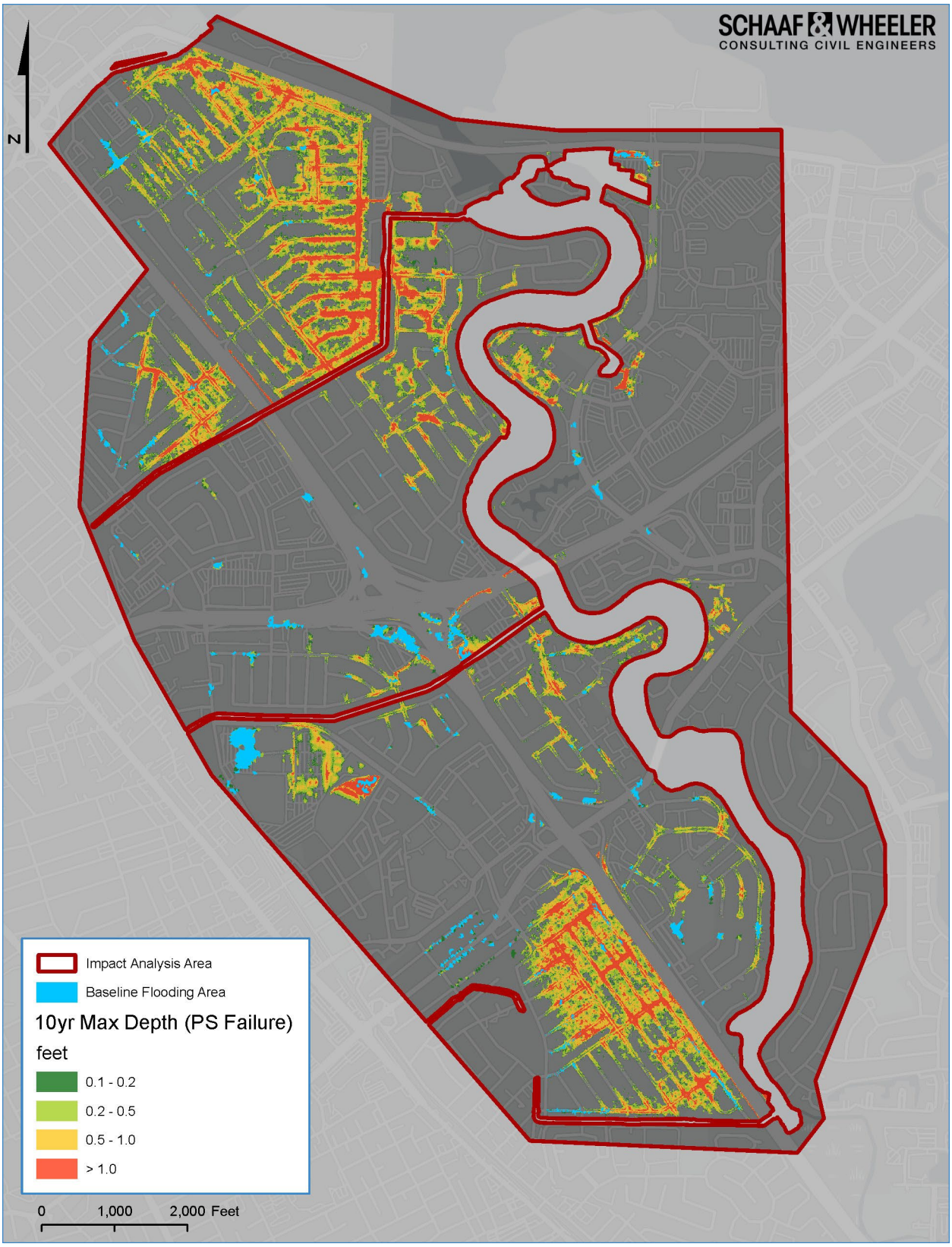


Figure G-13: Marina Lagoon Pump Station Failure Depth Map (10-year Storm Event)

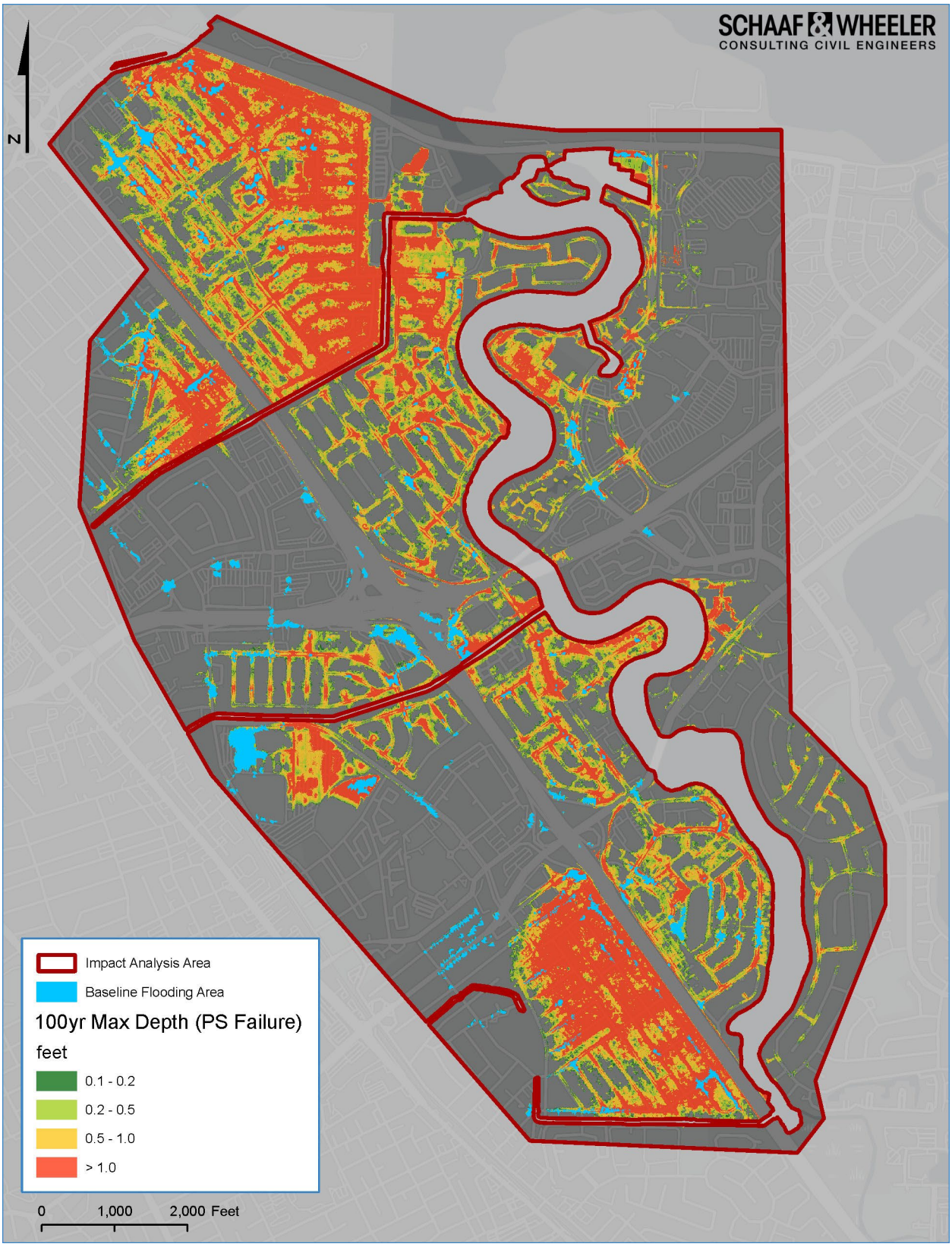


Figure G-14: Marina Lagoon Pump Station Failure Depth Map (100-year Storm Event)

Appendix H: Detailed Pump Station Cost Estimates

Short-Term Projects

42nd Avenue Pump Station Short-Term

Item	Estimated Construction Cost
SCADA upgrade	$10,000
Backup pump controls with mechanical floats	$40,000
On-site generator	$400,000
Concrete pad, fencing, and wiring for generator	$100,000
Subtotal	**$550,000**
35% Engineering, CM, Admin, Permitting, etc.	$190,000
40% Contingency	$220,000
TOTAL	**$960,000**

Hillsdale Pump Station Short-Term

Item	Estimated Construction Cost
SCADA upgrade	$10,000
Install backup pump controls with mechanical floats	$40,000
On-site generator	$400,000
Concrete pad, fencing, and wiring for generator	$100,000
Subtotal	**$550,000**
35% Engineering, CM, Admin, Permitting, etc.	$190,000
40% Contingency	$220,000
TOTAL	**$960,000**

Casanova Pump Station Short-Term

Item	Estimated Construction Cost
SCADA upgrade	$10,000
Backup pump controls with mechanical floats	$40,000
Repair corroded discharge piping and fittings	$40,000
Repair wet well vent pipe	$10,000
Subtotal	**$100,000**
35% Engineering, CM, Admin, Permitting, etc.	$40,000
40% Contingency	$40,000
TOTAL	**$180,000**

Poplar Avenue Pump Station Short-Term

Item	Estimated Construction Cost
SCADA upgrade	$10,000
Replace Tideflex pump discharge check valves	$100,000
Seal water intrusion at pump cable panels and repair corrosion	$10,000
Investigate electrical breaker tripping/power quality issues	$50,000
Subtotal	**$170,000**
35% Engineering, CM, Admin, Permitting, etc.	$60,000
40% Contingency	$70,000
TOTAL	**$300,000**

Coyote Point Pump Station Short-Term

Item	Estimated Construction Cost
Upgrade trash capture debris rack to improve access and cleaning	$300,000
SCADA upgrade	$10,000
Replace Tideflex pump discharge check valves	$80,000
Seal water intrusion at pump cable panels and repair corrosion	$10,000
Subtotal	**$400,000**
35% Engineering, CM, Admin, Permitting, etc.	$140,000
40% Contingency	$160,000
TOTAL	**$700,000**

Fathom Drive Pump Station Short-Term

Item	Estimated Construction Cost
SCADA upgrade	$10,000
Backup pump controls with mechanical floats	$40,000
Site security improvements and fencing for portable backup generator	$30,000
Replace corroded trash rack	$15,000
Install site lighting	$20,000
Replace wet well top slab and install hinged access hatches	$200,000
Relocate electrical panels to be code-compliant and away from wet well openings	$100,000
Subtotal	**$420,000**
35% Engineering, CM, Admin, Permitting, etc.	$150,000
40% Contingency	$170,000
TOTAL	**$740,000**

Marina Lagoon Pump Station Short-Term

Item	Estimated Construction Cost
Detailed condition assessment of major structural, mechanical, electrical, and control systems	$150,000
~~Physical hydraulic model study of lagoon pump station and trash rack hydraulics~~ [***Complete]***	~~$250,000~~
Wetwell modifications per recommendations of physical modeling study	$3,400,000
Reconfigure trash rack	$350,000
~~Rehabilitate cathodic protection system~~ **[*Complete*]**	~~$100,000~~
Replace/rehabilitate remaining original gear boxes and gear-reduction units	$200,000
Backup pump controls with mechanical floats	$40,000
~~SCADA upgrade~~ **[*Complete*]**	~~$10,000~~
Subtotal (Excluding Completed Items)	**$4,140,000**
35% Engineering, CM, Admin, Permitting, etc.	$1,450,000
40% Contingency	$1,660,000
TOTAL	**$7,250,000**

3rd & Detroit Pump Station Short-Term

Item	Estimated Construction Cost
Replace mechanical trash rack.	$450,000
SCADA upgrade	$10,000
Repair settlement at wet well structure cold joint near trash rack.	$30,000
Backup pump controls with mechanical floats	$40,000
Repair and/or replace roof	$125,000
Subtotal	**$660,000**
35% Engineering, CM, Admin, Permitting, etc.	$230,000
40% Contingency	$260,000
TOTAL	**$1,150,000**

16th Avenue Pump Station Short-Term

Item	Estimated Construction Cost
Electrical system inspection and upgrades to meet current code	$100,000
Replace damaged stairs to pump station entrance	$40,000
Reseal pump head	$10,000
Replace pump discharge check valve and outfall	$30,000
Replace corroded metal equipment	$60,000
Replace trash rack system	$20,000
Replace damaged or missing floorboards	$40,000
Subtotal	**$300,000**
35% Engineering, CM, Admin, Permitting, etc.	$110,000
40% Contingency	$120,000
TOTAL	**$530,000**

Long-Term Projects

42nd Avenue Pump Station Long-Term

Item	Qty	Unit	Unit Cost	Estimated Construction Cost
Reconstruct existing pump station with total station capacity of 7,200 GPM	16	cfs	$50,000	$800,000
Construct 348 LF of 24" force main	348	LF	$1,500	$500,000
Subtotal				**$1,300,000**
35% Engineering, CM, Admin, Permitting, etc.				$460,000
40% Contingency				$520,000
TOTAL				**$2,280,000**

Hillsdale Pump Station Long-Term

Item	Qty	Unit	Unit Cost	Estimated Construction Cost
Rehabilitate existing pump station with total station capacity of 5,800 GPM	12.9	cfs	$50,000	$650,000
Subtotal				**$650,000**
35% Engineering, CM, Admin, Permitting, etc.				$230,000
40% Contingency				$260,000
TOTAL				**$1,140,000**

Casanova Pump Station Long-Term

Item	Qty	Unit	Unit Cost	Estimated Construction Cost
Detailed condition assessment of structural, mechanical, electrical, and control systems	1	LS	$75,000	$75,000
40% Contingency				$30,000
TOTAL				**$105,000**

Fathom Drive Pump Station Long-Term

Item	Qty	Unit	Unit Cost	Estimated Construction Cost
Detailed structural condition assessment (concrete structures and discharge piping)	1	LS	$50,000	$50,000
40% Contingency				$20,000
TOTAL				**$70,000**

Marina Lagoon Pump Station Long-Term

Item	Qty	Unit	Unit Cost	Estimated Construction Cost
Construct new deep pump station with total station capacity of 300,000 GPM	680	cfs	$25,000	$17,000,000
Full reconstruction/rehabilitation of existing Marina Lagoon Pump Station with total station capacity of 750,000 GPM	1,600	cfs	$25,000	$40,000,000
Subtotal				**$57,000,000**
35% Engineering, CM, Admin, Permitting, etc.				$20,000,000
40% Contingency				$23,000,000
TOTAL				**$100,000,000**

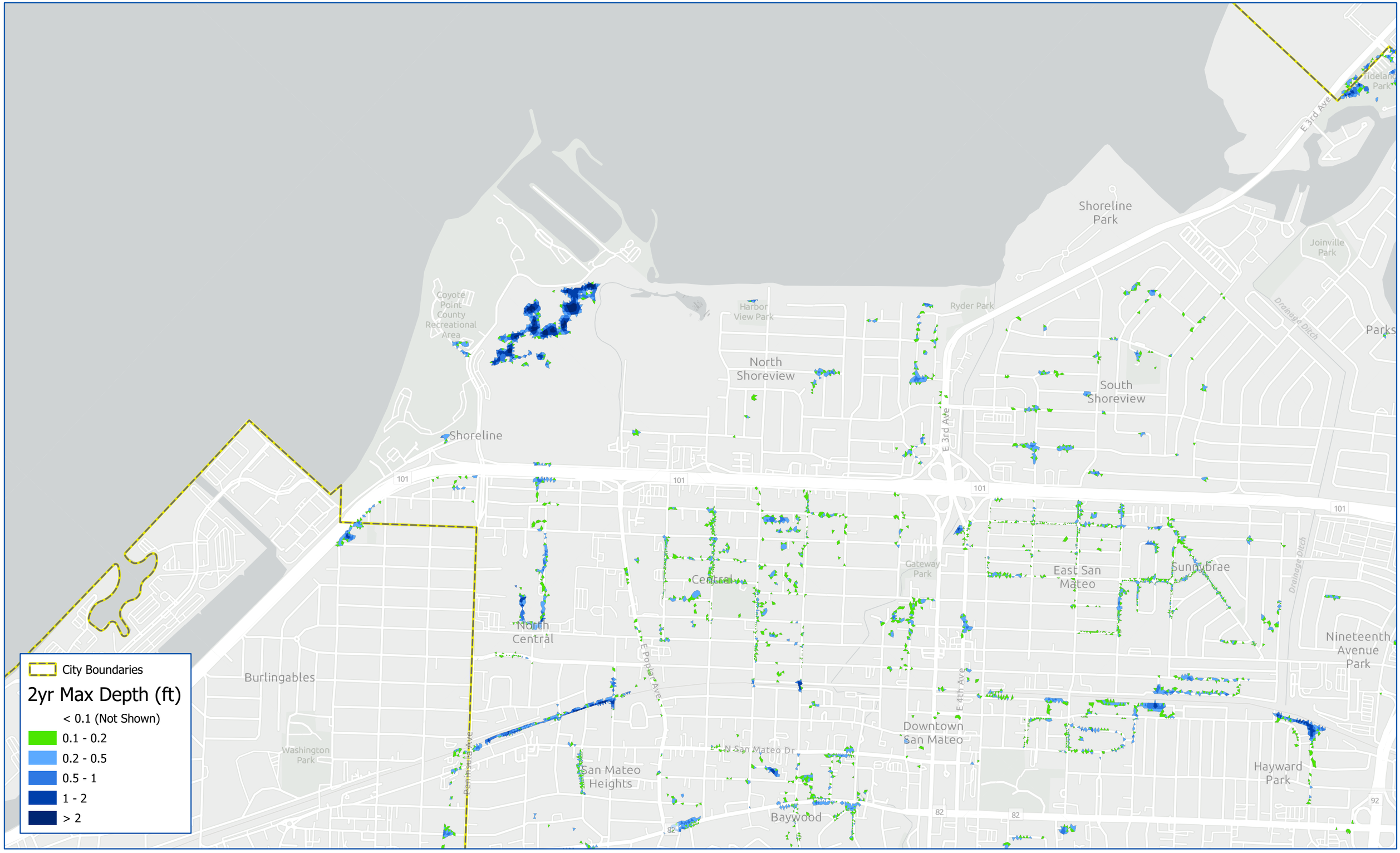
3rd & Detroit Pump Station Long-Term

Item	Qty	Unit	Unit Cost	Estimated Construction Cost
Rehabilitate existing pump station with total station capacity of 20,000 GPM	44.6	cfs	$35,000	$1,560,000
Subtotal				**$1,560,000**
35% Engineering, CM, Admin, Permitting, etc.				$550,000
40% Contingency				$620,000
TOTAL				**$2,730,000**

16th Avenue Pump Station Long-Term

Item	Qty	Unit	Unit Cost	Estimated Construction Cost
Construct new pump station matching existing total station capacity	4.9	cfs	$50,000	$250,000
Subtotal				**$250,000**
35% Engineering, CM, Admin, Permitting, etc.				$90,000
40% Contingency				$100,000
TOTAL				**$440,000**

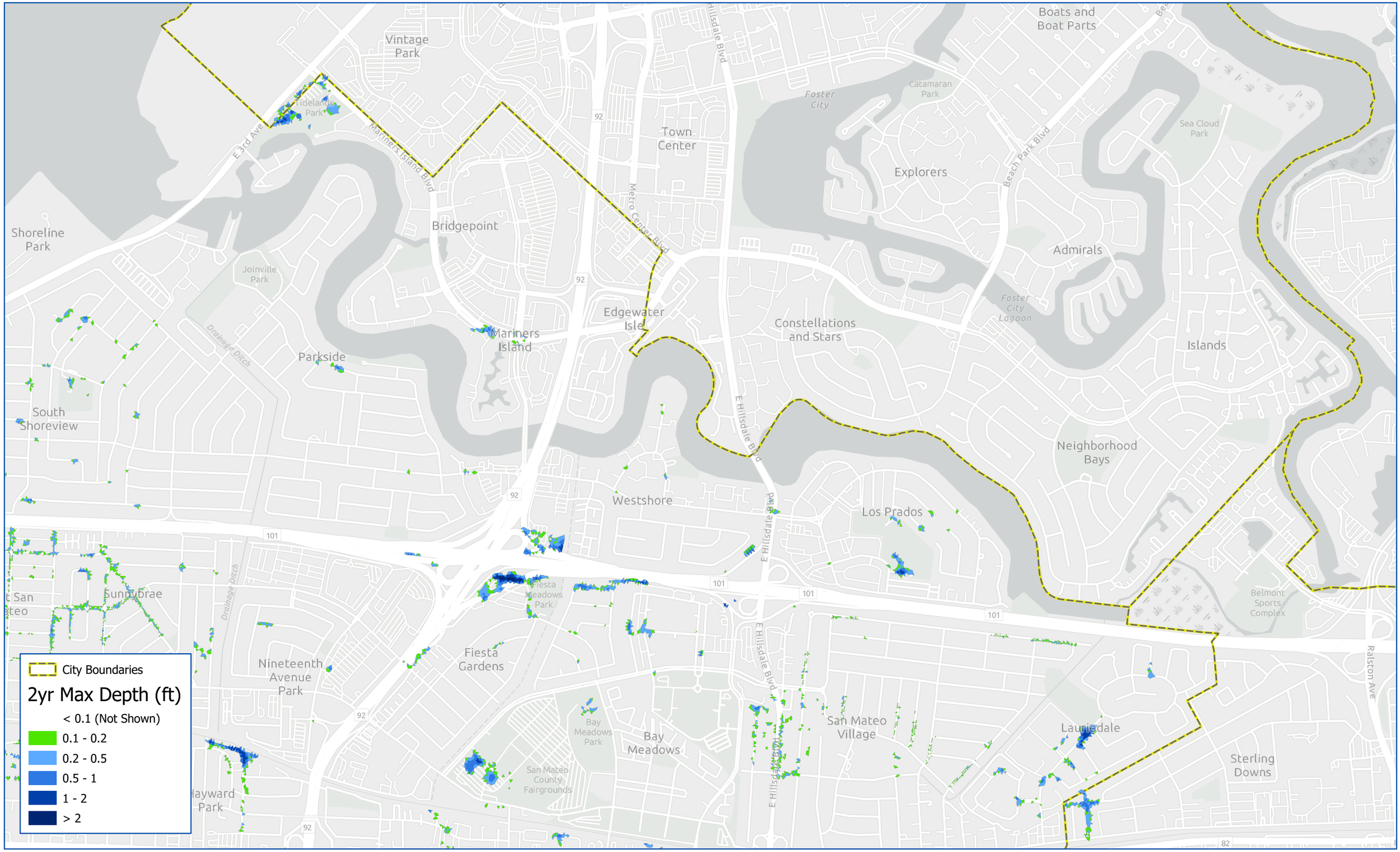
Appendix I: MIKE+ Model Result Maps



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 1,000 Feet

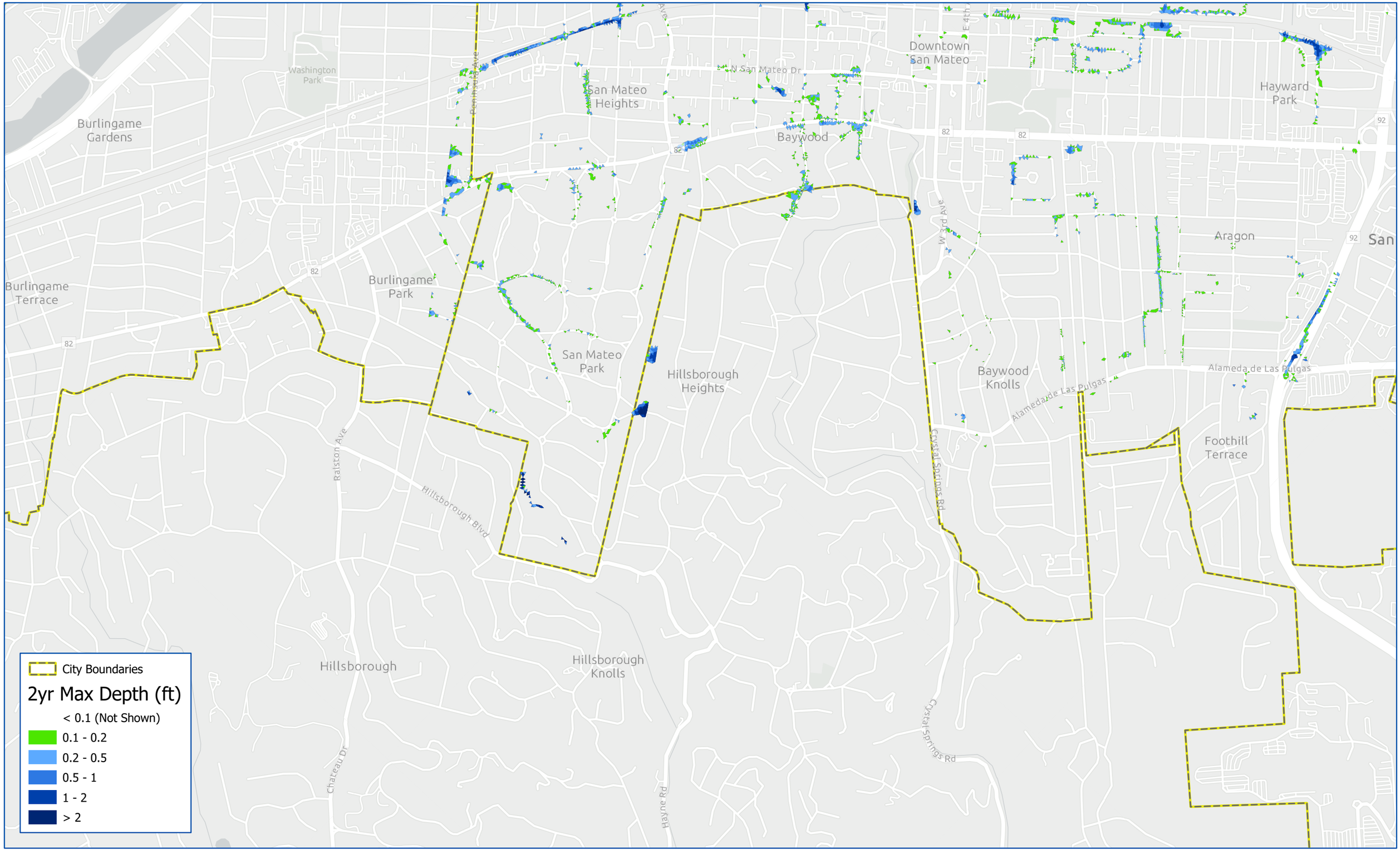
FIGURE I-1: **San Mateo SDMP Model Results (2-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 1,000 Feet

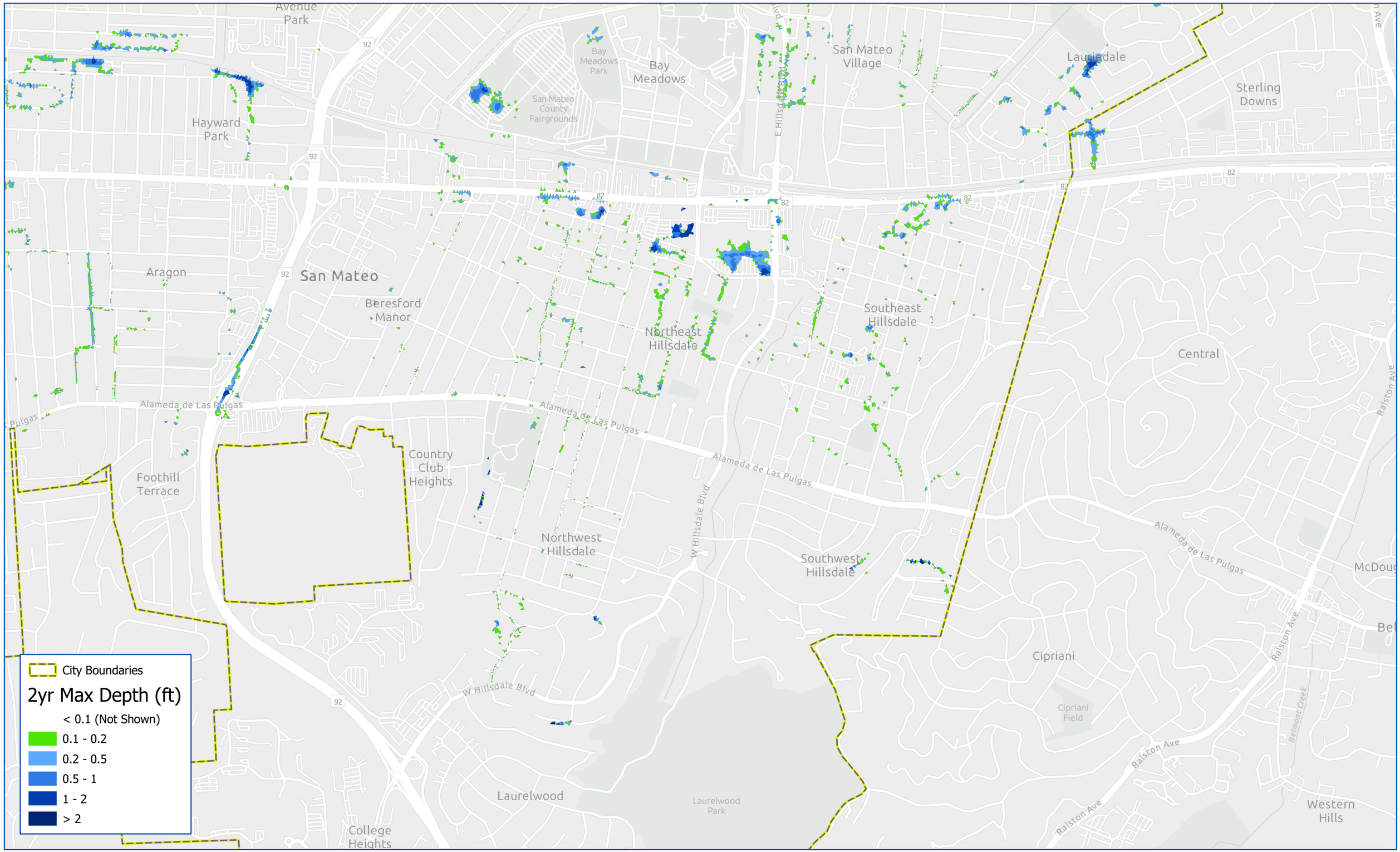
FIGURE I-2: **San Mateo SDMP Model Results (2-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 1,000 Feet

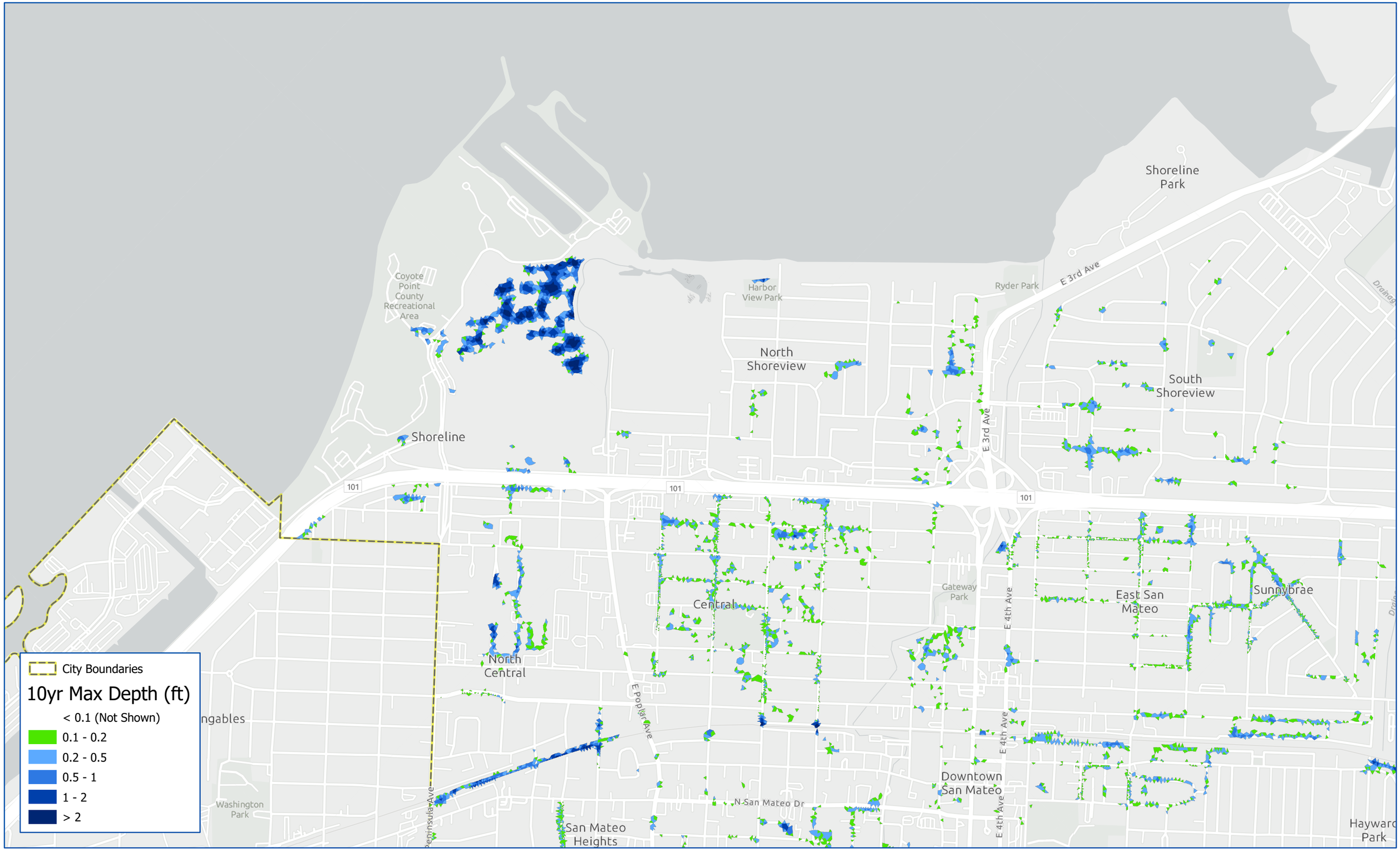
FIGURE I-3: **San Mateo SDMP Model Results (2-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 1,000 Feet

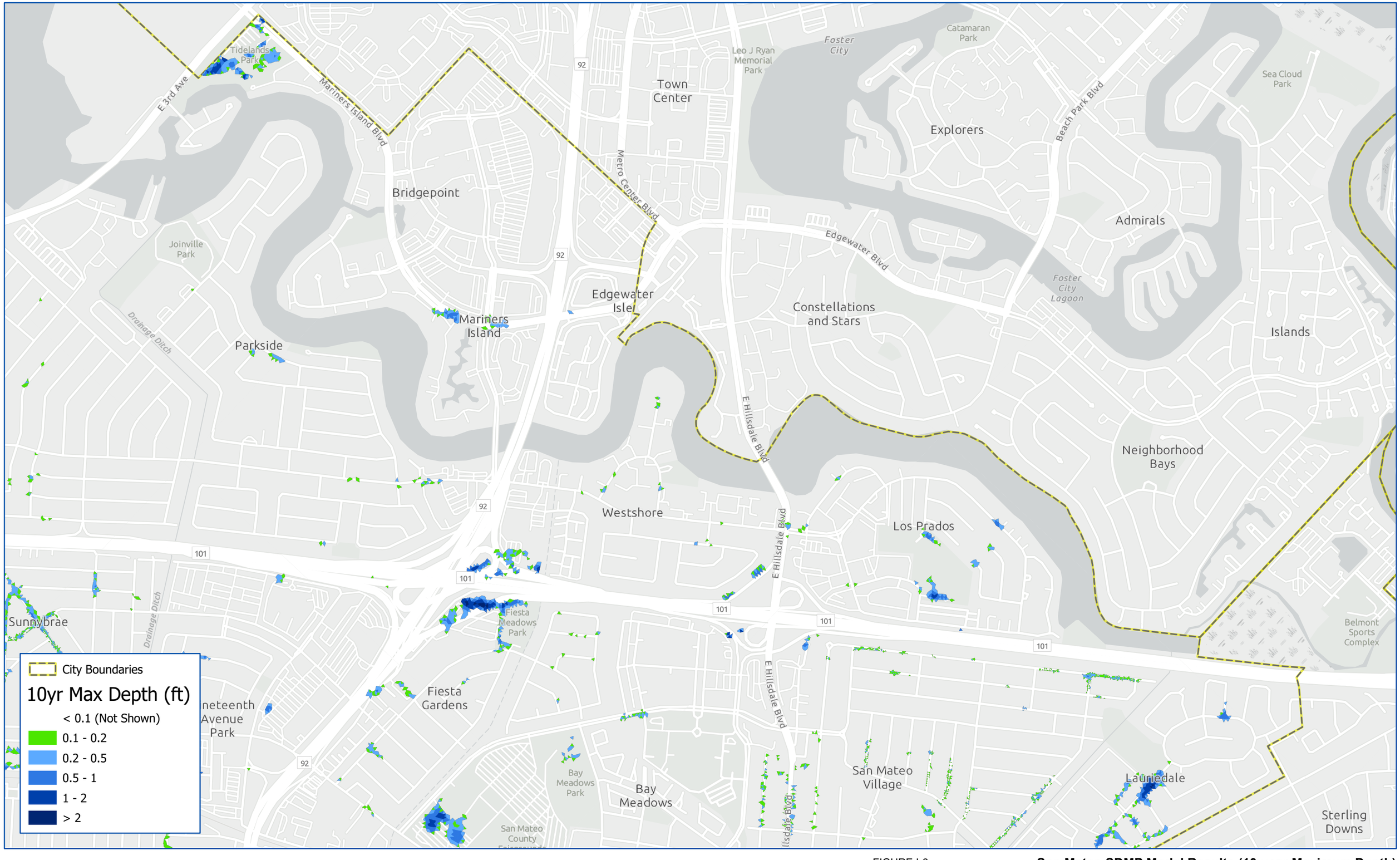
FIGURE I-4: **San Mateo SDMP Model Results (2-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

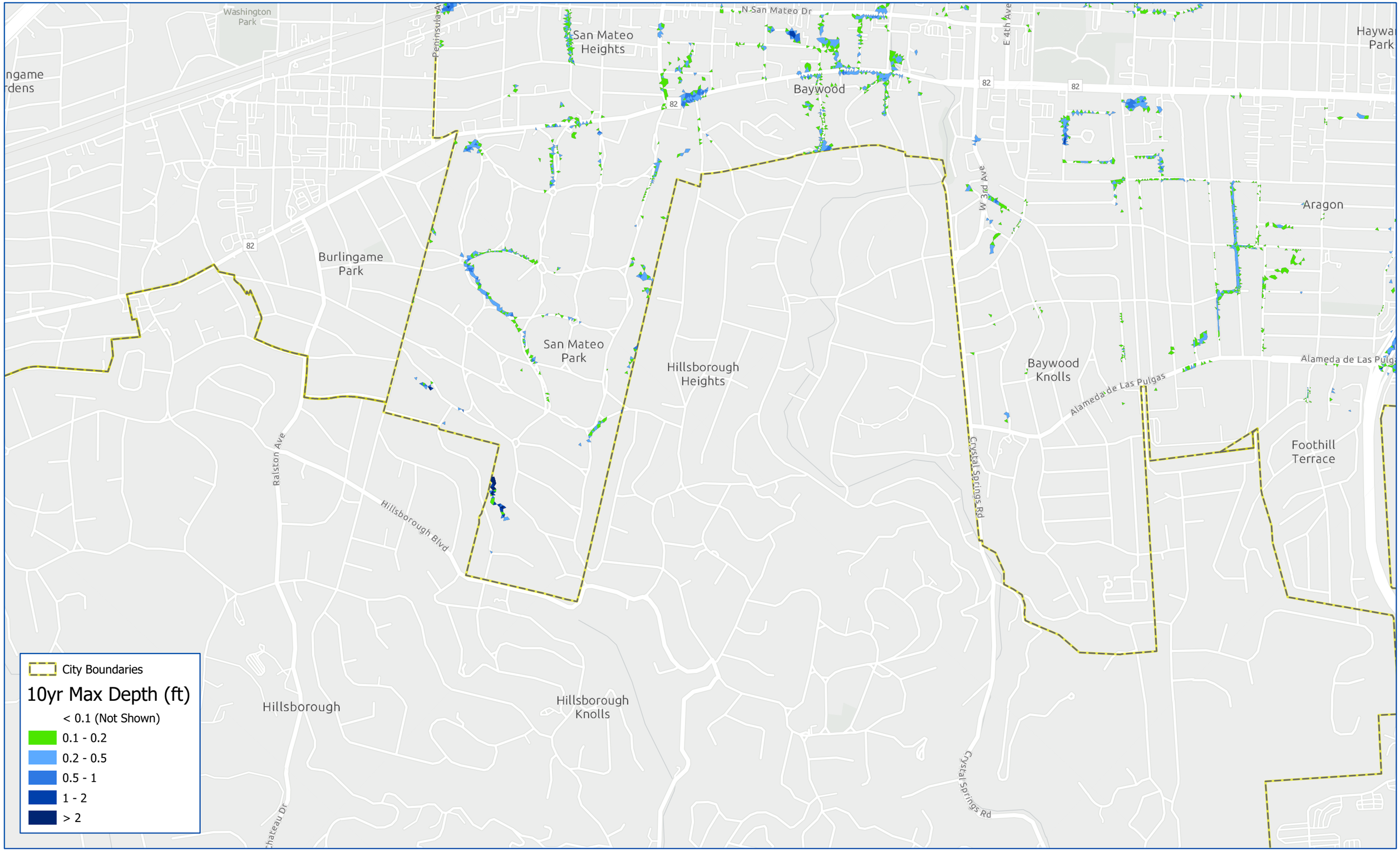
FIGURE I-5: **San Mateo SDMP Model Results (10-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

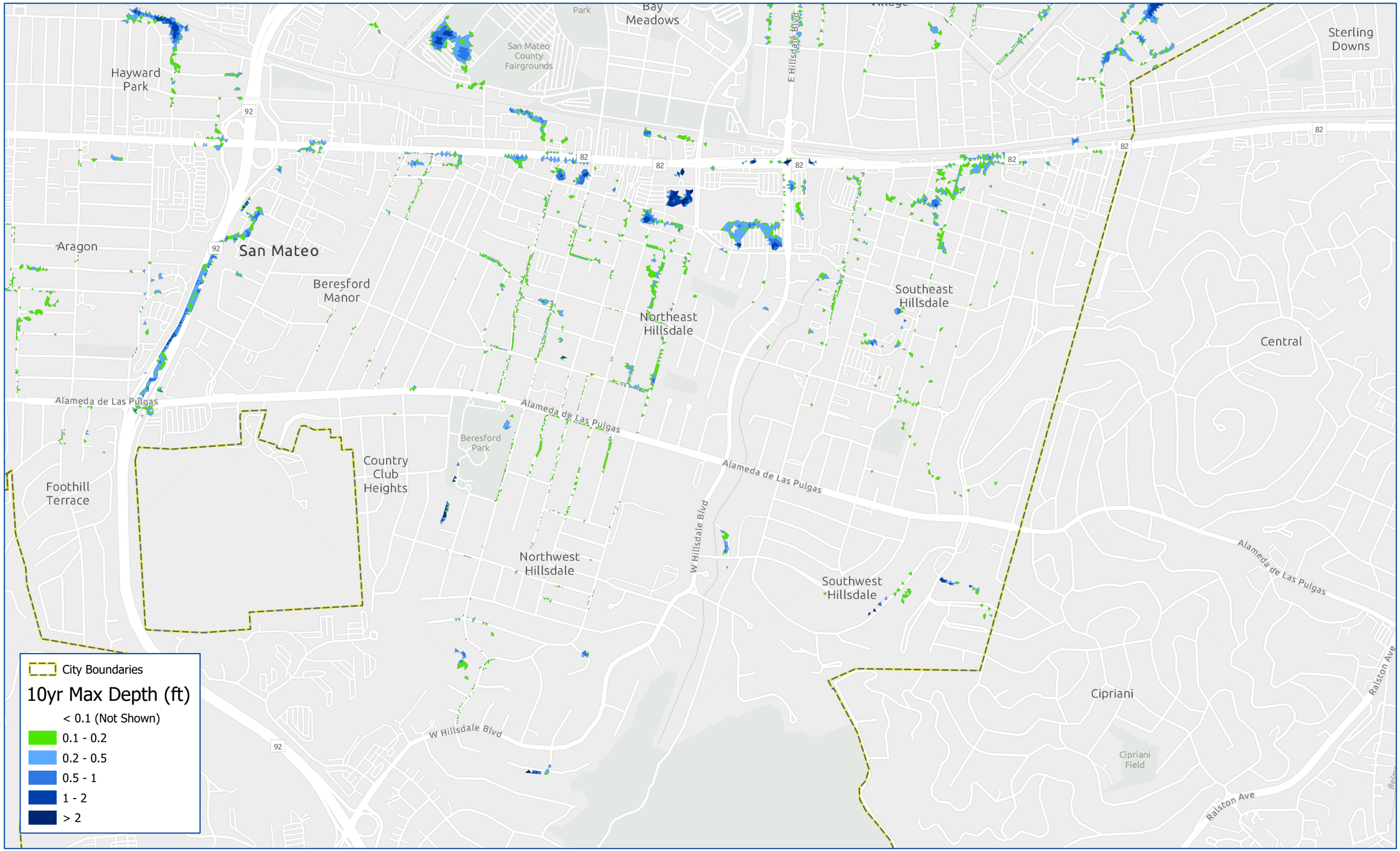
FIGURE I-6: **San Mateo SDMP Model Results (10-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

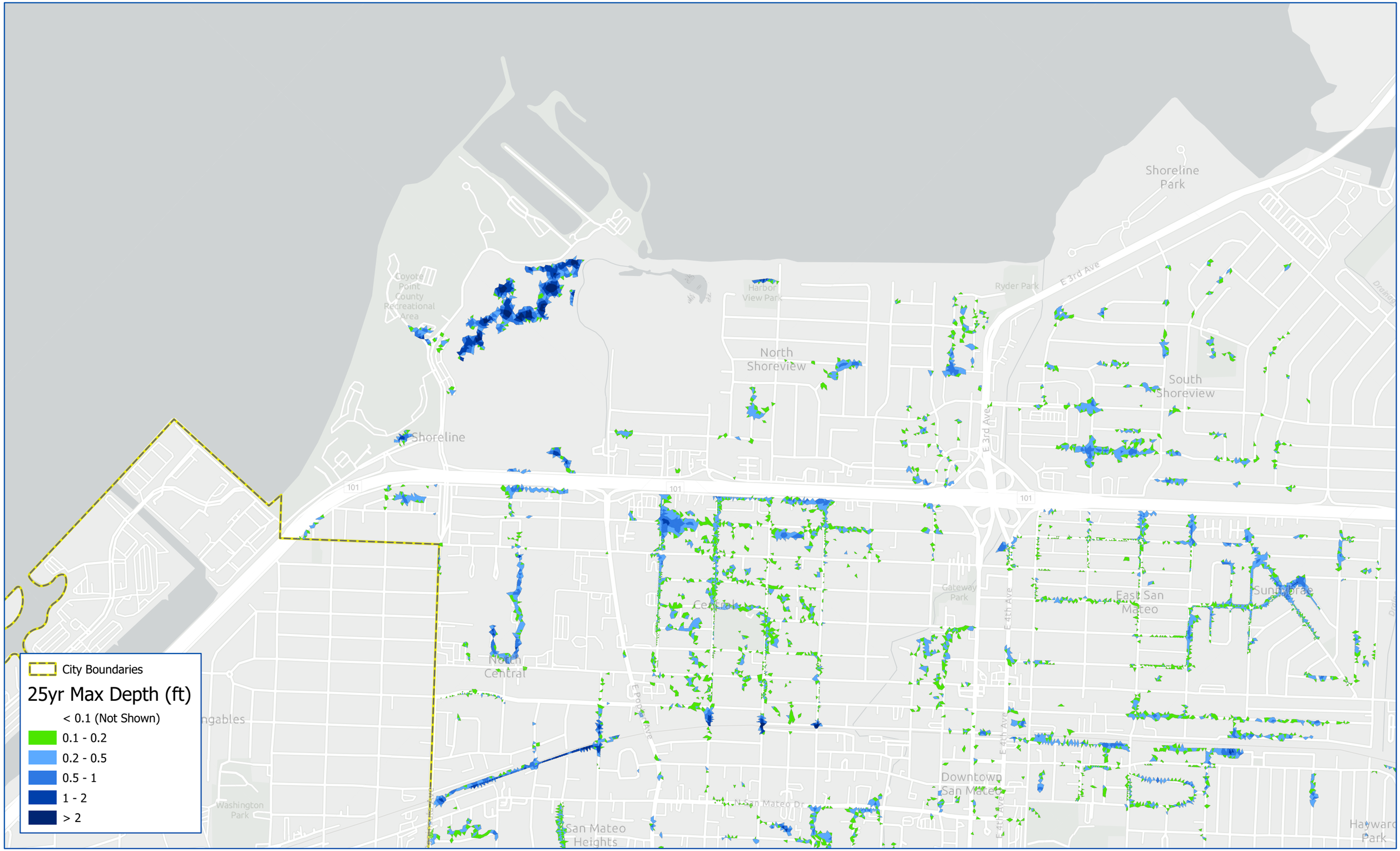
FIGURE I-7: **San Mateo SDMP Model Results (10-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

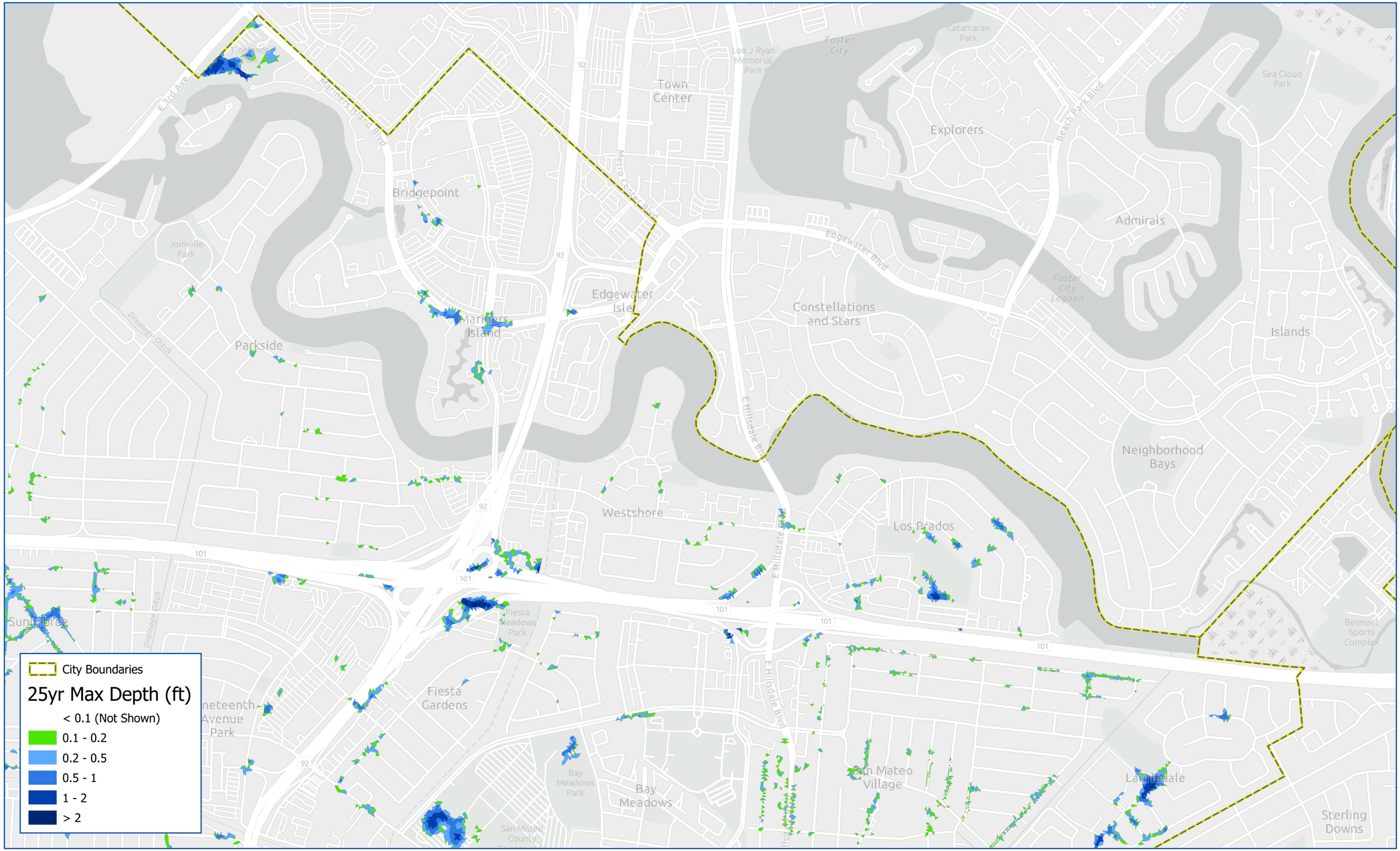
FIGURE I-8: **San Mateo SDMP Model Results (10-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

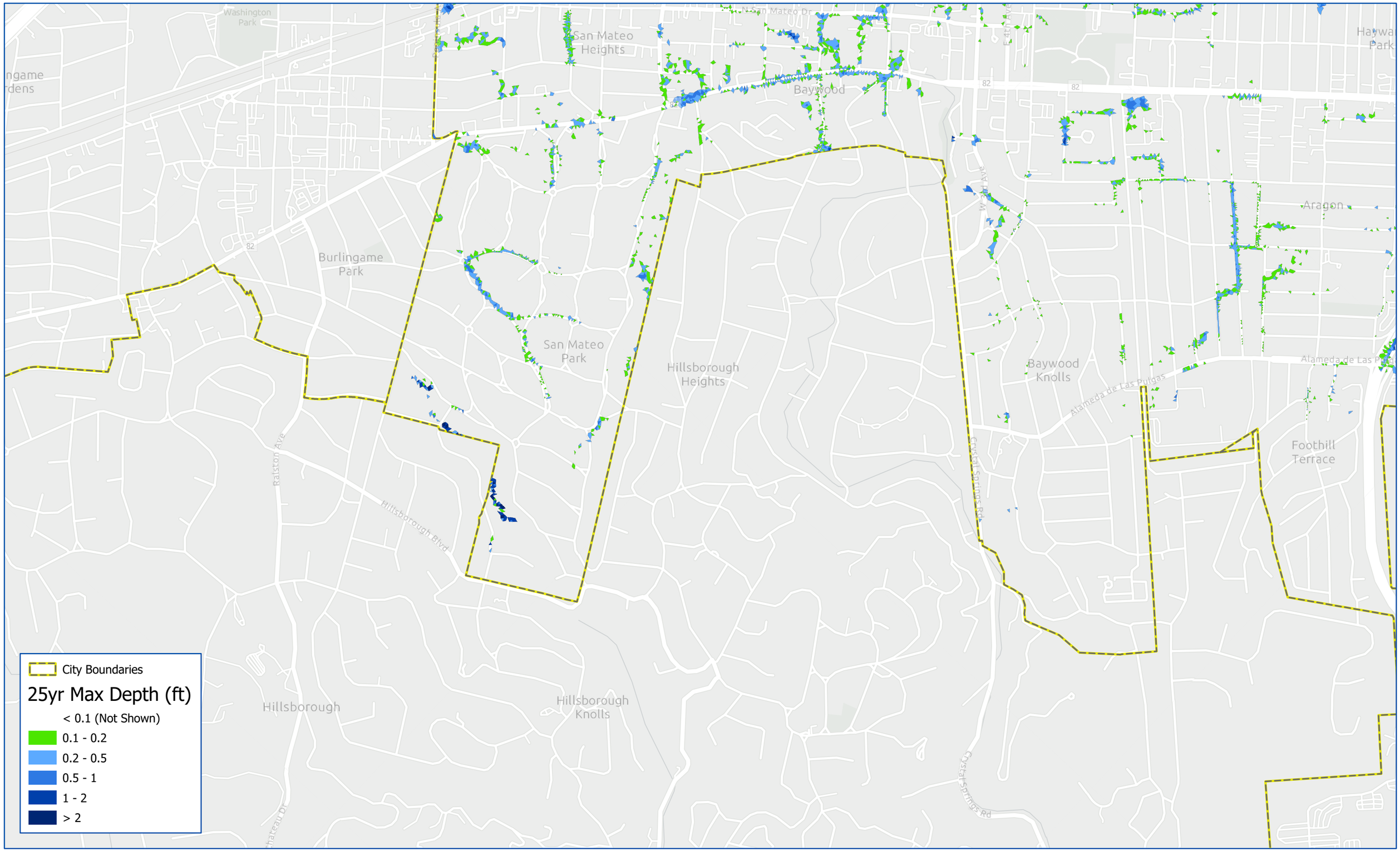
0 500 1,000 Feet

FIGURE I-9: **San Mateo SDMP Model Results (25-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

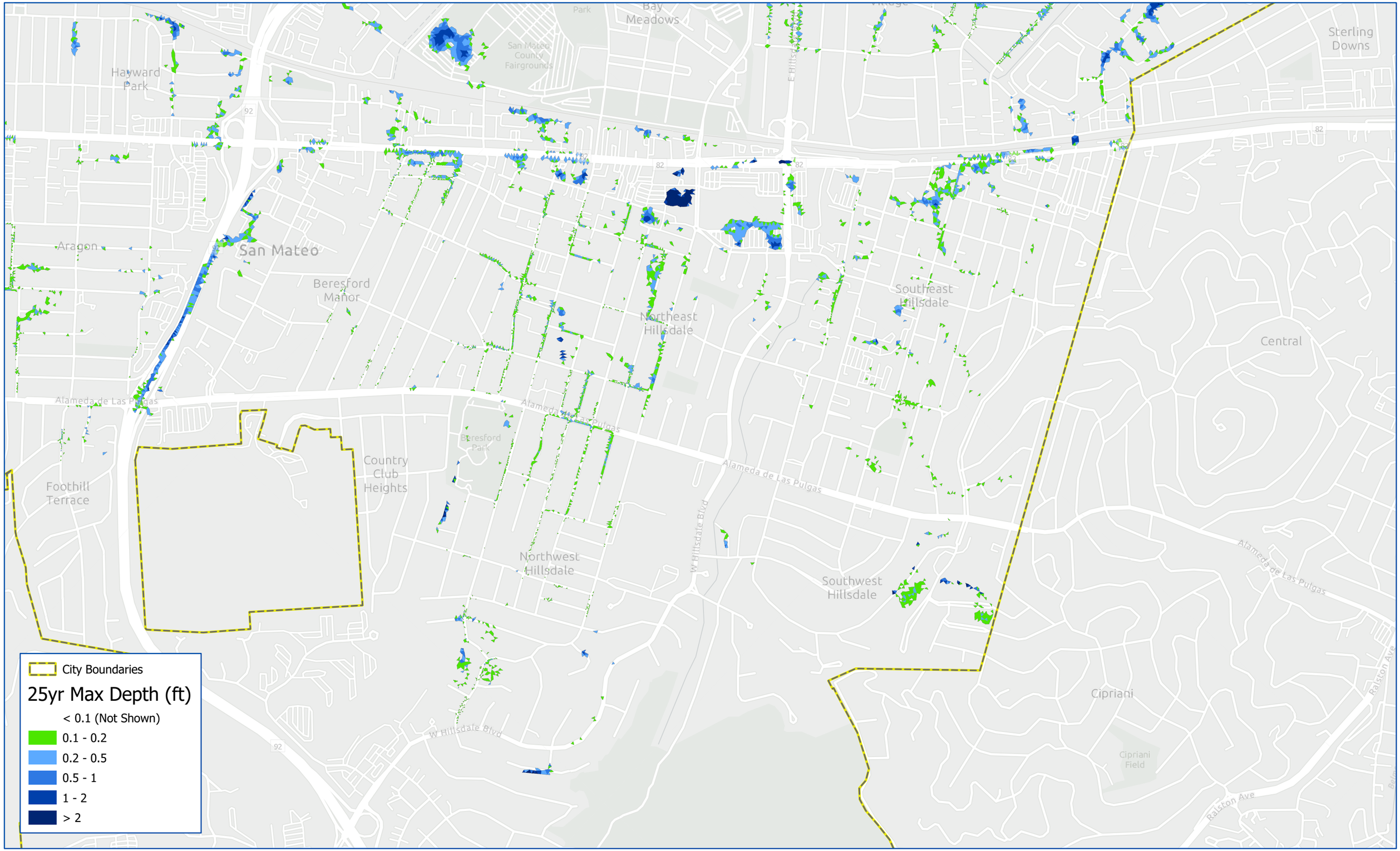
FIGURE I-10: **San Mateo SDMP Model Results (25-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

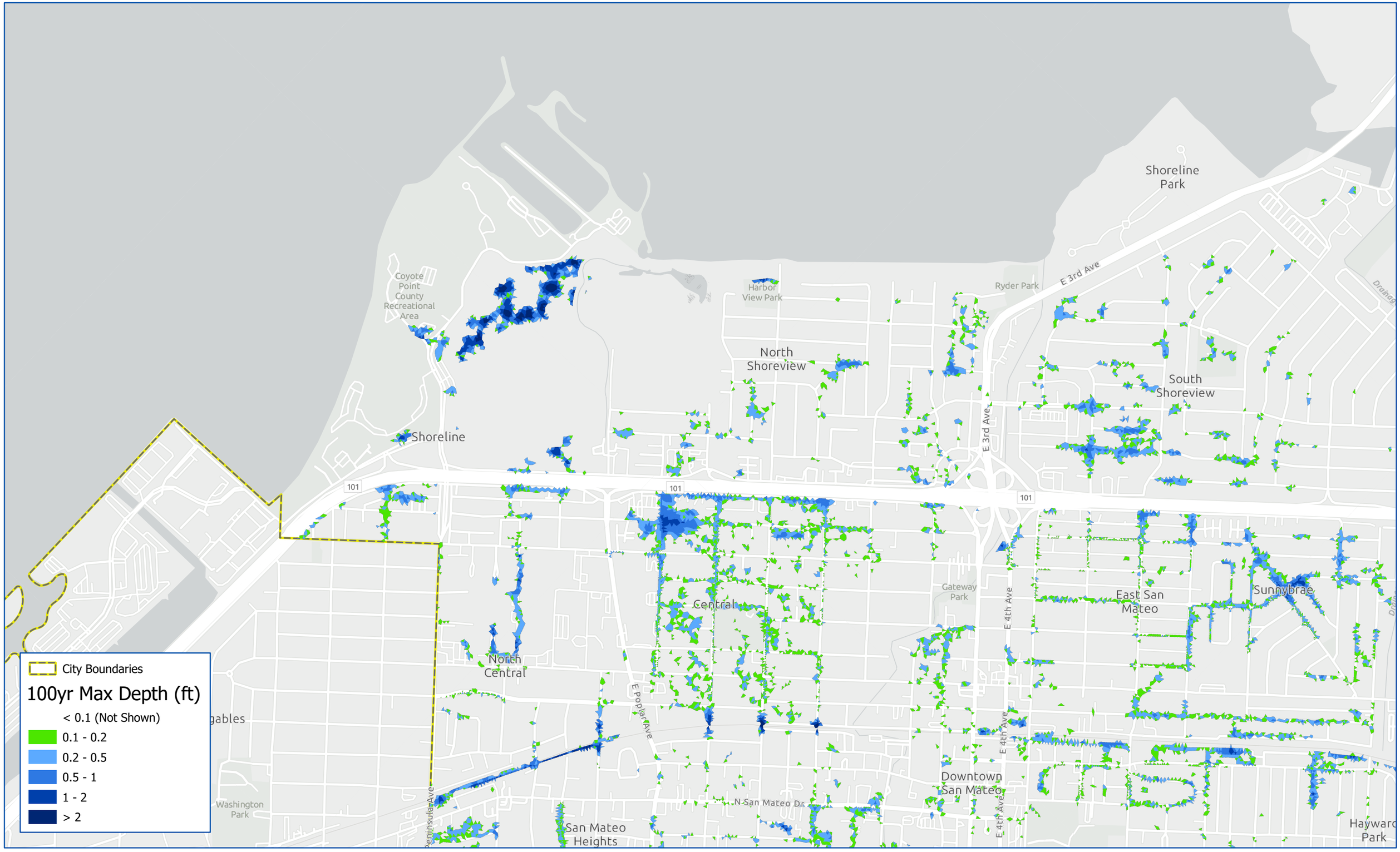
FIGURE I-11: **San Mateo SDMP Model Results (25-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

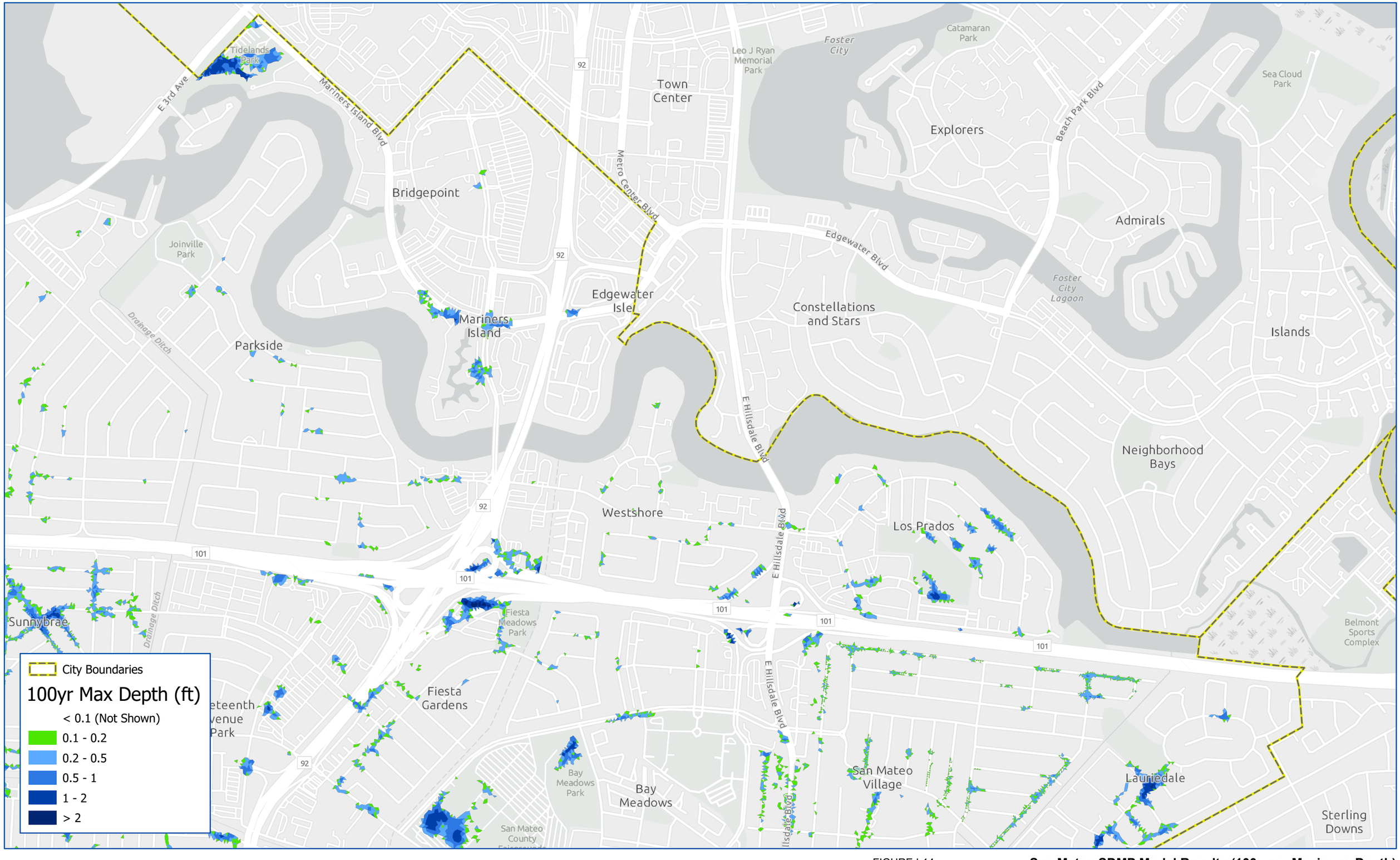
FIGURE I-12: **San Mateo SDMP Model Results (25-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

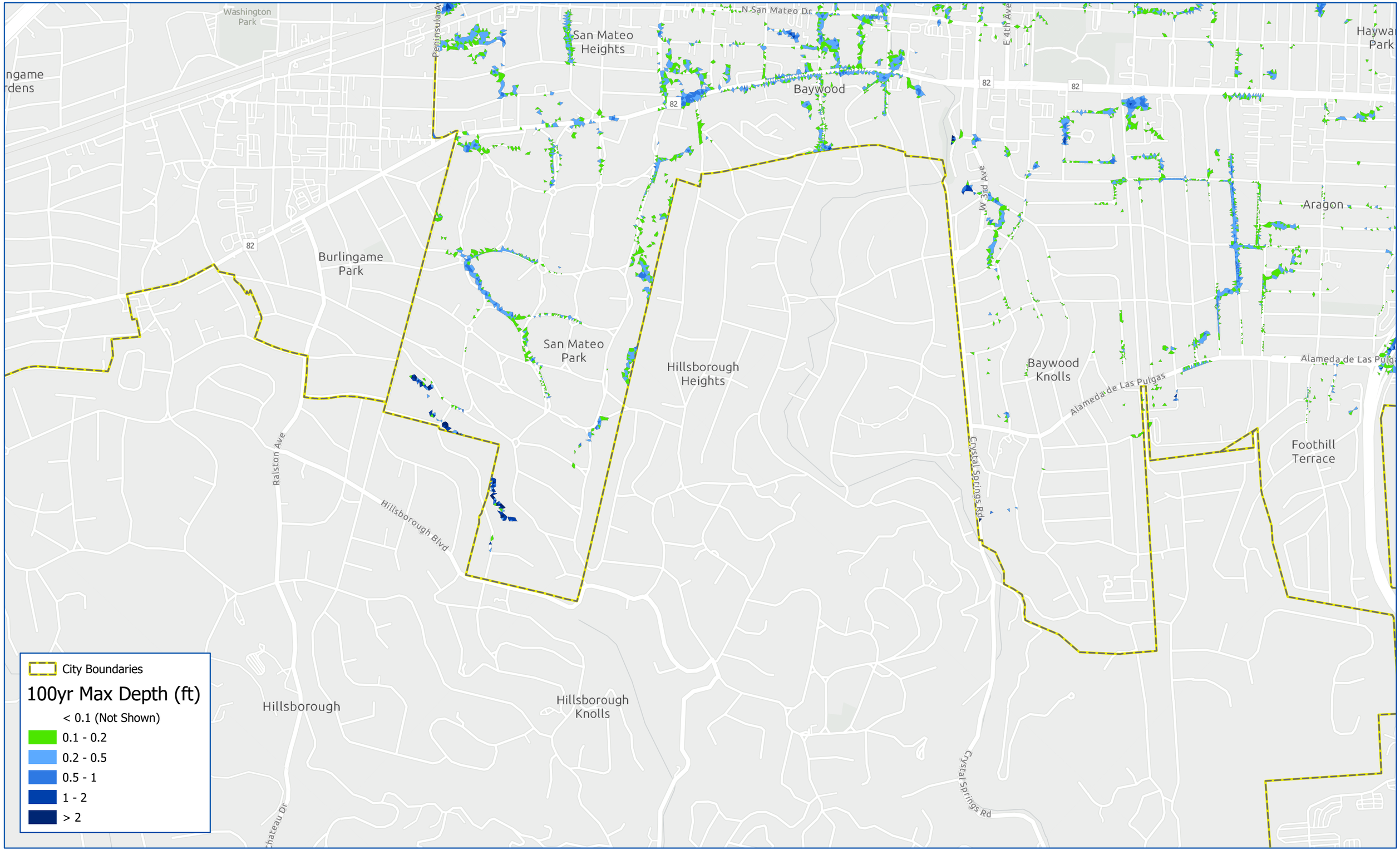
FIGURE I-13: **San Mateo SDMP Model Results (100-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

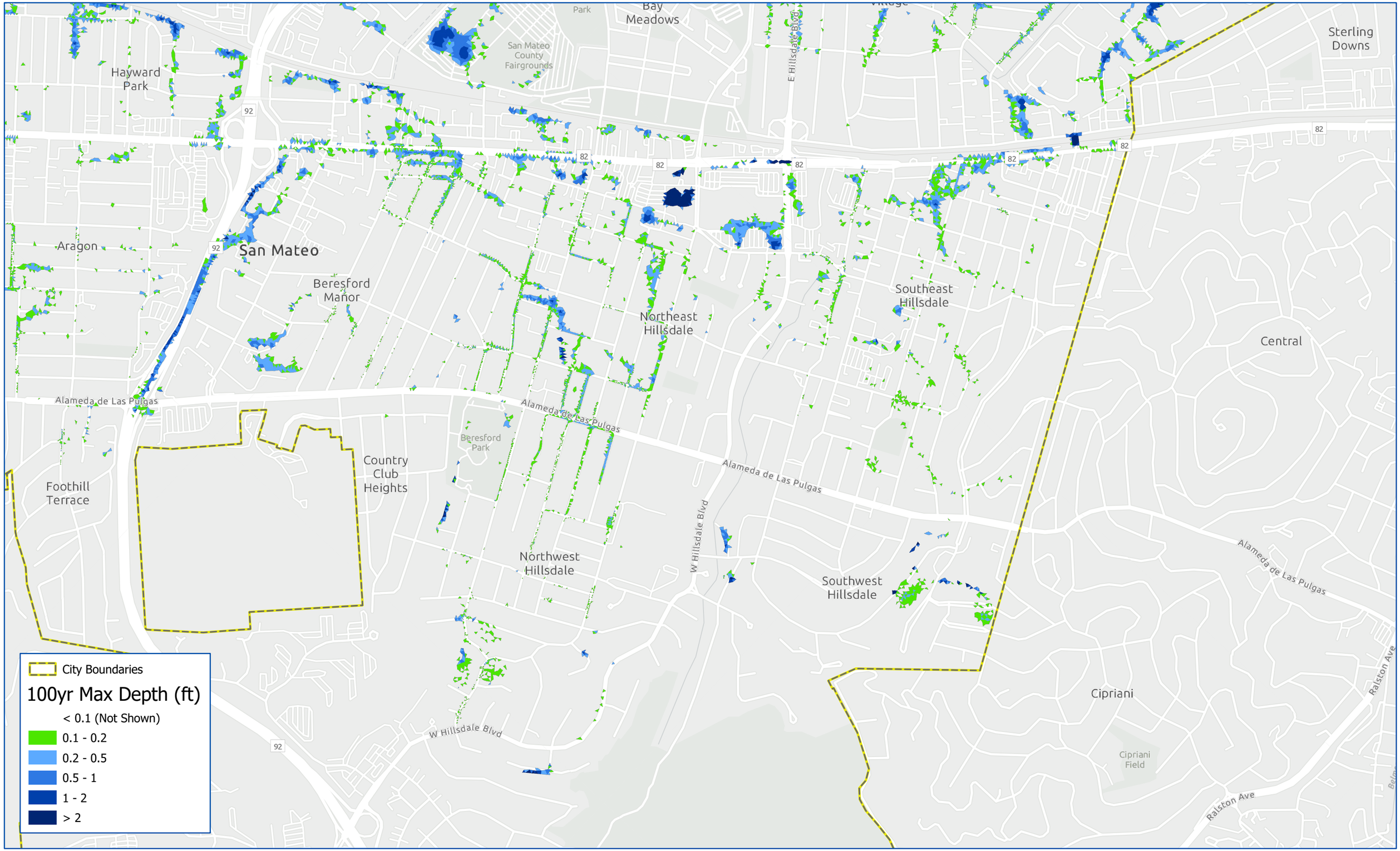
FIGURE I-14: **San Mateo SDMP Model Results (100-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

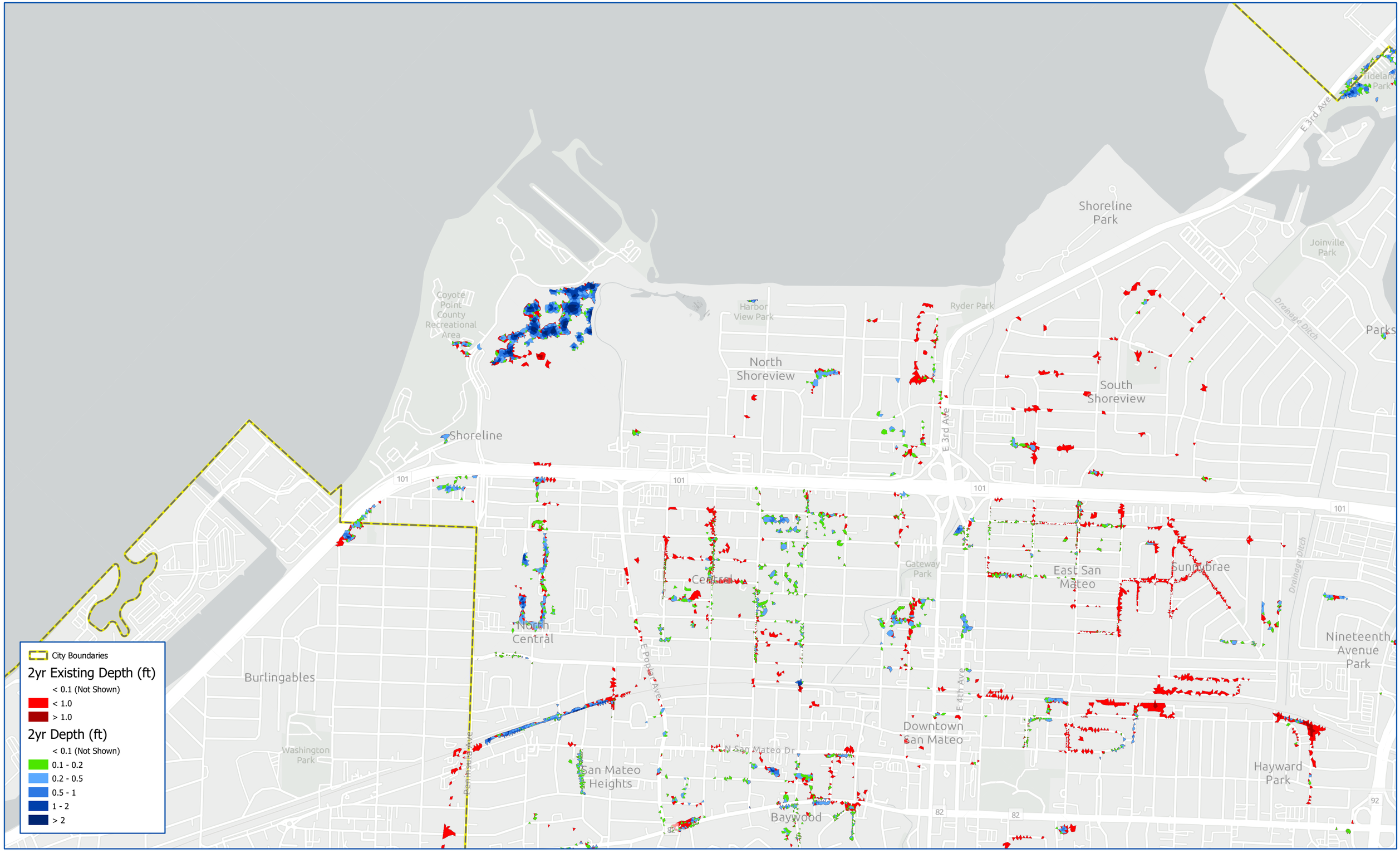
FIGURE I-15: **San Mateo SDMP Model Results (100-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

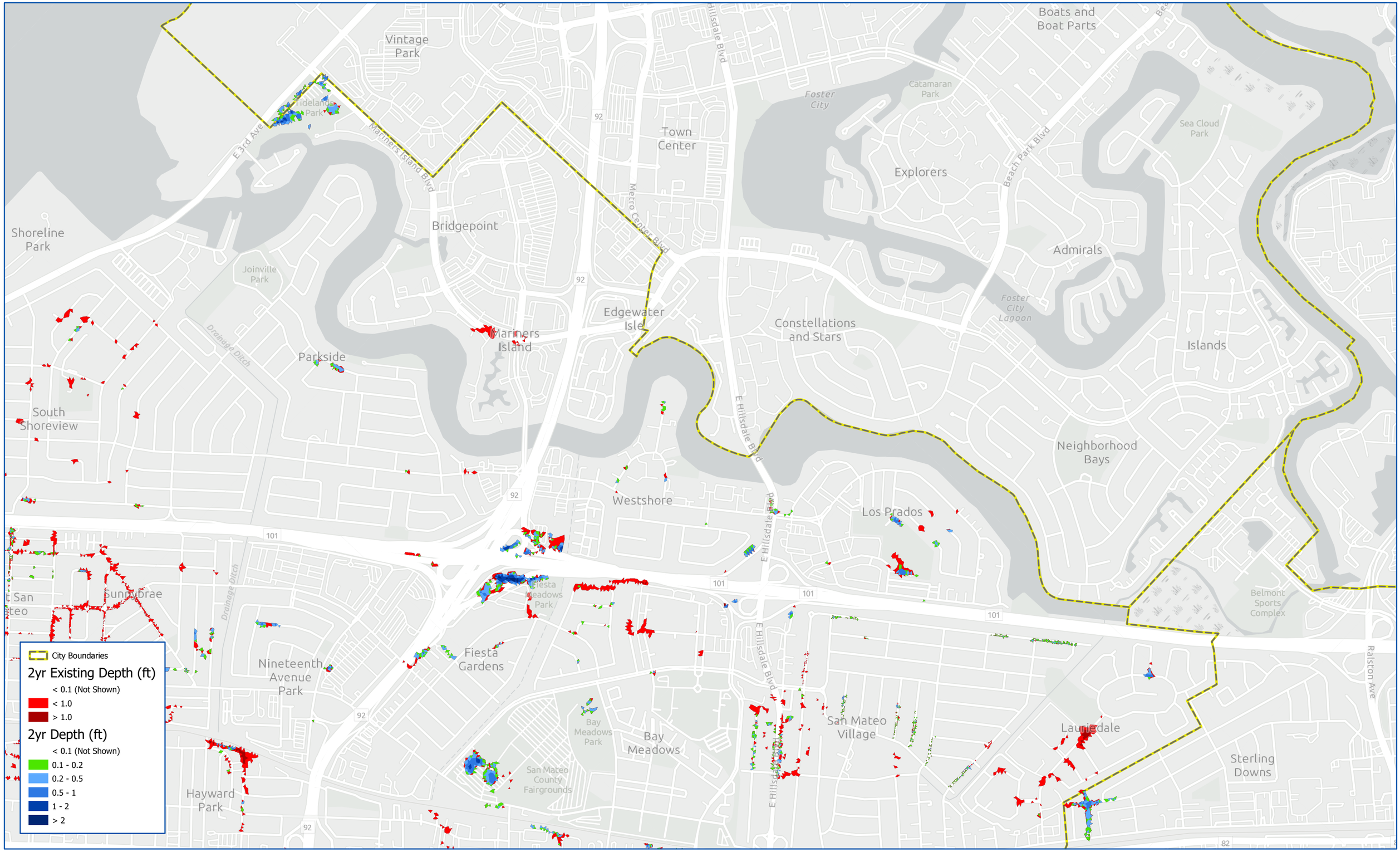
FIGURE I-16: **San Mateo SDMP Model Results (100-year Maximum Depth)**
Existing Conditions



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 1,000 Feet

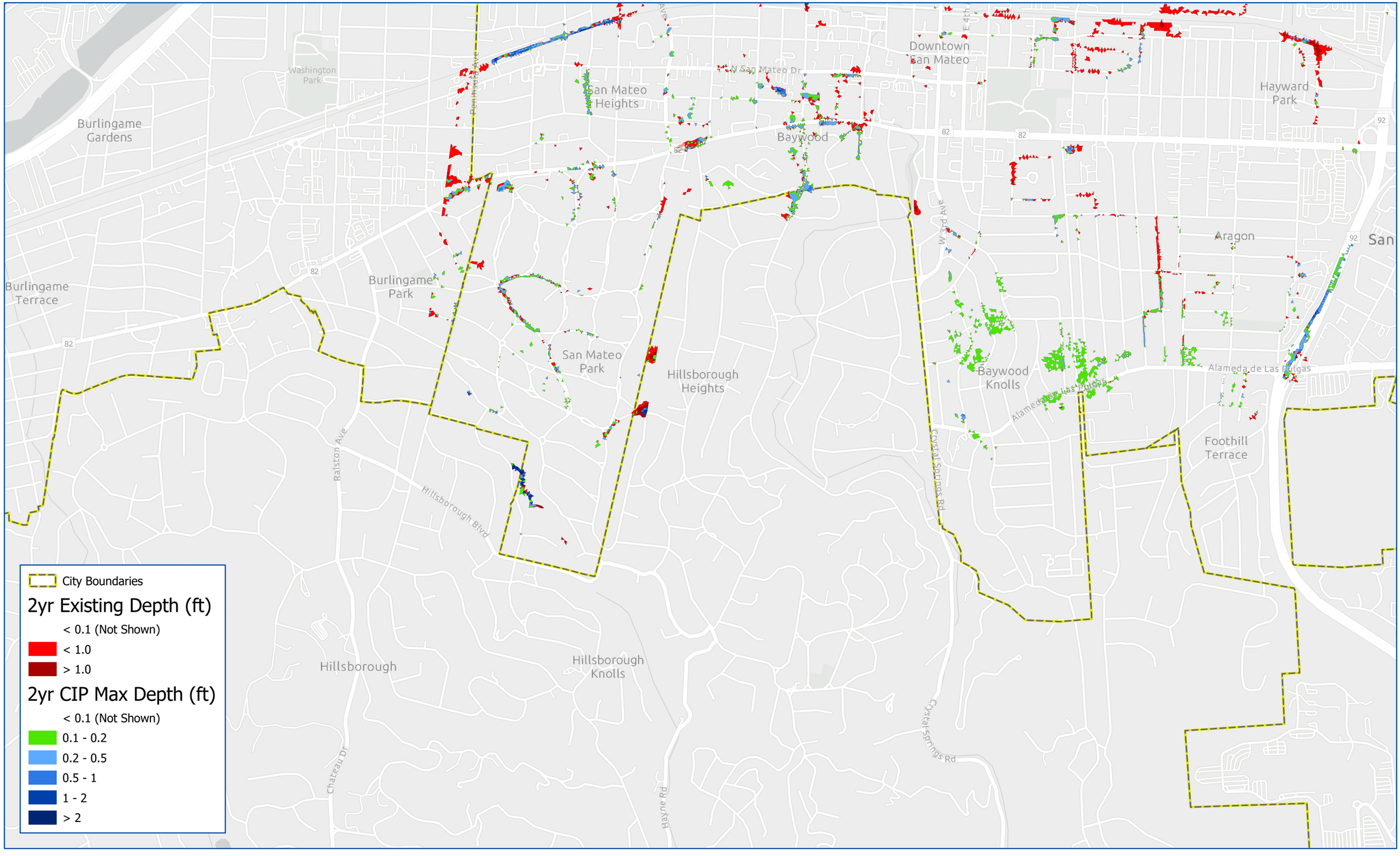
FIGURE I-17: **San Mateo SDMP Model Results (2-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 1,000 Feet

FIGURE I-18: **San Mateo SDMP Model Results (2-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 1,000 Feet

FIGURE I-19: **San Mateo SDMP Model Results (2-year Maximum Depth)**
CIP Conditions (Compared with Existing)

City Boundaries

2yr Existing Depth (ft)

< 0.1 (Not Shown)

< 1.0

> 1.0

2yr CIP Max Depth (ft)

< 0.1 (Not Shown)

0.1 - 0.2

0.2 - 0.5

0.5 - 1

1 - 2

> 2

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 1,000 Feet

FIGURE I-20: **San Mateo SDMP Model Results (2-year Maximum Depth)**
CIP Conditions (Compared with Existing)

City Boundaries

10yr Existing Depth (ft)

- < 0.1 (Not Shown)
- < 1.0
- > 1.0

10yr CIP Depth (ft)

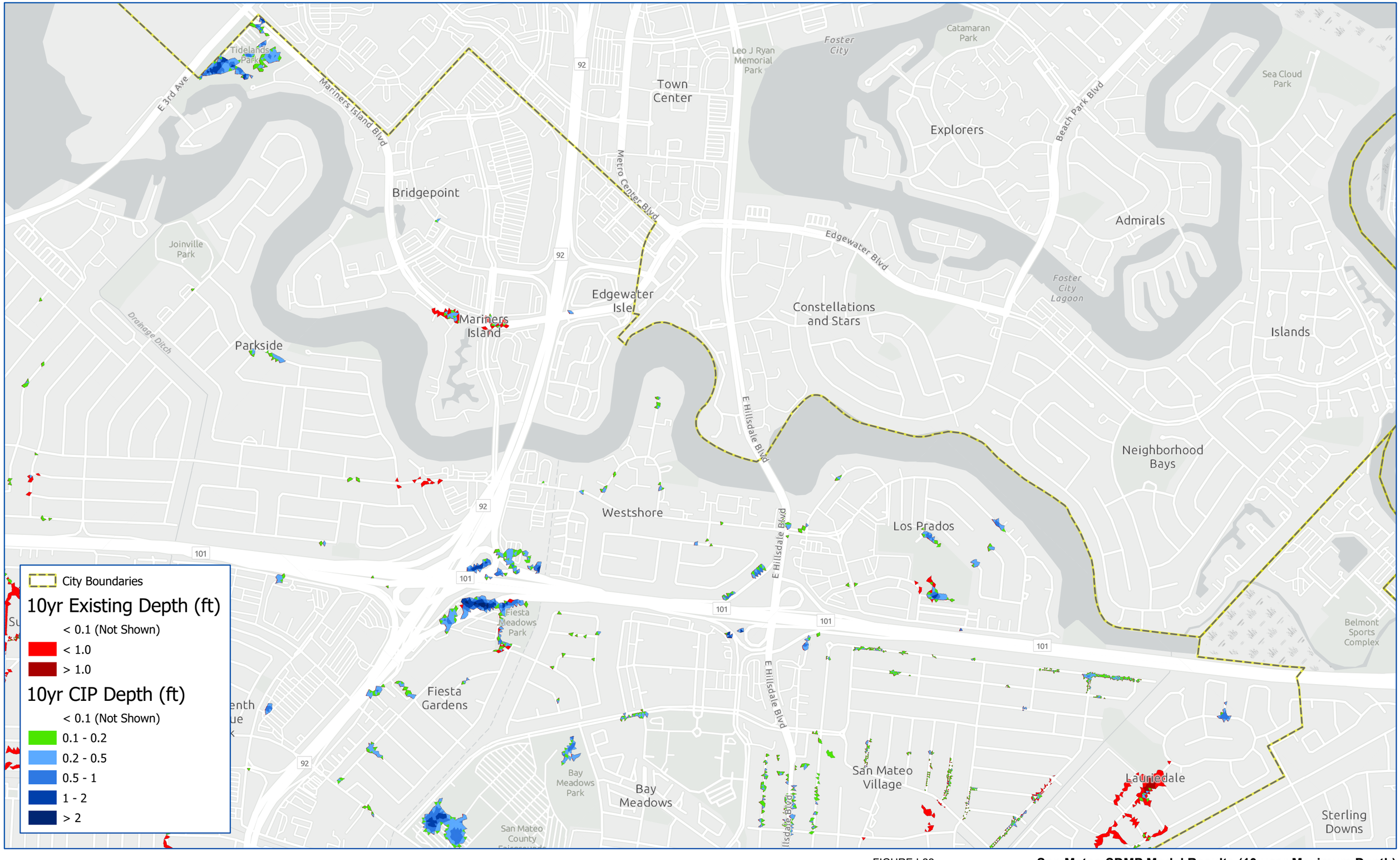
- < 0.1 (Not Shown)
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- 1 - 2
- > 2

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

FIGURE I-21:

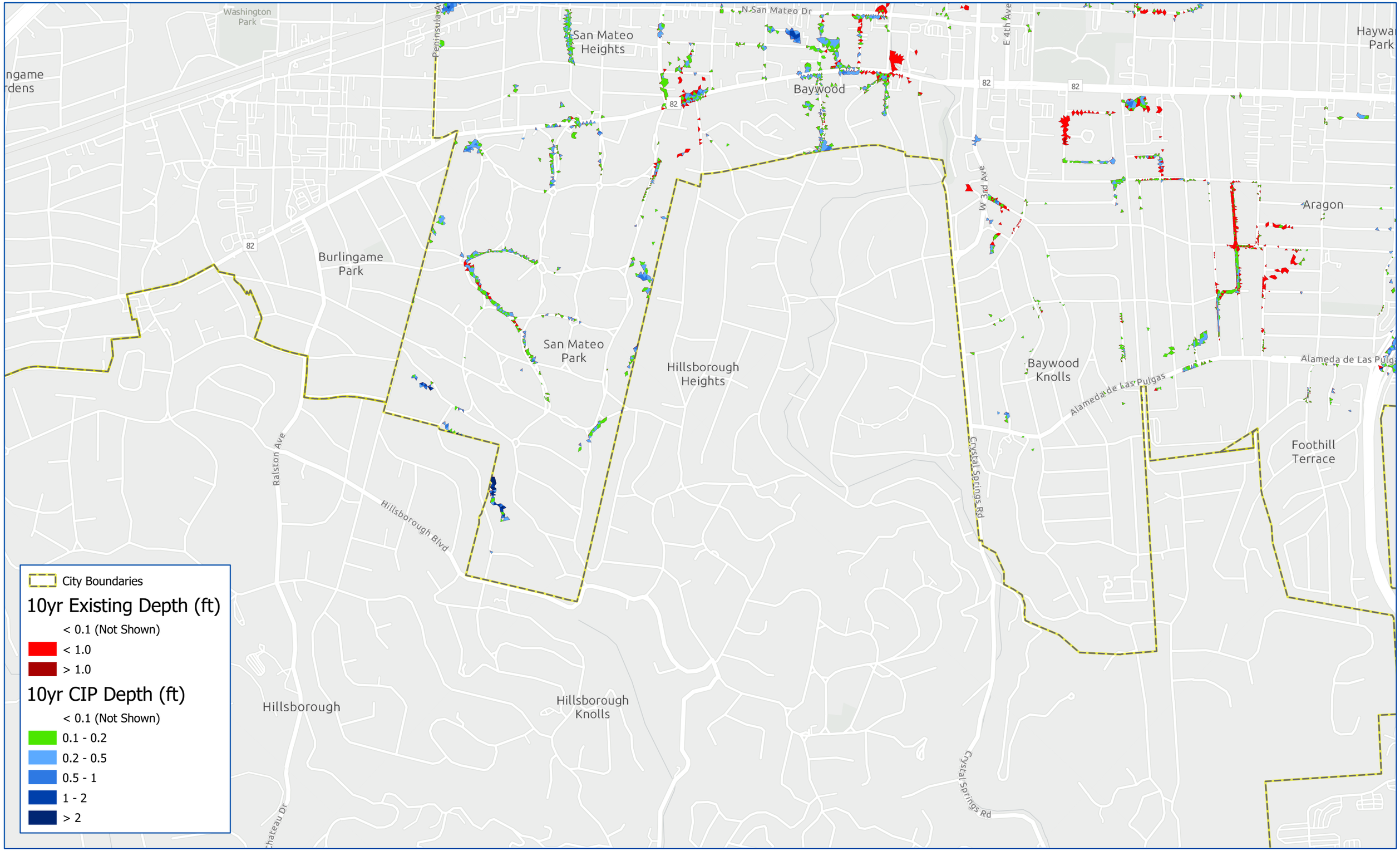
San Mateo SDMP Model Results (10-year Maximum Depth)
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

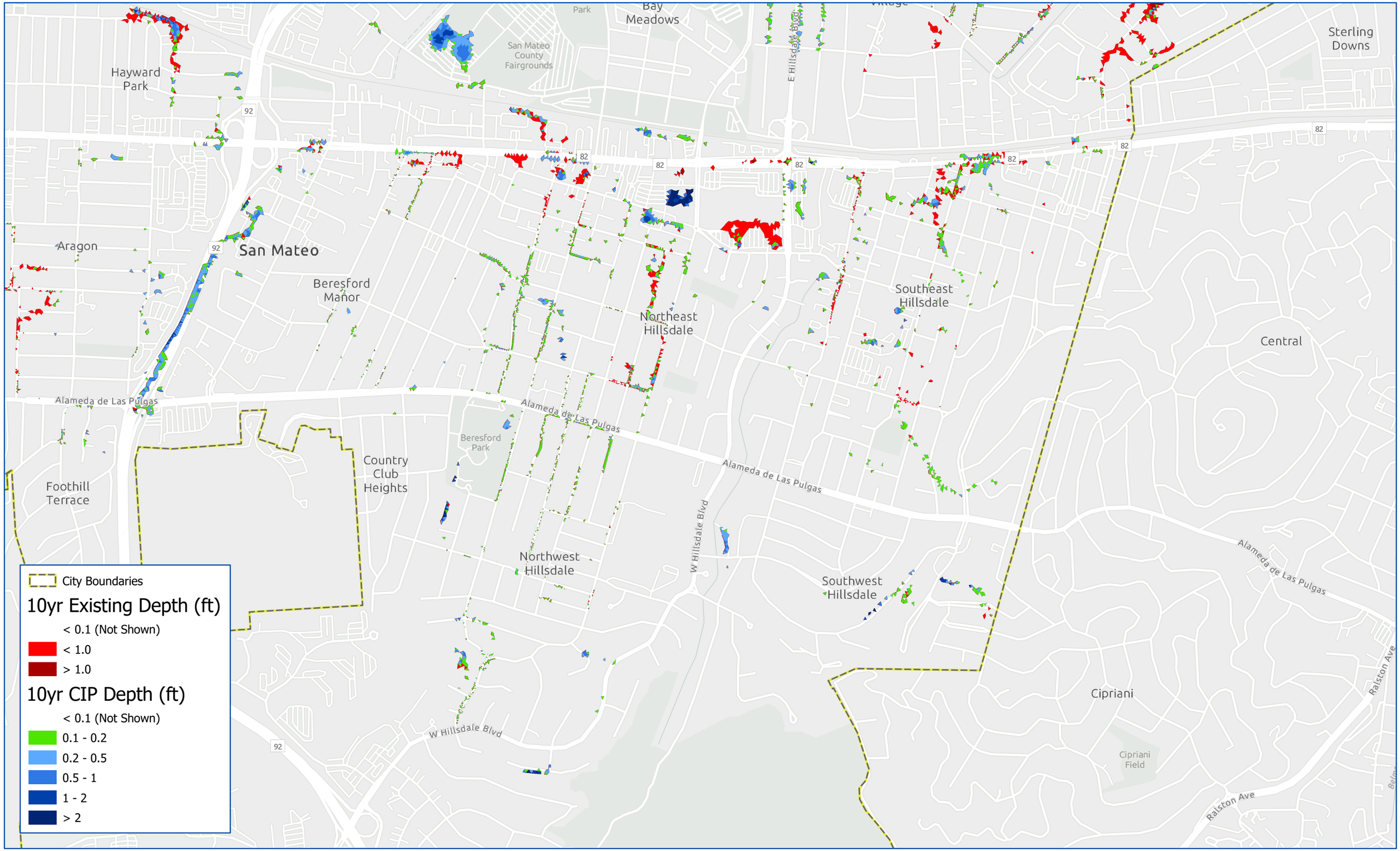
FIGURE I-22: **San Mateo SDMP Model Results (10-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
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0 500 1,000 Feet

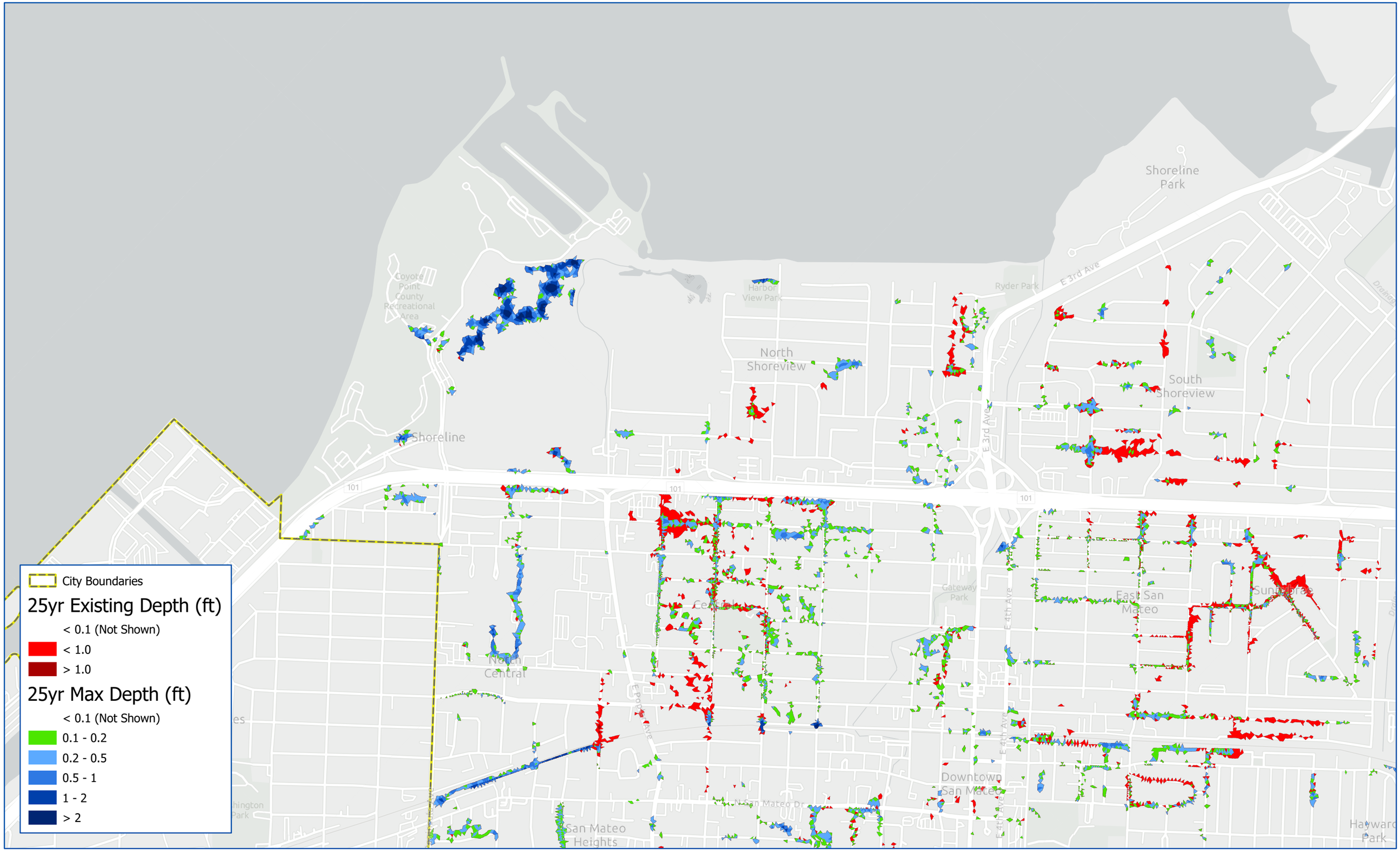
FIGURE I-23: **San Mateo SDMP Model Results (10-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

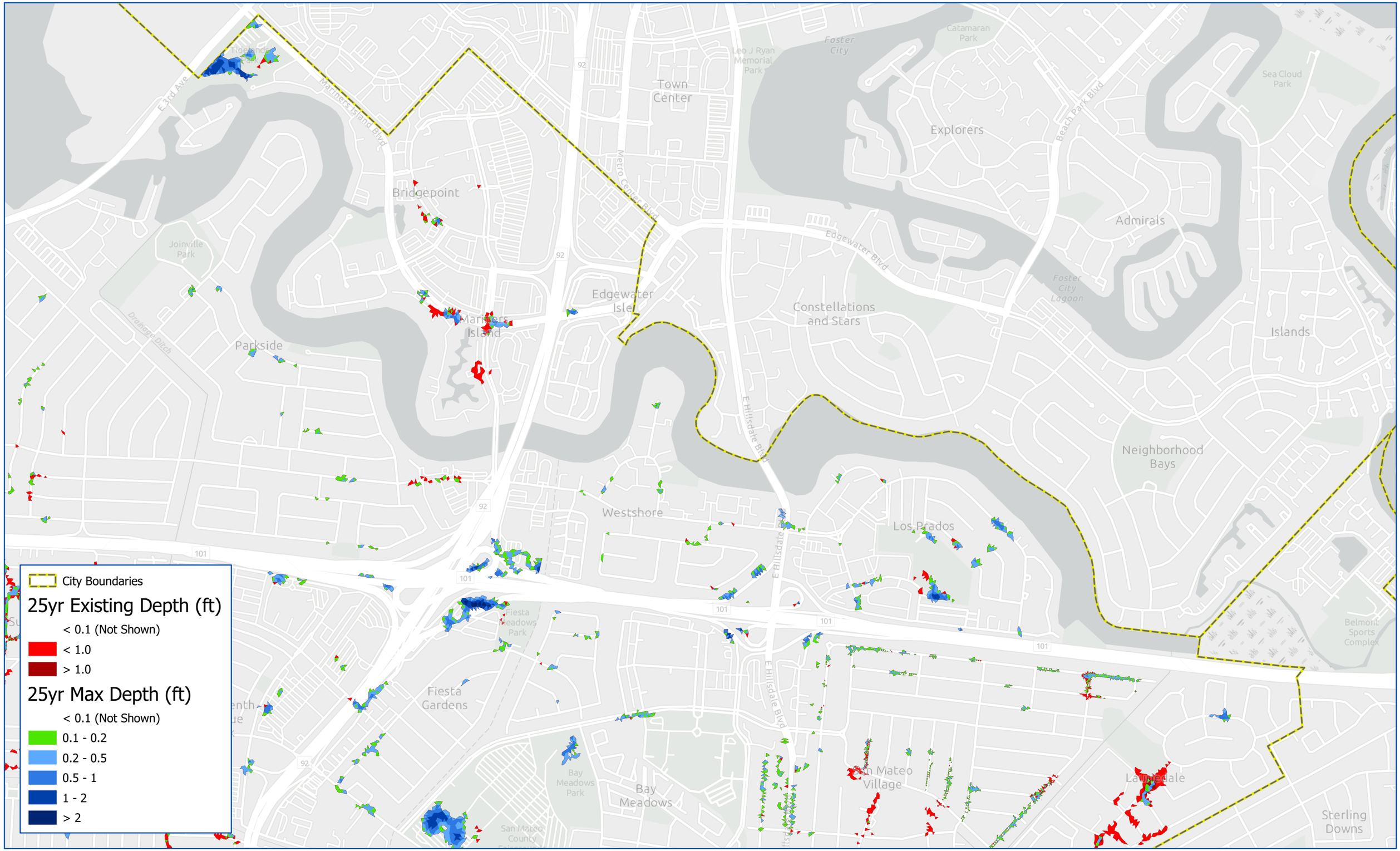
FIGURE I-24: **San Mateo SDMP Model Results (10-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

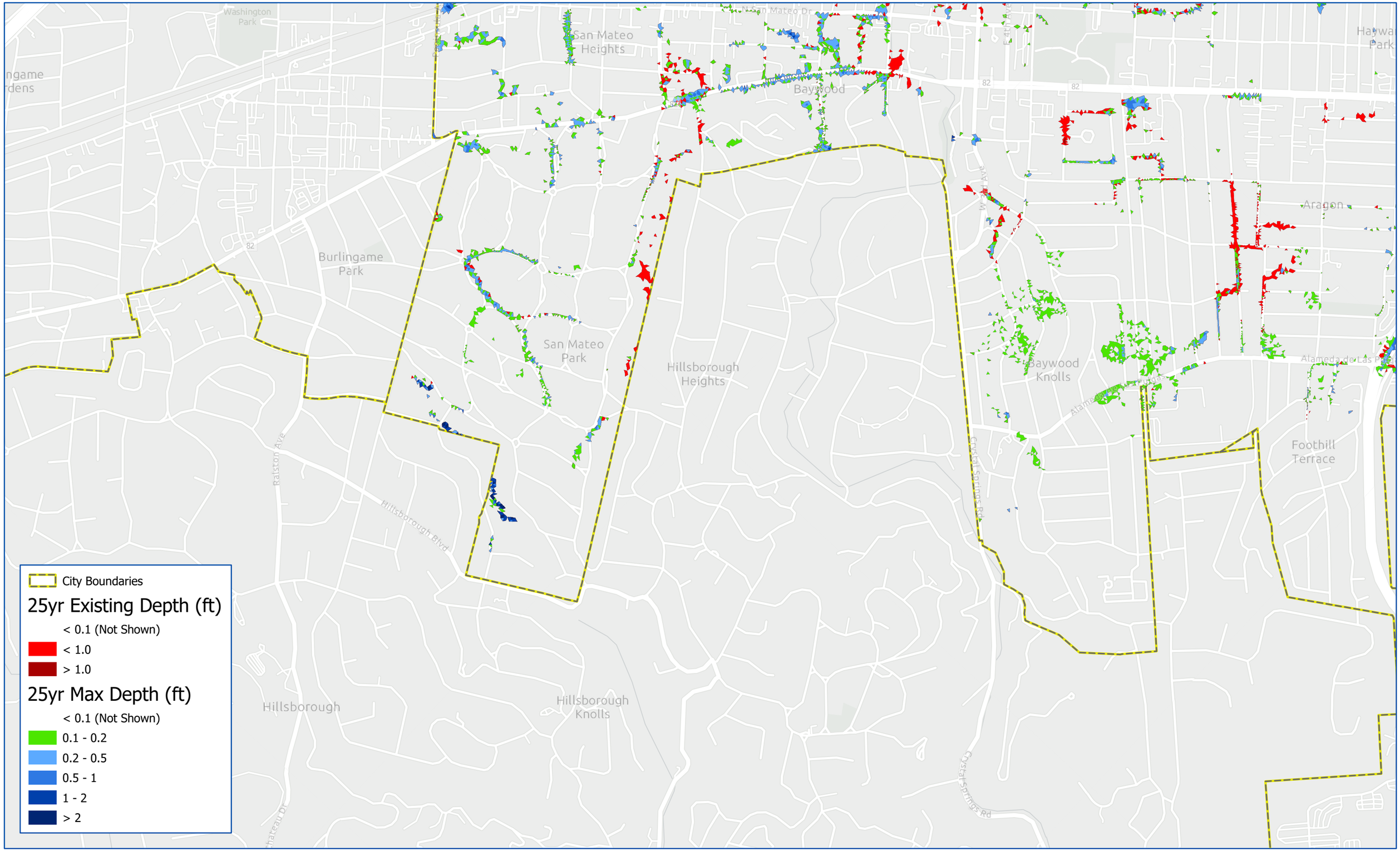
FIGURE I-25: **San Mateo SDMP Model Results (25-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

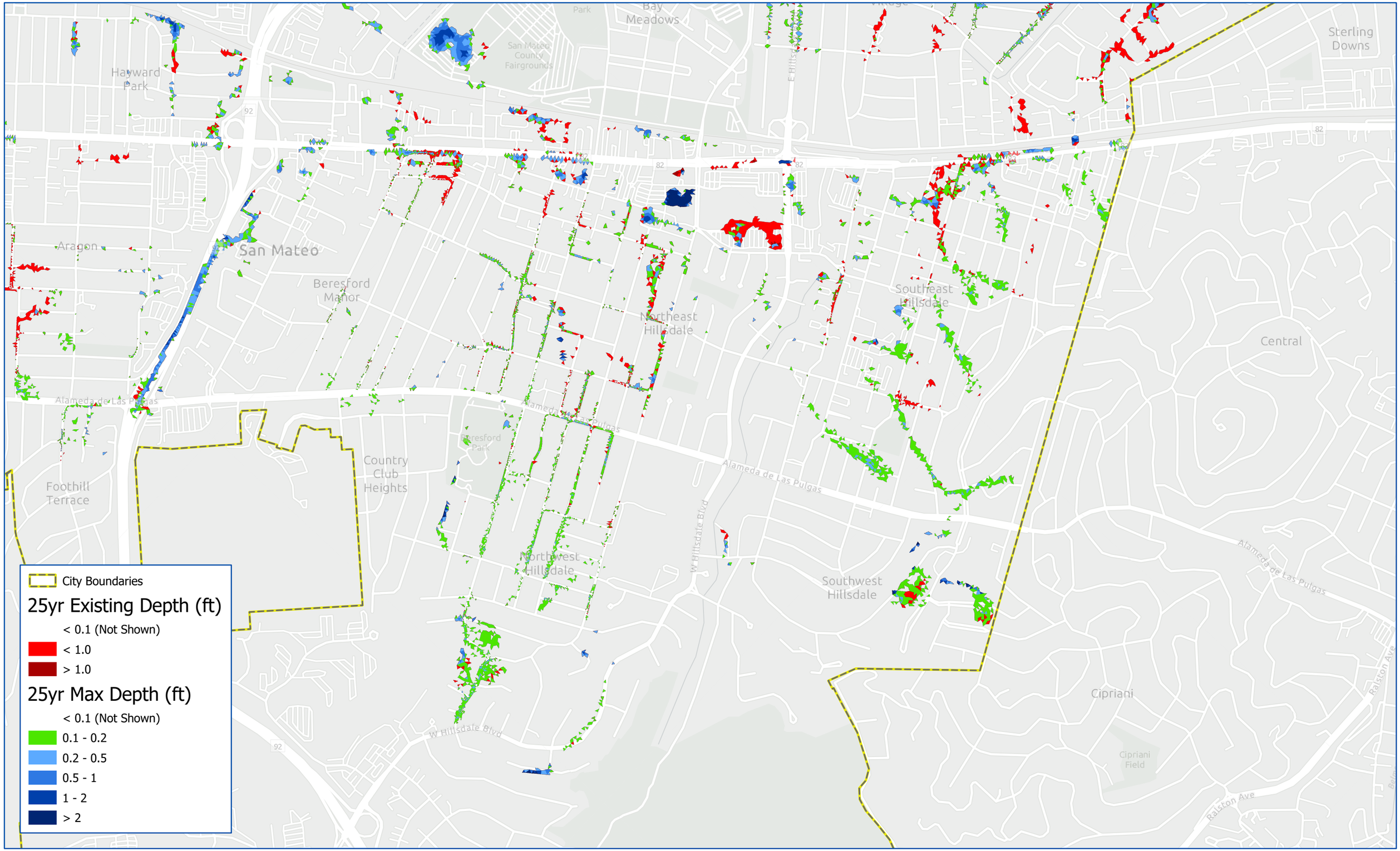
FIGURE I-26: **San Mateo SDMP Model Results (25-year Maximum Depth)**
CIP Conditions (Compared with Existing)



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CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

FIGURE I-27: **San Mateo SDMP Model Results (25-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

FIGURE I-28:

San Mateo SDMP Model Results (25-year Maximum Depth)

CIP Conditions (Compared with Existing)

City Boundaries

100yr Existing Depth (ft)

- < 0.1 (Not Shown)
- < 1.0
- > 1.0

100yr CIP Depth (ft)

- < 0.1 (Not Shown)
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- 1 - 2
- > 2

Coyote Point County Recreational Area
Harbor View Park
Ryder Park
Shoreline Park
North Shoreview
South Shoreview
Shoreline
Central
North Central
Gateway Park
East San Mateo
Sunnybrae
Downtown San Mateo
San Mateo Heights
Hayward Park
E 3rd Ave
E 4th Ave
E Poplar Ave
N San Mateo Dr
Peninsula Ave
101

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0 500 1,000 Feet

FIGURE I-29: **San Mateo SDMP Model Results (100-year Maximum Depth)**
CIP Conditions (Compared with Existing)

City Boundaries

100yr Existing Depth (ft)

< 0.1 (Not Shown)

< 1.0

> 1.0

100yr CIP Depth (ft)

< 0.1 (Not Shown)

0.1 - 0.2

0.2 - 0.5

0.5 - 1

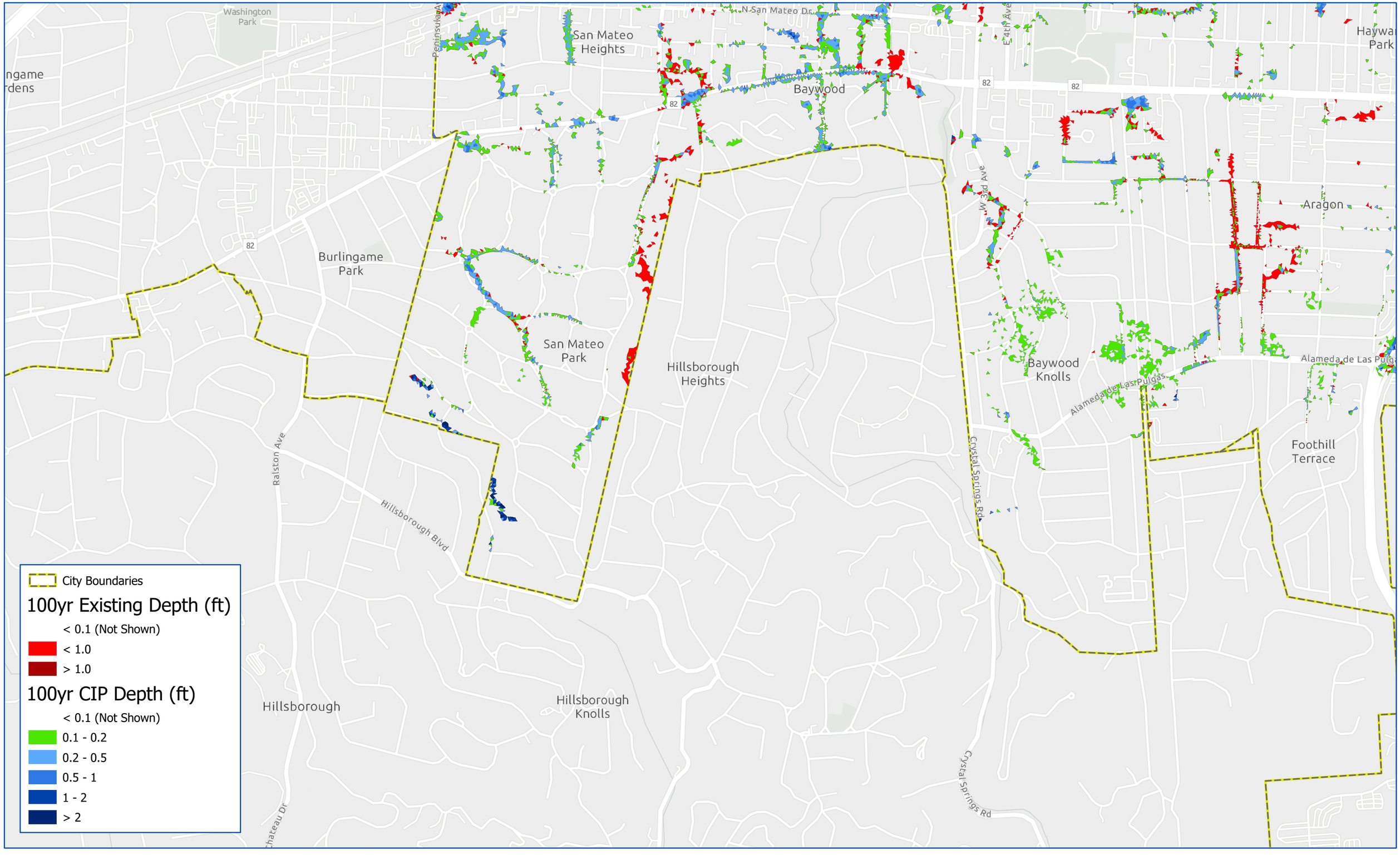
1 - 2

> 2

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0 500 1,000 Feet

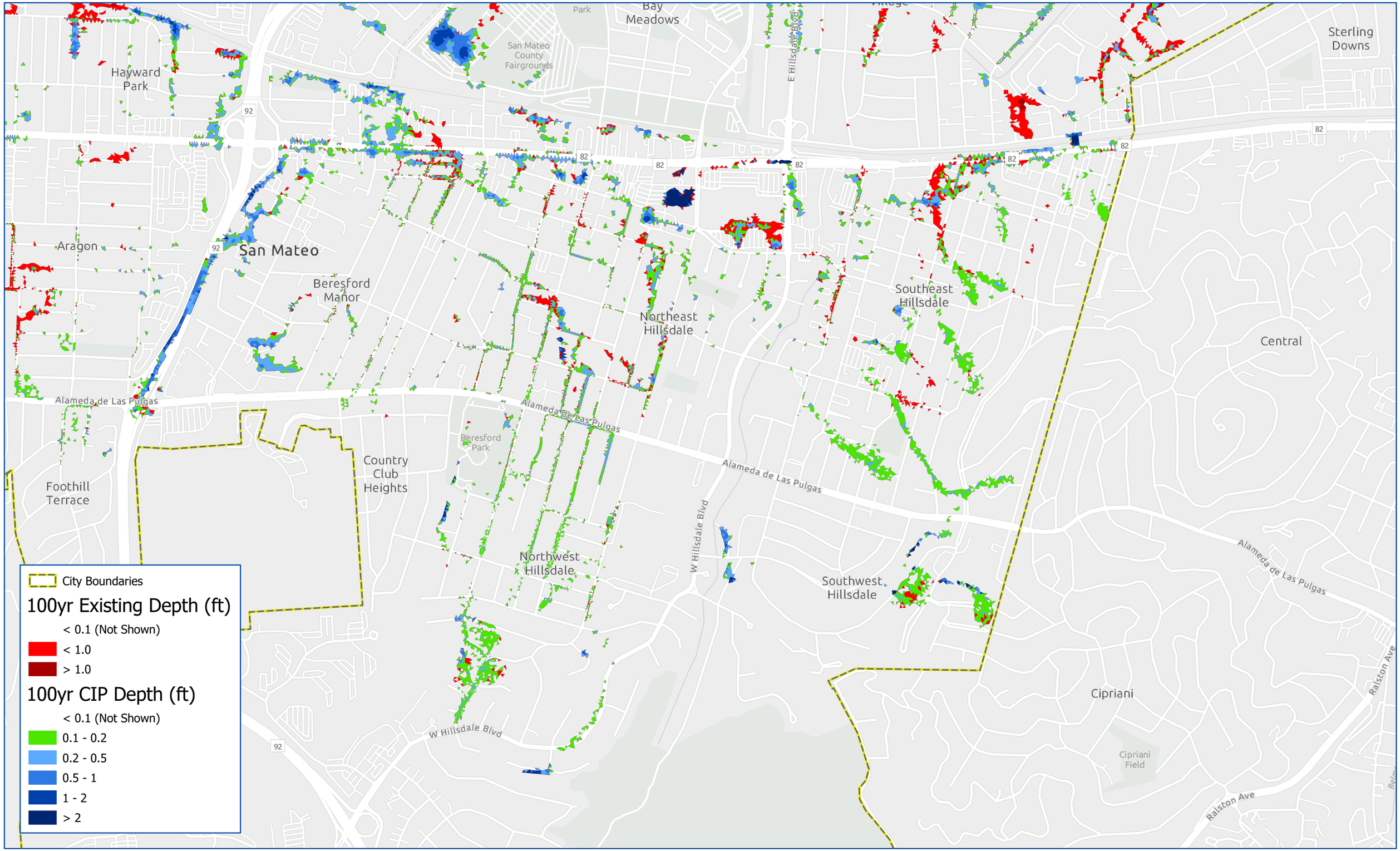
FIGURE I-30: **San Mateo SDMP Model Results (100-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

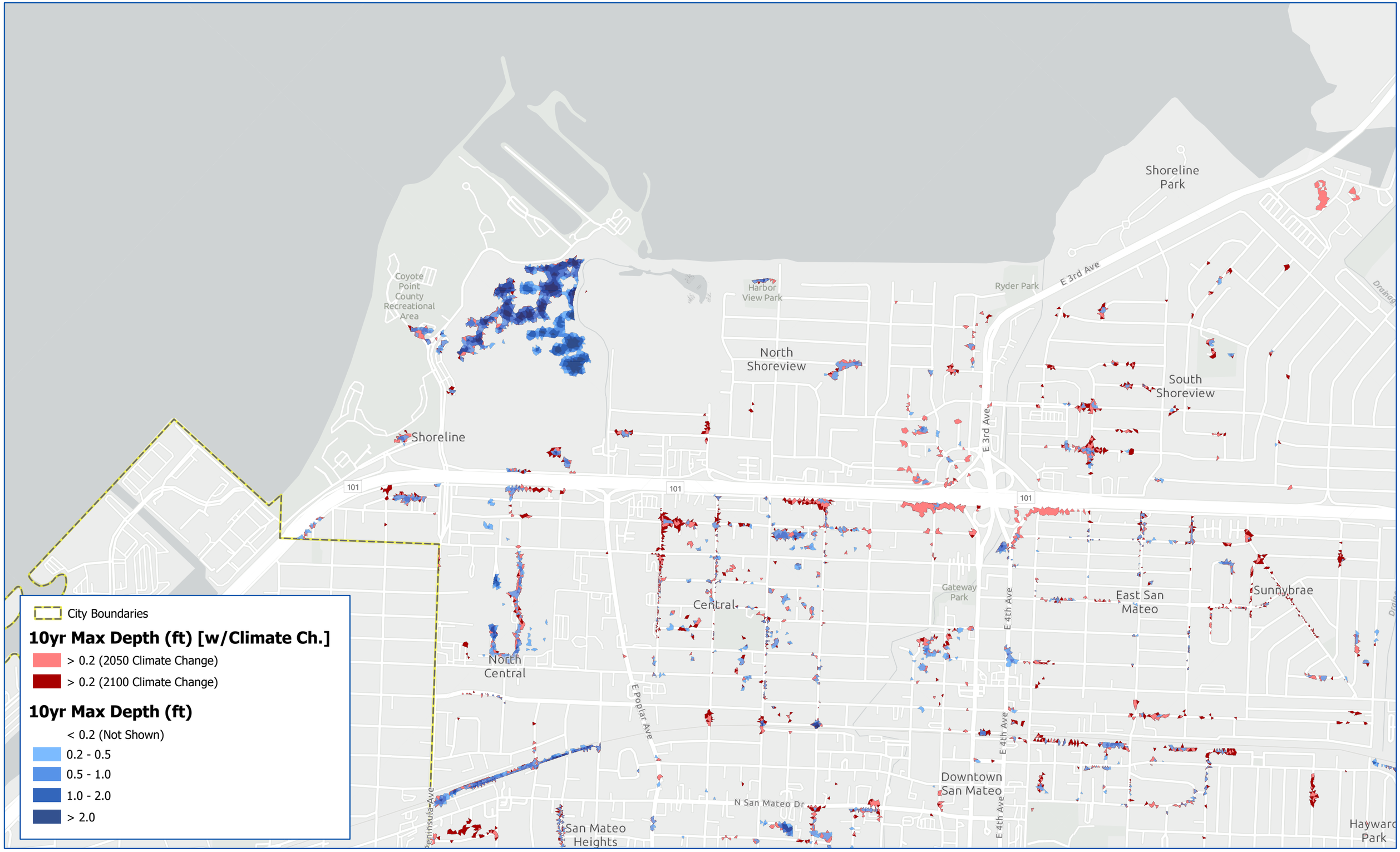
FIGURE I-31: **San Mateo SDMP Model Results (100-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

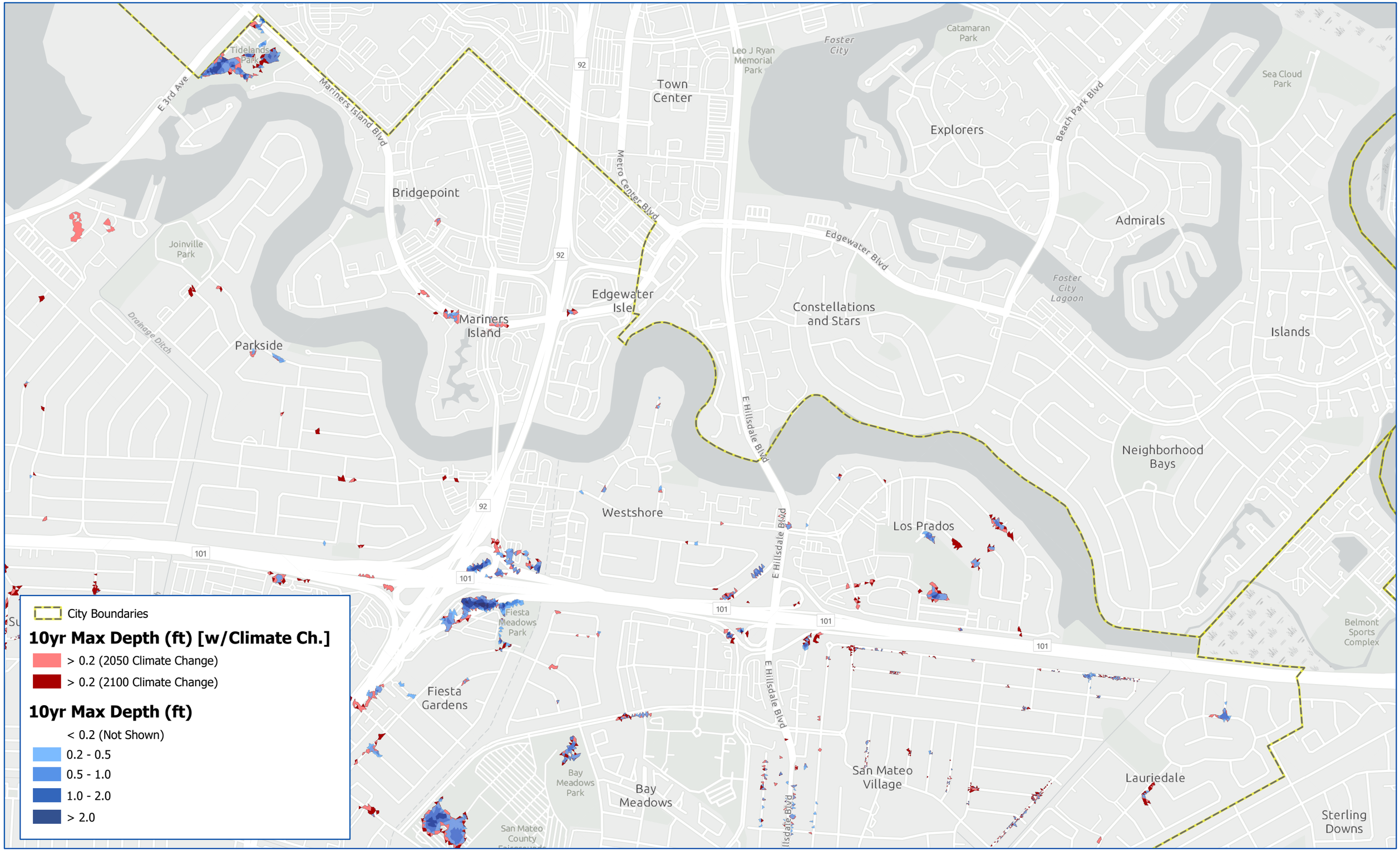
FIGURE I-32: **San Mateo SDMP Model Results (100-year Maximum Depth)**
CIP Conditions (Compared with Existing)



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

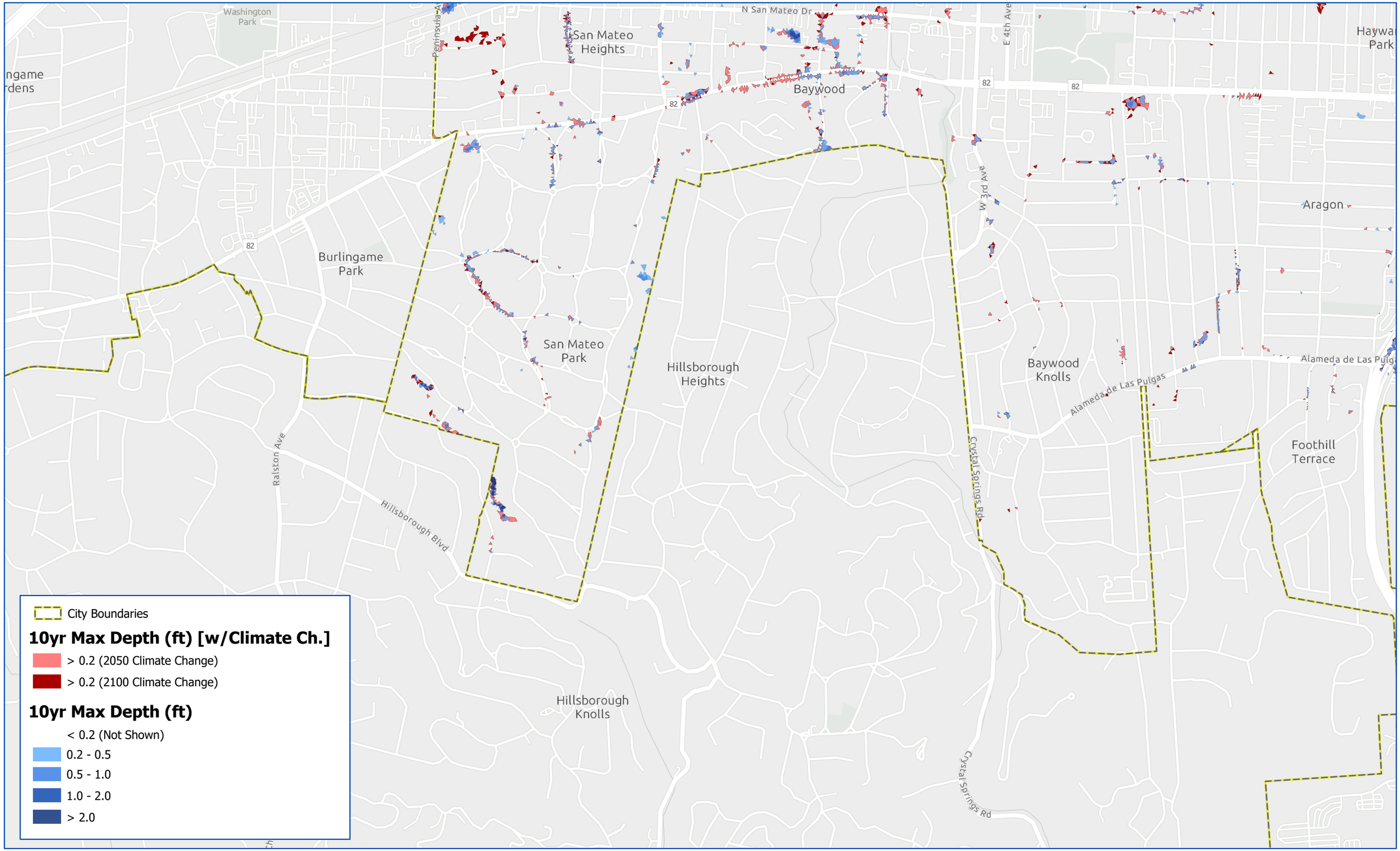
FIGURE I-33: **San Mateo SDMP Model Results (10-year Maximum Depth)**
CIP Conditions, with Climate Change



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

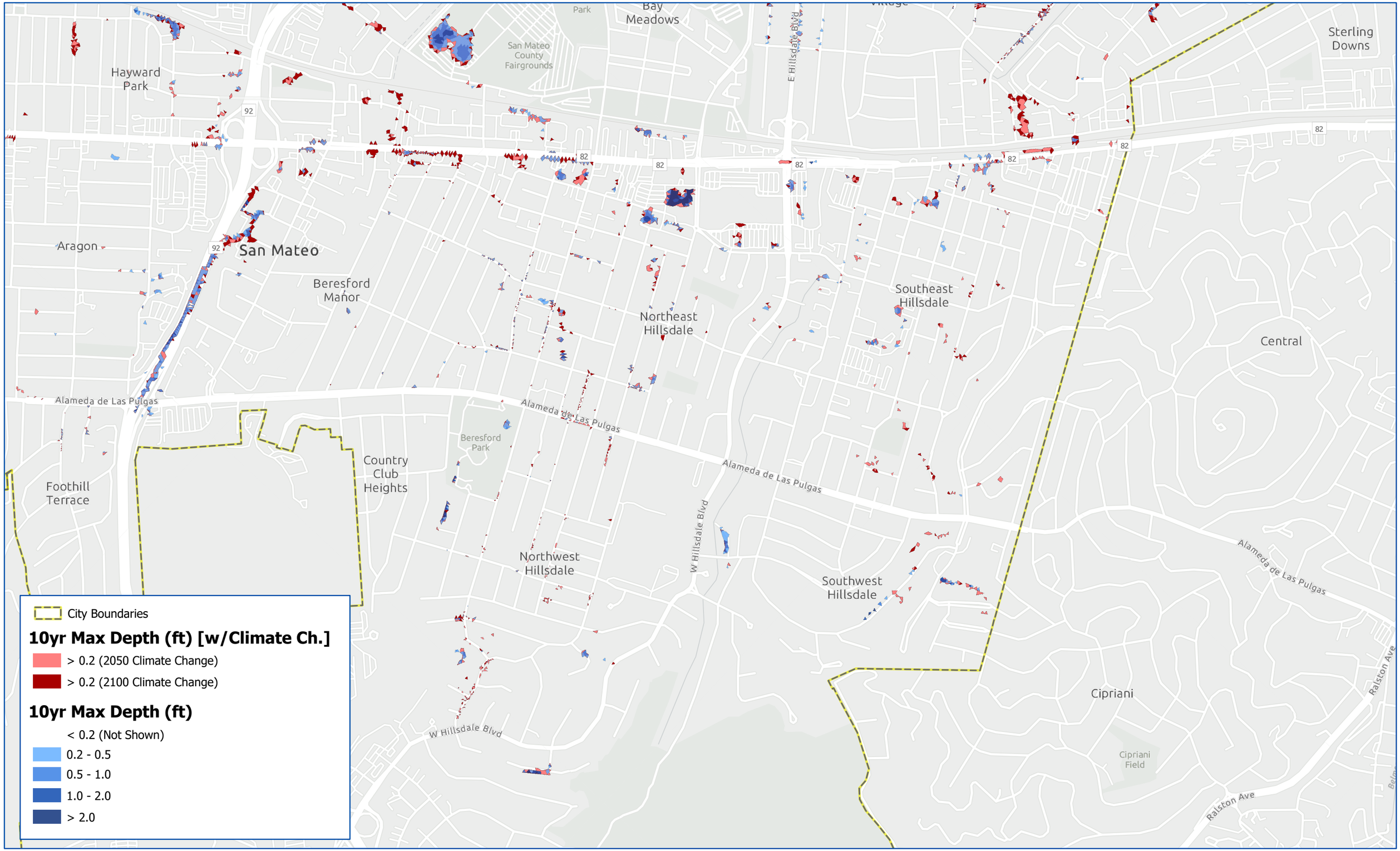
FIGURE I-34: **San Mateo SDMP Model Results (10-year Maximum Depth)**
CIP Conditions, with Climate Change



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

FIGURE I-35: **San Mateo SDMP Model Results (10-year Maximum Depth)**
CIP Conditions, with Climate Change



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

0 500 1,000 Feet

FIGURE I-36: **San Mateo SDMP Model Results (10-year Maximum Depth)**
CIP Conditions, with Climate Change

Appendix J: CIP Project Scoring Tables

Table J-1: Repair and Replacement (R&R) Projects Scoring Matrix

	A	B	C	Score Calculations		
R&R Project Name	**Max NASSCO Score**	**Average NASSCO Score**	**Total Length (ft)**	$25 \times \frac{B \times C}{(Max\ B \times C)}$	$25 \times \frac{A}{5}$	**Final CIP Score**
40th Ave	3	3.0	28	1	15	16
42nd Ave	0	4.0	651	16	0	16
42nd Ave–Kingridge	5	5.0	276	9	25	34
Alderwood	0	3.0	63	1	0	1
Almaden	5	5.0	303	9	25	34
Bettina-Kingridge	5	5.0	800	25	25	50
Countryside	3	3.0	182	3	15	18
Cupertino	4	3.5	984	21	20	41
David St	5	4.0	315	8	25	33
Edinburgh	4	4.0	270	7	20	27
Fairfax	4	3.5	720	16	20	36
Fallon	5	4.6	408	12	25	37
Glendora	5	4.4	261	7	25	32
Mason–Bedford Cr	5	4.5	20	1	25	26
Monte Diablo	5	5.0	654	20	25	45
Newlands–42nd Ave	3	4.0	282	7	15	22
Oak Valley	5	4.5	442	12	25	37
Ocean View	5	4.5	549	15	25	40
Palm	5	5.0	358	11	25	36
Parkside	5	4.2	129	3	25	28
Parrot	5	3.2	233	5	25	30
Parrot-CSM	5	4.7	207	6	25	31
Pasadena	5	5.0	437	14	25	39
Patricia	3	3.0	12	0	15	15
Peninsula	3	5.0	69	2	15	17
Polhemus	5	4.0	139	4	25	29
Quebec	3	3.0	120	2	15	17
San Miguel	4	4.5	771	22	20	42
Santa Clara	4	3.6	484	11	20	31
Saratoga	5	3.8	1,006	24	25	49
Shoreview	0	3.0	136	3	0	3
Viewridge	5	5.0	230	7	25	32
Woodberry	0	3.0	83	2	0	2

Table J-2: Creek Project Scoring Matrix (Part 1)

Factor	10-yr Flooding Max Depth	10-yr Structures at Risk	100-yr Flooding Max Depth	100-yr Structures at Risk	Upstream Projects	Cost Factor	Equity Priority Area	SLR Susceptibility	Multi-Jurisdictional	Recurring O&M Issue	
Type	Tiered	Count	Tiered	Count	Count	Tiered	Binary	Binary	Binary	Other	Raw Creek Project Score
Project Name Weight/ Multiplier	40	1	10	0.25	20	10	20	50	1	1	
16th Ave Channel–Highway 101	2	30	2	35	13	0	No	No	Yes		351.25
E Laurel Cr–Channel–Cap Improvement	2	1	4	5	0	0	No	No	No		92
E Laurel Cr–Laurelwood Culvert	1	5	4	8	1	2	No	No	No	100	215.75
Laurel Cr–Curtiss Bypass	1	65	4	350	4	0	No	No	No		286.25
Laurel Cr–Laurel Creek Rd Culvert	1	0	1	1	0	2	No	No	No		60.25
Laurel Cr–RR Xing	2	0	4	0	3	0	No	No	Yes	100	250
San Mateo Cr–3rd Ave Bypass	1	0	4	530	1	0	Yes	No	Yes		232.5
San Mateo Cr–Crystal Springs Rd Culvert	1	0	2	50	0	2	Yes	No	No		102.5
San Mateo Cr–Levees, Tidal	1	0	2	0	0	2	Yes	Yes	No	50	190
San Mateo Cr–Levees, Upstream	1	0	4	530	1	0	Yes	No	No		242.5

Table J-3: Creek Project Scoring Matrix (Part 2)

	Overall CIP Score Weights				Overall CIP Score	
	A	B	C	D		
Project Name	Creek Project Score (Normalized by Highest)	Life Safety Risk Weight	10-yr Property Damage Risk Weight	Overall Risk Weight $1+\left({}^{(B+C)}/_{2}\right)$	$50 * A * D$	Notes
16th Ave Channel–Highway 101	1.00	0.15	0.32	1.23	62	
E Laurel Cr–Channel Cap.	0.20	0.22	0.01	1.11	15	
E Laurel Cr–Laurelwood Culvert	0.67	0.13	0.05	1.09	34	
Laurel Cr–Curtiss Bypass	0.87	0.45	0.69	1.57	64	
Laurel Cr–Laurel Creek Rd Culvert.	0.17	0.03	0.00	1.02	9	
Laurel Cr–RR Xing	0.68	0.59	0.00	1.30	46	
San Mateo Cr–3rd Ave Bypass	0.66	0.46	0.00	1.23	41	Alternative to SMC–Levees Tidal project
San Mateo Cr–Crystal Springs Rd	0.29	0.10	0.00	1.05	15	
San Mateo Cr–Levees, Tidal	0.31	0.10	0.00	1.05	28	
San Mateo Cr–Levees, Upstream	0.69	0.46	0.00	1.23	43	

Notes:

- Life safety risk assigned based on depth during 10- and 100-year events (tidal or storm, depending on the project) today, as: $0.5\left(\frac{d_{10}}{10}\right) + 0.2\left(\frac{d_{100}}{10}\right) + 0.3\left(\frac{A_{100}}{100}\right)$
- The Property Damage Risk Weight formula accounts for recurring property damage costs that are less likely to be covered by disaster assistance or flood insurance: $\left({}^{ns10_i}/_{\max(ns10_{1:n})}\right)$, where: $ns10$ = the number of structures affected during a 10-year storm event

Table J-4: Gravity Pipe System Project Scoring Matrix (Part 1)

Factor	10-yr Depth Band (ft)	2-yr Flooding	Upstream Projects	Alleviates Recurring Issue	# Bubble-ups Eliminated	O&M Burden	Addresses Condition Deficiency	Proximity to Other R&R Project	Downstream Project Required	Properties w/ Reduced Flooding
Type	Tiered	Binary	Count	Tiered	Count	Binary	Tiered	Tiered	Binary	Count
Project Name Weight/ Multiplier	5	5	5	10	2	10	5	2	10	1
10th-Idaho	0.1-0.5	Yes	0	0	0	0	0	0	Yes	
11th-Claremont	0.5-1.0		0	0	1	0	0	0	No	15
17th Ave	0.5-1.0		0	2	2	0	1	0	No	
20th Ave	0.1-0.5		0	0	0	0	0	0	No	
30th-Edison	0.1-0.5		0	0	0	0	0	0	No	
31st at Hillsdale Park	0.1-0.5		0	2	0	0	0	0	Yes	
31st-Hillsdale Frontage	0.1-0.5		1	1	0	0	0	0	No	
3rd Ave at San Mateo (Bubble)	0.1-0.5		0	2	2	0	0	0	No	
40th	0.5-1.0		0	2	0	0	0	0	No	
40th at Casanova-Branson	0.1-0.5	Yes	0	1	0	0	0	0	No	0
42nd at Edison	0.1-0.5		0	0	2	0	0	0	No	
42nd Ave Underpass	> 1.0	Yes	0	2	0	0	0	0	No	
5th Ave	0.1-0.5		0	0	0	0	0	0	No	
7th (Bubble Conn)	0.1-0.5		0	0	1	0	0	0	No	
9th (Bubble Conn)	0.1-0.5		0	1	5	0	0	0	Yes	
9th at Laurel	0.1-0.5		0	2	2	0	0	0	No	
9th at RR Xing	0.1-0.5	Yes	1	1	0	0	0	0	Yes	
Amphlett 1	0.5-1		0	0	0	0	0	0	No	
Amphlett 2	0.5-1.0	Yes	1	1	0	0	0	0	No	10
Avila	0.1-0.5	Yes	0	1	0	0	0	3	No	
Avila-Maple	0.1-0.5	Yes	1	1	0	0	0	3	No	
B Street	0.5-1.0		0	2	0	0	0	0	No	
B Street (Bubble)	0.5-1.0		0	1	2	0	0	0	No	5
Baldwin	0.1-0.5		0	0	0	0	0	0	No	
Bellevue-Claremont	> 1.0	Yes	0	2	0	0	0	0	No	20
Birch Bubble	0.1-0.5	Yes	0	1	1	0	0	0	No	
Carlisle	0.5-1.0	Yes	3	2	1	0	0	0	No	30
Dakota	0.5-1.0		3	1	0	0	0	0	No	20
Donner to Colegrove	0.1-0.5		0	0	3	0	0	0	No	
E Laurel Creek Culvert Inlet	0.5-1.0		1	2	0	1	0	0	No	2
ECR at Poplar	0.5-1	Yes	0	0	0	0	0	0	No	5
ECR Beresford Lateral	0.1-0.5		0	0	0	0	0	0	No	
Edinburgh	0.5-1.0		1	1	0	0	0	0	No	0
Edison-27th (w/Flap Gate)	0.1-0.5		1	0	2	0	0	0	No	
Edison-31st	0.1-0.5		1	2	2	0	0	0	No	
El Camino Real at Barneson	0.5-1.0		4	0	0	0	0	0	No	30
El Camino South of Lodato	0.1-0.5		1	0	0	0	0	0	No	
Ellsworth	> 1.0		0	1	0	0	0	0	No	
Flores-22nd	0.1-0.5		0	0	2	0	0	0	No	

Factor	10-yr Depth Band (ft)	2-yr Flooding	Upstream Projects	Alleviates Recurring Issue	# Bubble-ups Eliminated	O&M Burden	Addresses Condition Deficiency	Proximity to Other R&R Project	Downstream Project Required	Properties w/ Reduced Flooding
Type	Tiered	Binary	Count	Tiered	Count	Binary	Tiered	Tiered	Binary	Count
Project Name Weight/ Multiplier	**5**	**5**	**5**	**10**	**2**	**10**	**5**	**2**	**10**	**1**
Flores-Edison (Bubble)	0.1-0.5		0	0	1	0	0	0	No	
Grant	0.5-1.0	Yes	0	2	4	0	0	0	Yes	10
Grant at Sunnybrae	0.5-1.0	Yes	3	2	0	0	0	0	No	50
Grant-Birch	0.5-1.0	Yes	2	2	0	0	0	0	Yes	30
Hacienda	0.1-0.5		1	2	0	0	0	0	No	
Hacienda (Bubble Conn)	0.1-0.5		0	0	2	0	0	0	No	
Hillsdale Frontage	0.5-1.0		2	1	0	0	0	0	No	
Hobart	0.1-0.5		0	2	4	0	0	0	No	
Idaho	> 1.0	Yes	2	0	0	0	0	0	No	10
Indian	0.1-0.5	Yes	0	0	0	0	0	0	Yes	
Isabelle-30th (Bubble)	0.1-0.5		0	0	1	0	0	0	No	
Jasmine Lateral	0.5-1.0		0	0	0	0	0	0	No	5
Juniper to 27th Ave	0.5-1.0		0	0	0	0	0	0	No	20
Kehoe at 16th Channel	0.1-0.5		1	0	0	0	0	0	No	
King	0.1-0.5	Yes	0	2	2	0	0	0	No	
Laurie Meadows	> 1.0		0	0	0	0	0	0	No	10
Leslie St	0.5-1.0		0	0	0	0	0	0	No	
Lodi-Kehoe	0.1-0.5		0	0	0	0	0	0	No	
Maple	0.5-1.0		1	0	0	0	0	0	No	8
Midvale (Bubble Conn)	0.1-0.5		0	0	1	0	0	0	No	
Mission-Capistrano (Bubble Conn)	0.5-1.0		0	0	2	0	0	0	No	5
Monte Diablo	0.1-0.5		2	0	0	0	0	0	No	10
Monte Diablo (Bubble)	0.1-0.5		0	0	2	0	0	0	No	
Monte Diablo 2	0.1-0.5		0	0	0	0	0	4	Yes	5
Newbridge	0.5-1.0		4	1	0	0	5	4	No	30
Newbridge Upstream	0.5-1.0	Yes	2	2	0	0	1	3	Yes	30
Norfolk at Susan Ct	0.1-0.5		0	0	0	0	0	0	No	
Norton St Ditch	0.5-1.0		6	1	0	1	2	0	No	20
Quebec-Dolan	0.5-1.0	Yes	0	0	2	0	0	0	No	5
S Delaware at 10th	0.5-1.0	Yes	2	2	0	0	0	0	No	10
S Norfolk at 16th Channel	0.1-0.5		0	0	0	0	0	0	No	
Santa Inez (Bubble Up)	0.1-0.5	Yes	0	0	1	0	0	0	No	
Shoreview	0.5-1.0		2	1	0	0	0	1	Yes	
Sunnybrae	0.1-0.5		0	1	2	0	0	0	No	5
Trollman	0.1-0.5		0	0	0	0	0	0	No	
W 39th (Bubble Conn)	0.1-0.5		0	0	4	0	0	0	No	
W 39th Main	0.5-1.0		1	0	0	0	0	0	No	
Warren-Clark	0.5-1.0	Yes	0	0	0	0	0	0	No	
West 3rd-Parrot	0.1-0.5		0	0	0	0	0	2	No	
West Poplar	0.1-0.5		0	2	2	0	0	0	No	

Table J-5: Gravity Pipe System Project Scoring Matrix (Part 2)

Factor	Equity Priority Area	Cost Factor	Multi-Jurisdictional	Overlaps Other City CIP	Other Factor			
Type	Binary	Tiered	Binary	Tiered	Other			
Project Name Weight/ Multiplier	5	1	10	5	10	Other Factor Description	Upstream Projects	Raw Gravity Project Score
10th-Idaho	No	2	No	0				22
11th-Claremont	No	2	No	2				59
17th Ave	No	2	Yes	1				56
20th Ave	No	5	No	0				30
30th-Edison	No	2	No	0				27
31st at Hillsdale Park	No	2	No	0				37
31st-Hillsdale Frontage	No	2	No	1			Edison-31st	47
3rd Ave at San Mateo (Bubble)	No	2	No	2				56
40th	No	5	No	2				65
40th at Casanova-Branson	No	2	No	0				42
42nd at Edison	No	10	No	0				39
42nd Ave Underpass	No	5	No	0	3	Recurring Safety Issue		100
5th Ave	No	2	No	0				27
7th (Bubble Conn)	No	5	No	2				42
9th (Bubble Conn)	No	2	No	1				42
9th at Laurel	No	5	No	2				64
9th at RR Xing	No	5	No	1			9th at Laurel	45
Amphlett 1	Yes	2	No	0				27
Amphlett 2	No	2	No	0			10th-Idaho	62
Avila	No	0	No	0				46
Avila-Maple	No	5	No	0				56
B Street	No	5	No	0				55
B Street (Bubble)	No	2	No	0				51
Baldwin	No	5	No	0				30
Bellevue-Claremont	Yes	2	No	2				102
Birch Bubble	No	5	No	0				47
Carlisle	No	0	No	1			Grant-Birch, Grant, Birch Bubble	107
Dakota	Yes	5	No	0				85
Donner to Colegrove	No	2	No	0				33
E Laurel Creek Culvert Inlet	No	2	No	2	2	Potential for property damage		99
ECR at Poplar	Yes	5	Yes	0				30
ECR Beresford Lateral	No	5	Yes	0				20
Edinburgh	No	2	No	2				57
Edison-27th (w/Flap Gate)	No	2	No	0			Flores-Edison Bubble	36
Edison-31st	No	5	No	0				59
El Camino Real at Barneson	No	2	No	0	1	Two 3.5x7 into one 3.5x10; Large impact area	Avila, Hobart, Maple	92
El Camino South of Lodato	No	2	Yes	0			Flores-22nd	22
Ellsworth	Yes	0	No	0	0.5	Potential safety issue, similar to 42nd Ave		60
Flores-22nd	No	0	No	0				29
Flores-Edison (Bubble)	No	2	No	0				29
Grant	No	0	No	0				63

Factor	Equity Priority Area	Cost Factor	Multi-Jurisdictional	Overlaps Other City CIP	Other Factor			
Type	Binary	Tiered	Binary	Tiered	Other			
Project Name **Weight/ Multiplier**	**5**	**1**	**10**	**5**	**10**	**Other Factor Description**	**Upstream Projects**	**Raw Gravity Project Score**
Grant at Sunnybrae	No	2	No	0			Grant, Birch Bubble, Sunnybrae	122
Grant-Birch	No	2	No	0			Grant, Birch Bubble	87
Hacienda	No	0	No	1			31st at Hillsdale Park	55
Hacienda (Bubble Conn)	No	2	No	1				36
Hillsdale Frontage	No	0	No	0			31st-Hillsdale Frontage, Edison-31st	50
Hobart	No	2	No	0				55
Idaho	Yes	2	No	2			Santa Inez, Indian	82
Indian	Yes	2	No	0				27
Isabelle-30th (Bubble)	No	5	No	2				42
Jasmine Lateral	No	2	No	2				47
Juniper to 27th Ave	No	0	No	1	1	Gridded model shows greater depths		65
Kehoe at 16th Channel	No	5	No	0			Lodi-Kehoe	30
King	No	2	No	0				56
Laurie Meadows	No	0	No	0				50
Leslie St	No	2	No	0	0.5	Upstream pipe larger; accumulates against RR		37
Lodi-Kehoe	No	2	No	0				22
Maple	No	2	No	0			Mission-Capistrano (Bubble)	45
Midvale (Bubble Conn)	No	10	No	0				37
Mission-Capistrano (Bubble Conn)	No	2	No	0				41
Monte Diablo	Yes	0	No	0			Monte Diablo 2, RR Xing Monte Diablo	50
Monte Diablo (Bubble)	Yes	10	No	0				44
Monte Diablo 2	Yes	0	No	2				43
Newbridge	Yes	0	No	1			Shoreview, Newbridge Upstream, Dakota, Rand	133
Newbridge Upstream	Yes	0	No	0				101
Norfolk at Susan Ct	No	2	No	1				32
Norton St Ditch	Yes	0	No	0	2	Opportunity-driven; CalTrans is improving Kehoe ramps	10th–Idaho, Amphlett 2, Birch Bubble, Carlisle, Grant, Grant–Birch*	125
Quebec-Dolan	Yes	2	No	1				56
S Delaware at 10th	No	0	No	1			9th at RR Xing and 9th at Laurel	80
S Norfolk at 16th Channel	Yes	2	No	1				32
Santa Inez (Bubble Up)	Yes	5	No	0				42
Shoreview	Yes	2	No	0			Newbridge	49
Sunnybrae	No	2	No	1				51
Trollman	Yes	2	No	0				32
W 39th (Bubble Conn)	No	2	No	2				45
W 39th Main	No	2	No	1			W 39th (Bubble)	42
Warren-Clark	No	2	No	0				37
West 3rd-Parrot	No	2	No	0				31
West Poplar	No	2	No	2				61

**Note: While Norton Street is not directly downstream of these projects, the cumulative effect of the projects listed is to promote interconnection across Highway 101 for these systems*

Table J-6: Gravity Pipe System Project Scoring Matrix (Part 3)

Project Name	Overall CIP Score Weights				Overall CIP Score	Other Notes
	A	B	C	D		
	Project Score (Normalized by Highest)	Life Safety Risk Weight	10-yr Property Damage Risk Weight	Overall Risk Weight $1+\left({}^{(B+C)}/_{2}\right)$	$50 * A * D$	
10th-Idaho	0.17	0.00	0.00	1.00	8	Amphlett 2 should be completed first
11th-Claremont	0.44	0.16	0.00	1.08	24	Reduces flooding from RR Xing culvert discharge into streets
17th Ave	0.42	0.00	0.00	1.00	21	Known issue with drainage at bubble-ups and at end of 17th Ave
20th Ave	0.23	0.00	0.00	1.00	11	Development in this area will provide some improvements and connect to this pipe
30th-Edison	0.20	0.00	0.00	1.00	10	Mitigates local capacity deficiency spilling runoff into adjacent parking lot
31st at Hillsdale Park	0.28	0.00	0.00	1.00	14	
31st-Hillsdale Frontage	0.35	0.00	0.00	1.00	18	
3rd Ave at San Mateo (Bubble)	0.42	0.00	0.00	1.00	21	
40th	0.49	0.00	0.00	1.00	24	
40th at Casanova-Branson	0.32	0.00	0.00	1.00	16	
42nd at Edison	0.29	0.00	0.00	1.00	15	
42nd Ave Underpass	0.75	0.00	1.00	1.50	56	Reduces flooding in underpass, assuming pumps are working properly
5th Ave	0.20	0.00	0.00	1.00	10	Reduces flooding in close proximity to buildings in downtown area
7th (Bubble Conn)	0.32	0.00	0.00	1.00	16	
9th (Bubble Conn)	0.32	0.00	0.00	1.00	16	Also reduces overland flow to Rosewood Drive; downstream projects are not pre-reqs but are helpful
9th at Laurel	0.48	0.00	0.00	1.00	24	
9th at RR Xing	0.34	0.00	0.00	1.00	17	Pre-requisite: *S Delaware at 10th*
Amphlett 1	0.20	0.00	0.00	1.00	10	Distributes flooding across multiple Highway 101 crossings
Amphlett 2	0.47	0.11	0.00	1.05	25	
Avila	0.35	0.00	0.00	1.00	17	Similar project identified in previous master plan. Mitigates flooding along Avila and Seville
Avila-Maple	0.42	0.00	0.00	1.00	21	Similar project identified in previous master plan. Mitigates flooding along Avila and Seville
B Street	0.41	0.00	0.00	1.00	21	Documented flooding issues during NYE 2022 storm
B Street (Bubble)	0.38	0.05	0.00	1.03	20	Addresses known issues on Rosewood Drive – Bubble up elimination is priority; enlarging lateral helps
Baldwin	0.23	0.00	0.00	1.00	11	Reduces flooding on El Camino Real
Bellevue-Claremont	0.77	0.21	0.00	1.11	42	
Birch Bubble	0.35	0.00	0.00	1.00	18	Contributes to reducing flooding at Grant/Sunnybrae
Carlisle	0.80	0.32	0.00	1.16	47	
Dakota	0.64	0.21	0.00	1.11	35	
Donner to Colegrove	0.25	0.00	0.00	1.00	12	
E Laurel Creek Culvert Inlet	0.74	0.52	0.00	1.26	47	
ECR at Poplar	0.23	0.05	0.00	1.03	12	
ECR Beresford Lateral	0.15	0.00	0.00	1.00	8	
Edinburgh	0.43	0.00	0.00	1.00	21	
Edison-27th (w/Flap Gate)	0.27	0.00	0.00	1.00	14	Reduces depth/extent/duration of flooding on El Camino Real
Edison-31st	0.44	0.00	0.00	1.00	22	O&M staff noted issues here
El Camino Real at Barneson	0.69	0.32	0.00	1.16	40	Create capacity at El Camino Real where two 3.5'x7' culverts discharge to a single 3.5'x10' crossing
El Camino South of Lodato	0.17	0.00	0.00	1.00	8	Reduces depth/extent/duration of flooding on El Camino Real
Ellsworth	0.45	0.00	0.50	1.25	28	Reduces flooding at RR Xings
Flores-22nd	0.22	0.00	0.00	1.00	11	Reduces depth/extent/duration of flooding on El Camino Real; provides redundancy across systems

Project Name	Overall CIP Score Weights				Overall CIP Score	Other Notes
	A	B	C	D		
	Project Score (Normalized by Highest)	Life Safety Risk Weight	10-yr Property Damage Risk Weight	Overall Risk Weight $1+\left((B+C)/2\right)$	$50 * A * D$	
Flores-Edison (Bubble)	0.22	0.00	0.00	1.00	11	Reduces depth/extent/duration of flooding on El Camino Real
Grant	0.47	0.11	0.00	1.05	25	Significant reduction of flooding at 10th and Grant. Pre-requisite: *Amphlett 2*
Grant at Sunnybrae	0.92	0.53	0.00	1.27	58	Directly reduces flooding at Sunnybrae/Grant. Pre-requisite: *Carlisle*
Grant-Birch	0.65	0.32	0.00	1.16	38	
Hacienda	0.41	0.00	0.00	1.00	21	
Hacienda (Bubble Conn)	0.27	0.00	0.00	1.00	14	
Hillsdale Frontage	0.38	0.00	0.00	1.00	19	Higher potential for flood depth/duration reduction in 100-year and climate change scenarios
Hobart	0.41	0.00	0.00	1.00	21	Solves problems at Quince (gutter flows from Hobart) – Interim solution is to add inlet capacity at Hobart
Idaho	0.62	0.11	0.00	1.05	32	
Indian	0.20	0.00	0.00	1.00	10	
Isabelle-30th (Bubble)	0.32	0.00	0.00	1.00	16	
Jasmine Lateral	0.35	0.05	0.00	1.03	18	
Juniper to 27th Ave	0.49	0.21	0.00	1.11	27	
Kehoe at 16th Channel	0.23	0.00	0.00	1.00	11	Reduces flooding in events >10-year
King	0.42	0.00	0.00	1.00	21	King Ct bubble-up floods (documented issue)
Laurie Meadows	0.38	0.11	0.00	1.05	20	Distributes flow from Belmont across multiple systems to address capacity deficiency in a single outfall
Leslie St	0.28	0.00	0.00	1.00	14	
Lodi-Kehoe	0.17	0.00	0.00	1.00	8	Reduces flooding in events >10-year
Maple	0.34	0.09	0.00	1.04	18	Further reduces flooding at existing bubble ups, in addition to other areas
Midvale (Bubble Conn)	0.28	0.00	0.00	1.00	14	
Mission-Capistrano (Bubble Conn)	0.31	0.05	0.00	1.03	16	Maple project downstream is not strictly required
Monte Diablo	0.38	0.11	0.00	1.05	20	
Monte Diablo (Bubble)	0.33	0.00	0.00	1.00	17	
Monte Diablo 2	0.32	0.05	0.00	1.03	17	
Newbridge	1.00	0.32	0.00	1.16	58	Nearby High priority R&R project *Ocean View*
Newbridge Upstream	0.76	0.32	0.00	1.16	44	Nearby R&R Projects *Fallon* and *Patricia*
Norfolk at Susan Ct	0.24	0.00	0.00	1.00	12	Local capacity deficiency
Norton St Ditch	0.94	0.21	0.00	1.11	52	Addresses a maintenance issue with the ditch adjacent to the freeway (vegetation, access difficult)
Quebec-Dolan	0.42	0.05	0.00	1.03	22	
S Delaware at 10th	0.60	0.11	0.00	1.05	32	O&M staff noted issues here
S Norfolk at 16th Channel	0.24	0.00	0.00	1.00	12	Reduces flooding in events >10-year
Santa Inez (Bubble Up)	0.32	0.00	0.00	1.00	16	Indirectly reduces flooding along Idaho and Indian
Shoreview	0.37	0.00	0.00	1.00	18	Creates redundancy across systems connecting to trunk line upstream of Detroit PS
Sunnybrae	0.38	0.05	0.00	1.03	20	Improves Grant/Sunnybrae w/o changing flow rates; could be constructed before *Grant at Sunnybrae*
Trollman	0.24	0.00	0.00	1.00	12	
W 39th (Bubble Conn)	0.34	0.00	0.00	1.00	17	
W 39th Main	0.32	0.00	0.00	1.00	16	Also reduces depth/duration/extent of flooding on El Camino
Warren-Clark	0.28	0.00	0.00	1.00	14	Reduces system surcharge upstream of recently completed Greenwood project
West 3rd-Parrot	0.23	0.00	0.00	1.00	12	*Fairfax* R&R project (CCTV structural deficiency) just upstream
West Poplar	0.46	0.00	0.00	1.00	23	Eliminate bubble-ups and issues documented by O&M staff

Table J-7: Pump Station Project Overall CIP Score Weighting

Project Name	Overall CIP Score Weights						Overall CIP Score
	A	B	C	D	E	F	
	Project Score (Normalized by Highest Raw Score)	10yr Structures Impacted	Pump Failure Risk Factor	Property Damage Risk Weight $C\left(\frac{B_i}{max(B_{1:n})}\right)$	Life Safety Weight	Overall Risk Weight $1+\left({}^{(D+E)}/_{2}\right)$	$50 * A * F$
16th Avenue Long-Term	0.40	0	0.00	0.00	0.00	1.00	20
16th Avenue Short-Term	0.40	0	0.00	0.00	0.00	1.00	20
3rd & Detroit Long-Term	0.45	12	0.50	0.06	0.00	1.03	23
3rd & Detroit Short-Term	0.74	12	0.50	0.06	0.00	1.03	38
4000 Pacific Long-Term	0.93	0	1.00	0.00	1.00	1.50	70
4000 Pacific Short-Term	0.87	0	1.00	0.00	1.00	1.50	66
Casanova Long-Term	0.10	7	0.00	0.00	0.00	1.00	5
Casanova Short-Term	0.39	7	0.00	0.00	0.00	1.00	20
Coyote Short-Term	0.70	74	0.00	0.00	0.00	1.00	35
Fathom Drive Long-Term	0.00	0	0.00	0.00	0.00	1.00	0
Fathom Drive Short-Term	0.52	0	0.00	0.00	0.00	1.00	26
Hillsdale Long-Term	0.82	0	0.50	0.00	0.20	1.10	45
Hillsdale Short-Term	0.87	0	0.50	0.00	0.20	1.10	48
Marina Lagoon Long-Term	0.94	94	1.00	1.00	0.50	1.75	82
Marina Lagoon Short-Term	1.00	94	1.00	1.00	0.50	1.75	88
Poplar Short-Term	0.61	74	0.00	0.00	0.00	1.00	30

Notes:

Life safety risk assigned based on potential inundation areas and depths during 10- and 100-year events in the event of pump station failures. In other words, what level of risk is there if the pump station didn't provide total protection.

Property Damage Risk Weight formula (Accounts for recurring property damage cost less likely to be covered by disaster assistance or flood insurance) is calculated by similar methods as for creeks, except the pump station's existing reliability is factored in. Pump station failure scenarios were modeled for all stations. However, the degree to which the pump station's failure is impactful and its age are accounted for. Poplar Avenue, for example, recently underwent major rehabilitation, so its failure risk factor is 0. Marina Lagoon and 42nd Avenue are nearing 50 years old, putting them at the greatest risk of mechanical issues, and both have exhibited reliability issues. Marina Lagoon's pumps are exposed to tidal forces that influence total dynamic head and can cause the station to operate outside of the motors' intended operating ranges in rare cases.

Appendix K: CIP Maps

City Boundaries
Modeled Pipe

CIP Pipe

Priority (Pipe System)
- Very High
- High
- Medium
- Low

CIP (New Inlets)

Priority
- Medium (Inlet)

Creek CIP

Priority (Creek)
- Very High
- Medium
- Low

Levee CIP

Priority (Levee)
- Very High
- High
- Medium
- Low

Pump Station CIP

Priority (PS)
- Very High
- High
- Medium

Poplar
Coyote Pt
OM - Amphlett
OM - Bayswater
RR - Peninsula
Amphlett 1
Trollman
RR - Quebec
Monte Diablo (Bubble)
Monte Diablo
Quebec-Dolan
Idaho
Santa Inez (Bubble Up)
Indian
Monte Diablo 2
RR - Monte Diablo
Bellevue-Claremont
Ellsworth
B Street
ECR at Poplar
West Poplar
Baldwin
3rd Ave at San Mateo (Bubble)
OM - 5th at Ellsworth
2nd and Delaware (in Progress)
5th Ave
9th at RR
9th at Laurel
Mission-Capistrano (Bubble Conn)
Shoreview
RR - Shoreview
OM - Shoreview
RR - Fallon
RR - Ocean View
Dakota
OM - Ada
Newbridge Upstream
Newbridge
N/A - Part of Very High priority capacity project
RR - Patricia
OM - Bayshore
7th (Bubble Conn)
9th (Bubble Conn)
Amphlett 2
10th-Idaho
Grant
Grant-Birch
Grant at Sunnybrae
Sunnybrae
Carlisle
Norton St Ditch
S Delaware at 10th
Birch Bubble
11th-Claremont
B Street (Bubble)
17th Ave
RR - Palm
El Camino Real at Barneson
Jasmine Lateral
Leslie St
Detroit
Marina Lagoon
Kehoe at 16th Channel
Lodi-Kehoe
S Norfolk at 16th Channel

Shoreline
Shoreline Park
Harbor View Park
North Shoreview
Ryder Park
Joinville Park
Parkside
South Shoreview
Central
North Central
Gateway Park
East San Mateo
Sunnybrae
San Mateo Heights
Downtown San Mateo
Baywood
Nineteenth Avenue Park
Hayward Park
Marina Lagoon

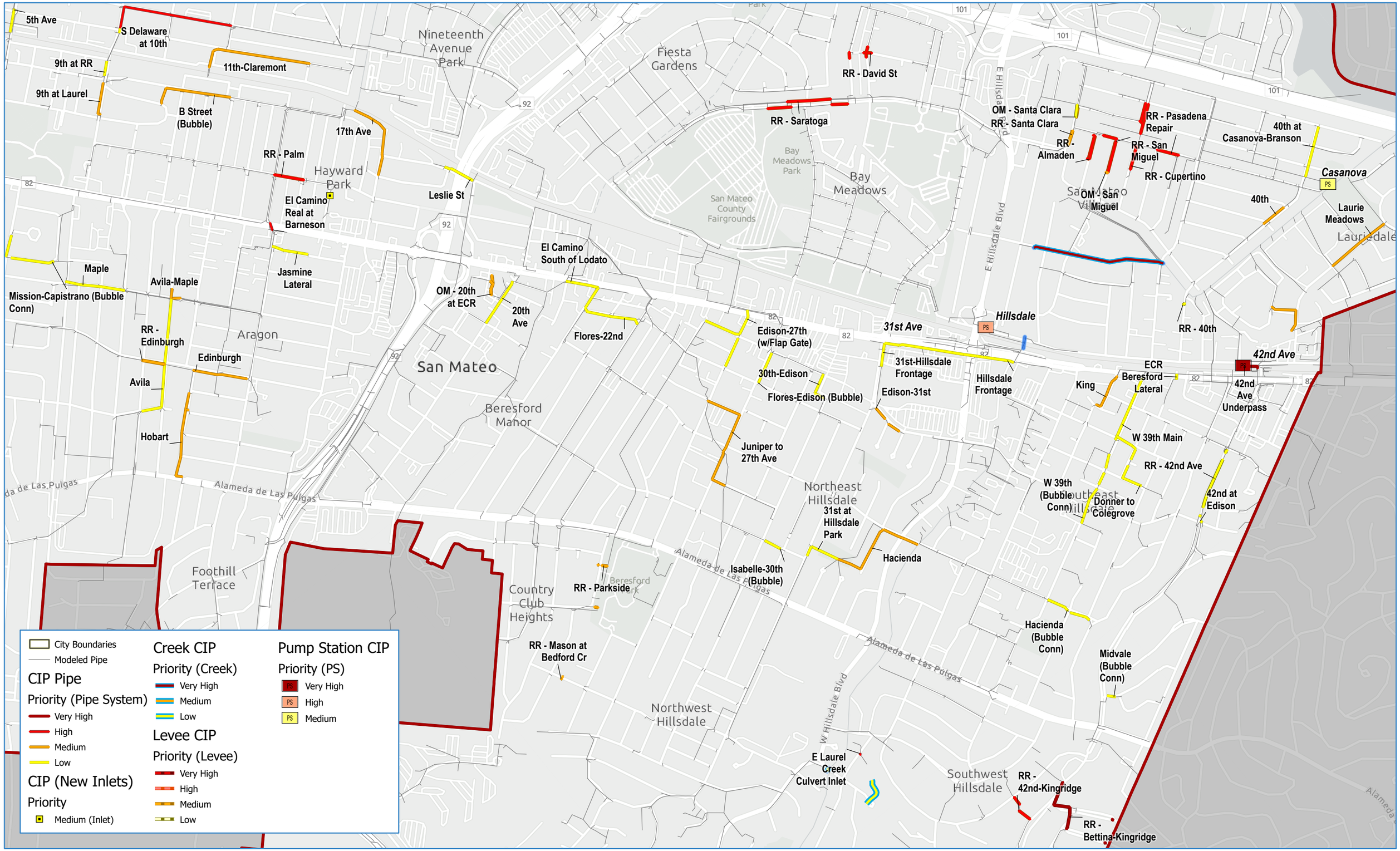
E 3rd Ave
E Poplar Ave
N San Mateo Dr
E 4th Ave
Drainage Ditch

101
82
92

0 500 1,000 Feet

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

FIGURE K-1: **San Mateo SDMP Capital Improvement Projects**



SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

FIGURE K-2: **San Mateo SDMP Capital Improvement Projects**

Appendix L: CIP Project Cost Summary

Table L-1: Project-Level Cost Summary for Creek CIPs

PROJECT	PRIORITY	QUANTITIES	PROJECT SUBTOTALS		OTHER COSTS					PROJECT TOTAL
		Pipe Length (LF)	Ave Unit Cost (LF)	Project Subtotal	Traffic Control	Mobilization	Contingency	Design/ Engineering	Special Costs	
Laurel Cr–Curtiss Bypass	Very High	1,560	$1,584	$2,470,000	$124,000	$247,000	$988,000	$766,000	$50,000	$4,650,000
16th Ave Channel -Highway 101	Very High	220	$13,940	$3,070,000	$154,000	$307,000	$1,228,000	$952,000	$17,700,000	$23,410,000
E Laurel Cr–Laurelwood Culvert	High	175	$1,430	$250,000	$13,000	$25,000	$100,000	$78,000	$100,000	$570,000
San Mateo Cr–Levees, Upstream	High	1,700	$363	$620,000	$31,000	$62,000	$248,000	$192,000	$100,000	$1,250,000
Laurel Cr–RR Xing	High	140	$2,214	$310,000	$16,000	$31,000	$124,000	$96,000	$4,250,000	$4,830,000
San Mateo Cr–Levees, Tidal	Medium	1,260	$300	$380,000	$19,000	$38,000	$152,000	$118,000	$0	$710,000
E Laurel Cr–Channel Cap. Improvement	Low	350	$1,630	$570,000	$29,000	$57,000	$228,000	$177,000	$100,000	$1,160,000
San Mateo Cr–Crystal Springs Rd Culvert	Low	60	$7,500	$450,000	$23,000	$45,000	$180,000	$140,000	$100,000	$940,000
Laurel Cr–Laurel Creek Rd Culvert	Low	50	$7,150	$360,000	$18,000	$36,000	$144,000	$112,000	$100,000	$770,000

Table L -2: Project-Level Cost Summary for Repair & Replacement CIPs

PROJECT	PRIORITY	QUANTITIES			PROJECT SUBTOTALS					OTHER COSTS					PROJECT TOTAL
		Pipe Length (LF)	Pipe Count	# of Outfalls	Ave Unit Cost (LF)	Pipe/Demo Subtotal	Structure Subtotal	Outfall Cost	Project Subtotal	Traffic Control	Mobilization	Contingency	Design/ Engineering	Special Costs	
Bettina-Kingridge	Very High	797	8	0	$240	$219,000	$129,000	$ -	$348,000	$17,000	$35,000	$139,000	$108,000		$650,000
Saratoga	High	1,006	6	0	$5,787	$177,000	$48,000	$ -	$225,000	$11,000	$23,000	$90,000	$70,000		$420,000
Monte Diablo	High	654	2	0	$235	$181,000	$32,000	$ -	$213,000	$11,000	$21,000	$85,000	$66,000		$400,000
Ocean View	High	549	6	0	$303	$177,000	$98,000	$ -	$275,000	$14,000	$28,000	$110,000	$85,000		$510,000
San Miguel	High	771	2	0	$6,605	$105,000	$16,000	$ -	$121,000	$6,000	$12,000	$48,000	$37,000		$220,000
Cupertino	High	984	9	0	$1,428	$190,000	$113,000	$ -	$303,000	$15,000	$30,000	$121,000	$94,000		$560,000
Pasadena Repair	High	437	2	0	$12,000	$24,000	$ -	$ -	$24,000	$1,000	$2,000	$10,000	$7,000		$40,000
Oak Valley	High	442	3	0	$127	$54,000	$16,000	$ -	$70,000	$4,000	$7,000	$28,000	$22,000		$130,000
Palm	High	358	2	0	$11,000	$22,000	$ -	$ -	$22,000	$1,000	$2,000	$9,000	$7,000		$40,000
Fallon	High	408	3	0	$210	$98,000	$48,000	$ -	$146,000	$7,000	$15,000	$58,000	$45,000		$270,000
Almaden	High	303	2	0	$210	$73,000	$32,000	$ -	$105,000	$5,000	$11,000	$42,000	$33,000		$200,000
42nd-Kingridge	High	276	2	0	$210	$66,000	$32,000	$ -	$98,000	$5,000	$10,000	$39,000	$30,000		$180,000
Fairfax	High	720	3	0	$3,713	$50,000	$ -	$ -	$50,000	$3,000	$5,000	$20,000	$16,000		$90,000
Viewridge	High	230	1	0	$220	$51,000	$ -	$ -	$51,000	$3,000	$5,000	$20,000	$16,000		$100,000
Glendora	High	261	3	0	$3,843	$61,000	$33,000	$ -	$94,000	$5,000	$9,000	$38,000	$29,000		$180,000
David St	High	315	5	0	$10,048	$66,000	$16,000	$ -	$82,000	$4,000	$8,000	$33,000	$25,000		$150,000
Parrot-CSM	High	207	3	0	$4,490	$59,000	$32,000	$ -	$91,000	$5,000	$9,000	$36,000	$28,000		$170,000
Santa Clara	High	484	3	0	$3,840	$102,000	$33,000	$ -	$135,000	$7,000	$14,000	$54,000	$42,000		$250,000
Parrot	Medium	233	3	0	$7,737	$58,000	$16,000	$ -	$74,000	$4,000	$7,000	$30,000	$23,000		$140,000
Parkside	Medium	129	3	0	$210	$31,000	$48,000	$ -	$79,000	$4,000	$8,000	$32,000	$25,000		$150,000
Polhemus	Medium	139	2	0	$250	$40,000	$32,000	$ -	$72,000	$4,000	$7,000	$29,000	$22,000		$130,000
Mason at Bedford Cr	Medium	20	2	0	$320	$7,000	$33,000	$ -	$40,000	$2,000	$4,000	$16,000	$12,000		$70,000
Edinburgh	Medium	270	1	0	$11,000	$11,000	$ -	$ -	$11,000	$1,000	$1,000	$4,000	$3,000		$20,000

PROJECT	PRIORITY	QUANTITIES			PROJECT SUBTOTALS					OTHER COSTS					PROJECT TOTAL
		Pipe Length (LF)	Pipe Count	# of Outfalls	Ave Unit Cost (LF)	Pipe/Demo Subtotal	Structure Subtotal	Outfall Cost	Project Subtotal	Traffic Control	Mobilization	Contingency	Design/ Engineering	Special Costs	
Newlands-42nd	Medium	282	2	0	$210	$68,000	$32,000	$ -	$100,000	$5,000	$10,000	$40,000	$31,000		$190,000
Countryside	Low	182	1	0	$210	$44,000	$16,000	$ -	$60,000	$3,000	$6,000	$24,000	$19,000		$110,000
Peninsula	Low	69	1	0	$240	$19,000	$16,000	$ -	$35,000	$2,000	$4,000	$14,000	$11,000		$70,000
Quebec	Low	120	1	0	$210	$29,000	$16,000	$ -	$45,000	$2,000	$5,000	$18,000	$14,000		$80,000
40th	Low	28	1	0	$13,000	$13,000	$ -	$ -	$13,000	$1,000	$1,000	$5,000	$4,000		$20,000
Patricia	Low	12	1	0	$210	$3,000	$16,000	$ -	$19,000	$1,000	$2,000	$8,000	$6,000		$40,000
42nd Ave	Low	651	2	0	$5,630	$23,000	$16,000	$ -	$39,000	$2,000	$4,000	$16,000	$12,000		$70,000
Shoreview	Low	136	1	0	$14,000	$14,000	$ -	$ -	$14,000	$1,000	$1,000	$6,000	$4,000		$30,000
Alderwood	Low	63	1	0	$290	$21,000	$17,000	$ -	$38,000	$2,000	$4,000	$15,000	$12,000		$70,000
Woodberry	Low	83	1	0	$14,000	$14,000	$ -	$ -	$14,000	$1,000	$1,000	$6,000	$4,000		$30,000

Table L -3: Project-Level Cost Summary for Capacity CIPs

PROJECT	PRIORITY	QUANTITIES			PROJECT SUBTOTALS					OTHER COSTS					PROJECT TOTAL
		Pipe Length (LF)	Pipe Count	# of Outfalls	Ave Unit Cost (LF)	Pipe/Demo Subtotal	Structure Subtotal	Outfall Cost	Project Subtotal	Traffic Control	Mobilization	Contingency	Design/ Engineering	Special Costs	
Grant at Sunnybrae	Very High	301	4	0	$810	$429,000	$69,000	$0	$498,000	$25,000	$50,000	$199,000	$154,000	$0	$930,000
Newbridge	Very High	1,817	8	0	$420	$1,115,000	$91,000	$0	$1,206,000	$60,000	$121,000	$482,000	$374,000	$0	$2,240,000
42nd Ave Underpass	Very High	195	2	0	$365	$88,000	$35,000	$0	$123,000	$6,000	$12,000	$49,000	$38,000	$0	$230,000
Norton St Ditch	Very High	2,697	6	1	$1,175	$2,462,000	$155,000	$100,000	$2,717,000	$136,000	$272,000	$1,087,000	$842,000	$50,000	$5,100,000
Carlisle	High	1,660	4	0	$493	$967,000	$87,000	$0	$1,054,000	$53,000	$105,000	$422,000	$327,000	$0	$1,960,000
E Laurel Creek Culvert Inlet	High	10	1	0	$670	$8,000	$19,000	$0	$27,000	$1,000	$3,000	$11,000	$8,000	$500,000	$550,000
Newbridge Upstream	High	2,196	6	0	$503	$1,108,000	$138,000	$0	$1,246,000	$62,000	$125,000	$498,000	$386,000	$0	$2,320,000
Bellevue-Claremont	High	950	2	0	$320	$304,000	$52,000	$0	$356,000	$18,000	$36,000	$142,000	$110,000	$0	$660,000
El Camino Real at Barneson	High	90	1	0	$3,130	$282,000	$21,000	$0	$303,000	$15,000	$30,000	$121,000	$94,000	$50,000	$610,000
Grant-Birch	High	746	11	0	$320	$239,000	$189,000	$0	$428,000	$21,000	$43,000	$171,000	$133,000	$0	$800,000
Dakota	High	211	1	0	$480	$101,000	$17,000	$0	$118,000	$6,000	$12,000	$47,000	$37,000	$0	$220,000
Idaho	High	1,327	4	0	$318	$418,000	$84,000	$0	$502,000	$25,000	$50,000	$201,000	$156,000	$0	$930,000
S Delaware at 10th	High	1,551	5	0	$410	$675,000	$88,000	$0	$763,000	$38,000	$76,000	$305,000	$236,000	$0	$1,420,000
Ellsworth	Medium	615	5	0	$670	$452,000	$93,000	$0	$545,000	$27,000	$55,000	$218,000	$169,000	$0	$1,010,000
Juniper to 27th Ave	Medium	1,436	2	0	$490	$704,000	$72,000	$0	$776,000	$39,000	$78,000	$310,000	$241,000	$0	$1,440,000
Grant	Medium	2,026	10	0	$268	$538,000	$152,000	$0	$690,000	$35,000	$69,000	$276,000	$214,000	$0	$1,280,000
Amphlett 2	Medium	618	1	0	$260	$161,000	$34,000	$0	$195,000	$10,000	$20,000	$78,000	$61,000	$0	$360,000
11th-Claremont	Medium	1,366	4	0	$248	$354,000	$100,000	$0	$454,000	$23,000	$45,000	$182,000	$141,000	$0	$850,000
40th	Medium	310	2	0	$240	$84,000	$33,000	$0	$117,000	$6,000	$12,000	$47,000	$36,000	$0	$220,000
9th at Laurel	Medium	409	2	0	$225	$97,000	$33,000	$0	$130,000	$7,000	$13,000	$52,000	$40,000	$0	$240,000
West Poplar	Medium	777	2	0	$210	$163,000	$49,000	$0	$212,000	$11,000	$21,000	$85,000	$66,000	$0	$400,000
Edison-31st	Medium	330	2	0	$210	$69,000	$33,000	$0	$102,000	$5,000	$10,000	$41,000	$32,000	$0	$190,000
Quebec-Dolan	Medium	747	3	0	$210	$159,000	$49,000	$0	$208,000	$10,000	$21,000	$83,000	$64,000	$0	$390,000

PROJECT	PRIORITY	QUANTITIES			PROJECT SUBTOTALS					OTHER COSTS					PROJECT TOTAL
		Pipe Length (LF)	Pipe Count	# of Outfalls	Ave Unit Cost (LF)	Pipe/Demo Subtotal	Structure Subtotal	Outfall Cost	Project Subtotal	Traffic Control	Mobilization	Contingency	Design/ Engineering	Special Costs	
Edinburgh	Medium	649	3	0	$490	$356,000	$54,000	$0	$410,000	$21,000	$41,000	$164,000	$127,000	$0	$760,000
King	Medium	476	8	0	$260	$130,000	$134,000	$0	$264,000	$13,000	$26,000	$106,000	$82,000	$0	$490,000
17th Ave	Medium	977	3	0	$273	$294,000	$51,000	$0	$345,000	$17,000	$35,000	$138,000	$107,000	$50,000	$690,000
3rd Ave at San Mateo (Bubble)	Medium	695	3	0	$210	$146,000	$49,000	$0	$195,000	$10,000	$20,000	$78,000	$61,000	$0	$360,000
Hobart	Medium	1,115	6	1	$252	$288,000	$100,000	$100,000	$488,000	$24,000	$49,000	$195,000	$151,000	$0	$910,000
Hacienda	Medium	1,286	6	1	$320	$431,000	$120,000	$100,000	$651,000	$33,000	$65,000	$260,000	$202,000	$0	$1,210,000
Avila-Maple	Medium	235	2	0	$320	$83,000	$34,000	$0	$117,000	$6,000	$12,000	$47,000	$36,000	$0	$220,000
B Street	Medium	395	1	0	$260	$115,000	$17,000	$0	$132,000	$7,000	$13,000	$53,000	$41,000	$0	$250,000
Laurie Meadows	Medium	1,350	3	0	$467	$596,000	$70,000	$0	$666,000	$33,000	$67,000	$266,000	$206,000	$0	$1,240,000
Monte Diablo	Medium	1,251	4	0	$570	$717,000	$73,000	$0	$790,000	$40,000	$79,000	$316,000	$245,000	$0	$1,470,000
Sunnybrae	Medium	458	2	0	$225	$103,000	$33,000	$0	$136,000	$7,000	$14,000	$54,000	$42,000	$0	$250,000
B Street (Bubble)	Medium	969	2	0	$235	$248,000	$50,000	$0	$298,000	$15,000	$30,000	$119,000	$92,000	$20,000	$570,000
Hillsdale Frontage	Low	1,552	9	1	$490	$785,000	$161,000	$100,000	$1,046,000	$52,000	$105,000	$418,000	$324,000	$0	$1,950,000
Jasmine Lateral	Low	440	3	0	$280	$129,000	$51,000	$0	$180,000	$9,000	$18,000	$72,000	$56,000	$0	$340,000
Shoreview	Low	906	2	0	$320	$290,000	$52,000	$0	$342,000	$17,000	$34,000	$137,000	$106,000	$0	$640,000
Birch Bubble	Low	493	1	0	$210	$104,000	$16,000	$0	$120,000	$6,000	$12,000	$48,000	$37,000	$0	$220,000
31st-Hillsdale Frontage	Low	279	2	0	$320	$101,000	$34,000	$0	$135,000	$7,000	$14,000	$54,000	$42,000	$0	$250,000
Maple	Low	715	3	0	$293	$226,000	$51,000	$0	$277,000	$14,000	$28,000	$111,000	$86,000	$0	$520,000
Avila	Low	1,530	5	0	$410	$627,000	$88,000	$0	$715,000	$36,000	$72,000	$286,000	$222,000	$0	$1,330,000
9th at RR Xing	Low	236	2	0	$365	$90,000	$35,000	$0	$125,000	$6,000	$13,000	$50,000	$39,000	$0	$230,000
W 39th (Bubble Conn)	Low	798	4	0	$240	$192,000	$66,000	$0	$258,000	$13,000	$26,000	$103,000	$80,000	$0	$480,000
Monte Diablo 2	Low	1,844	6	0	$310	$631,000	$103,000	$0	$734,000	$37,000	$73,000	$294,000	$228,000	$0	$1,370,000
Monte Diablo (Bubble)	Low	124	1	0	$210	$26,000	$16,000	$0	$42,000	$2,000	$4,000	$17,000	$13,000	$0	$80,000
9th (Bubble Conn)	Low	1,571	5	0	$220	$359,000	$99,000	$0	$458,000	$23,000	$46,000	$183,000	$142,000	$0	$850,000
40th at Casanova-Branson	Low	618	5	0	$264	$183,000	$84,000	$0	$267,000	$13,000	$27,000	$107,000	$83,000	$0	$500,000
Mission-Capistrano (Bubble Up)	Low	791	2	0	$210	$166,000	$49,000	$0	$215,000	$11,000	$22,000	$86,000	$67,000	$0	$400,000
W 39th Main	Low	803	3	0	$490	$421,000	$72,000	$0	$493,000	$25,000	$49,000	$197,000	$153,000	$0	$920,000
Santa Inez (Bubble Up)	Low	309	1	0	$210	$65,000	$16,000	$0	$81,000	$4,000	$8,000	$32,000	$25,000	$0	$150,000
7th (Bubble Up)	Low	292	1	0	$210	$61,000	$16,000	$0	$77,000	$4,000	$8,000	$31,000	$24,000	$0	$140,000
Isabelle-30th (Bubble Up)	Low	218	1	0	$240	$52,000	$17,000	$0	$69,000	$3,000	$7,000	$28,000	$21,000	$0	$130,000
42nd at Edison	Low	63	2	0	$210	$13,000	$33,000	$0	$46,000	$2,000	$5,000	$18,000	$14,000	$0	$90,000
Leslie St	Low	381	2	0	$260	$111,000	$34,000	$0	$145,000	$7,000	$15,000	$58,000	$45,000	$0	$270,000
Warren-Clark	Low	1,033	4	0	$300	$358,000	$85,000	$0	$443,000	$22,000	$44,000	$177,000	$137,000	$0	$820,000
Edison-27th (w/Flap Gate)	Low	754	3	0	$243	$184,000	$50,000	$0	$234,000	$12,000	$23,000	$94,000	$73,000	$0	$440,000
31st at Hillsdale Park	Low	474	2	0	$290	$164,000	$34,000	$0	$198,000	$10,000	$20,000	$79,000	$61,000	$0	$370,000
Midvale (Bubble Up)	Low	103	1	0	$210	$22,000	$16,000	$0	$38,000	$2,000	$4,000	$15,000	$12,000	$0	$70,000
Hacienda (Bubble Up)	Low	535	2	0	$235	$126,000	$33,000	$0	$159,000	$8,000	$16,000	$64,000	$49,000	$0	$300,000
Trollman	Low	617	3	0	$210	$130,000	$49,000	$0	$179,000	$9,000	$18,000	$72,000	$56,000	$0	$330,000
Norfolk at Susan Ct	Low	504	5	0	$210	$121,000	$82,000	$0	$203,000	$10,000	$20,000	$81,000	$63,000	$0	$380,000

PROJECT	PRIORITY	QUANTITIES			PROJECT SUBTOTALS					OTHER COSTS					PROJECT TOTAL
		Pipe Length (LF)	Pipe Count	# of Outfalls	Ave Unit Cost (LF)	Pipe/Demo Subtotal	Structure Subtotal	Outfall Cost	Project Subtotal	Traffic Control	Mobilization	Contingency	Design/ Engineering	Special Costs	
Donner to Colegrove	Low	822	4	0	$248	$195,000	$67,000	$0	$262,000	$13,000	$26,000	$105,000	$81,000	$0	$490,000
S Norfolk at 16th Channel	Low	411	3	1	$610	$261,000	$55,000	$100,000	$416,000	$21,000	$42,000	$166,000	$129,000	$0	$770,000
West 3rd-Parrot	Low	657	2	0	$320	$237,000	$34,000	$0	$271,000	$14,000	$27,000	$108,000	$84,000	$0	$500,000
ECR at Poplar	Low	251	2	0	$320	$89,000	$34,000	$0	$123,000	$6,000	$12,000	$49,000	$38,000	$0	$230,000
Flores-22nd	Low	981	6	0	$570	$568,000	$110,000	$0	$678,000	$34,000	$68,000	$271,000	$210,000	$0	$1,260,000
Flores-Edison (Bubble Up)	Low	760	2	0	$240	$182,000	$33,000	$0	$215,000	$11,000	$22,000	$86,000	$67,000	$0	$400,000
20th Ave	Low	594	1	0	$210	$125,000	$0	$0	$125,000	$6,000	$13,000	$50,000	$39,000	$0	$230,000
Baldwin	Low	321	1	0	$290	$93,000	$17,000	$0	$110,000	$6,000	$11,000	$44,000	$34,000	$0	$210,000
Kehoe at 16th Channel	Low	158	1	0	$480	$76,000	$17,000	$0	$93,000	$5,000	$9,000	$37,000	$29,000	$0	$170,000
Amphlett 1	Low	527	1	0	$210	$111,000	$33,000	$0	$144,000	$7,000	$14,000	$58,000	$45,000	$0	$270,000
Indian	Low	629	3	0	$247	$159,000	$50,000	$0	$209,000	$10,000	$21,000	$84,000	$65,000	$0	$390,000
5th Ave	Low	284	3	0	$260	$82,000	$50,000	$0	$132,000	$7,000	$13,000	$53,000	$41,000	$0	$250,000
30th-Edison	Low	383	3	0	$410	$174,000	$53,000	$0	$227,000	$11,000	$23,000	$91,000	$70,000	$0	$420,000
Lodi-Kehoe	Low	525	2	1	$305	$161,000	$34,000	$100,000	$295,000	$15,000	$30,000	$118,000	$92,000	$0	$550,000
El Camino South of Lodato	Low	395	1	0	$490	$209,000	$18,000	$0	$227,000	$11,000	$23,000	$91,000	$70,000	$50,000	$470,000
10th-Idaho	Low	670	4	0	$270	$186,000	$67,000	$0	$253,000	$13,000	$25,000	$101,000	$78,000	$0	$470,000
ECR Beresford Lateral	Low	69	1	0	$260	$20,000	$17,000	$0	$37,000	$2,000	$4,000	$15,000	$12,000	$50,000	$120,000

Appendix M: CIP Project Detail Tables

Table M-1: Detailed Capacity Project Summary, by Pipe Segment

PIPE ID	PROJECT	PRIORITY	QUANTITIES				PROJECT SUBTOTALS				
			Length (LF)	Existing Size (in)	Proposed Size (in)	Structure Count	Ave Unit Cost (LF)	Structure Unit Cost (EA)	Pipe/Demo Subtotal	Structure Subtotal	Project Subtotal
Link_68	Grant at Sunnybrae	Very High	51	12	18	1	$290	$16,800	$14,700	$16,800	$31,500
SD-B3FA	Grant at Sunnybrae	Very High	89	18	24	1	$360	$17,200	$32,200	$17,200	$49,400
SD-B472	Grant at Sunnybrae	Very High	6	12	18	1	$290	$16,800	$1,700	$16,800	$18,500
SD-B474	Grant at Sunnybrae	Very High	155	21	24x60	1	$2,445	$18,600	$380,100	$18,600	$398,700
CIP_Newbridge-P1	Newbridge	Very High	595	--	2x 30"	2	$820	$18,600	$487,900	$37,200	$525,100
CIP_Newbridge-P2	Newbridge	Very High	145	--	2x 30"	1	$820	$18,600	$118,900	$18,600	$137,500
SD-BA6A	Newbridge	Very High	45	36	Abandon	1	$70	$0	$3,200	$0	$3,200
SD-B313	Newbridge	Very High	27	36	36	1	$560	$17,900	$15,300	$17,900	$33,200
SD-B315	Newbridge	Very High	125	36	Abandon	0	$70	$0	$8,800	$0	$8,800
CIP_Newbridge-P3	Newbridge	Very High	372	--	30	1	$410	$17,500	$152,500	$17,500	$170,000
SD-B314	Newbridge	Very High	133	36	Abandon	0	$70	$0	$9,300	$0	$9,300
SD-B328	Newbridge	Very High	375	12	2x 30"	1	$850	$0	$318,700	$0	$318,700
SD-1A356	42nd Ave Underpass	Very High	22	18	24	1	$360	$17,200	$8,000	$17,200	$25,200
SD-1A370	42nd Ave Underpass	Very High	173	24	30	1	$460	$17,500	$79,500	$17,500	$97,000
16th-101_Ditch1	Norton St Ditch	Very High	755	--	36	2	$490	$17,900	$370,000	$35,800	$405,800
16th-101_Ditch2	Norton St Ditch	Very High	450	--	42	1	$570	$18,300	$256,500	$18,300	$274,800
16th-101_Ditch2	Norton St Ditch	Very High	502	--	48	2	$670	$18,600	$336,300	$37,200	$373,500
16th-101_Ditch2	Norton St Ditch	Very High	190	--	36x96	0	$3,640	$0	$691,600	$0	$691,600
16th-101_Ditch3	Norton St Ditch	Very High	800	--	66	2	$1,010	$22,400	$808,000	$44,800	$852,800
16th-101_Ditch4	Norton St Ditch	Very High	0	--	48	1	$670	$18,600	$0	$18,600	$18,600
CIP_Birch-P1	Carlisle	High	189	--	Ellipse_19x30	1	$480	$17,200	$90,900	$17,200	$108,100
CIP_BirchP3	Carlisle	High	911	--	Ellipse_24x38	2	$615	$17,500	$560,300	$35,000	$595,300
CIP_Birch-P2	Carlisle	High	480	--	Ellipse_24x38	1	$615	$17,500	$295,100	$17,500	$312,600
CIP_Carlisle-P4	Carlisle	High	80	--	18	1	$260	$16,800	$20,700	$16,800	$37,500
Laurelwood Culv	E Laurel Creek Culvert Inlet	High	10	48	48	1	$750	$18,600	$7,500	$18,600	$26,100
CIP_Newbridge2-P1	Newbridge Upstream	High	397	--	Ellipse_24x38	1	$615	$17,500	$244,300	$17,500	$261,800
CIP_Newbridge2-P4	Newbridge Upstream	High	535	--	Ellipse_19x30	2	$480	$17,200	$257,000	$34,400	$291,400
CIP_Newbridge2-P5	Newbridge Upstream	High	252	--	Ellipse_19x30	1	$480	$17,200	$121,000	$17,200	$138,200
CIP_Newbridge2_P6	Newbridge Upstream	High	384	--	Ellipse_19x30	1	$480	$17,200	$184,500	$17,200	$201,700
CIP_Newbridge2-P2	Newbridge Upstream	High	127	--	Ellipse_19x30	1	$480	$17,200	$61,000	$17,200	$78,200
CIP_Newbridge2-P3	Newbridge Upstream	High	500	--	Ellipse_19x30	2	$480	$17,200	$240,200	$34,400	$274,600
CIP_Bellevue-Claremont-P2	Bellevue-Claremont	High	501	--	24	2	$320	$17,200	$160,300	$34,400	$194,700
CIP_Bellevue-Claremont-P1	Bellevue-Claremont	High	449	--	24	1	$320	$17,200	$143,800	$17,200	$161,000
CIP_ECR-Barneson-P1	El Camino Real at Barneson	High	90	--	42x48	1	$3,130	$20,600	$281,700	$20,600	$302,300
SD-O6572	Grant-Birch	High	13	--	24	1	$320	$17,200	$4,200	$17,200	$21,400
SD-O6574	Grant-Birch	High	58	--	24	1	$320	$17,200	$18,700	$17,200	$35,900
SD-O6706	Grant-Birch	High	72	--	24	1	$320	$17,200	$23,100	$17,200	$40,300
SD-B370-3	Grant-Birch	High	243	--	24	1	$320	$17,200	$77,700	$17,200	$94,900
SD-B370-2	Grant-Birch	High	44	--	24	1	$320	$17,200	$14,000	$17,200	$31,200
CIP_Dakota-P4	Dakota	High	54	--	24	1	$320	$17,200	$17,400	$17,200	$34,600
SD-O6568	Grant-Birch	High	4	--	24	1	$320	$17,200	$1,400	$17,200	$18,600
SD-O6570	Grant-Birch	High	99	--	24	1	$320	$17,200	$31,800	$17,200	$49,000

PIPE ID	PROJECT	PRIORITY	QUANTITIES				PROJECT SUBTOTALS				
			Length (LF)	Existing Size (in)	Proposed Size (in)	Structure Count	Ave Unit Cost (LF)	Structure Unit Cost (EA)	Pipe/Demo Subtotal	Structure Subtotal	Project Subtotal
SD-O6708	Grant-Birch	High	4	--	24	1	$320	$17,200	$1,400	$17,200	$18,600
SD-B370-3	Grant-Birch	High	79	--	24	1	$320	$17,200	$25,400	$17,200	$42,600
CIP_Idaho-P1	Idaho	High	74	--	24	1	$320	$17,200	$23,700	$17,200	$40,900
CIP_Idaho-P2	Idaho	High	551	--	Ellipse_14x23	2	$390	$16,800	$215,000	$33,600	$248,600
CIP_Idaho-P3	Idaho	High	446	--	Ellipse_19x30	1	$480	$17,200	$214,200	$17,200	$231,400
CIP_Dakota-P2	Dakota	High	150	--	Ellipse_19x30	1	$480	$17,200	$72,000	$17,200	$89,200
SD-B2BD	S Delaware at 10th	High	211	--	Ellipse_19x30	1	$480	$17,200	$101,400	$17,200	$118,600
CIP_Dakota-P1-2	Dakota	High	179	--	Ellipse_19x30	1	$480	$17,200	$85,700	$17,200	$102,900
CIP_Idaho-P1	Idaho	High	329	--	30	1	$410	$17,500	$134,700	$17,500	$152,200
CIP_Idaho-P2	Idaho	High	35	--	15	1	$240	$16,600	$8,400	$16,600	$25,000
CIP_Idaho-P3	Idaho	High	646	--	12	2	$210	$16,400	$135,600	$32,800	$168,400
SD-2131	Idaho	High	318	12	30	1	$440	$17,500	$139,700	$17,500	$157,200
SD-B2BD	S Delaware at 10th	High	277	--	30	1	$410	$17,500	$113,800	$17,500	$131,300
SD-B361	S Delaware at 10th	High	365	27	30	1	$465	$17,500	$169,500	$17,500	$187,000
SD-B360	S Delaware at 10th	High	349	27	30	1	$465	$17,500	$162,100	$17,500	$179,600
SD-B440	S Delaware at 10th	High	262	--	30	1	$410	$17,500	$107,200	$17,500	$124,700
SD-B2BE	S Delaware at 10th	High	299	--	30	1	$410	$17,500	$122,600	$17,500	$140,100
Link_3	Ellsworth	Medium	242	36	48	1	$740	$18,600	$179,400	$18,600	$198,000
SD-1F0C	Ellsworth	Medium	165	33	48	1	$735	$18,600	$121,600	$18,600	$140,200
SD-1F3E	Ellsworth	Medium	132	33	48	1	$735	$18,600	$97,300	$18,600	$115,900
Link_4	Ellsworth	Medium	56	36	48	1	$740	$18,600	$41,500	$18,600	$60,100
SD-265	Ellsworth	Medium	19	--	48	1	$670	$18,600	$12,600	$18,600	$31,200
CIP-Juniper-27th-P1	Juniper to 27th Ave	Medium	526	--	36	2	$490	$17,900	$257,700	$35,800	$293,500
CIP-Juniper-27th-P2	Juniper to 27th Ave	Medium	910	--	36	2	$490	$17,900	$445,900	$35,800	$481,700
CIP_Grant-P4	Grant	Medium	369	--	12	1	$210	$16,400	$77,500	$16,400	$93,900
SD-B36D	Grant	Medium	73	15	24	1	$355	$17,200	$26,000	$17,200	$43,200
CIP_Grant-P5	Grant	Medium	38	--	12	1	$210	$16,400	$8,000	$16,400	$24,400
Link_224	Grant	Medium	320	--	12	1	$210	$16,400	$67,200	$16,400	$83,600
SD-B2C8	Grant	Medium	68	10	15	1	$270	$16,600	$18,500	$16,600	$35,100
CIP_Grant-P3	Grant	Medium	327	--	24	1	$320	$17,200	$104,600	$17,200	$121,800
CIP_Grant-P2-1	Grant	Medium	273	--	24	1	$320	$17,200	$87,500	$17,200	$104,700
SD-B36E	Grant	Medium	38	15	24	1	$355	$17,200	$13,500	$17,200	$30,700
CIP_Grant-P2	Grant	Medium	284	--	12	1	$210	$0	$59,700	$0	$59,700
CIP_Grant-P1	Grant	Medium	234	--	24	1	$320	$17,200	$75,000	$17,200	$92,200
CIP_Amphlett2-P1	Amphlett 2	Medium	618	--	18	2	$260	$16,800	$160,600	$33,600	$194,200
CIP_11th-Claremont-P1	11th-Claremont	Medium	1004	--	18	3	$260	$16,800	$261,000	$50,400	$311,400
SD-B9C9	11th-Claremont	Medium	58	12	12	1	$240	$16,400	$13,900	$16,400	$30,300
CIP_11th-Claremont-P3	11th-Claremont	Medium	206	--	18	1	$260	$16,800	$53,500	$16,800	$70,300
CIP_11th-Claremont-P2	11th-Claremont	Medium	99	--	18	1	$260	$16,800	$25,700	$16,800	$42,500
SD-199AE	40th	Medium	254	12	15	1	$270	$16,600	$68,600	$16,600	$85,200
SD-199AF	40th	Medium	56	12	15	1	$270	$16,600	$15,000	$16,600	$31,600
CIP_9thLaurel-P2	9th at Laurel	Medium	34	--	12	1	$210	$16,400	$7,200	$16,400	$23,600
CIP_9thLaurel-P1	9th at Laurel	Medium	375	--	15	1	$240	$16,600	$89,900	$16,600	$106,500

PIPE ID	PROJECT	PRIORITY	QUANTITIES				PROJECT SUBTOTALS				
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CIP_WPoplar-P2	West Poplar	Medium	156	--	12	1	$210	$16,400	$32,700	$16,400	$49,100
CIP_WPoplar-P1	West Poplar	Medium	622	--	12	2	$210	$16,400	$130,600	$32,800	$163,400
CIP_Edison-31st-P2	Edison-31st	Medium	161	--	12	1	$210	$16,400	$33,800	$16,400	$50,200
CIP_Edison-31st-P1	Edison-31st	Medium	169	--	12	1	$210	$16,400	$35,500	$16,400	$51,900
SD-B278	Rand	Medium	102	6	Ellipse_19x30	1	$510	$17,200	$52,200	$17,200	$69,400
CIP_Rand-P1	Rand	Medium	418	--	Ellipse_19x30	1	$480	$17,200	$200,400	$17,200	$217,600
SD-B9E6	Rand	Medium	63	--	Ellipse_19x30	1	$480	$17,200	$30,300	$17,200	$47,500
CIP_Quebec-Dolan-P2	Quebec-Dolan	Medium	469	--	12	1	$210	$16,400	$98,400	$16,400	$114,800
CIP_Quebec-Dolan-P1	Quebec-Dolan	Medium	224	--	12	1	$210	$16,400	$47,100	$16,400	$63,500
SD-20DB	Quebec-Dolan	Medium	54	12	12	1	$240	$16,400	$13,000	$16,400	$29,400
Link_80	Edinburgh	Medium	288	27	36	1	$545	$17,900	$157,000	$17,900	$174,900
SD-53F6	Edinburgh	Medium	299	32	36	1	$550	$17,900	$164,500	$17,900	$182,400
SD-53F7	Edinburgh	Medium	62	32	36	1	$550	$17,900	$34,100	$17,900	$52,000
SD-12D59	King	Medium	26	15	18	1	$295	$16,800	$7,600	$16,800	$24,400
CIP_King-P3	King	Medium	69	--	18	1	$260	$16,800	$18,000	$16,800	$34,800
SD-TBD-7540	King	Medium	9	12	18	1	$290	$16,800	$2,700	$16,800	$19,500
SD-3F7CC	King	Medium	52	12	18	1	$290	$16,800	$15,200	$16,800	$32,000
CIP_King-P1	King	Medium	60	--	18	1	$260	$16,800	$15,600	$16,800	$32,400
CIP_King-P2	King	Medium	160	--	18	1	$260	$16,800	$41,700	$16,800	$58,500
SD-3F7CB	King	Medium	50	12	18	1	$290	$16,800	$14,600	$16,800	$31,400
SD-12D5B	King	Medium	49	12	18	1	$290	$16,800	$14,100	$16,800	$30,900
CIP_17th-P1	17th Ave	Medium	215	--	15	1	$240	$16,600	$51,500	$16,600	$68,100
SD-7A99	17th Ave	Medium	47	12	18	1	$290	$0	$13,600	$0	$13,600
17th_RR Xing Ditch	17th Ave	Medium	716	--	24	2	$320	$17,200	$229,000	$34,400	$263,400
CIP_3rdSanMateo-P2	3rd Ave at San Mateo (Bubble)	Medium	69	--	12	1	$210	$16,400	$14,400	$16,400	$30,800
CIP_3rdSanMateo-P3	3rd Ave at San Mateo (Bubble)	Medium	283	--	12	1	$210	$16,400	$59,400	$16,400	$75,800
CIP_3rdSanMateo-P1	3rd Ave at San Mateo (Bubble)	Medium	344	--	12	1	$210	$16,400	$72,200	$16,400	$88,600
CIP_Hobart-P1	Hobart	Medium	206	--	24	1	$320	$17,200	$65,800	$17,200	$83,000
CIP_Hobart-P3	Hobart	Medium	266	--	18	1	$260	$16,800	$69,200	$16,800	$86,000
CIP_Hobart-P2	Hobart	Medium	35	--	12	1	$210	$16,400	$7,400	$16,400	$23,800
SD-5567	Hobart	Medium	46	--	15	1	$240	$16,600	$11,000	$16,600	$27,600
CIP_Hobart-P4	Hobart	Medium	248	--	15	1	$240	$16,600	$59,500	$16,600	$76,100
CIP_Hobart-P5	Hobart	Medium	314	--	15	1	$240	$16,600	$75,300	$16,600	$91,900
SD-14764	Hacienda	Medium	188	21	24	1	$365	$17,200	$68,500	$17,200	$85,700
SD-14765	Hacienda	Medium	86	21	24	1	$365	$17,200	$31,300	$17,200	$48,500
CIP_Hacienda-P3	Hacienda	Medium	547	--	24	2	$320	$17,200	$175,000	$34,400	$209,400
CIP_Hacienda-P4	Hacienda	Medium	296	--	24	1	$320	$17,200	$94,600	$17,200	$111,800
SD-14766	Hacienda	Medium	152	21	24	1	$365	$17,200	$55,400	$17,200	$72,600
SD-14767	Hacienda	Medium	18	21	24	1	$365	$17,200	$6,500	$17,200	$23,700
SD-5337	Avila-Maple	Medium	118	10	24	1	$350	$17,200	$41,300	$17,200	$58,500
SD-533F	Avila-Maple	Medium	117	18	24	1	$360	$17,200	$42,100	$17,200	$59,300
SD-25D	B Street	Medium	395	10	18	1	$290	$16,800	$114,600	$16,800	$131,400
CIP_Laurie-P1	Laurie Meadows	Medium	561	--	18	2	$260	$16,800	$146,000	$33,600	$179,600

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CIP_LaurieMead-P1	Laurie Meadows	Medium	356	--	24x48	1	$570	$18,300	$203,000	$18,300	$221,300
CIP_LaurieMead-P2	Laurie Meadows	Medium	433	--	24x48	1	$570	$18,300	$246,700	$18,300	$265,000
CIP_MonteDiablo-P2	Monte Diablo	Medium	228	--	24x48	1	$570	$18,300	$129,900	$18,300	$148,200
CIP_MonteDiablo-P1	Monte Diablo	Medium	404	--	24x48	1	$570	$18,300	$230,500	$18,300	$248,800
CIP_MonteDiablo-P3	Monte Diablo	Medium	498	--	24x48	1	$570	$18,300	$283,600	$18,300	$301,900
SD-2402	Monte Diablo	Medium	121	6	24x48	1	$600	$18,300	$72,700	$18,300	$91,000
CIP_Sunnybrae-P2	Sunnybrae	Medium	226	--	12	1	$210	$16,400	$47,500	$16,400	$63,900
CIP_Sunnybrae-P1	Sunnybrae	Medium	231	--	15	1	$240	$16,600	$55,500	$16,600	$72,100
SD-7889	B Street (Bubble)	Medium	197	8	12	1	$240	$16,400	$47,300	$16,400	$63,700
CIP_BSt-Bubb-P1	B Street (Bubble)	Medium	772	--	18	2	$260	$16,800	$200,800	$33,600	$234,400
SDMP-P6	Hillsdale Frontage	Low	176	--	24x36	1	$490	$17,900	$86,400	$17,900	$104,300
SD-12D36-2	Hillsdale Frontage	Low	84	--	24x36	1	$490	$17,900	$41,300	$17,900	$59,200
SD-12D37	Hillsdale Frontage	Low	54	--	24x36	1	$490	$17,900	$26,200	$17,900	$44,100
SD-15E91	Hillsdale Frontage	Low	254	--	24x36	1	$490	$17,900	$124,300	$17,900	$142,200
SD-15E97	Hillsdale Frontage	Low	19	--	24x36	1	$490	$17,900	$9,300	$17,900	$27,200
SD-12D17	Hillsdale Frontage	Low	409	24	24x36	1	$540	$17,900	$220,700	$17,900	$238,600
SD-12D34	Hillsdale Frontage	Low	86	24	24x36	1	$540	$17,900	$46,400	$17,900	$64,300
SD-12D35	Hillsdale Frontage	Low	157	--	24x36	1	$490	$17,900	$76,800	$17,900	$94,700
SD-12D36	Hillsdale Frontage	Low	314	--	24x36	1	$490	$17,900	$154,000	$17,900	$171,900
SD-92F1	Jasmine Lateral	Low	25	12	24	1	$350	$17,200	$8,800	$17,200	$26,000
SD-92F2	Jasmine Lateral	Low	118	12	18	1	$290	$16,800	$34,200	$16,800	$51,000
SD-54C3	Jasmine Lateral	Low	297	12	18	1	$290	$16,800	$86,100	$16,800	$102,900
CIP_Shoreview-P2	Shoreview	Low	251	--	24	1	$320	$17,200	$80,300	$17,200	$97,500
CIP_Shoreview-P1	Shoreview	Low	655	--	24	2	$320	$17,200	$209,700	$34,400	$244,100
CIP_BirchBubb-P1	Birch Bubble	Low	493	--	12	1	$210	$16,400	$103,600	$16,400	$120,000
SD-142FF	31st-Hillsdale Frontage	Low	79	21	24	1	$365	$17,200	$28,800	$17,200	$46,000
SD-14300	31st-Hillsdale Frontage	Low	200	18	24	1	$360	$17,200	$72,100	$17,200	$89,300
SD-5F05	Maple	Low	275	--	24	1	$320	$17,200	$88,000	$17,200	$105,200
CIP_Maple-P1	Maple	Low	171	--	15	1	$240	$16,600	$41,000	$16,600	$57,600
SD-5EB6	Maple	Low	270	18	24	1	$360	$17,200	$97,100	$17,200	$114,300
SD-5DC1	Avila	Low	240	--	30	1	$410	$17,500	$98,500	$17,500	$116,000
SD-5DC0	Avila	Low	272	--	30	1	$410	$17,500	$111,700	$17,500	$129,200
CCTV_P1	Avila	Low	419	--	30	1	$410	$17,500	$171,600	$17,500	$189,100
SD-5DBD	Avila	Low	239	--	30	1	$410	$17,500	$98,000	$17,500	$115,500
CIP_Avila-P1	Avila	Low	359	--	30	1	$410	$17,500	$147,300	$17,500	$164,800
SD-B9C7	9th at RR Xing	Low	57	18	30	1	$450	$17,500	$25,800	$17,500	$43,300
SD-740C	9th at RR Xing	Low	178	18	24	1	$360	$17,200	$64,200	$17,200	$81,400
CIP_W39th-P4	W 39th (Bubble Conn)	Low	301	--	15	1	$240	$16,600	$72,100	$16,600	$88,700
CIP_W39th-P1	W 39th (Bubble Conn)	Low	175	--	15	1	$240	$16,600	$42,100	$16,600	$58,700
CIP_W39th-P3	W 39th (Bubble Conn)	Low	161	--	15	1	$240	$16,600	$38,800	$16,600	$55,400
CIP_W39th-P2	W 39th (Bubble Conn)	Low	161	--	15	1	$240	$16,600	$38,600	$16,600	$55,200
SD-2410	Monte Diablo 2	Low	346	15	24	1	$355	$17,200	$122,900	$17,200	$140,100
SD-2411	Monte Diablo 2	Low	360	15	24	1	$355	$17,200	$127,800	$17,200	$145,000

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SD-2412	Monte Diablo 2	Low	278	15	24	1	$355	$17,200	$98,800	$17,200	$116,000
SD-2412-2	Monte Diablo 2	Low	100	15	24	1	$355	$17,200	$35,700	$17,200	$52,900
SD-23EC	Monte Diablo 2	Low	361	18	24	1	$360	$17,200	$130,100	$17,200	$147,300
SD-2413	Monte Diablo 2	Low	398	12	18	1	$290	$16,800	$115,300	$16,800	$132,100
CIP_MonteDiabBubble-P1	Monte Diablo (Bubble)	Low	124	--	12	1	$210	$16,400	$26,100	$16,400	$42,500
CIP_9thBubble-P1	9th (Bubble Conn)	Low	293	--	12	1	$210	$16,400	$61,600	$16,400	$78,000
CIP_9thBubble-P2	9th (Bubble Conn)	Low	296	--	12	1	$210	$16,400	$62,100	$16,400	$78,500
CIP_9thBubble-P3	9th (Bubble Conn)	Low	576	--	18	2	$260	$16,800	$149,800	$33,600	$183,400
CIP_9thBubble-P4	9th (Bubble Conn)	Low	366	--	12	1	$210	$16,400	$76,900	$16,400	$93,300
CIP_9thBubble-P5	9th (Bubble Conn)	Low	40	--	12	1	$210	$16,400	$8,400	$16,400	$24,800
SD-1998C	40th at Casanova-Branson	Low	226	12	18	1	$290	$16,800	$65,400	$16,800	$82,200
SD-19990	40th at Casanova-Branson	Low	119	18	24	1	$360	$17,200	$42,700	$17,200	$59,900
SD-19991	40th at Casanova-Branson	Low	25	12	18	1	$290	$16,800	$7,100	$16,800	$23,900
SD-19992	40th at Casanova-Branson	Low	25	12	15	1	$270	$16,600	$6,600	$16,600	$23,200
SD-19993	40th at Casanova-Branson	Low	225	12	15	1	$270	$16,600	$60,800	$16,600	$77,400
CIP_Mission-Cap-P2	Mission-Capistrano (Bubble Conn)	Low	269	--	12	1	$210	$16,400	$56,500	$16,400	$72,900
CIP_Mission-Cap-P1	Mission-Capistrano (Bubble Conn)	Low	522	--	12	2	$210	$16,400	$109,600	$32,800	$142,400
SD-12D8E-2	W 39th Main	Low	46	15	36	1	$525	$17,900	$23,900	$17,900	$41,800
SD-12D8E	W 39th Main	Low	722	15	36	2	$525	$17,900	$378,800	$35,800	$414,600
SD-3F794	W 39th Main	Low	36	15	36	1	$525	$17,900	$18,700	$17,900	$36,600
CIP_SantaInez-P1	Santa Inez (Bubble Up)	Low	309	--	12	1	$210	$16,400	$64,800	$16,400	$81,200
CIP_7thBubble-P1	7th (Bubble Conn)	Low	292	--	12	1	$210	$16,400	$61,300	$16,400	$77,700
CIP_Isabelle30th-P1	Isabelle-30th (Bubble)	Low	218	--	15	1	$240	$16,600	$52,300	$16,600	$68,900
CIP_42-Edison-P2	42nd at Edison	Low	32	--	12	1	$210	$16,400	$6,700	$16,400	$23,100
CIP_42-Edison-P1	42nd at Edison	Low	31	--	12	1	$210	$16,400	$6,600	$16,400	$23,000
SD-O2319	Leslie St	Low	76	12	18	1	$290	$16,800	$22,000	$16,800	$38,800
SD-FE76	Leslie St	Low	305	12	18	1	$290	$16,800	$88,500	$16,800	$105,300
SD-11B1	Warren-Clark	Low	539	15	24	2	$355	$17,200	$191,300	$34,400	$225,700
SD-11B1-2	Warren-Clark	Low	188	15	24	1	$355	$17,200	$66,800	$17,200	$84,000
SD-B3	Warren-Clark	Low	198	15	24	1	$355	$17,200	$70,400	$17,200	$87,600
SD-A3	Warren-Clark	Low	107	12	15	1	$270	$16,600	$29,000	$16,600	$45,600
CIP_Edison-P1	Edison-27th (w/Flap Gate)	Low	229	12	18	1	$290	$16,800	$66,400	$16,800	$83,200
CIP_Edison-P2	Edison-27th (w/Flap Gate)	Low	442	--	12	1	$210	$16,400	$92,800	$16,400	$109,200
SD-10946	Edison-27th (w/Flap Gate)	Low	83	15	18	1	$295	$16,800	$24,600	$16,800	$41,400
SD-3DFF3	31st at Hillsdale Park	Low	125	15	18	1	$295	$16,800	$36,700	$16,800	$53,500
SD-14752	31st at Hillsdale Park	Low	349	21	24	1	$365	$17,200	$127,500	$17,200	$144,700
CIP_MidvaleBubble-P1	Midvale (Bubble Conn)	Low	103	--	12	1	$210	$16,400	$21,700	$16,400	$38,100
CIP_Hacienda-P2	Hacienda (Bubble Conn)	Low	251	--	12	1	$210	$16,400	$52,800	$16,400	$69,200
CIP_Hacienda-P1	Hacienda (Bubble Conn)	Low	283	--	18	1	$260	$16,800	$73,600	$16,800	$90,400
CIP_Trollman-P2	Trollman	Low	260	--	12	1	$210	$16,400	$54,600	$16,400	$71,000
CIP_Trollman-P3	Trollman	Low	113	--	12	1	$210	$16,400	$23,700	$16,400	$40,100
CIP_Trollman-P1	Trollman	Low	244	--	12	1	$210	$16,400	$51,300	$16,400	$67,700
SD-B8A2-2	Norfolk at Susan Ct	Low	68	6	12	1	$240	$16,400	$16,400	$16,400	$32,800

PIPE ID	PROJECT	PRIORITY	QUANTITIES				PROJECT SUBTOTALS				
			Length (LF)	Existing Size (in)	Proposed Size (in)	Structure Count	Ave Unit Cost (LF)	Structure Unit Cost (EA)	Pipe/Demo Subtotal	Structure Subtotal	Project Subtotal
SD-B8A2	Norfolk at Susan Ct	Low	241	6	12	1	$240	$16,400	$57,800	$16,400	$74,200
SD-B8D2	Norfolk at Susan Ct	Low	142	6	12	1	$240	$16,400	$34,100	$16,400	$50,500
SD-4185D	Norfolk at Susan Ct	Low	43	6	12	1	$240	$16,400	$10,300	$16,400	$26,700
SD-O4672	Norfolk at Susan Ct	Low	10	6	12	1	$240	$16,400	$2,400	$16,400	$18,800
CIP_Donner-Colegrove-P1	Donner to Colegrove	Low	212	--	18	1	$260	$16,800	$55,100	$16,800	$71,900
SD-12D94	Donner to Colegrove	Low	58	12	18	1	$290	$16,800	$16,800	$16,800	$33,600
CIP_Donner-Colegrove-P2	Donner to Colegrove	Low	140	--	18	1	$260	$16,800	$36,400	$16,800	$53,200
CIP_Donner-Colegrove-P3	Donner to Colegrove	Low	412	--	12	1	$210	$16,400	$86,500	$16,400	$102,900
SD-B531	S Norfolk at 16th Channel	Low	138	33	36x48	1	$735	$18,600	$101,200	$18,600	$119,800
SD-B53B	S Norfolk at 16th Channel	Low	50	33	36x48	1	$735	$18,600	$36,900	$18,600	$55,500
SD-B57A	S Norfolk at 16th Channel	Low	223	30	36	1	$550	$17,900	$122,900	$17,900	$140,800
SD-5F83	West 3rd-Parrot	Low	298	18	24	1	$360	$17,200	$107,300	$17,200	$124,500
SD-5F81	West 3rd-Parrot	Low	359	18	24	1	$360	$17,200	$129,300	$17,200	$146,500
SD-290	ECR at Poplar	Low	45	12	24	1	$350	$17,200	$15,800	$17,200	$33,000
SD-FA	ECR at Poplar	Low	206	15	24	1	$355	$17,200	$73,100	$17,200	$90,300
CIP_Flores-22-P2	Flores-22nd	Low	61	--	24x48	1	$570	$18,300	$34,700	$18,300	$53,000
CIP_Flores-22-P1	Flores-22nd	Low	295	--	24x48	1	$570	$18,300	$168,100	$18,300	$186,400
SD-10782	Flores-22nd	Low	20	12	24x48	1	$600	$18,300	$11,800	$18,300	$30,100
SD-10783-2	Flores-22nd	Low	140	12	24x48	1	$600	$18,300	$83,800	$18,300	$102,100
CIP_Flores-22-P3	Flores-22nd	Low	337	--	24x48	1	$570	$18,300	$192,300	$18,300	$210,600
SD-10783	Flores-22nd	Low	129	12	24x48	1	$600	$18,300	$77,300	$18,300	$95,600
CIP_Flores-Edison-P1	Flores-Edison (Bubble)	Low	371	--	15	1	$240	$16,600	$88,900	$16,600	$105,500
CIP_Flores-Edison-P2	Flores-Edison (Bubble)	Low	389	--	15	1	$240	$16,600	$93,400	$16,600	$110,000
CIP_2nd-Delaware-P1	2nd & Delaware (In progress)	Low	83	--	12	1	$210	$16,400	$17,500	$16,400	$33,900
CIP_20th-P1	20th Ave	Low	594	--	12	2	$210	$0	$124,800	$0	$124,800
CIP_Baldwin-P1	Baldwin	Low	321	--	21	1	$290	$17,000	$93,100	$17,000	$110,100
SD-B59C	Kehoe at 16th Channel	Low	158	--	Ellipse_19x30	1	$480	$17,200	$75,700	$17,200	$92,900
CIP_Amphlett-P1	Amphlett 1	Low	527	--	12	2	$210	$16,400	$110,600	$32,800	$143,400
CIP_Indian-P2	Indian	Low	261	--	15	1	$240	$16,600	$62,700	$16,600	$79,300
CIP_Indian-P1	Indian	Low	324	--	18	1	$260	$16,800	$84,300	$16,800	$101,100
SD-2188	Indian	Low	44	12	15	1	$270	$16,600	$11,900	$16,600	$28,500
SD-O7586	5th Ave	Low	104	12	18	1	$290	$16,800	$30,200	$16,800	$47,000
SD-BA03	5th Ave	Low	133	12	18	1	$290	$16,800	$38,500	$16,800	$55,300
SD-O7587	5th Ave	Low	47	12	18	1	$290	$16,800	$13,600	$16,800	$30,400
SD-10673	30th-Edison	Low	17	21	30	1	$455	$17,500	$7,700	$17,500	$25,200
SD-10674	30th-Edison	Low	236	21	30	1	$455	$17,500	$107,600	$17,500	$125,100
SD-142F4	30th-Edison	Low	129	21	30	1	$455	$17,500	$58,800	$17,500	$76,300
CIP_Lodi-P2	Lodi-Kehoe	Low	255	--	21	1	$290	$17,000	$74,100	$17,000	$91,100

Appendix N: Very High Priority CIP Detail Sheets



City of San Mateo
Storm Drain Master Plan

Marina Lagoon PS

Improvement Project
San Mateo, CA
7/9/2026

Legend

City Boundary

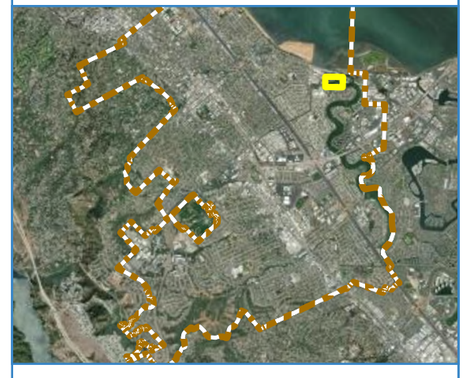
Pump Station CIP

PS Very High

PS High

PS Medium

Improvement Project	Project Type	Cost	Priority	Summary
Marina Lagoon PS	Pump Stations	Short-Term: $7,250,000; Long-Term: $100,000,000	Very High Factors: Impact Area, Flood Damage Potential, Station Age	Some components of the existing pump station require replacement or rehabilitation to ensure reliability and operational flexibility. Short-term projects would include a full condition assessment (including major structural, mechanical, electrical, and control systems), trash rack reconfiguration, a new floating debris boom, replacement or rehabilitation of remaining original gear boxes, and redundant backup controls with mechanical floats. Modifications are also recommended based on CFD modeling. Long-term improvements include a new, deep 300,000 gpm pump station and full reconstruction or rehabilitatioin of the existing 750,000 gpm station



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

0 80 160
Feet

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Project Location	Marina Lagoon Pump Station
Priority	Very High
Prioritization Factors	Impact Area, Flood Damage Potential, Station Age
Type	Pump Stations
Project-Specific Considerations	Spread short-term costs over multiple contracts; Long-term phasing
Alternatives	None identified

Description

Short-Term	Long-Term
Condition Assessment	Construct new, separate pump station
Structural/Hydraulic modifications	Fully re-construct/rehab existing station
Reconfigure Trash Rack	
Replace/rehab Gear Boxes	
Backup pump controls	
SCADA Upgrade	

Project Cost

MAJOR ITEMS (SHORT-TERM)		COST
Wetwell structural/hydraulic modifications (per physical modeling study)		$1,000,000
Detailed condition assessment of major structural, mechanical, electrical, and control systems		$150,000
Reconfigure trash rack		$350,000
Replace/rehabilitate remaining original gear boxes and gear-reduction units		$500,000
Backup pump controls with mechanical floats		$40,000
SUBTOTAL (SHORT-TERM IMPROVEMENTS)		**$2,040,000**
Engineering, CM, Admin, Permitting	35%	$710,000
Contingency	40%	$820,000
CONSTRUCTION COST TOTAL (SHORT-TERM IMPROVEMENTS)		**$3,570,000**

MAJOR ITEMS (LONG-TERM)		COST
LONG-TERM IMPROVEMENTS		
Construct new deep pump station with total station capacity of 300,000 GPM		$17,000,000
Full reconstruction/rehabilitation of existing Marina Lagoon Pump Station with total station		$40,000,000
SUBTOTAL (LONG-TERM IMPROVEMENTS)		**$57,000,000**
Engineering, CM, Admin, Permitting	35%	$20,000,000
Contingency	40%	$23,000,000
CONSTRUCTION COST TOTAL (IONG-TERM IMPROVEMENTS)		**$100,000,000**

City of San Mateo
Storm Drain Master Plan
Marina Lagoon PS
Improvement Project
San Mateo, California
7/2/2026

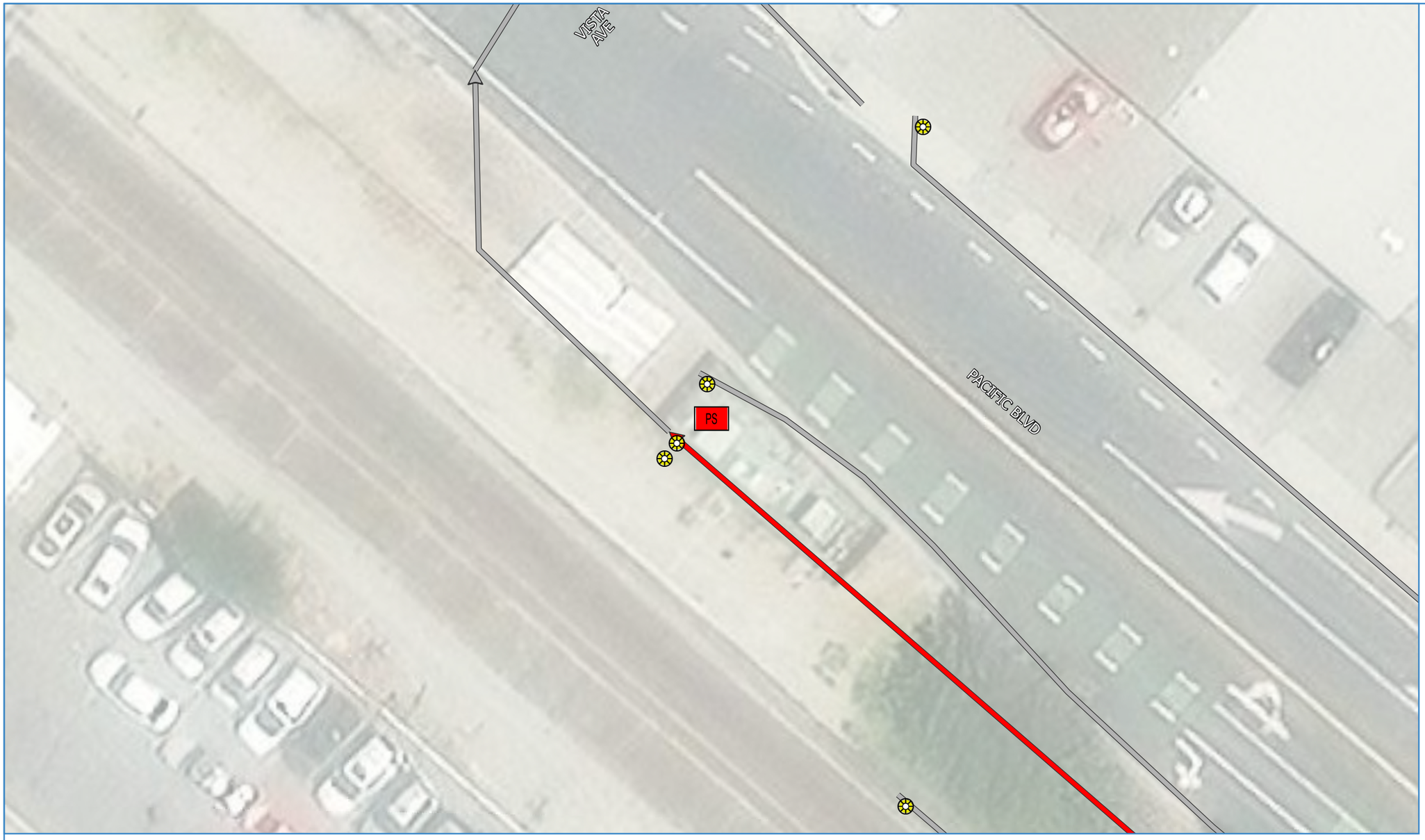
Project Summary: Some components of the existing pump station require replacement or rehabilitation to ensure reliability and operational flexibility. Short-term projects would include a full condition assessment (including major structural, mechanical, electrical, and control systems), trash rack reconfiguration, a new floating debris boom, replacement or rehabilitation of remaining original gear boxes, and redundant backup controls with mechanical floats. Modifications are also recommended based on CFD modeling. Long-term improvements include a new, deep 300,000 gpm pump station and full reconstruction or rehabilitation of the existing 750,000 gpm station

Work already completed: Physical modeling study, new cathodic protection system, SCADA Upgrade, some new alarm floats



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Vertical Datum: NAVD88

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City of San Mateo
Storm Drain Master Plan

4000 Pacific PS

Improvement Project

San Mateo, California

7/9/2026

Legend

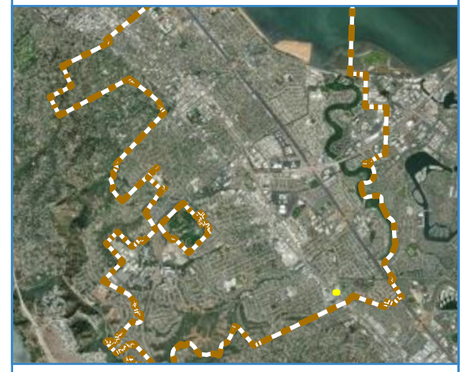
- City Boundary
- Other Storm Drain Pipes

Structures

- Manhole
- Cleanout

Priority Level

- Very High
- High
- Medium
- Low
- Pump Stations
- CIP Pipes
- Repair Replacement
- Creeks



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

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Feet

Improvement Project	Type	Cost ($)	Priority	Summary
4000 Pacific PS	Pump Stations	Short-Term: $960,000 Long-Term: $3,680,000	Very High Factors: Response Time, Capacity Need, Station Age	The existing station is aged and requires replacement to ensure reliability. Short-term upgrades would include SCADA systems, backup pump controls with mechanical floats, and an on-site generator with required concrete pad, fencing, and wiring. Long-term upgrades include replacement of the wetwell and pumps with a fixed trash rack, code-compliant electrical systems, an automatic transfer switch (ATS), new 24-inch discharge piping/forcemain, and above-grade electrical and control panels

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Project Location 4000 Pacific Avenue Storm Drain Pump Station, near 41st Avenue
Priority Very High
Prioritization Factors Response Time, Capacity Need, Station Age
Type Pump Stations
Project-Specific Considerations Potential coordination with Railroad
Alternatives None identified

Description

Short-Term	Long-Term
SCADA Upgrades	New wetwell with fixed trash rack
Backup Pump Controls (Floats)	Code-compliant electrical systems
Onsite Generator Pad	ATS and backup generator
Security Fencing	New rail-mounted submersible pumps
	New 24-inch discharge piping/forcemain
	Above-grade electrical and control panels

Project Cost

MAJOR ITEMS (SHORT-TERM)		COST
SCADA upgrade		$10,000
Backup pump controls with mechanical floats		$40,000
Onsite generator		$400,000
Concrete pad, fencing, and wiring for generator		$100,000
SUBTOTAL (SHORT-TERM IMPROVEMENTS)		**$550,000**
Engineering, CM, Admin, Permitting	35%	$190,000
Contingency	40%	$220,000
CONSTRUCTION COST TOTAL (SHORT-TERM IMPROVEMENTS)		**$960,000**

MAJOR ITEMS (LONG-TERM)		COST
LONG-TERM IMPROVEMENTS		
Reconstruct existing pump station with total station capacity of 7,200 GPM		$1,600,000
Construct 348 LF of 24" Forcemain		$500,000
SUBTOTAL (LONG-TERM IMPROVEMENTS)		**$2,100,000**
Engineering, CM, Admin, Permitting	35%	$740,000
Contingency	40%	$840,000
CONSTRUCTION COST TOTAL (IONG-TERM IMPROVEMENTS)		**$3,680,000**

City of San Mateo
Storm Drain Master Plan
4000 Pacific PS
Improvement Project
San Mateo, California
7/2/2026

Project Summary: The existing station is aged and requires replacement to ensure reliability. Short-term upgrades would include SCADA systems, backup pump controls with mechanical floats, and an on-site generator with required concrete pad, fencing, and wiring. Long-term upgrades include replacement of the wetwell and pumps with a fixed trash rack, code-compliant electrical systems, an automatic transfer switch (ATS), new 24-inch discharge piping/forcemain, and above-grade electrical and control panels



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Vertical Datum: NAVD88

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City of San Mateo
Storm Drain Master Plan

Laurel Creek - Curtiss Bypass

Improvement Project
San Mateo, California
7/9/2026

Legend

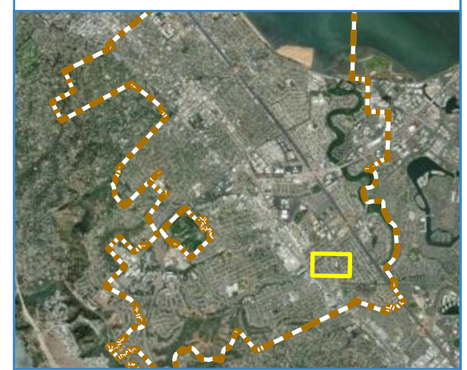
- City Boundary
- Other Storm Drain Pipes

Structures

- Manhole
- Cleanout

Priority Level

- Very High
- High
- Medium
- Low
- Pump Stations (PS)
- CIP Pipes
- Repair Replacement
- Creeks



Improvement Project	Type	Cost ($)	Priority	Summary
Laurel Creek - Curtiss Bypass	Creeks	$4,650,000	Very High Factors: 10- and 100-yr Flood Damage Risk, Upstream Projects	This project would signifciantly reduce flood risk during a 100-year storm event by providing bypass capacity to redirect flow from undersized culverts at Curtiss and George Hall Elementary. The project includes new parallel 48" pipes capturing flow from Laurel Creek upstream of the existing Curtiss Street culvert crossing and discharging downstream of the George Hall Elementary School culverts.

Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

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Feet

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Project Location	Laurel Creek at Curtiss Avenue, Bypassing George Hall Culverts
Priority	Very High
Prioritization Factors	10- and 100-yr Flood Damage Risk, Upstream Projects
Type	Creeks
Project-Specific Considerations	Potential for utility conflicts
Alternatives	Orinda Drive alignment, if utilities are an issue on Curtiss

Size and Length Summary

Existing Conveyance	Proposed Conveyance	Length (ft)
N/A	Dual 48" Pipe	220

Project Cost

MAJOR ITEMS	SIZE	AVE DEPTH (ft)	QTY.	UNIT	UNIT COST	COST
BASELINE CONSTRUCTION COST						
Pipe Construction						
New Dual 48" Creek Bypass	48	7	1,560	LF	$1,320	$2,059,000
Structures						
New Manhole/Access Structures			6	EA	$18,600	$111,600
New Intake Structure at Curtiss			1	LS		$100,000
Outfalls			1	LS		$100,000
Site-Specific Costs						
Utility Relocation						$100,000
ROW Acquisition						$0
SUBTOTAL						**$2,470,000**
Mobilization/Demobilization					10%	$250,000
Traffic Control					5%	$120,000
Contingency					40%	$990,000
CONSTRUCTION COST TOTAL						**$3,830,000**
Engineering/Inspection					20%	$770,000
Environmental/Jurisdictional Permitting						$50,000
CIP TOTAL						**$4,650,000**

**Totals rounded to nearest $10,000*

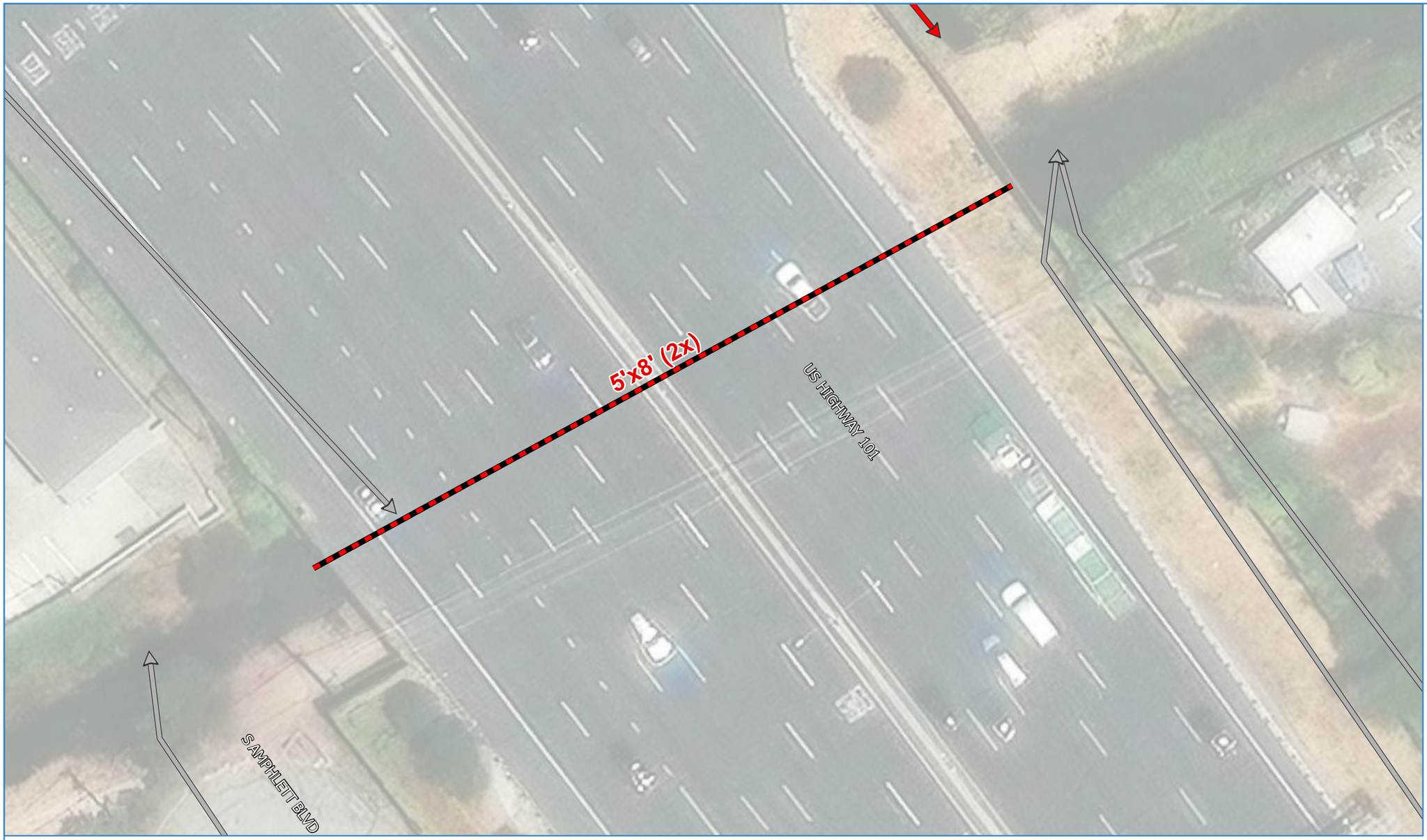
City of San Mateo
Storm Drain Master Plan
Laurel Creek - Curtiss Bypass Improvement Project
San Mateo, California
7/2/2026

Project Summary: This project would signifciantly reduce flood risk during a 100-year storm event by providing bypass capacity to redirect flow from undersized culverts at Curtiss and George Hall Elementary. The project includes new parallel 48" pipes capturing flow from Laurel Creek upstream of the existing Curtiss Street culvert crossing and discharging downstream of the George Hall Elementary School culverts.



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0404 (US Feet)
Vertical Datum: NAVD88

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City of San Mateo
Storm Drain Master Plan

16th Avenue Channel - Highway 101 Culvert
Improvement Project

San Mateo, California
7/9/2026

Legend

- City Boundary
- Other Storm Drain Pipes

Structures

- Manhole
- Cleanout

Priority Level

- Very High
- High
- Medium
- Low
- Pump Stations (PS)
- CIP Pipes
- Repair Replacement
- Creeks



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

0 25 50
Feet

Improvement Project	Type	Cost ($)	Priority	Summary
16th Avenue Channel - Highway 101 Culvert	Creeks	$23,400,000	Very High Factors: Upstream Projects, 10- &100-yr Flood Damage Risk	This project would increase the capacity of the existing 5'x10' box culvert crossing Highway 101 by adding a new 5'x8' box on either side. This will likely require open trench methods across Highway 101 and will require close coordination with CalTrans

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Project Location 16th Avenue Channel at Highway 101
Priority Very High
Prioritization Factors Upstream Projects, 10- &100-yr Flood Damage Risk
Type Creeks
Project-Specific Considerations Open trench methods on Highway 101; coordination with Caltrans
Alternatives None identified

Size and Length Summary

Existing Conveyance	Proposed Conveyance	Length (ft)
Single 5'x10' Box	Add Dual 5'x8' Culvert	220

Project Cost

MAJOR ITEMS	SIZE	AVE DEPTH (ft)	QTY.	UNIT	UNIT COST	COST
BASELINE CONSTRUCTION COST						
Pipe Construction						
Install New 5'x8' Box Culverts (Either Side of Existing)	5'X8'	15	440	LF	$6,970	$3,066,800
Open Trench Methods on Highway 101			220	LF	$42,500	$9,350,000
SUBTOTAL						**$12,420,000**
Mobilization/Demobilization					10%	$1,240,000
Traffic Control					5%	$620,000
Contingency					40%	$4,970,000
CONSTRUCTION COST TOTAL						**$19,250,000**
Engineering/Inspection					20%	$3,850,000
Environmental/Jurisdictional Permitting						$200,000
CalTrans Coordination						$100,000
CIP TOTAL						**$23,400,000**

**Totals rounded to nearest $10,000*

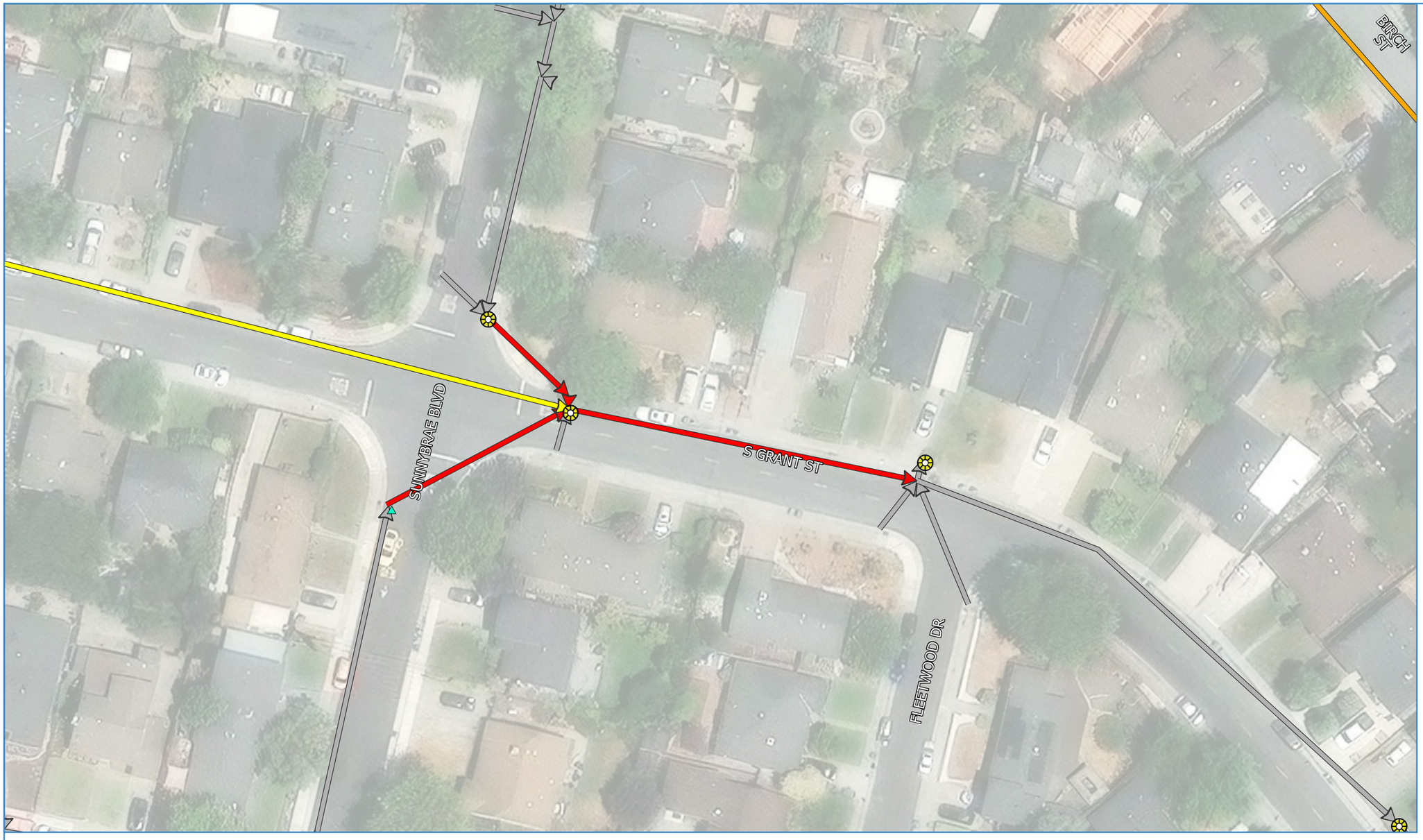
City of San Mateo
Storm Drain Master Plan
16th Avenue Channel - Highway 101 Culvert
Improvement Project
San Mateo, California
7/2/2026

Project Summary: This project would increase the capacity of the existing 5'x10' box culvert crossing Highway 101 by adding a new 5'x8' box on either side. This will likely require open trench methods across Highway 101 and will require close coordination with CalTrans



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0404 (US Feet)
Vertical Datum: NAVD88

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City of San Mateo
Storm Drain Master Plan

Grant at Sunnybrae

Improvement Project

San Mateo, California
7/9/2026

Legend

- City Boundary
- Other Storm Drain Pipes

Structures

- Manhole
- Cleanout

Priority Level

- Very High
- High
- Medium
- Low
- Pump Stations (PS)
- CIP Pipes
- Repair Replacement
- Creeks



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

0 40 80
Feet

Improvement Project	Type	Cost ($)	Priority	Summary
Grant at Sunnybrae	Gravity System	$430,000	Very High Factors: Number of Properties w/Reduced Flooding; Frequently Recurring Flooding; Upstream Projects	This project would increase the capacity of systems near the intersection of Grant Street and Sunnybrae Boulevard to alleviate flooding issues during even small storms, mitigate frequent issues, and create capacity for future projects upstream

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

Project Location	Intersection of S Grant St and Sunnybrae Blvd
Priority	Very High
Prioritization Factors	Number of Properties w/Reduced Flooding; Frequently Recurring Flooding; Upstream Projects
Type	Pipe System Capacity
Project-Specific Considerations	Connection to existing box culvert in front yards (driveway access/construction easements)
Alternatives	None identified

Size and Length Summary

Existing Pipe Diameter (in)	Replacement Pipe Size (in)	Equiv. Parallel Pipe Diameter (in)	Length (ft)
12	18	15	56
18	24	18	89
21	24x60 Box	N/A	155

Project Cost

MAJOR ITEMS	SIZE	AVE DEPTH (ft)	QTY.	UNIT	UNIT COST	COST
BASELINE CONSTRUCTION COST						
Pipe Demo/Disposal						
Link_68, SD-B472	12	5	56	LF	$30	$2,000
SD-B3FA	18	5	89	LF	$40	$4,000
SD-B474	21	5	155	LF	$45	$7,000
Pipe Construction						
Link_68, SD-B3FA	18	5	56	LF	$280	$16,000
SD-B3FA	24	5	89	LF	$320	$28,000
SD-B474	24x60	5	155	LF	$2,400	$372,000
Structures						
Manhole/Catch Basin Connection						$69,000
Outfalls						$0
SUBTOTAL						**$500,000**
Mobilization/Demobilization					10%	$50,000
Traffic Control					5%	$25,000
Contingency					40%	$200,000
CONSTRUCTION COST TOTAL						**$775,000**
Engineering/Inspection					20%	$155,000
CIP TOTAL						**$930,000**

**Totals rounded to nearest $10,000*

City of San Mateo
Storm Drain Master Plan
Grant at Sunnybrae
Improvement Project
San Mateo, California
7/2/2026

Project Summary: This project would increase the capacity of systems near the intersection of Grant Street and Sunnybrae Boulevard to alleviate flooding issues during even small storms, mitigate frequent issues, and create capacity for future projects upstream



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0404 (US Feet)
Vertical Datum: NAVD88

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City of San Mateo
Storm Drain Master Plan

Newbridge

Improvement Project
San Mateo, California
7/9/2026



Legend

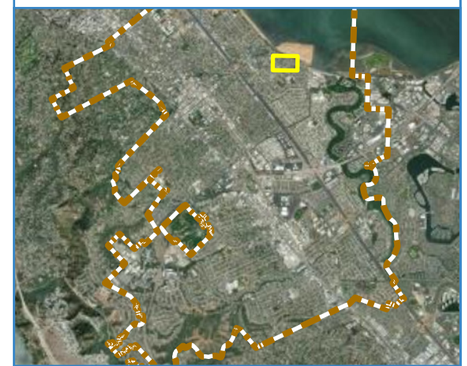
- City Boundary
- Other Storm Drain Pipes

Structures

- Manhole
- Cleanout

Priority Level

- Very High
- High
- Medium
- Low
- Pump Stations (PS)
- CIP Pipes
- Repair Replacement
- Creeks



Improvement Project	Type	Cost ($)	Priority	Summary
Newbridge	Gravity System	$2,250,000	Very High Factors: Existing Pipes in Poor Condition; Number of Properties w/Reduced Flooding; Upstream Projects	This project would abandon pipe in poor condition from Katherine Ave to Helene Ct and provide additional conveyance capacity with a new, larger connector along Katherine Ave. The project would also increase capacity for future projects on Newbridge Ave, allowing additional flow to enter the main line discharging to Detroit PS

Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

0 110 220
Feet

SCHAAF & WHEELER
CONSULTING CIVIL ENGINEERS

Project Location	Newbridge Ave, from Katherine Ave to E 3rd Ave
Priority	Very High
Prioritization Factors	Existing Pipes in Poor Condition; Number of Properties w/Reduced Flooding; Upstream Projects
Type	Pipe System Capacity
Project-Specific Considerations	Low cover, low slope systems
Alternatives	None identified

Size and Length Summary

Existing Pipe Diameter (in)	Replacement Pipe Size (in)	Equiv. Parallel Pipe Diameter (in)	Length (ft)
N/A	30	N/A	303
36	36	N/A	27
N/A	24x48	2x 30" Diam	740
12	24x48	2x 30" Diam	375

Project Cost

MAJOR ITEMS	SIZE	AVE DEPTH (ft)	QTY.	UNIT	UNIT COST	COST
BASELINE CONSTRUCTION COST						
Pipe Demo/Disposal						
SD-B328	12	5	375	LF	$30	$11,000
SD-BA6A, SD-B313, SD-B315, SD-B314	36	3	330	LF	$70	$23,000
Pipe Construction						
CIP_Newbridge-P3	30	5.5	372	LF	$410	$153,000
SD-B313	36	6	27	LF	$490	$13,000
CIP_Newbridge-P1, CIP_Newbridge-P2, SD-B328	30 (2x)	5	1,115	LF	$820	$914,000
Structures						
Manhole/Catch Basin Connection						
Outfalls						$91,000
SUBTOTAL						**$1,210,000**
Mobilization/Demobilization					10%	$120,000
Traffic Control					5%	$61,000
Contingency					40%	$484,000
CONSTRUCTION COST TOTAL						**$1,875,000**
Engineering/Inspection					20%	$375,000
CIP TOTAL						**$2,250,000**

**Totals rounded to nearest $10,000*

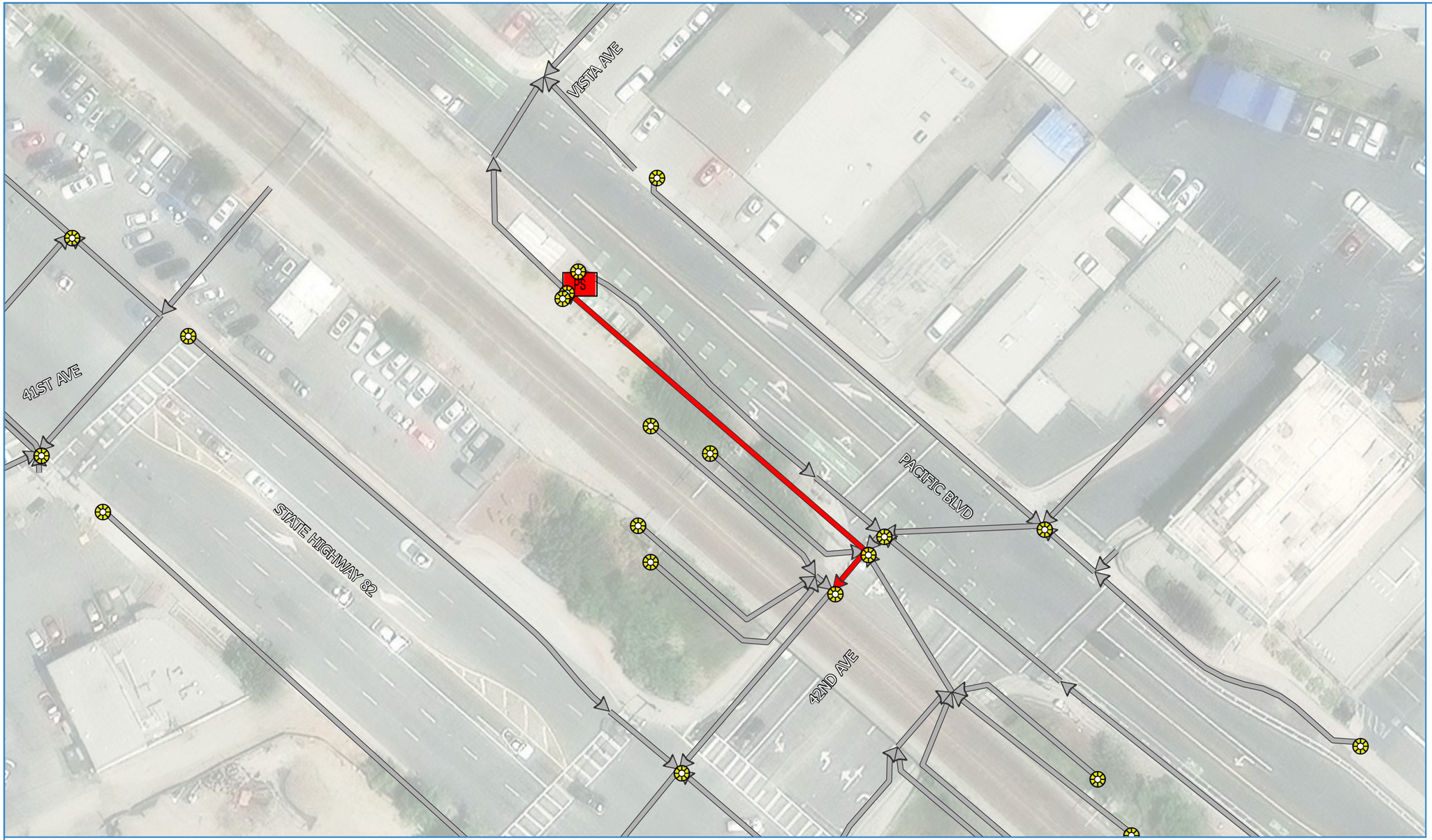
City of San Mateo
Storm Drain Master Plan
Newbridge
Improvement Project
San Mateo, California
7/2/2026

Project Summary: This project would abandon pipe in poor condition from Katherine Ave to Helene Ct and provide additional conveyance capacity with a new, larger connector along Katherine Ave. The project would also increase capacity for future projects on Newbridge Ave, allowing additional flow to enter the main line discharging to Detroit PS



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0404 (US Feet)
Vertical Datum: NAVD88

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City of San Mateo
Storm Drain Master Plan

42nd Ave Underpass

Improvement Project

San Mateo, California

7/9/2026

Legend

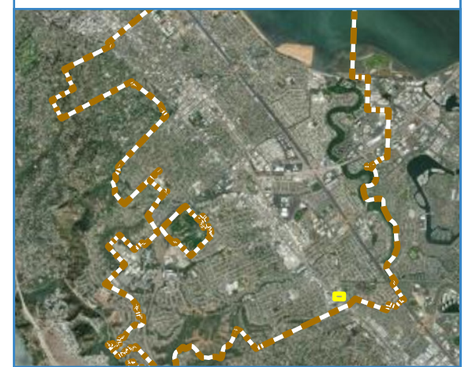
- City Boundary
- Other Storm Drain Pipes

Structures

- Manhole
- Cleanout

Priority Level

- Very High
- High
- Medium
- Low
- Pump Stations
- CIP Pipes
- Repair Replacement
- Creeks



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

0 40 80

Feet

Improvement Project	Type	Cost ($)	Priority	Summary
42nd Ave Underpass	Gravity System	$230,000	Very High Factors: Helps Mitigate Safety Issues; Recurring Flooding; Flood Depth > 1 ft	This project would increase the capacity of systems draining the 42nd Ave railroad underpass to the nearby pump station, replacing existing pipes (18- and 24-inch) with larger diameter pipe (24- and 30-inch diameter)

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CONSULTING CIVIL ENGINEERS

Project Location 42nd Avenue Split Grade Railroad Crossing
Priority Very High
Prioritization Factors Helps Mitigate Safety Issues; Recurring Flooding; Flood Depth > 1 ft
Type Pipe System Capacity
Project-Specific Considerations Potential coordination with railroad
Alternatives None identified

Size and Length Summary

Existing Pipe Diameter (in)	Replacement Pipe Size (in)	Equiv. Parallel Pipe Diameter (in)	Length (ft)
18	24	18	22
24	30	21	173

Project Cost

MAJOR ITEMS	SIZE	AVE DEPTH (ft)	QTY.	UNIT	UNIT COST	COST
BASELINE CONSTRUCTION COST						
Pipe Demo/Disposal						
SD-1A356	18	5	22	LF	$40	$1,000
SD-1A370	24	6	173	LF	$50	$9,000
Pipe Construction						
SD-1A356	24	5	22	LF	$320.00	$7,000
SD-1A370	30	5	173	LF	$410	$71,000
Structures						
Manhole/Catch Basin Connection						$35,000
Outfalls						$0
Site-Specific Costs						
N/A						
SUBTOTAL						**$120,000**
Mobilization/Demobilization					10%	$12,000
Traffic Control					5%	$6,000
Contingency					40%	$48,000
CONSTRUCTION COST TOTAL						**$186,000**
Engineering/Inspection					20%	$37,000
CIP TOTAL						**$223,000**

**Totals rounded to nearest $1,000*

City of San Mateo
Storm Drain Master Plan
42nd Avenue Underpass Improvement Project
San Mateo, California
7/2/2026

Project Summary: This project would increase the capacity of systems draining the 42nd Ave railroad underpass to the nearby pump station, replacing existing pipes (18- and 24-inch) with larger diameter pipe (24- and 30-inch diameter)



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0404 (US Feet)
Vertical Datum: NAVD88

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City of San Mateo
Storm Drain Master Plan

Norton St Ditch

Improvement Project

San Mateo, California

7/9/2026

Legend

- City Boundary
- Other Storm Drain Pipes

Structures

- Manhole
- Cleanout

Priority Level

- Very High
- High
- Medium
- Low
- Pump Stations
- CIP Pipes
- Repair Replacement
- Creeks



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

0 310 620

Feet

Improvement Project	Type	Cost ($)	Priority	Summary
Norton St Ditch	Gravity System	$4,800,000	Very High Factors: Number of Upstream Projects; Opportunity to Leverage CalTrans Project; Number of Properties Benefitting	This project would increase conveyance capacity and reduce maintenance load by replacing heavily vegetated open channel adjacent to Highway 101 near Norton Street with closed conduit systems. This would also create capacity for future projects nearby and reduce the HGL in existing systems

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Project Location Open channel adjacent to Highway 101 near Norton St
Priority Very High
Prioritization Factors Number of Upstream Projects; Opportunity to Leverage CalTrans Project; Number of Properties Benefitting
Type Pipe System Capacity
Project-Specific Considerations Low cover, low slope systems; CalTrans project at Kehoe ramps
Alternatives None identified

Size and Length Summary

Existing Pipe Diameter (in)	Replacement Pipe Size (in)	Equiv. Parallel Pipe Diameter (in)	Length (ft)
N/A	36	N/A	755
N/A	42	N/A	450
N/A	48	N/A	502
N/A	66	N/A	800
42	36x96	N/A	190

Project Cost

MAJOR ITEMS	SIZE	AVE DEPTH (ft)	QTY.	UNIT	UNIT COST	COST
BASELINE CONSTRUCTION COST						
Pipe Demo/Disposal						
Existing Kehoe Crossing	42	6	190	LF	$75	$14,000
Pipe Construction						
Upstream Kehoe Reach 1	36	6	755	LF	$490.00	$370,000
Upstream Kehoe Reach 2	42	6	450	LF	$570.00	$257,000
Upstream Kehoe Reach 3	48	7	502	LF	$670	$336,000
Downstream Kehoe	66	8	800	LF	$1,010	$808,000
Existing Kehoe Crossing	36x96	6	190	LF	$2,770	$526,000
Structures						
Manhole/Catch Basin Connection						$136,000
Outfalls						$100,000
SUBTOTAL						**$2,550,000**
Mobilization/Demobilization					10%	$260,000
Traffic Control					5%	$130,000
Contingency					40%	$1,020,000
CONSTRUCTION COST TOTAL						**$3,960,000**
Engineering/Inspection					20%	$790,000
Other Special Cost (CalTrans Coordination)						$50,000
CIP TOTAL						**$4,800,000**

**Totals rounded to nearest $10,000*

City of San Mateo
Storm Drain Master Plan
Norton Street Ditch
Improvement Project
San Mateo, California
7/2/2026

Project Summary: This project would increase conveyance capacity and reduce maintenance load by replacing heavily vegetated open channel adjacent to Highway 101 near Norton Street with closed conduit systems. This would also create capacity for future projects nearby and reduce the HGL in existing systems



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0404 (US Feet)
Vertical Datum: NAVD88

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City of San Mateo
Storm Drain Master Plan

Bettina-Kingridge (RR)

Improvement Project

San Mateo, California

7/9/2026

Legend

- City Boundary
- Other Storm Drain Pipes

Structures

- Manhole
- Cleanout

Priority Level

- Very High
- High
- Medium
- Low
- Pump Stations (PS)
- CIP Pipes
- Repair Replacement
- Creeks



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0403 (US Feet)
Vertical Datum: NAVD88

0 75 150
Feet

Improvement Project	Type	Cost ($)	Priority	Summary
Bettina-Kingridge (RR)	Repair & Replacement	$647,000	Very High Factors: Very Poor Structural NASSCO Score; Continuous Length in Poor Condition	This project would replace existing 15-inch pipe in poor condition on Newlands, Bettina, and 42nd Ave above Kingridge Drive. The reach just downstream, from 42nd Ave to Kingridge was also identified as structurally deficient and was recently replaced.

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Project Location Newlands Avnue, Bettina Ave, and 42nd Ave above Kingridge
Priority Very High
Prioritization Factors Very Poor Structural NASSCO Score; Continuous Length in Poor Condition
Type Repair & Replacement
Project-Specific Considerations N/A
Alternatives None identified

Size and Length Summary

Existing Pipe Diameter (in)	Replacement Pipe Size (in)	Equiv. Parallel Pipe Diameter (in)	Length (ft)
15	15	N/A	800

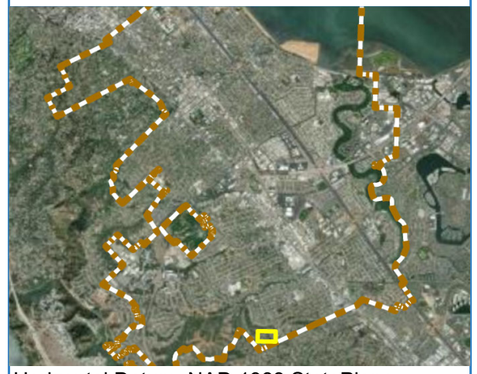
Project Cost

MAJOR ITEMS	SIZE	AVE DEPTH (ft)	QTY.	UNIT	UNIT COST	COST
BASELINE CONSTRUCTION COST						
Pipe Demo/Disposal						
Demo existing 15" pipe in poor condition	15	4.25	800	LF	$35	$28,000
Pipe Construction						
Replace existing 15" pipe in-kind	15	4.25	800	LF	$240	$190,000
Structures						
Manhole/Catch Basin Connection						$129,000
Outfalls						$0
SUBTOTAL						**$347,000**
Mobilization/Demobilization					10%	$35,000
Traffic Control					5%	$17,000
Contingency					40%	$140,000
CONSTRUCTION COST TOTAL						**$539,000**
Engineering/Inspection					20%	$108,000
CIP TOTAL						**$647,000**

**Totals rounded to nearest $1,000*

City of San Mateo
Storm Drain Master Plan
Bettina-Kingridge (RR)
Improvement Project
San Mateo, California
7/2/2026

Project Summary: This project would replace existing 15-inch pipe in poor condition on Newlands, Bettina, and 42nd Ave above Kingridge Drive. The reach just downstream, from 42nd Ave to Kingridge was also identified as structurally deficient and was recently replaced.



Horizontal Datum: NAD 1983 StatePlane California III FIPS 0404 (US Feet)
Vertical Datum: NAVD88

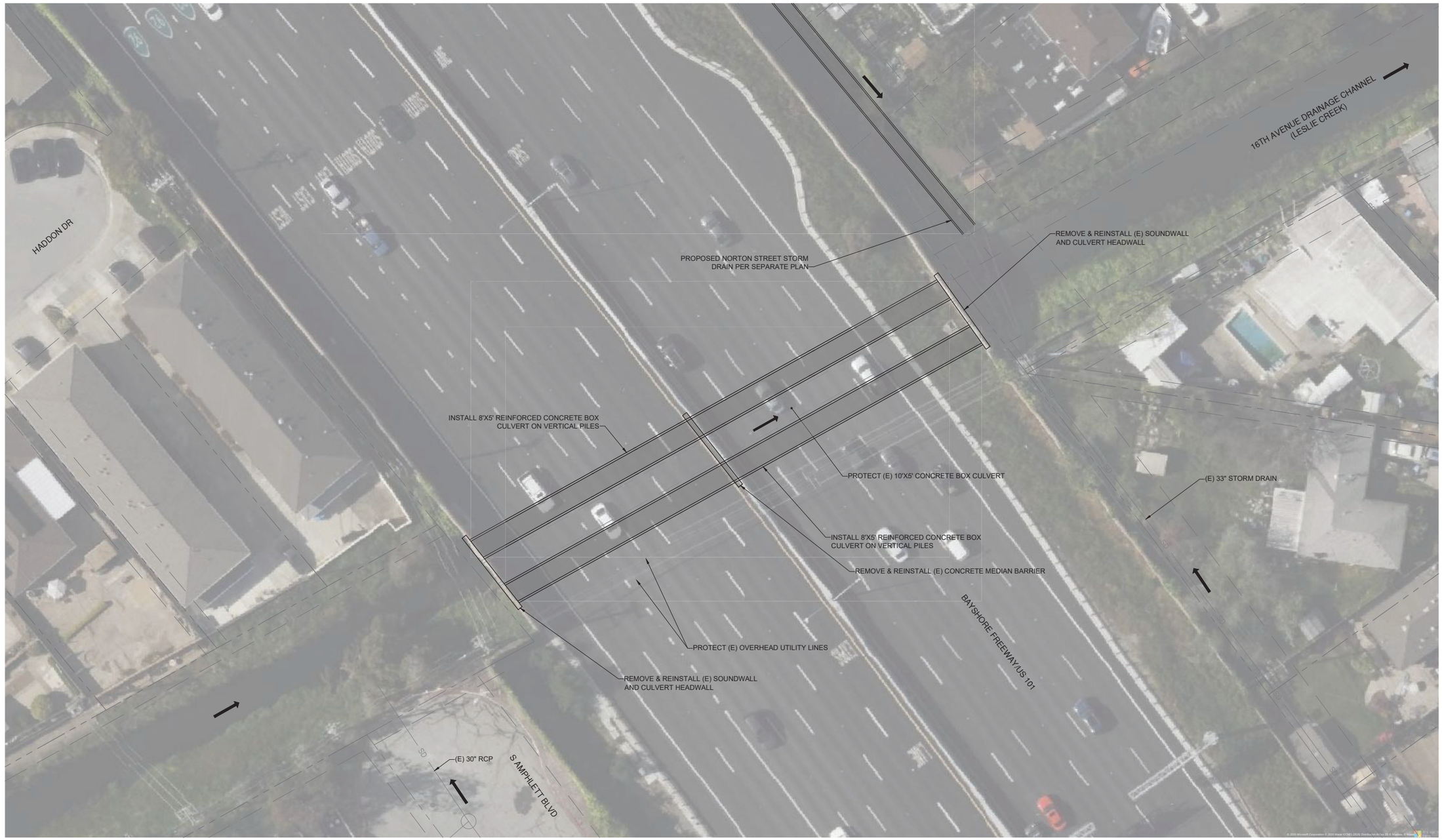
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Appendix O: Preliminary Very High Priority Project Designs

ORIGINAL SIZE: 22x34

20 0 20 40

SCALE: 1 INCH = 20 FEET



STORM DRAIN IMPROVEMENT PLAN

SCALE: 1" = 20'

10% DESIGN PLANS - NOT FOR CONSTRUCTION

NO	REVISIONS	DATE	APPR
1			
2			
3			
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SANTA CLARA, CA 95054
(408) 246-4848

STORM DRAIN
IMPROVEMENT PLAN

16TH AVENUE CHANNEL CULVERTS
CONCEPTUAL PLAN

DATE: 7/6/2026
SCALE: AS SHOWN
DESIGN: JDG
DRAWN: JDG
CHECKED: GMA

SHEET
1 OF 1

ESTIMATED COST OF 16TH AVE CHANNEL DRAINAGE IMPROVEMENTS

10% Conceptual Estimate - 7/2/2026

Item of Work	Unit	Unit Cost	Quantity	Subtotal	Notes
Demolition					
Remove Existing Median Barrier	LS	$5,000	1	$5,000	
Remove Existing Soundwall and Culvert Headwall	LS	$200,000	1	$200,000	
				$205,000	
Drainage Features					
8'x5' Reinforced Concrete Box Culvert on Piles	LF	$12,500	440	$5,500,000	
				$5,500,000	
Site & Utility					
AC Pavement	LS	$300,000	1	$300,000	
Install Concrete Median Barrier	LS	$20,000	1	$20,000	
Install Soundwall and Culvert Headwall	LS	$700,000	1	$700,000	
Landscaping	LS	$50,000	1	$50,000	
				$1,070,000	
			Construction Subtotal	***$6,775,000***	
Indirect Costs					
Design & Engineering (15%)	LS	$1,016,250	1	$1,016,250	
Construction Management (10%)	LS	$677,500	1	$677,500	
Mobilization & Demobilization (10%)	LS	$677,500	1	$677,500	
Geotechnical (3%)	LS	$203,250	1	$203,250	
Subsurface Utility Engineering (5%)	LS	$338,750	1	$338,750	
Public Outreach (3%)	LS	$203,250	1	$203,250	
Traffic Control (7%)	LS	$474,250	1	$474,250	
Erosion Control & Permitting (5%)	LS	$338,750	1	$338,750	
Contingencies (25%)	LS	$1,693,750	1	$1,693,750	
Environmental Complexity Factor (15%)	LS	$1,016,250	1	$1,016,250	
Project Complexity Factor (15%)	LS	$1,016,250	1	$1,016,250	
			Indirect Costs Total	***$7,655,750***	
			Construction Total	***$14,430,750***	

ORIGINAL SIZE: 22x34

10 0 10 20

SCALE: 1 INCH = 10 FEET



STORM DRAIN IMPROVEMENT PLAN

SCALE: 1" = 10'

10% DESIGN PLANS - NOT FOR CONSTRUCTION

NO	REVISIONS	DATE	APPR
1			
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(408) 246-4848

STORM DRAIN
IMPROVEMENT PLAN

GRANT AT SUNNYBRAE STORM DRAIN CONCEPTUAL PLANS

DATE: 7/6/2026
SCALE: AS SHOWN
DESIGN: JDG
DRAWN: JDG
CHECKED: GMA

SHEET C1

1 OF 1

ESTIMATED COST OF GRANT AT SUNNYBRAE DRAINAGE IMPROVEMENTS

10% Conceptual Estimate - 7/10/2026

Item of Work	Unit	Unit Cost	Quantity	Subtotal	Notes
Mobilization / Demobilization					
~5% of project cost. This cost includes permits, fees, temporary structures, equipment rental, and various misc. items	LS	$ 26,000	1	$26,000	
				$26,000	
Demolition					
Abandon Existing Storm Drain	LF	$25	115	$2,875	
Remove Existing Storm Drain	LF	$75	45	$3,375	
Remove Existing Manhole	EA	$3,000	2	$6,000	
Remove Existing Catch Basin	EA	$2,000	2	$4,000	
				$16,250	
Drainage Features					
Standard Catch Basin	EA	$10,000	2	$20,000	
Standard Manhole	EA	$15,000	2	$30,000	
Large Manhole	EA	$30,000	4	$120,000	
18" Storm Drain Pipe	LF	$350	60	$21,000	
24" Storm Drain Pipe	LF	$500	75	$37,500	
24"x60" Storm Drain Pipe	LF	$950	220	$209,000	
				$437,500	
Site Restoration					
Sidewalk, Curb & Gutter	LS	$25,000	1	$25,000	
AC Pavement	LS	$40,000	1	$40,000	
				$65,000	
Traffic Control					
Traffic Control	LS	$ 37,000	1	$37,000	
				$37,000	
			Construction Subtotal	$581,750	
			30% Contingency	$174,525	
			Construction Total	$756,275	

ORIGINAL SIZE: 22x34



STORM DRAIN IMPROVEMENT PLAN

SCALE: 1" = 30'

10% DESIGN PLANS - NOT FOR CONSTRUCTION

NO	REVISIONS	DATE	APPR
1			
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SANTA CLARA, CA 95054
(408) 246-4848

STORM DRAIN
IMPROVEMENT PLAN

NEWBRIDGE STORM DRAIN
CONCEPTUAL PLAN

DATE: 7/6/2026
SCALE: AS SHOWN
DESIGN: JDG
DRAWN: JDG
CHECKED: GMA

SHEET
1 OF 1

ESTIMATED COST OF NEWBRIDGE DRAINAGE IMPROVEMENTS

10% Conceptual Estimate - 7/10/2026

Item of Work	Unit	Unit Cost	Quantity	Subtotal	Notes
Mobilization / Demobilization					
~5% of project cost. This cost includes permits, fees, temporary structures, equipment rental, and various misc. items	LS	$ 138,000	1	$138,000	
				$138,000	
Demolition					
Remove Existing Storm Drain	LF	$75	100	$7,500	
Abandon Existing Storm Drain	LF	$25	1200	$30,000	
Remove Existing Catch Basin or Manhole	EA	$2,000	9	$18,000	
				$55,500	
Drainage Features					
Standard Catch Basin	EA	$10,000	7	$70,000	
Large Catch Basin	EA	$30,000	1	$30,000	
Large Manhole	EA	$30,000	12	$360,000	
18" Storm Drain Pipe	LF	$350	150	$52,500	
30" Storm Drain Pipe	LF	$700	2340	$1,638,000	
36" Storm Drain Pipe	LF	$800	380	$304,000	
				$2,454,500	
Site & Utility					
AC Pavement	LS	$200,000	1	$200,000	
Sidewalk, Curb & Gutter	LS	$40,000	1	$40,000	
				$240,000	
Traffic Control					
Traffic Control	LS	$ 193,000	1	$193,000	
				$193,000	

Construction Subtotal	$3,081,000
30% Contingency	$924,300
Construction Total	$4,005,300

ORIGINAL SIZE: 22x34

40 0 40 80

SCALE: 1 INCH = 40 FEET



STORM DRAIN IMPROVEMENT PLAN

SCALE: 1" = 40'

10% DESIGN PLANS - NOT FOR CONSTRUCTION

NO	REVISIONS	DATE	APPR
1			
2			
3			
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(408) 246-4848

STORM DRAIN
IMPROVEMENT PLAN

NORTON ST STORM DRAIN
CONCEPTUAL PLANS

DATE: 7/6/2026
SCALE: AS SHOWN
DESIGN: JDG
DRAWN: JDG
CHECKED: GMA

SHEET
1 OF 3

ORIGINAL SIZE: 22x34

40 0 40 80

SCALE: 1 INCH = 40 FEET



STORM DRAIN IMPROVEMENT PLAN

SCALE: 1" = 40'

10% DESIGN PLANS - NOT FOR CONSTRUCTION

NO	REVISIONS	DATE	APPR
1			
2			
3			
4			

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STORM DRAIN
IMPROVEMENT PLAN

NORTON ST STORM DRAIN
CONCEPTUAL PLANS

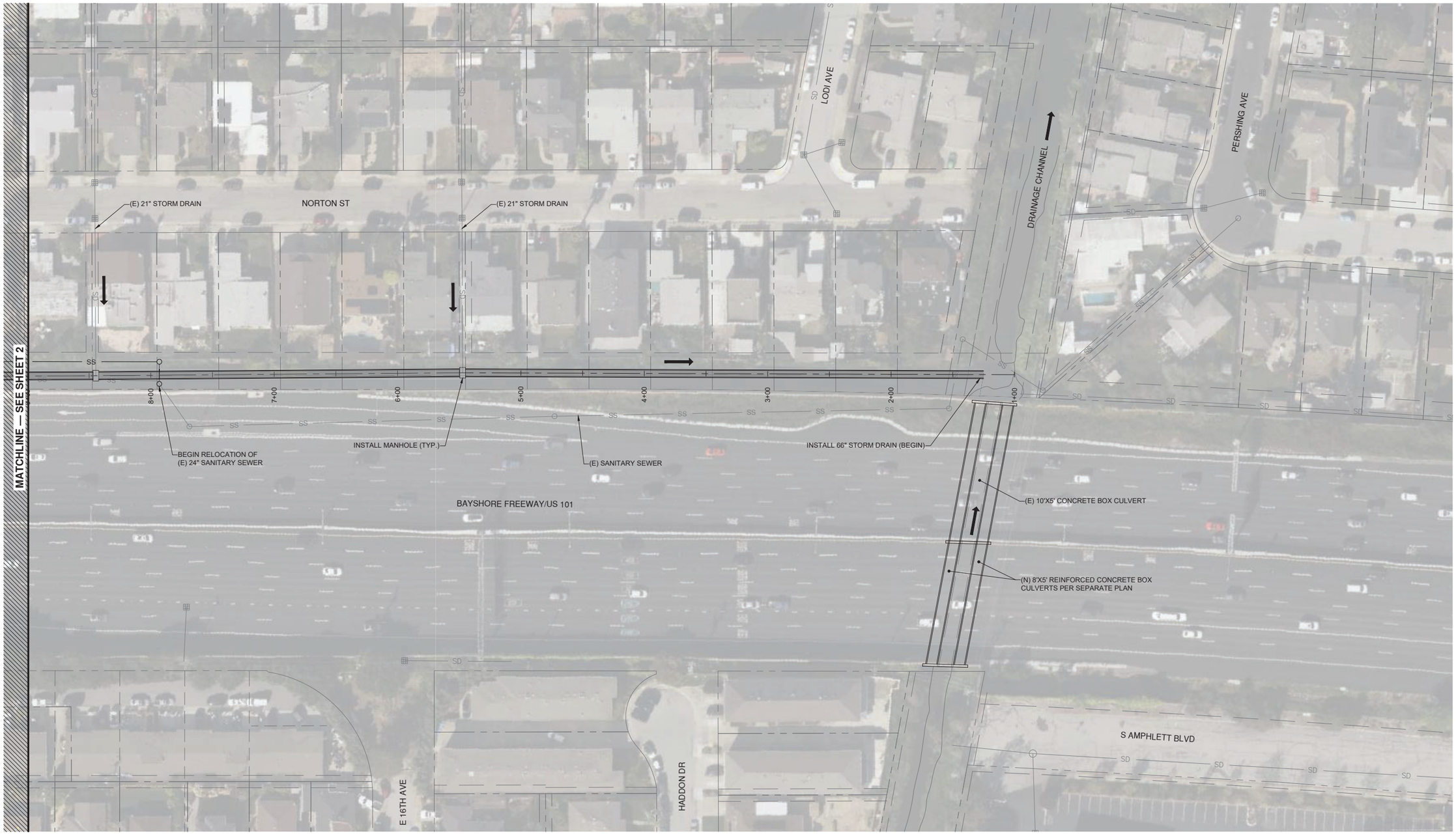
DATE: 7/6/2026
SCALE: AS SHOWN
DESIGN: JDG
DRAWN: JDG
CHECKED: GMA

SHEET
2 OF 3

ORIGINAL SIZE: 22x34

40 0 40 80

SCALE: 1 INCH = 40 FEET



STORM DRAIN IMPROVEMENT PLAN

SCALE: 1" = 40'

10% DESIGN PLANS - NOT FOR CONSTRUCTION

NO	REVISIONS	DATE	APPR
1			
2			
3			
4			

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CONSULTING CIVIL ENGINEERS
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STORM DRAIN
IMPROVEMENT PLAN

NORTON ST STORM DRAIN
CONCEPTUAL PLANS

DATE: 7/6/2026
SCALE: AS SHOWN
DESIGN: JDG
DRAWN: JDG
CHECKED: GMA

SHEET
3 OF 3

ESTIMATED COST OF NORTON ST DRAINAGE IMPROVEMENTS

10% Conceptual Estimate - 7/10/2026

Item of Work	Unit	Unit Cost	Quantity	Subtotal	Notes
Mobilization / Demobilization					
~5% of project cost. This cost includes permits, fees, temporary structures, equipment rental, and various misc. items	LS	$ 224,000	1	$224,000	
				$224,000	
Demolition					
Remove Existing 42" Culvert	LS	$20,000	1	$20,000	
Remove Existing Catch Basin	EA	$2,000	2	$4,000	
				$24,000	
Drainage Features					
Large Catch Basin	EA	$30,000	2	$60,000	
Large Manhole	EA	$30,000	17	$510,000	
36" Storm Drain Pipe	LF	$800	810	$648,000	
42" Storm Drain Pipe	LF	$900	460	$414,000	
48" Storm Drain Pipe	LF	$1,000	500	$500,000	
8'x3' Storm Drain Box Culvert	LF	$1,500	250	$375,000	
66" Storm Drain Pipe	LF	$1,400	1000	$1,400,000	
				$3,907,000	
Site & Utility					
AC Pavement	LS	$80,000	1	$80,000	
Remove and Reinstall Ramp Meter and Cabinet	LS	$50,000	1	$50,000	
Remove and Reset Guardrail	LS	$10,000	1	$10,000	
Relocate Existing 24" Sanitary Sewer	LF	$700	410	$287,000	
Remove and Reinstall Soundwall	LS	$50,000	1	$50,000	
Landscaping	LS	$60,000	1	$60,000	
				$537,000	
Traffic Control					
Traffic Control	LS	$ 313,000	1	$313,000	
				$313,000	
			Construction Subtotal	$5,005,000	
			30% Contingency	$1,501,500	
			Construction Total	$6,506,500	