



TECHNICAL MEMORANDUM

Date: October 13, 2023
To: Akin Okupe, EPASD General Manager
From: Jeffrey C. Bensch, P.E.
Cc:



**RE: CCTV Survey Results Evaluation and Pipeline Replacement Priorities
Area 2, Trunk Line, and All Areas**

Sierra West Consultants, Inc. (Sierra West) is pleased to provide this follow-up evaluation of the closed-circuit television (CCTV) surveys of the wastewater collection system for East Palo Alto Sanitary District (EPASD). The surveys were conducted to clean, inspect and assess sewer pipelines throughout EPASD’s service area. The service area was divided into four areas for organizational and contracting purposes (Figure 1). Over 700 pipelines were inspected by National Plant Services, Inc. (NPS), and video recordings with summary reports were made for each pipeline.

This technical memorandum evaluates the CCTV survey results for Area 2 and the trunk line pipelines. Areas 1, 3, and 4 were surveyed in 2022 and the results and evaluations were presented in the *CCTV Survey Results Evaluation and Pipeline Replacement Priorities, Areas 1, 3, and 4 Technical Memorandum* (Sierra West, October 31, 2022). The results are used to develop a priority list of pipelines to be replaced or repaired.

The evaluation considers the degree of structural deficiencies based on the CCTV results and pipeline capacity upgrades based on the projected pipeline diameters to achieve the desired flow capacity. Ultimately, the high priority pipeline replacement projects will consider the improvements under a limited budget. Opinions of probable cost for potential pipeline replacement programs are also presented for All Areas. As such, the evaluations are intended to provide a guide for future phased implementation of pipeline replacement projects.

Evaluation of CCTV Survey Results

The following CCTV surveys were completed for Area 2 and the trunk line:

Area	Pipeline Segments	Linear Feet Surveyed
2	182	31,085
Trunk Line	33	10,359
Total	553	41,444

Details of the surveys in each area are provided in Attachments 1 and 2. NPS evaluated each pipeline with respect to its structural integrity and operations and maintenance (O&M) functionality. These evaluations were made in accordance with the National Association of Sewer Service Companies (NASSCO) and their Pipeline Assessment and Certification Program (PACP). NPS used PACP’s Quick Rating approach by assigning a 4-digit code for a Structural grade and an O&M grade.

Each digit of the code represents the following:

- The first digit is recorded as 0 through 5 to represent the degree of severity of the encountered problem. 0 is no problem and 5 is the most severe.
- The second digit is how many times a problem of this severity was encountered in the pipeline segment. This ranges from 1 to 9, and then letters are used when there are more than nine problem locations. A represents 10 to 14 defects; B is 15 to 19; C is 20 to 24, etc.
- The third digit represents the second worst level of severity encountered.
- The fourth digit represents how many times the second severity of problem occurred.

Each of the four-digit codes is used to calculate a single score by multiplying the degree of severity by the number of occurrences, and then adding the two products. For instance, a Structural rating of 5432 would equal 26 ($5*4 + 3*2$).

The Structural rating addresses items that require pipeline repair to resolve, such as a cracked or broken pipe. The O&M rating addresses items that can be resolved by improved maintenance, such as root balls or debris.

Area 2 and Trunk Line Evaluations

The Area 2 and Trunk Line scoring evaluations are shown in the spreadsheets included in Attachments 1 and 2. The approach for each is described below.

Area 2 Structural Evaluation

Area 2 is at the upper end of the collection system where the pipelines are generally a smaller diameter with less flow. At the same time, Area 2 appears to have more structural integrity problems with possibly older pipelines constructed of vitrified clay materials. As such, Area 2 is susceptible to higher levels of inflow and infiltration (I/I) that would contribute to fluctuations in wastewater flow rates during storm events.

This pipeline replacement evaluation considers the Structural score augmented with an assessment of notable defects and sagging pipelines. The Structural ratings are developed by the CCTV inspection software and sometimes miss the significance of certain items, such as a collapsed pipe. As such, notable defects observed in the video recordings were incorporated into the assessment. Sagging pipelines were also given a score where the settlement was considered excessive. Consideration of the notable defects and sagging added a substantial number of pipelines to be upgraded compared to considering only the software generated ratings.

Area 2 Capacity Evaluation

The *Addendum to the March 2015 East Palo Alto Sanitary District Master Plan Update* (Master Plan Update, Freyer & Laureta, April 28, 2021) was used to assess the hydraulic capacity and a score was applied to pipelines identified as under capacity in the Master Plan (Attachment 3 - Table 16 and Figure 10 from the Master Plan). For pipelines designated as undersized, a score was calculated as three times the diameter of the proposed pipeline upgrade.

Trunk Line Evaluation

The trunk pipeline is predominantly in good condition with only one pipeline segment having a structural score greater than 100. This segment, T19 to T18, was installed in 2018 and has experienced sagging between the manholes that causes debris accumulation. Other trunk line segments also have sagging pipelines but to a lesser degree than T19 to T18.

The trunk pipeline is adequately sized for current conditions but may need to be expanded to accommodate future development, as shown on Figure 10 from the *Master Plan Update*. A parallel trunk sewer pipeline expansion project is under design that will double the capacity of the pipeline downstream from the siphon at manhole T32 to the wastewater treatment plant at T0. It may be necessary to upgrade other trunk pipelines in the future.

Priority of Pipeline Evaluation to be Replaced

This evaluation considers the hydraulic capacity along with the structural integrity to develop a priority list for the entire wastewater collection system by combining the results from Area 2 and the Trunk Line with the results from Areas 1, 3, and 4. In addition, the Light Tree and Beech Street pipeline replacement projects are incorporated into the spreadsheets as completed without any current repair or replacement needs.

The Light Tree project included approximately \$2M of pipeline upgrades during 2023 at the east end of O'Connor Street and upstream into Pulgas Avenue. Similarly, the Beech Street project included approximately \$5M of pipeline upgrades during 2023 at the east end of Beech Street and upstream into Clarke Avenue and Green Street. Both projects are major collector pipelines that discharge into the trunk line.

The scoring evaluation summarized in Table 1 for the entire system develops a priority of pipeline segments that need to be replaced. Recent activities with the Light Tree and Beech Street projects addressed a significant portion of under capacity pipelines within the collection system. As such, structural scoring is more predominant in the current listing, although there are remaining capacity concerns.

The Structural, Notable Defects, and Sagging scores, and the Capacity score, are added to create the Total Score for each pipeline segment. The Total Scores are ranked from highest to lowest to generate a priority list of pipelines to replace. Pipelines with a Total Score greater than 105 were selected as pipelines for replacement in the near future (**Table 2**). This priority list is also anticipated to have a construction budget approximately \$10M. **Figure 2** shows the pipelines with priority for replacement (scores > 105) considering all Areas and the trunk line.

The priority list was sorted by pipeline diameter in **Table 3** to evaluate probable costs. The Engineer's Opinion of Probable Cost for this hypothetical project (**Table 4**) was prepared using bid results from recent EPASD projects as a basis for unit price estimates. Published industry cost data and engineering judgement were also used where recent bid prices were incomplete.

As shown, approximately 13,500 linear feet of pipeline throughout the collection system have a total score greater than 105. The opinion of probable construction cost is approximately \$11M, while the opinion of total project budget is \$12M.

Summary – Areas 1, 2, 3, 4 and Trunk Line

The total scoring spreadsheets, figures, and the opinion of probable costs presented in Tables 1 through 4 and summarized in Figure 2, develop a listing of high priority pipelines for replacement under a phased approach. An implementation schedule is beyond the scope of this evaluation because various non-engineering factors will be considered as each implementation project is undertaken.

The evaluations can be used together to implement a phased program while also considering available time and financial resources. EPASD is able to evaluate potential construction projects on a regular

basis and make adjustments to a phased program. For example, it may be desirable to develop a construction project that includes only the pipelines crossing or within the Highway 101 right of way. Pipelines within high traffic areas and often with capacity concerns in these areas, such as on Donohoe Street and Bay Road, may be implemented as a specific project. It may also work well to implement a construction project that addresses major holes or collapsed pipes found in small diameter vitrified clay pipe (VCP) where significant I/I are likely occurring.

To evaluate the long-term cost considerations, the phased approach may be conducted by the Areas used in the CCTV survey (Figure 1). An opinion of cost summary follows.

Phased Approach by Geographic Area

Area	Subbasins	Opinion of Construction Cost	Opinion of Total Project Cost
1	C, D, O	\$ 16.9 M	\$ 18.5 M
2	B, E	\$ 18.8 M	\$ 20.7 M
3	A, F, G, I, J, K	\$ 12.4 M	\$13.7 M
4	H, L, M, N	\$ 11.5 M	\$12.7 M
Trunk Line*	Above Siphon*	\$ 5.6 M	\$ 6.2 M
Total		\$ 65.2 M	\$ 71.8 M

*Does not include Trunk Line expansion project from MH T32 to T0

It may also be desired to address the pipelines of greatest concern first based on their respective scores from the CCTV survey (Table 1). An opinion of cost summary follows.

Phased Approach by Addressing Priority Pipelines First

Phase	Pipeline Evaluation Score Range	Opinion of Construction Cost	Opinion of Total Project Cost
1	170 to 105	\$ 11.1 M	\$ 12.1 M
2	104 to 90	\$ 11.7 M	\$ 12.9 M
3	89 to 80	\$ 9.7 M	\$ 10.8 M
4	79 to 73	\$ 11.4 M	\$ 12.5 M
5	73 to 50	\$ 21.3 M	\$23.50
Total		\$ 65.2 M	\$71.8 M

Further evaluations and secondary priority listings may be useful in developing or updating EPASD's Capital Improvement Plan (CIP) as capital improvements are made.

Tables

Table 1	Summary of CCTV Survey Evaluation – All Areas and Trunk Line
Table 2	Priority List of Pipelines to be Replaced – All Areas and Trunk Line
Table 3	Priority List of Pipelines, Sorted by Diameter – All Areas and Trunk Line
Table 4	Opinion of Probable Cost, Replacement of High Priority Pipelines All Areas and Trunk Line

Figures

Figure 1	CCTV Survey Areas
Figure 2	High Priority Pipelines for Replacement – All Areas and Trunk Line

Attachments

Attachment 1	Summary of Area 2 CCTV Survey Results and Evaluation
Attachment 2	Summary of Trunk Line CCTV Survey Results and Evaluation
Attachment 3	Table 16 and Figure 10 from Master Plan Addendum

Tables

Table 1
East Palo Alto Sanitary District
Summary of CCTV Survey Evaluation - All Areas and Trunk Line
Ranking Pipelines for Replacement

Date Inspected	Area	Location/ Street Name	PSR	Actual Diameter (inch)	Master Plan Proposed Diameter (inch)	Recommended Design Diameter (inches)	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (3 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
1/13/2023	D/E	Donohoe Street	D1 - E4	10	16	18	VCP	354	Multiple fractures and cracks. Sagging 50-75%	113	48	5	4	170
1/13/2023	E	Donohoe Street	E4 - E3	10	16	18	VCP	357	broken at 34, 37, 43, 49, 56, 96, and 355 ft	107	48	10	0	165
6/30/2022	O	Woodland Avenue	O21 - O19	6		8	VCP	394	MSA/Reverse inspection performed.	84	0	60		144
8/2/2022	A	Bay Road	A5 - A8	12	18	21	PE	124	Sagging pipe 50%-100%	86	54	0	2	142
7/14/2022	D	Hwy 101	D10 - D3	10	10	12	Unknown	489	MSA/80% grease in line. No heavy cleaning performed	86	30	20	2	138
1/11/2023	B	Bay Road	B5 - B52	12	15	18	PVC	176	the pipe had numerous 90% sags. accumulated grease and	82	45	5	6	138
6/17/2022	C	Elliot Drive	C40 - C36	6		8	VCP	257	MSA/Root tap barrel. Could not pass rootball, reverse	82	0	50		132
1/17/2023	T	Bay Trail	T27 - T26	18	24	30	RCP	356	broken at 72.4 with a noticeable infiltration from the hole	29	72	30	0	131
12/14/2022	B	Palo Verde Avenue	B27 - B25	6		8	VCP	318	Broken at 36, 193 & 260 ft. Multiple fractures and cracks	120	0	10	0	130
1/11/2023	B	Bay Road	B6 - B5	12	15	18	PVC	158	the pipe had numerous 85% sags. accumulated grease and	79	45	0	5	129
12/14/2022	B	Bay Road	B12 - B11	12		12	PVC	277	Grease accumulated on the sides of pipe starting at 100	120	0	5	3	128
8/19/2022	C	Hwy 101	C21 - C19	6		8	VCP	284	MSA/Collapsed pipe. Reverse inspection performed.	67	0	60		127
1/10/2023	E	Capitol Avenue	E20 - E7	6		8	VCP	504	broken at 27, 110.3, 237.8, 282.5, 193, and 466 ft. Pipeline	113	0	10	4	127
8/2/2022	H	Clarke Avenue	H12 - H11	8	12	15	VCP	333	Broken at 111ft, 231ft, 331.9ft	87	36	0	3	126
8/3/2022	A	Bay Road	A10 - A15	15	18	21	ACP	299	Surface Damage Roughness Increased	65	54	0	4	123
N/A	D	West Bayshore Road	D21 - O19	8	10	12	HDPE	391	Heavy Cleaning/high flow. Night work. HDPE. This line	70	30	20		120
8/2/2022	A	Bay Road	A2 - A5	12	15	18	Unknown	244	Sagging pipe 75%	70	45	0	5	120
1/13/2023	E	Cooley Avenue	E3 - E2	12	16	18	PE	280	-	70	48	0	0	118
7/12/2022	C	Menalto Avenue	C4 - C3	6	8	12	PE	436	This is the second inspection after heavy cleaning. The	80	24	10	3	117
N/A	A	Bay Road	A1 - A2	12	15	18	Unknown	80	MH A1 does not exist. Inspection started from B2-A2.	62	45	10	0	117
8/2/2022	H	Clarke Avenue	H14 - H13	8	12	15	VCP	446	Broken at 425.5ft, 429ft with multiple cracks	76	36	0	5	117
12/16/2022	B	Gloria Way	B37 - B6	6		8	VCP	262	badly broken at 9.3, 103, 136.8, 171.1 and 209.5ft. 60%	102	0	10	3	115
12/22/2022	E	Capitol Avenue	E46 - E7	6		8	VCP	501	broken at 103.1, 200.5 and 348.8 ft	105	0	10	0	115
7/7/2022	C	Menalto Avenue	C2 - C1	8	10	12	Unknown	204	MSA/Grease. Heavy grease blockage at 136.9	53	30	30	1	114
8/11/2022	O	West Bayshore Road	O4 - O3	8		8	VCP	277	85% sag, 10% grease build up	109	0	0	5	114
6/16/2022	D	O'Connor Street	D25 - D24	6	8	8	VCP	301	large offset between joints and unable to video it at	49	24	40		113
12/19/2022	E	Glen Way	E36 - E15	6		8	VCP	420	badly broken at 97.2, 207.8, 353, and 248 ft	83	0	30	0	113
8/3/2022	A	Bay Road	A15 - A16	15	18	21	ACP	435	Surface damage roughness. Sagging 75%	53	54	0	5	112
7/27/2022	K	Larkspur Drive	K19 - K18	6		8	CP	272	Pipe is broken and soil is visible at 144ft, and surface	58	0	50	2	110
8/1/2022	L	Gardenia Way	L2 - L1	12	12	15	PVC	179	Joint Separated Large at 104.9ft, infiltration from the wall	34	36	40		110
6/17/2022	C	Elliot Drive	C41 - C40	6		8	VCP	191	substantial breakage throughout their entire length	70	0	40		110
N/A	O	Woodland Avenue	O20 - O19	6		8	-	116	After removing roots and debris from the exit of the pipe	50	0	60		110
12/8/2022	H	Clarke Avenue	H20 - H19	6		8	VCP	271	The camera can only travel 19 feet from H20; the survey	110	0	0	0	110
6/24/2022	D	West Bayshore Road	D51 - D7	6		8	VCP	458	MSA/IOL. Camera cannot move any further. Reverse	68	0	40	1	109
1/13/2023	E	Cooley Avenue	E2 - E1	12	16	18	PE	283	60% sag for 34 ft	58	48	0	3	109
8/2/2022	B/A	Bay Road	B2 - A1	12	15	18	PE	181	A1 is buried, operator surveyed B2-A2 for total of 260.51 ft	62	45	0	2	109
12/15/2022	B	Lilac Lane	B32 - B31	6		8	VCP	254	badly broken at 162 ft, and collapsed at 252 ft (by the	48	0	60	0	108
1/19/2023	T	Bay Trail	T17 - T34	21	28	30	RCP	464	ver 70% sag that allows debris accumulation in the	15	84	5	4	108
12/20/2022	E	Dumbarton Avenue	E33 - E29	6		8	VCP	229	badly broken at 123.8 ft. In addition, pipeline is 50%	75	0	30	2	107
1/19/2023	T	Bay Trail	T19 - T18	21	28	30	RCP	500	ver 70% sag that allows debris accumulation in the	13	84	5	5	107
8/4/2022	H	Runnymede Street	H35 - H34	6	10	12	VCP	322	Pipeline has a lot of sagging. The high water level in the	62	30	8	6	106
7/11/2022	F	Weeks Street	F12 - F11	6		8	VCP	355	Broken at 414ft, multiple fractures and cracks along the	105	0	0	1	106
12/12/2022	B	Poplar Avenue	B17 - B13	6		8	VCP	501	Broken at 103, 212, 246, 416, and 502 feet	95	0	10	0	105
12/16/2022	B	Gloria Way	B50 - B37	6		8	VCP	205	Pipeline is 80% sagging from 50 to 60 ft from B50. Pipeline	69	0	30	5	104
7/11/2022	C	O'Connor Street	C35 - C7	6		8	Unknown	403	Proteus. This is the second inspection. First inspection	83	0	20	1	104
7/7/2022	A	Pulgas Avenue	A18 - A16	6		8	VCP	442	Broken pipe at 44ft.	90	0	10	4	104
6/23/2022	D	Euclid Avenue	D24 - D23	8	10	12	PE	350	Pipeline had heavy grease	66	30	8		104
1/19/2023	T	Bay Trail	T18 - T17	21	28	30	RCP	540	ver 70% sag that allows debris accumulation in the	16	84	0	4	104
7/8/2022	A	Illinois Street	A7 - A6	6		8	VCP	306	Broken pipe at 82 and 230 ft.	55	0	45	3	103
8/12/2022	O	Woodland Avenue	O23 - O22	6		8	VCP	470	MSA/TBI. Reverse inspection complete. Pipe had multiple	83	0	20		103
6/17/2022	C	Elliot Drive	C42 - C41	6		8	VCP	300	substantial breakage throughout their entire length	82	0	20		102
12/14/2022	B	Dumbarton Avenue	B31 - B29	6		8	VCP	257	badly broken at 5, 15, 33, 76, 220, 222, and 234 ft	92	0	10	0	102
7/26/2022	K	Azalia Drive	K9 - K8	8		8	VCP	356	Pipe is broken at 158ft, 183ft, 296ft. At 104ft a defective	41	0	60		101
7/8/2022	A	Illinois Street	A6 - A5	6		8	VCP	287	Broken pipe at 15 and 75ft. Also, an offset joint at 162ft.	68	0	30		101
7/12/2022	C	Menalto Avenue	C43 - C8	6		8	VCP	101	Proteus. MSA/TBI. Heavy cleaning was performed. There	71	0	30		101
6/24/2022	C	Raimar Avenue	C15 - C14	6		8	VCP	565	MSA/IAM. Camera is unable to get past this point.	60	0	40		100
7/26/2022	K	Wisteria Drive	K11 - K5	6		8	VCP	370	MSA/joint offset. Reverse inspection performed	58	0	40	2	100
7/27/2022	K	Larkspur Drive	K18 - K17	6		8	CP	269	SMW spots on the line.	80	0	20		100
12/20/2022	E	Dumbarton Avenue	E30 - E29	6		8	VCP	502	broken at 41.4, 123, 141, 306.7, and 375.7 ft	90	0	10	0	100
7/31/2022	I	Pulgas Avenue	I15 - I14	12	15	18	PVC	386	Sagging pipe 85%	50	45	0	5	100
6/15/2022	C	Green Street	C23 - C3	6		8	VCP	400	Pipe has grease and is under water for about 360' till the	78	0	20	1	99
8/3/2022	A	Bay Road	A16 - A21	15	18	21	ACP	296	-	44	54	0	1	99
1/18/2023	T	Bay Trail	T20 - T19	18	28	30	RCP	332	Some surface damage. Sagging 75%	10	84	0	4	98
8/1/2022	K/L	Larkspur Drive	L21 - K28	10	14	15	PVC	68	Sagging pipe 75%	52	42	0	4	98
7/27/2022	K	Daisy Lane	K21 - K3	6		8	CP	246	Pipe has few locations with chunks of pipe missing at	55	0	40	2	97
12/14/2022	B	Dumbarton Avenue	B33 - B31	6		8	VCP	280	badly broken at 54, 146, 161, 123, and 249 feet from B9.	67	0	30	0	97
7/22/2022	J	Pulgas Avenue	J7 - J6	6		8	VCP	441	Pipe is broken at 124ft and 197ft	82	0	10	5	97
1/10/2023	E	Capitol Avenue	E21 - E20	6		8	VCP	386	broken at 262.3 and 187 ft	87	0	10	0	97
12/22/2022	E	Bell Street	E9 - E8	12		12	PVC	340	few fractures were noticed	92	0	5	0	97
12/9/2022	B	Menalto Avenue	B16A - B16	8	8	12	PVC	390	Pipeline in 65% sagging.	70	24	0	3	97
7/7/2022	A	Demeter Street	A13 - A12	6		8	Unknown	412	Broken pipe at 129 ft and 139 ft with sags.	73	0	20	3	96
8/5/2022	H	Runnymede Street	H34 - H17	6	10	12	VCP	269	Submerged pipe with a line down alignment. Reverse	34	30	30	2	96
12/15/2022	B	Palo Verde Avenue	B35 - B34	6		8	VCP	364	broken and soil is visible at 10.8 and 210.6 ft	66	0	30	0	96
12/13/2022	B	Addison Avenue	B21 - B11	6		8	VCP	400	broken at 176 and 214 feet from B21	86	0	10	0	96
7/14/2022	D	Donohoe Street	D3 - D3A	10	16	18	VCP	11	Surface Damage Roughness Increased	46	48	0	1	95
7/8/2022	A	Gonzaga Street	A3 - A2	6		8	VCP	287	Broken pipe at 53, 141, 157, and 159 ft. Also, an	50	0	40	4	94
12/12/2022	B	Raimar Avenue	B20 - B19	6		8	VCP	585	Broken at 297, 391, 394, 416, 493, and 556 feet. Also	64	0	30	0	94
12/12/2022	B	Raimar Avenue	B19 - B12	6		8	VCP	500	Broken at 13, 52, 60, 163, and 497 feet	84	0	10	0	94
12/9/2022	B	Menalto Avenue	B16 - B15	8	8	8	VCP	327	-	70	24	0	0	94
7/14/2022	D	Donohoe Street	D3A - D2	10	16	18	VCP	355	Broken at 4.2ft	46	48	0		94
12/20/2022	E	Bell Street	E29 - E12	6		8	VCP	247	broken at 9.6 and 106.8 ft. In addition, pipe was damaged	73	0	20	0	93
12/20/2022	E	Bell Street	E31 - E29	6		8	VCP	252	Pipeline is broken at 83, 125.4 ft	82	0	10	0	92
8/2/2022	H	Clarke Avenue	H13 - H12	8	12	15	VCP	108	Broken at 18ft with 55% sagging pipe	54	36	0	2	92
8/3/2022	A / T	Bay Trail	A29 - T29	18	24	30	ACP	345	-	20	72	0		92
12/16/2022	B	Ursula Way	B40 - B39	6		8	VCP	306	badly broken at 5.8, 180.2, and 253.7 ft	92	0	0	0	92
12/7/2022	H	Bell Street	H26 - H25	6		8	VCP	413	Broken at 114 ft with multiple fractures along the pipeline	81	0	10	0	91
12/21/2022	E	Euclid Avenue	E42 - E10	6		8	VCP	551	Multiple fractures and cracks	86	0	5	0	91
8/18/2022	C	Hwy 101	C19 - C2	6		8	VCP	264	MSA/OBM. Reverse inspection performed. Pipeline was	60	0	30		90
12/13/2022	B	Oakwood Drive	B26 - B25	6		8	VCP	402	badly broken at 285 and 190 feet from B26. This pipeline	80	0	10	0	90
12/15/2022	B	Palo Verde Avenue	B34 - B8	6		8	VCP	251	badly broken at 260, 244-246, and 141 ft	80	0	10	0	90
7/6/2022	A	Tara Street	A27 - A26	6		8	VCP	311	Broken pipe and soil is visible at 254.10 ft at 11 o'clock	35	0	50	4	89

Table 1
East Palo Alto Sanitary District
Summary of CCTV Survey Evaluation - All Areas and Trunk Line
Ranking Pipelines for Replacement

Date Inspected	Area	Location/ Street Name	PSR	Actual Diameter (inch)	Master Plan Proposed Diameter (inch)	Recommended Design Diameter (inches)	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (3 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
7/20/2022	H	Runnymede Street	H17 - H76	8	12	15	VCP	397	H17 - H16. Broken pipe at 43.2ft, 144.9ft, 150ft	22	36	30	1	89
7/19/2022	D	East Bayshore Road	D65 - D64	6		8	VCP	448	Pipe is damaged. MSA/Crawler cannot move any further.	49	0	40		89
12/22/2022	E	Cooley Avenue	E6 - E1	12		15	PVC	501	Accumulated grease. 75% in few segments	80	0	5	4	89
7/12/2022	C	Menalto Avenue	C6 - C5	6	8	8	PE	87	Pipeline has lots of debris	42	24	20	2	88
7/22/2022	I	Beech Street	I20 - I9	6		8	VCP	278	Pipe has MSA at 267 due to hard deposit.MSA/Hard	44	0	40	4	88
12/21/2022	E	Lincoln Street	E27 - E12	6		8	VCP	576	broken at 138, 271, and 437 ft. In addition, the pipeline is	58	0	30	0	88
12/14/2022	B	Palo Verde Avenue	B28 - B27	6		8	VCP	202	Broken at 163 ft. Multiple cracks along the pipeline	78	0	10	0	88
6/14/2022	D	Donohoe Street	D9 - D8	6		8	VCP	496	Broken at 21ft, multiple cracks	80	0	8		88
7/14/2022	D	Donohoe Street	D2 - D1	10	18	21	VCP	53		34	54	0		88
1/18/2023	T	Bay Trail	T23 - T22	18	24	30	RCP	376		16	72	0	0	88
6/15/2022	D	Donohoe Street	D8 - D7	6		8	VCP	158	broken pipe at 100.08 ft from upstream	55	0	30	2	87
1/17/2023	T	Bay Trail	T28 - T27	18	24	30	RCP	162		15	72	0	0	87
7/25/2022	L	Gaillardia Way	L11 - L10	6		8	VCP	360	Pipe is broken at 240ft and soil is visible	34	0	50	2	86
N/A	D	Euclid Avenue	D22 - D21	8	10	12	HDPE	149	Grease/surcharged. Requires heavy cleaning. HDPE. This	30	30	26		86
7/6/2022	C	Menalto Avenue	C7 - C6	6	8	12	PE	448	Pipeline has lots of debris	45	24	12	5	86
1/10/2023	E	Cooley Avenue	E48 - E6	6		8	VCP	498	broken at Pipeline is broken at 148, 290, 299.7, and 330 ft	76	0	10	0	86
7/29/2022	M/I	Pulgas Avenue	I43 - I15	12	15	18	PVC	62	I15A - I15. Sagging pipe 90%. Unmapped MH between M2-	35	45	0	6	86
12/20/2022	E	Oakwood Drive	E32 - E31	6		8	VCP	263	badly broken at 10, 48.7, 50.5, 128.9, and 207 ft	45	0	40	0	85
8/3/2022	A	Bay Road	A9 - A10	15	18	21	ACP	181	Broken at 172ft	28	54	0	3	85
12/22/2022	E	Bell Street	E8 - E7	12	12	15	PVC	355		49	36	0	0	85
7/25/2022	I	Myrtle Street	I21 - I13	6	8	8	VCP	600	As I24 should be between them as shown in the map,	60	24	0	1	85
7/27/2022	K	Larkspur Drive	K16 - K4	6		8	CP	274	SMW spots on the line	61	0	20	3	84
12/19/2022	E	Glen Way	E40 - E38	6		8	VCP	390	badly broken at 85.1, 146.2, and 266.3 ft. The Inspection	44	0	40	0	84
12/15/2022	B	Weeks Street	B30 - B29	6		8	VCP	243	badly broken at 8.7, 120.3, and 242.5 ft	74	0	10	0	84
12/21/2022	E	Euclid Avenue	E26 - E25	6		8	VCP	488	broken at 17.1, 169.6, and 291.2 ft	74	0	10	0	84
8/17/2022	D	Euclid Avenue	D23 - D22	8	10	12	PE	73	Pipeline had heavy grease	44	30	8	2	84
7/28/2022	K	Carmelia Drive	K33 - K32	6		8	VCP	131	Sagging pipe 75%	80	0	0	4	84
7/18/2022	D	French Court	D40 - D37	6		8	VCP	194	This is the second inspection after using a root cutter. The	43	0	40		83
7/19/2022	C	Addison Avenue	C18 - C17	6		8	VCP	370	MSA/Proteus could not crawl any farther due to offset	53	0	30		83
6/21/2022	D	Oak Court	D36 - D35	6		8	VCP	251	MSA/Broken. Reverse inspection attempted. broken pipe	43	0	40		83
7/18/2022	O	West Bayshore Road	O9 - O8	8	8	8	VCP	140	15% grease buildup at 96ft	58	24	0	1	83
6/21/2022	D	Oak Court	D37 - D36	6		8	VCP	368	MSA/Reverse inspection complete	83	0	0		83
12/13/2022	B	Addison Avenue	B22 - B21	6		8	VCP	400	badly broken at 20.8, 82.6, 133.3, and 170.3 feet. An	72	0	10	0	82
7/12/2022	F	Weeks Street	F23 - F8	6		8	VCP	327	This pipeline was F9A-F8	78	0	0	4	82
8/12/2022	D	West Bayshore Road	D7 - D6	6		8	VCP	398	5% grease build up and 90% sag	79	0	0	3	82
1/10/2023	E	Cooley Avenue	E49 - E48	6		8	VCP	458	broken at 351.6, 225, and 343 ft. Pipeline is broken with	51	0	30	0	81
12/15/2022	B	Dumbarton Avenue	B29 - B9	6		8	VCP	211	badly broken at 17 ft	70	0	10	0	80
12/19/2022	E	Garden Street	E15 - E14	8		8	VCP	246	broken at 88 and 236 ft	70	0	10	0	80
12/20/2022	E	Lincoln Street	E35 - E14	6		8	VCP	333	broken at 7.1 and 253 ft	70	0	10	0	80
7/21/2022	J	Garden Street	J8 - J6	6		8	VCP	442	Broken at 33ft, 81.4ft, 164ft, 223ft, 286ft, 318ft	79	0	0	1	80
7/13/2022	C	Oak Court	C47 - C46	6		8	VCP	309	This is the second inspection after heavy cleaning and	80	0	0	0	80
7/8/2022	F	Clarke Avenue	F15 - F11	6		8	VCP	301	Multiple cracks along the pipe	80	0	0	0	80
7/21/2022	J	Garden Street	J9 - J9A	6		8	VCP	365	Pipe is cracked at 8ft, 32ft, 81ft, 223ft & 318ft.	55	0	20	4	79
7/26/2022	K	Wisteria Drive	K13 - K12	6		8	VCP	362	Pipe is broken at 9ft and 91ft.	56	0	20	3	79
12/20/2022	E	Garden Street	E14 - E13	8		8	VCP	186	Multiple fractures and cracks along the line	74	0	5	0	79
8/11/2022	O	West Bayshore Road	O5 - O4	8		8	Unknown	399	Noteable sagging	76	0	0	3	79
7/29/2022	M	O'Connor Street	M3 - M2	12	12	15	PVC	380	-	43	36	0		79
7/7/2022	C	Menalto Avenue	C2A - C2	6	8	8	VCP	28	New line segment - Broken at 19.9 ft	34	24	20		78
7/7/2022	A	Tara Street	A24 - A23	6		8	VCP	240	Broken pipe at 228 ft.	58	0	20		78
7/21/2022	J	Garden Street	J10 - J9	6		8	VCP	300		75	0	0	3	78
12/21/2022	E	Lincoln Street	E13 - E12	8		8	VCP	450	broken lateral at 326.6 ft from E13	78	0	0	0	78
6/17/2022	C	Oak Court	C46 - C45	6		8	VCP	256	Broken at 153ft with multiple cracks	78	0	0		78
7/25/2022	L	Azalia Drive	L9 - L4	6	6	8	VCP	162	-	60	18	0		78
6/30/2022	O	Woodland Avenue	O22 - O21	6		8	VCP	348	broken at 81.02 ft, 311 ft, and 320 ft.	47	0	30		77
7/5/2022	C	Poplar Avenue	C13 - C12	6		8	Unknown	481	MSA/Lined pipe. Camera could not move any further.	37	0	40		77
7/6/2022	C	Woodland Avenue	C48 - C11	6	8	8	Unknown	179	MSA/ Reverse inspection complete	23	24	30		77
8/17/2022	O	Woodland Avenue	O29 - O30	6		8	VCP	220	Surcharged MH with substantial crud on water surface.	65	0	12		77
12/21/2022	E	Euclid Avenue	E25 - E50	6		8	VCP	232	broken at 48.4 ft	67	0	10	0	77
6/23/2022	D	East O'Keefe Street	D43 - D41	6		8	VCP	517	MSA/Broken. Reverse inspection complete. broken pipe at	69	0	8		77
1/17/2023	T	Bay Trail	T29 - T28	18	24	30	RCP	234		5	72	0	0	77
7/20/2022	H	Runnymede Street	H57 - H16	8	12	15	VCP	48	H16A - H16B. Broken at 20.9ft	20	36	20		76
6/23/2022	D	Manhattan Avenue	D19 - D10	10	10	12	PVC	48	Line is sagging. Camera was under water for most of the	42	30	0	4	76
7/31/2022	I	Pulgas Avenue	I13 - I12	12	15	18	PVC	320	-	30	45	0	1	76
12/22/2022	E	Bell Street	E7 - E6	12	12	15	PVC	311		40	36	0	0	76
7/11/2022	F	Weeks Street	F19 - F20	6		8	VCP	189	MH was F19 - F21	75	0	0	1	76
7/29/2022	M	O'Connor Street	M31 - M3	12	12	15	PVC	357	-	40	36	0		76
6/21/2022	C	Oak Court	C44 - C10	6		8	VCP	155	MSA/LR. Camera cannot move past bend.	45	0	30		75
7/20/2022	H	Runnymede Street	H76 - H57	8	12	15	VCP	73	H16 - H16A. Broken at 63.2ft	19	36	20		75
12/19/2022	E	Runnymede Street	E39 - E38	6		8	VCP	301	badly broken at 94.7 ft. E39 is supposed to be an	35	0	40	0	75
12/20/2022	E	Dumbarton Avenue	E34 - E33	6		8	VCP	279	broken at 37 and 79.7 ft	65	0	10	0	75
1/12/2023	B	Bay Road	B4 - B3	12	15	18	Unknown	465	Accumulated grease	25	45	5	0	75
12/14/2022	B	Bay Road	B11 - B10	12	15	15	VCP	201	Pipeline is 80% sagging all line long till 20 feet from B10	70	0	0	5	75
12/7/2022	H	Bell Street	H50 - H26	6		8	VCP	154	couple fractures and roots at the joints	64	0	10	0	74
8/18/2022	O	Woodland Avenue	O28 - O26	6		8	VCP	434	MSA/Reverse inspection complete. Proteous. pipeline has	64	0	10		74
1/12/2023	B	Bay Road	B3 - B2	12	15	18	Unknown	239	sagging 50% to 65% along the pipe	26	45	0	3	74
7/12/2022	F	Pulgas Avenue	F14 - F8	6		8	PVC	463	Sagging pipe up to 75%	70	0	0	4	74
6/21/2022	D	Woodland Avenue	D35 - D34	6	8	12	VCP	178	Fracture Multiple at 73ft	50	24	0		74
7/29/2022	G	Pulgas Avenue	G13 - G3	6		8	PVC	453	Proteous	74	0	0		74
7/27/2022	L	Wisteria Drive	L29 - L28	6		8	VCP	366	Pipe is broken at 348ft, and soil is visible	39	0	30	4	73
7/7/2022	A	Pulgas Avenue	A20 - A19	6		8	VCP	340	Broken pipe at 225ft, and separated joints at 281ft.	23	0	50		73
7/1/2022	O	Capitol Avenue	O16 - O15	6		8	VCP	235	Broken at 131.9 ft	53	0	20		73
7/1/2022	D	Green Street	D68 - D67	6		8	VCP	139	Surface Damage at 94ft, pipeline has multiple cracks	61	0	12		73
7/11/2022	D	Oakwood Drive	D71 - D52	6		8	VCP	130	Proteus. This is the second inspection. First inspection	53	0	20		73
6/22/2022	D	Woodland Avenue	D56 - D35	6		8	VCP	286	Offset joint 4' from MH	53	0	20		73
12/16/2022	B	Ursula Way	B39 - B38	6		8	VCP	301	broken with visible soil at 11.9, 133.6-139, 238.2, 293.7,	63	0	10	0	73
12/16/2022	B	Grace Avenue	B43 - B37	6		8	VCP	363	badly broken at 171.6ft	63	0	10	0	73
1/18/2023	T	Bay Trail	T24 - T23	18	24	30	RCP	317		1	72	0	0	73
1/18/2023	T	Bay Trail	T25 - T24	18	24	30	RCP	282		1	72	0	0	73
1/17/2023	T	Bay Trail	T26 - T25	18	24	30	RCP	306		1	72	0	0	73
6/23/2022	D	O'Connor Street	D41 - D24	6		8	VCP	191	Broken at 51 ft and 122 ft	73	0	0		73
6/15/2022	C	Palmar Avenue	C25 - C23	6		8	VCP	303	Medium Joint Offset	72	0	0	1	73

Table 1
East Palo Alto Sanitary District
Summary of CCTV Survey Evaluation - All Areas and Trunk Line
Ranking Pipelines for Replacement

Date Inspected	Area	Location/ Street Name	PSR	Actual Diameter (inch)	Master Plan Proposed Diameter (inch)	Recommended Design Diameter (inches)	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (3 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
12/21/2022	E	Euclid Avenue	E50 - E10	6		8	VCP	218	Multiple fractures and cracks	62	0	10	0	72
7/12/2022	F	Weeks Street	F11 - F10	6		8	VCP	420	Broken at 176ft, 242ft	71	0	0	1	72
12/22/2022	E	Capitol Avenue	E47 - E46	6		8	VCP	455	Pipeline is broken at 171.5, 174.8, 187.3, 235.4, 270.8,	61	0	10	0	71
12/14/2022	B	Bay Road	B13 - B12	12		15	PVC	263	Accumulated grease	66	0	5	0	71
7/28/2022	K	Camellia Drive	K36 - K35	6		8	VCP	282	Broken pipe at 264ft.	38	0	30	2	70
6/23/2022	D	Addison Avenue	D55 - D54	6		8	VCP	252	MSA/Reverse inspection complete. broken at 146.7 ft	40	0	30		70
6/14/2022	D	East O'Keefe Street	D47 - D22	8		8	VCP	299	Grease build up at 269 ft	64	0	5	1	70
7/29/2022	M	O'Connor Street	M42 - M13	6	12	15	VCP	377	Surface Damage and cracks	34	36	0		70
1/11/2023	B	Bay Road	B7 - B6	12	15	18	PVC	380	the pipe had numerous 85% sags	20	45	0	5	70
8/1/2022	L	Gardenia Way	L3 - L2	12	12	15	PVC	83	-	34	36	0		70
7/27/2022	L	Azalia Drive	L49 - L48	8	10	12	VCP	233	-	40	30	0		70
7/14/2022	D	Donohoe Street	D4 - D3	8	10	12	VCP	296	Fracture Multiple at 131ft	40	30	0		70
7/29/2022	M	O'Connor Street	M13 - M12	8	12	15	VCP	276	Broken at 193	13	36	20		69
12/7/2022	H	Bell Street	H28 - H50	6		8	VCP	192	couple fractures and roots at the joints. Hole at 24ft.	59	0	10	0	69
12/13/2022	B	Oakwood Drive	B24 - B10	6		8	VCP	493	Multiple fractures and cracks along the pipeline	64	0	5	0	69
7/7/2022	A	Demeter Street	A12 - A11	6		8	VCP	485	Sagging pipeline 55%	65	0	0	4	69
7/27/2022	L	Azalia Drive	L47 - L4	8		8	VCP	88	Heavy grease was found on a sewer line cleaning material	38	0	30		68
8/19/2022	C	Hwy 101	C20 - C19	6		8	VCP	199	Broken at 5.1 ft, surface damage at 30 ft	48	0	20		68
1/12/2023	B	Bay Road	B52 - B4	12	15	18	Unknown	360		23	45	0	0	68
7/18/2022	C/D	Donohoe Street	C26 - D9	6		8	VCP	436	This is the second inspection after heavy cleaning and	47	0	20		67
6/29/2022	O	Woodland Avenue	O33 - O32	6		8	VCP	263	Visible soil	34	0	30	2	66
12/14/2022	B	Bay Road	B9 - B8	12		15	PVC	351	Pipeline is 60% sagging for the last 60 feet from B9	64	0	0	2	66
8/3/2022	K/L	Gardenia Way	K31 - L1	8		8	PVC	148	-	62	0	0	4	66
8/3/2022	K/L	Gardenia Way	K31 - L1	8		8	PVC	148	-	62	0	0	4	66
7/25/2022	I	Myrtle Street	I23 - I28	6		8	VCP	166	Broken at 59ft. This pipe line was I23 - I23A	35	0	30		65
8/2/2022	H	Schembri Lane	H46 - H52	6		8	VCP	361	Broken at 344.2ft	45	0	20		65
12/19/2022	E	Glen Way	E38 - E36	6		8	VCP	234	badly broken at 153.1, 216.9, and 219.6 ft	55	0	10	0	65
7/28/2022	L	Wisteria Drive	L26 - L25	8		8	VCP	216	Pipe has a lot of sagging, and an offset joint between 80 to	36	0	24	4	64
7/6/2022	C	Menalto Avenue	C8 - C7	6	8	8	PE	401	broken pipe located 100.08 ft from upstream	20	24	20		64
7/25/2022	L	Verbina Drive	L13 - L9	6		8	VCP	311	Broken at 60.2ft	44	0	20		64
6/15/2022	D	O'Connor Street	D29 - D28	6		8	VCP	130	Clogged, extensive cleaning required	56	0	8		64
6/16/2022	D	O'Connor Street	D26 - D25	6		8	VCP	157	broken pipe due to tree roots between 23-26 ft.	43	0	20		63
7/5/2022	C	Menalto Avenue	C5 - C4	6	8	8	Unknown	328	Pipeline has lots of debris	29	24	10		63
7/1/2022	O	Woodland Avenue	O55 - O54	6		8	VCP	399	MSA/Reverse Inspection Complete.	55	0	8		63
7/27/2022	L	Daphine Way	L34 - L26	6		8	VCP	287	Hole at 263.3ft	31	0	30	1	62
7/6/2022	C	Menalto Avenue	C10 - C8	6	8	8	PE	387	Modified line segment. Could not find C9	27	24	10	1	62
8/18/2022	C	West Bayshore Road	C22 - C21	6		8	VCP	92	Broken at 6 ft	57	0	5		62
7/27/2022	K	Daisy Lane	K22 - K21	6		8	CP	256	Surface Damage Missing Wall along the pipeline	62	0	0		62
6/29/2022	O	Woodland Avenue	O32 - O31	6		8	VCP	258	Broken at 3.2 ft and 226 ft	31	0	30		61
7/28/2022	K	Camellia Drive	K35 - K34	6		8	VCP	280	Broken pipe at 9ft.	47	0	10	4	61
6/21/2022	C	Oak Court	C45 - C44	6		8	VCP	166	Broken pipe at 6ft, 41ft, 24ft	51	0	10		61
8/5/2022	H	Donohoe Street	H21 - H56	6		8	VCP	151	H22 - H55. Broken at 14ft and 110ft	61	0	0		61
7/28/2022	L	Jasmine Way	L43 - L44	8		8	PVC	334	Joint Separated Large at 331.7ft	60	0	0		60
7/11/2022	F	Weeks Street	F20 - F17	6		8	VCP	136	MH was F20 - F21	60	0	0		60
12/19/2022	E	Garden Street	E41 - E15	6		8	VCP	98	badly broken with visible soil at 6 ft. In addition, it is	19	0	40	0	59
12/13/2022	B	Oakwood Drive	B25 - B24	6		8	VCP	406	badly broken at 377 and 391 feet	49	0	10	0	59
12/19/2022	B	Fordham Street	B44 - B2	6		8	VCP	296	badly broken at 56.7, 27, 73, 144.1, 231, 261.8, and 289.9	49	0	10	0	59
7/20/2022	G	Buchanan Court	G9 - G6	6		8	CP	291	Pipe is broken and soil is visible at 84 ft	17	0	40	1	58
7/18/2022	O	West Bayshore Road	O59 - O7	8		8	VCP	182	Soil is visible at 167ft, 50% sag	16	0	40	2	58
6/29/2022	O	Newell Road	O31 - O30	6		8	VCP	90	Visible soil	18	0	40		58
7/12/2022	F	Weeks Street	F8 - F8A	6		8	VCP	281	New Line segment	54	0	0	4	58
8/9/2022	H/E	Euclid Avenue	H38 - F42	6		8	VCP	519	Broken pipe Soil Visible at 146ft, 197ft	17	0	40		57
7/19/2022	O	Mission Drive	O41 - O40	6		8	Unknown	45	Proteous. seemed to be different material assuming to be	27	0	30		57
7/8/2022	C	Woodland Avenue	C51 - C50	6		8	Unknown	556	Proteous. MSA/Reverse inspection complete. Pipe is	37	0	20		57
8/1/2022	L	Larkspur Drive	L1 - L21	12	14	14	PVC	223	-	14	42	0	1	57
12/9/2022	B	Menalto Avenue	B15 - B49	8	8	8	VCP	331	-	33	24	0	0	57
8/5/2022	H	Donohoe Street	H23 - H22	6		8	VCP	405	H23 - H56. Broken at 133.9ft, 316.9ft	57	0	0		57
6/28/2022	O	Clarke Avenue	O26 - O25	6		8	VCP	333	Broken at 125ft	57	0	0		57
8/18/2022	H	Clarke Avenue	H24 - H20	6		8	VCP	333	MSA/Broken pipe. The USMH is a cleanout so no reverse	22	0	30	4	56
8/4/2022	H	University Avenue	H36 - H35	6	10	10	VCP	474	-	25	30	0	1	56
8/3/2022	A	Bay Road	A23 - A22	8	18	18	ACP	14	-	2	54	0		56
12/20/2022	E	Garden Street	E33 - E13	6		8	VCP	253	Root ball was blocking the pipeline at 170 ft from E33,	56	0	0	0	56
7/11/2022	F	Paul Robeson Court	F18 - F17	6		8	PVC	198	-	55	0	0	1	56
7/29/2022	M	O'Connor Street	M5 - M4	12	12	12	PVC	373	-	20	36	0		56
7/1/2022	D	Green Street	D69 - D67	6		8	VCP	259	MSA/TBI. No reverse inspection performed because the	47	0	8		55
7/27/2022	K	Larkspur Drive	K17 - K16	6		8	CP	267	Surface Damage Missing Wall along the pipeline	55	0	0		55
7/20/2022	G	Buchanan Court	G10 - G9	6		8	CP	271	Pipe is broken and soil is visible at 10 ft and 221 ft	24	0	30		54
7/27/2022	K	Azalia Drive	K26 - K6	6		8	VCP	294	Pipe is broken at 286ft	34	0	20		54
8/11/2022	O/N	Highway 101	O3 - N8	10		10	Unknown	205	O3 was surcharged.	44	0	8	2	54
7/20/2022	H	Runnymede Street	H15 - H62	8	12	12	Other	201	H15 - H58	18	36	0		54
8/17/2022	O	Cooley Avenue	O51A - O13	6		8	VCP	236	5% grease build up, 60% sag	52	0	0	2	54
8/3/2022	A	Bay Road	A21 - A23	15	18	18	ACP	168	New Line Segment. MH Name changed from A22 to A23	0	54	0		54
8/2/2022	A	Bay Road	A8 - A9	12	18	18	PVC	61	-	0	54	0		54
6/29/2022	O	Newell Road	O35 - O34	6		8	ACP	316	-	54	0	0		54
6/27/2022	O	Cooley Avenue	O57 - O51	6		8	VCP	365	Cracks and surface damage along the pipe	54	0	0		54
6/27/2022	O	Scofield Street	O54 - O52	6		8	VCP	380	Pipe is broken at 26.08 feet.	23	0	30		53
7/20/2022	G	Runnymede Street	G7 - G6	6		8	PVC	295	-	48	0	0	5	53
6/21/2022	D	Euclid Avenue	D33 - D24	8	10	10	PE	450	-	23	30	0		53
8/1/2022	L	Wisteria Drive	L23 - L3	8	10	10	PVC	351	-	23	30	0		53
8/17/2022	O	Cooley Avenue	O51 - O51A	6		8	VCP	234	10% grease build up	52	0	0	1	53
7/21/2022	J	Garden Street	J9A - J8	6		8	VCP	35	Pipe is broken at 115ft, 176ft, and 359ft.	22	0	30		52
6/27/2022	O	Cooley Avenue	O58 - O57	6		8	VCP	403	MSA/Tap break in intruding. No reverse inspection	22	0	30		52
6/14/2022	D	East O'Keefe Street	D49 - D48	6		8	VCP	400	Broken at 264 ft, 90% blockage by a root ball at 137 ft	22	0	30		52
8/5/2022	H	Donohoe Street	H21A - H55	6		8	VCP	157	H21A - H21. Broken at 61ft, 101ft	48	0	0	4	52
7/26/2022	L	Camellia Drive	L53 - L52	6	6	6	VCP	218	MSA/Reverse Inspection Complete	34	18	0		52
7/20/2022	G	Runnymede Street	G4 - G3	6		8	PVC	213	-	50	0	0	2	52
7/25/2022	L	Verbina Drive	L17 - L16	6		8	VCP	236	-	52	0	0		52
7/27/2022	L	Daphine Way	L35 - L34	6		8	VCP	250	-	52	0	0		52
7/20/2022	H	Cooley Avenue	H32 - H17	6		8	VCP	550	Broken Soil Visible at 111ft. Broken at 213.8ft, 372ft, 420ft.	52	0	0		52
8/3/2022	H	Sacramento Street	H40 - H36	6		8	VCP	496	MSA/JOL. Reverse Inspection performed.	52	0	0		52
8/1/2022	K	Larkspur Drive	K28 - K4	10	15	18	PVC	242	-	6	45	0		51

Table 1
East Palo Alto Sanitary District
Summary of CCTV Survey Evaluation - All Areas and Trunk Line
Ranking Pipelines for Replacement

Date Inspected	Area	Location/ Street Name	PSR	Actual Diameter (inch)	Master Plan Proposed Diameter (inch)	Recommended Design Diameter (inches)	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (3 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
7/25/2022	L	Verbina Drive	L16 - L15	6			VCP	311	Broken at 169ft	31	0	20		51
7/8/2022	C	Woodland Avenue	C50 - C49	6			Unknown	361	Proteous	39	0	12		51
6/16/2022	D	O'Connor Street	D27 - D26	6			VCP	392	Clogged, extensive cleaning required	43	0	8		51
12/14/2022	B	Bay Road	B10 - B9	12			PVC	290	Pipeline was at full capacity	46	0	5	0	51
7/22/2022	J	Garden Street	J5C - T21	8			PVC	62	New Line Segment. Sagging pipe 75%	47	0	0	4	51
7/20/2022	G	Runnymede Street	G6 - G4	6			PVC	388	-	50	0	0	1	51
8/5/2022	H	Donohoe Street	H56 - H21A	6			VCP	157	H55 - H21A. Broken at 1.5ft	51	0	0		51
7/1/2022	D	Glen Way	D67 - D63	6			VCP	294	Pipe broken at 231.1 ft	20	0	30		50
7/28/2022	L	Jasmine Way	L40 - L42	8			VCP	346	Broken pipe soil visible at 184ft	10	0	40		50
12/19/2022	B	Fordham Street	B45 - B44	6			VCP	301	badly broken at 65.6ft	40	0	10	0	50
8/5/2022	M	East Bayshore Road	M41 - M42	6	12		PVC	104	-	14	36	0		50
7/28/2022	L	Wisteria Drive	L25 - L24	8	10		PVC	342	-	20	30	0		50
7/7/2022	A	Demeter Street	A14 - A13	6			Unknown	288	-	50	0	0		50
12/22/2022	E	Bell Street	E11 - E10	12			PVC	195	-	50	0	0	0	50
12/22/2022	E	Bell Street	E12 - E11	12			PVC	494	-	50	0	0	0	50
12/19/2022	E	Oakdale Road	E37 - E36	6			VCP	353	A piece of PVC coming out a lateral into the main sewer	50	0	0	0	50
6/27/2022	O	Scofield Street	O52 - O51	6			VCP	213	-	50	0	0		50
7/31/2022	I	Pulgas Avenue	I14 - I13	12	15		PVC	444	-	5	45	0		50
7/26/2022	K	Azalia Drive	K7 - K6	8			VCP	362	-	46	0	0	4	50
8/3/2022	H	Weeks Street	H43 - H42	6			VCP	346	Broken at 4.7ft, 303.7ft	50	0	0		50
7/18/2022	O	West Bayshore Road	O10 - O9	8			VCP	157	-	50	0	0		50
8/2/2022	H	Runnymede Street	H62 - H14	8	12		Other	233	H58 - H14	13	36	0		49
7/21/2022	G	Runnymede Street	G19 - T23	6			VCP	154	This pipeline was G2A-T23	49	0	0		49
6/14/2022	D	East O'Keefe Street	D48 - D47	6			VCP	401	5% Grease build up at 335ft	35	0	12	1	48
7/25/2022	L	Azalia Drive	L10 - L9	6			VCP	180	-	48	0	0		48
6/24/2022	D	West Bayshore Road	D53 - D52	6			VCP	248	Joint Separated Medium	47	0	0	1	48
8/3/2022	H	Weeks Street	H42 - H37	6			VCP	388	Broken at 304ft	48	0	0		48
7/8/2022	C	Woodland Avenue	C49 - C48	6			Unknown	248	Proteous	35	0	12		47
6/15/2022	D	O'Connor Street	D28 - D27	6			VCP	81	Clogged, extensive cleaning required	38	0	8	1	47
6/27/2022	O	West Bayshore Road	O11 - O10	8			VCP	259	-	47	0	0		47
7/26/2022	L	Gardenia Court	L61 - L5	6			VCP	152	Broken at 98.8	26	0	20		46
6/24/2022	C	Addison Avenue	C17 - C16	6			VCP	333	There's a JAM 3' from the DSMH. Camera is unable to go	38	0	8		46
7/27/2022	L	Azalia Drive	L50 - L49	8	10		VCP	224	-	16	30	0		46
7/12/2022	F	Weeks Street	F10 - F9	6			VCP	463	Broken at 32.2ft & 247ft & 297ft & 314ft	45	0	0	1	46
7/20/2022	F	Weeks Street	F7 - T25	6			VCP	477	Multiple cracks along the pipe	44	0	0	2	46
7/1/2022	O	Woodland Avenue	O56 - O55	6			VCP	377	-	46	0	0		46
7/27/2022	L	Azalia Drive	L48 - L47	8			VCP	229	-	46	0	0		46
7/27/2022	L	Aster Way	L31 - L30	6			VCP	179	Pipe is broken at 59ft, and soil is visible	15	0	30		45
7/29/2022	M	O'Connor Street	M12 - M15	8	12		VCP	337	This is M12-M40 in MP	9	36	0		45
12/16/2022	B	Ursula Way	B42 - B38	6			PVC	61	MH B41 on Ursula way appearing to be nonexistent, it is	45	0	0	0	45
8/1/2022	I	Pulgas Avenue	I12 - I6	12	15		PVC	339	-	0	45	0		45
7/11/2022	A	Pulgas Avenue	A17 - A31	6			VCP	61	This pipe line was A17 - A17A	45	0	0		45
7/25/2022	L	Camellia Drive	L20 - L16	6			VCP	101	Broken at 6.6ft	45	0	0		45
7/27/2022	L	Daphine Way	L37 - L36	6			VCP	312	Hole at 252ft, 93.5ft	45	0	0		45
7/13/2022	D	Oak Court	D39 - D37	6			Unknown	14	New line segment. Proteus was used to inspect this line.	14	0	30		44
12/19/2022	B	Fordham Street	B44 - B2	6			VCP	7	Broken at 28, 73, 144, 231, and 261 ft. Broken with visible	4	0	40	0	44
7/21/2022	G	Mandela Court	G15 - G14	8			PVC	215	-	42	0	0	2	44
8/1/2022	L	Wisteria Drive	L24 - L23	8	10		PVC	386	-	14	30	0		44
7/12/2022	F	Weeks Street	F9 - F23	6			VCP	111	This pipeline was F9-F9A	43	0	0	1	44
7/1/2022	C	East Bayshore	C14 - C12	6			VCP	282	-	44	0	0		44
6/29/2022	O	Newell Road	O34 - O10	6			ACP	268	-	44	0	0		44
6/23/2022	D	East O'Keefe Street	D44 - D43	6			VCP	113	Broken at 72.2ft	44	0	0		44
7/5/2022	C	East Bayshore	C12 - C1	6	8		PVC	265	-	20	24			44
7/5/2022	D	East Bayshore Road	D64 - D63	6			VCP	471	MSA/Reverse inspection complete	22	0	20	1	43
7/27/2022	L	Aster Way	L33 - L32	6			VCP	91	Hole at 10.2ft	13	0	30		43
7/21/2022	G	Veronica Court	G18 - G17	6			PVC	291	-	42	0	0	1	43
12/15/2022	B	Palo Verde Avenue	B35A - B35	6			VCP	207	Unmapped and paved over manhole found at 186 ft from	43	0	0	0	43
8/3/2022	H	University Avenue	H37A - H36	6			VCP	149	New Line Segment. Broken 144.3ft, 145ft	43	0	0		43
6/27/2022	O	Circle Drive	O53 - O52	6			VCP	188	Broken at 204ft	43	0	0		43
7/7/2022	C	East O'Keefe Street	C29 - C28	6			PVC	298	-	43	0	0		43
7/21/2022	G	Runnymede Street	G14 - G17	6			VCP	151	Pipe is broken at 17ft.	17	0	20	5	42
7/26/2022	L	Abelia Way	L58 - L57	6			VCP	295	Broken at 13ft, 50ft, 87ft, 236ft	22	0	20		42
7/20/2022	G	Buchanan Court	G11 - G10	6			CP	266	Pipe is broken at 33 ft and 256 ft.	22	0	20		42
7/27/2022	K	Hibiscus Court	K24 - K21	6			CP	149	Surface Damage Missing Wall	42	0	0		42
8/3/2022	H	Sacramento Street	H41 - H40	6			VCP	150	Broken at 38ft, 42ft	42	0	0		42
7/7/2022	D	East O'Keefe Street	D50 - D49	6			VCP	422	Broken at 418.9 ft	42	0	0		42
8/1/2022	L	Wisteria Drive	L22 - L3	6			VCP	366	Broken at 48.6ft	21	0	20		41
8/12/2022	L	Daphine Way	L37 - L38	6			VCP	212	Proteous. Hole at 140.7ft	31	0	10		41
7/12/2022	C/D	O'Connor Street	D29 - C37	6			Unknown	130	Proteus	31	0	8	2	41
6/21/2022	D	Oak Court	D38 - D37	6			VCP	238	MSA/Broken. No reverse inspection can be performed	10	0	30		40
1/12/2023	E	University Avenue	E44 - E8A	6			VCP	318	Broken at 146 ft. Unmapped MH was found between	30	0	10	0	40
1/20/2023	T	Bay Trail	K1-T16	15			PE	35	lots of grease	35	0	5	0	40
7/20/2022	H	Runnymede Street	H16 - H60	8	12		PVC	351	H16B - H16C	4	36	0		40
7/1/2022	C	East Bayshore	C16 - C14	6			PVC	273	-	40	0	0		40
8/5/2022	H	Donohoe Street	H55 - H54	6			PVC	144	H21 - H54. Broken at 51ft	40	0	0		40
7/28/2022	K	Camellia Drive	K34 - K33	6			VCP	278	-	39	0	0	1	40
7/25/2022	L	Verbina Drive	L19 - L18	6			VCP	333	Broken at 330ft	40	0	0		40
7/26/2022	L	Gardenia Way	L5 - L47	6			VCP	276	-	40	0	0		40
7/14/2022	O	West Bayshore Road	O60 - O61	14			PVC	199	-	40	0	0		40
8/9/2022	H	Schembri Lane	H29 - H12	6			VCP	551	Broken pipe at 257ft, 349ft	19	0	20		39
7/11/2022	C	O'Connor Street	C39 - C37	6			VCP	164	Proteus. This is the second inspection. First inspection	9	0	30		39
8/4/2022	N	Pulgas Avenue	N8 - N9	12			PE	119	Joint Separated Large at 9.5ft	9	0	30		39
7/27/2022	L	Daphine Way	L36 - L35	6			VCP	278	Hole at 38.4ft	29	0	10		39
7/11/2022	A	Pulgas Avenue	A31 - A16	6			PVC	38	This pipe line was A17A - A16	38	0	0	1	39
8/2/2022	H	Schembri Lane	H30 - H46	6			VCP	135	-	39	0	0		39
7/27/2022	K	Sage Street	K20 - K19	6			CP	135	Surface Damage Missing Wall at 96.4ft	8	0	30		38
7/26/2022	L	Camellia Drive	L54 - L53	6			VCP	369	Pipe is broken and soil is visible at 3.02ft.	8	0	30		38
7/11/2022	C	O'Connor Street	C36 - C35	6			Unknown	92	Proteus. This is the second inspection. First inspection	18	0	20		38
12/8/2022	H	Clarke Avenue	H19 - H18	6			PVC	387	Sag 60% for 25 ft at the DS	35	0	0	3	38
7/14/2022	D	East Bayshore Road	D5 - D4	8	10		Unknown	90	-	8	30	0		38
7/29/2022	M	O'Connor Street	M43 - M42	6			VCP	104	Broken at 109ft	38	0	0		38

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Date Inspected	Area	Location/ Street Name	PSR	Actual Diameter (inch)	Master Plan Proposed Diameter (inch)	Recommended Design Diameter (inches)	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (3 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
8/4/2022	H	Runnymede Street	H47 - H35	6			VCP	192	Fracture at 8.6 with cracks along the pipeline	37	0	0	1	38
7/27/2022	K/L	Azalia Drive	L10 - K27	6			VCP	275	Broken connection of lateral at 28ft.	14	0	20	3	37
7/27/2022	K/L	Azalia Drive	L10 - K27	6			VCP	275	Broken connection of lateral at 28ft.	14	0	20	3	37
8/4/2022	H	Runnymede Street	H38 - H47	6			VCP	205	Broken at 80.3ft	37	0	0		37
8/5/2022	H	Donohoe Street	H22 - H21	6			VCP	216	H56 - H22. Broken pipe at 3.9ft, 137.4ft	16	0	20		36
7/20/2022	H	Runnymede Street	H60 - H15	8	12		PVC	107	H16C - H15	0	36	0		36
7/29/2022	M	O'Connor Street	M15 - M5	8	12		VCP	265	-	0	36	0		36
8/5/2022	M	East Bayshore Road	M38 - M39	6	12		PVC	158	-	0	36	0		36
8/5/2022	M	East Bayshore Road	M39 - M40	6	12		PVC	241	-	0	36	0		36
8/5/2022	M	East Bayshore Road	M40 - M41	6	12		PVC	263	This is M40-M5 in MP	0	36	0		36
7/29/2022	M/I	Pulgas Avenue	M2 - I43	12			PVC	20	M2 - I15A. Sagging pipeline 100%	31	0	0	5	36
7/25/2022	I	Terra Villa Avenue	I17 - I7	6			VCP	526	Broken at 520ft	34	0	0	2	36
7/20/2022	G	Runnymede Street	G8 - G7	6			PVC	327	-	35	0	0	1	36
7/27/2022	L	Daphine Court	L62 - L34	6			VCP	147	-	36	0	0		36
7/27/2022	L	Wisteria Drive	L28 - L27	6			VCP	363	Hole at 310.2ft	36	0	0		36
7/29/2022	G	Ruth Ct	G12 - G4	6			PVC		Broken at 47ft, 170ft	36	0	0		36
7/18/2022	O	West Bayshore Road	O8 - O59	8			VCP	103	-	36	0	0		36
7/21/2022	G	Runnymede Street	G17 - G2	6			VCP	144	-	36	0	0		36
8/12/2022	L	Aster Way	L30 - L27	6			VCP	236	Proteous. Broken at 0.0 ft	15	0	20		35
8/18/2022	O	Woodland Avenue	O29 - O28	6			VCP	143	Surcharged MH with substantial crud on water surface.	23	0	12		35
8/5/2022	H	Donohoe Street	H54 - H20	6			VCP	153	Fracture at 14.7ft	25	0	10		35
7/28/2022	L	Camellia Drive	L46 - L45	6			VCP	136	Broken pipe Soil Visible at 135.9ft	35	0	0		35
7/7/2022	C	East O'Keefe Street	C34 - C32	6			VCP	57	-	35	0	0		35
7/25/2022	L	Verbina Drive	L14 - L13	6			VCP	302	-	35	0	0		35
8/3/2022	H	University Avenue	H37 - H37A	6			VCP	221	New Line Segment. Broken at 162ft	14	0	20		34
7/26/2022	K	Sage Street	K14 - K13	6			VCP	90	intruding lateral at 81ft and camera can not move	14	0	20		34
7/11/2022	C	O'Connor Street	C37 - C36	6			Unknown	153	Proteus. This is the second inspection. First inspection	21	0	12	1	34
1/12/2023	E	University Avenue	E23 - E22	6			VCP	439	broken at 158 ft	24	0	10	0	34
7/26/2022	L	Camellia Drive	L52 - L50	6	8		VCP	224	-	10	24	0		34
7/25/2022	I	Brentwood Court	I18 - I8	6			PVC	237	-	32	0	0	2	34
6/23/2022	D	O'Connor Street	D42 - D41	6			VCP	100	Crack Multiple at 7.6ft & 69.2ft	34	0	0		34
6/23/2022	D	West Bayshore Road	D54 - D53	6			VCP	75	-	34	0	0		34
8/12/2022	D	Hwy 101	D6 - D5	8			Unknown	246	Joint Offset Large at 112ft	34	0	0		34
7/25/2022	L	Gaillardia Way	L12 - L11	6			VCP	82	-	34	0	0		34
7/28/2022	L	Jasmine Way	L44 - L45	8			PVC	238	-	34	0	0		34
7/29/2022	K	Lotus Way / Camellia Drive	K37 - K32	6			VCP	350	Joint Offset Large at 342.9ft	34	0	0		34
7/26/2022	K	Azalia Drive	K8 - K7	8			VCP	356	-	34	0	0		34
7/26/2022	L	Abelia Way	L59 - L58	6			VCP	250	Broken at 220ft, 245ft	13	0	20		33
8/2/2022	H	Clarke Avenue	H31 - H14	6			VCP	404	MSA/IOL. No reverse inspection performed because the	17	0	16		33
7/26/2022	L	Gardenia Way	L7 - L6	6	6		VCP	261	-	15	18	0		33
7/7/2022	A	Pulgas Avenue	A19 - A18	6			VCP	214	Fracture multiple along the pipeline	33	0	0		33
12/9/2022	B / C	Menalto Avenue	C1 - B16A	8	8		PVC	17	Unmapped MH was located 17 ft from C1 named B16A	9	24	0	0	33
8/1/2022	L	Gardenia Way	L4 - L3	12			VCP	248	-	33	0	0		33
7/28/2022	L	Daphine Way	L39 - L40	6			VCP	346	Broken at 296.7ft	12	0	20		32
7/29/2022	K	Daisy Lane	K23 - K22	6			Unknown	100	Material change at 23ft and needs a mini camera	24	0	8		32
7/26/2022	L	Camellia Court	L56 - L54	6			VCP	327	-	32	0	0		32
7/11/2022	F	Weeks Street	F17 - F22	6			VCP	56	This pipe line was F17 - F17A	32	0	0		32
7/28/2022	L	Camellia Drive	L45 - L25	8			VCP	202	-	31	0	0	1	32
7/21/2022	G	Runnymede Street	G2 - G19	6			VCP	154	This pipeline was G2-G2A	32	0	0		32
6/22/2022	D	Woodland Avenue	D58 - D57	6			VCP	158	-	32	0	0		32
7/7/2022	C	East O'Keefe Street	C32 - C30	6			VCP	147	-	32	0	0		32
6/15/2022	C	Green Street	C24 - C23	6			VCP	151	MSA/IOM. No reverse inspection performed because the	11	0	20		31
8/9/2022	H	Schembri Lane	H52 - H29	6			VCP	94	Fracture at 43.7ft	11	0	20		31
12/8/2022	H	Clarke Avenue	H20 - H19	6			PVC	271	75% sag. Fractures and cracks	27	0	0	4	31
6/23/2022	D	Manhattan Avenue	D76 - D19	10			PVC	99	-	31	0	0		31
7/26/2022	K	Wisteria Drive	K12 - K11	6			VCP	354	-	31	0	0		31
7/25/2022	L	Verbina Drive	L18 - L17	6			VCP	331	Broken at 135ft	10	0	20		30
8/3/2022	A	Bay Road	A22 - A29	15			ACP	369	-	30	0	0		30
12/9/2022	B	Menalto Avenue	B49 - B14	8	8		VCP	328	-	6	24	0	0	30
7/12/2022	C	Menalto Avenue	C3 - C2A	6	8		PVC	370	New line segment	6	24	0		30
6/29/2022	C	East O'Keefe Street	C30 - C27	6			VCP	163	-	30	0	0		30
1/12/2023	E	University Avenue	E22 - E8	6			VCP	450	-	30	0	0	0	30
7/11/2022	F	Weeks Street	F22 - F12	6			VCP	54	This pipe line was F17A - F12	30	0	0		30
8/18/2022	O	Clarke Avenue	O25 - O7	6			VCP	177	This is the second inspection. The first inspection on 6.29	21	0	8		29
7/25/2022	I	Myrtle Street	I28 - I21	6			VCP	315	This pipe line was I23A - I21	29	0	0		29
7/5/2022	D	East Bayshore Road	D63 - D5	8			VCP	297	-	29	0	0		29
6/27/2022	O	West Bayshore Road	O12 - O11	8			VCP	394	-	29	0	0		29
8/3/2022	H	Sacramento Street	H40 - H36	6			VCP	496	MSA/Reverse Inspection Complete	29	0	0		29
6/28/2022	O	Mission Drive	O50 - O49	6			VCP	172	Joint Offset Large at 170 ft	28	0	0		28
7/19/2022	O	West Bayshore Road	O7 - O6	8	8		Unknown	427	-	4	24	0		28
7/8/2022	A	Demeter Street	A11 - A11A	6			PVC	209	Uncharted MH was found between A11-A10 on Demeter	28	0	0		28
8/11/2022	O	West Bayshore Road	O18 - O17	8			VCP	264	-	28	0	0		28
7/26/2022	L	Gardenia Way	L6 - L5	6			VCP	215	-	28	0	0		28
8/9/2022	M	Clarke Avenue	M14A - M5	6			VCP	75	New Line Segment. Broken at 70.2ft	7	0	20		27
6/22/2022	D	Woodland Avenue	D61 - D60	6			VCP	101	Joint Offset Large at 91 ft	7	0	20		27
8/8/2022	H	Campor Way	H45 - H9	6			PVC	222	Broken at 103ft, 106ft, 167ft	27	0	0		27
8/8/2022	N	Pulgas Avenue	N5 - N4	12			PE	332	-	27	0	0		27
8/11/2022	O	West Bayshore Road	O17 - O3	8			VCP	161	-	27	0	0		27
6/28/2022	O	Mission Drive	O48 - O47	6			VCP	122	Surface Damage at 119ft	14	0	12		26
7/22/2022	J	Garden Street	J6 - J5	6			VCP	558	Crack at 404ft	23	0	0	3	26
7/25/2022	L	Verbina Drive	L15 - L14	6			VCP	310	-	26	0	0		26
7/8/2022	A	Demeter Street	A11A - A10	6			PVC	206	Uncharted MH was found between A11-A10 on Demeter	26	0	0		26
7/27/2022	K	Azalia Drive	K27 - K26	6			VCP	200	-	26	0	0		26
6/28/2022	O	Mission Drive	O46 - O45	6			VCP	213	Broken at 3.7ft, Joint Separated Medium along the pipe	25	0	0		25
7/26/2022	K	Sage Street	K10 - K9	6			VCP	156	-	25	0	0		25
7/19/2022	O	West Bayshore Road	O6 - O5	8			Other	399	-	25	0	0		25
8/10/2022	M	Clarke Avenue	M21 - M20	12			VCP	78	M20 - M6	25	0	0		25
6/27/2022	O	West Bayshore Road	O13 - O12	8			Other	415	-	25	0	0		25
7/25/2022	I	Brentwood Court	I19 - I18	6			PVC	239	-	23	0	0	1	24
6/21/2022	D	Euclid Avenue	D34 - D33	8	8		PE	293	-	0	24	0		24
7/5/2022	D	Oakwood Drive	D66 - D65	8	8		Unknown	413	-	0	24	0		24

Table 1
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Ranking Pipelines for Replacement

Date Inspected	Area	Location/ Street Name	PSR	Actual Diameter (inch)	Master Plan Proposed Diameter (inch)	Recommended Design Diameter (inches)	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (3 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
1/13/2023	E	Cooley Avenue	E38 - E3C	6			Unknown	44		24	0	0	0	24
12/7/2022	H	Bell Court	H27 - H26	6			VCP	115	One fracture at 105 ft	24	0	0	0	24
6/29/2022	O	Newell Road	O30 - O35	6			ACP	176	-	24	0	0	0	24
7/28/2022	L	Wisteria Drive	L27 - L26	8			VCP	260	-	24	0	0	0	24
1/12/2023	E	University Avenue	E8A - E8	6			VCP	316	Unmapped MH was found between E44-E8, named E8A	23	0	0	0	23
7/6/2022	A	Tara Street	A25 - A24	6			VCP	253	-	23	0	0	0	23
7/20/2022	G	Runnymede Street	G3 - G14	6			PVC	208	Multiple cracks along the pipe	22	0	0	1	23
6/29/2022	O	Newell Road	O36 - O30	6			ACP	164	-	23	0	0	0	23
12/13/2022	B	Addison Avenue	B22 - B21	6			VCP	33	Broken at 8, 20.8, 79, 82 133, and 170 ft	12	0	10	0	22
7/26/2022	L	Abelia Way	L57 - L53	6			VCP	203	-	22	0	0	0	22
6/28/2022	O	Mission Drive	O37 - O25	6			VCP	81	50% sagging pipe	20	0	0	2	22
7/25/2022	I	Pulgas Avenue	I16 - I6	8			PVC	493	-	20	0	0	1	21
7/28/2022	K	Camellia Drive	K30 - K31	8			PVC	108	-	20	0	0	1	21
7/20/2022	H	Cooley Avenue	H33 - H32	8			Other	515	-	21	0	0	0	21
6/28/2022	O	Clarke Avenue	O27 - O26	6			VCP	65	-	21	0	0	0	21
8/3/2022	A	Bay Road	A30 - A28	6			VCP	301	-	20	0	0	0	20
12/14/2022	B	Bay Road	B14 - B13	6			PVC	253	-	20	0	0	0	20
12/15/2022	B	Ursula Way	B51 - B50	6			PVC	282	-	20	0	0	0	20
12/22/2022	E	Bell Street	E10 - E9	12			PVC	192	-	20	0	0	0	20
1/12/2023	E	University Avenue	E45 - E44	6			VCP	319	-	20	0	0	0	20
12/7/2022	H	Bell Street	H25 - H11	6			VCP	378	Fractures and cracks	20	0	0	0	20
7/22/2022	J	Cypress Street	J11 - J11A	8			PVC	200	New Line Segment	20	0	0	0	20
7/22/2022	J	Cypress Street	J11A - T20	8			PVC	81	New Line Segment	20	0	0	0	20
7/22/2022	J	Cypress Street	J12 - J11	8			PVC	299	-	20	0	0	0	20
7/22/2022	J	Cypress Street	J13 - J12	8			PVC	299	-	20	0	0	0	20
7/28/2022	K	Camellia Drive	K32 - K30	8			PVC	227	-	20	0	0	0	20
7/28/2022	L	Daphne Way	L38 - L39	6			VCP	215	-	20	0	0	0	20
7/22/2022	M	Tate Street	M29 - M31	8			PVC	329	-	20	0	0	0	20
8/4/2022	N	Pulgas Avenue	N6 - N5	12			PE	333	-	20	0	0	0	20
8/4/2022	N	Pulgas Avenue	N9 - N7	12			PE	284	-	20	0	0	0	20
7/8/2022	F	Clarke Avenue	F16 - F15	6			VCP	238	-	20	0	0	0	20
6/24/2022	D	West Bayshore Road	D52 - D51	6			VCP	267	Broken at 262 ft	11	0	8	0	19
6/30/2022	O	Woodland Avenue	O19 - O17	6			VCP	86	Broken at 83 ft	19	0	0	0	19
12/16/2022	B	Glen Way	B48 - B7	6			VCP	450	inspection was abandoned at 4.6 ft from B7 and the	8	0	10	0	18
7/27/2022	L	Aster Way	L32 - L31	6			VCP	293	Hole at 157ft	8	0	10	0	18
6/22/2022	D	Emma Lane	D62 - D59	6			VCP	248	D62 is cleanout with "water" lid	10	0	8	0	18
7/8/2022	A	Gonzaga Street	A4 - A3	6			VCP	312	Broken ar 205.9ft, multiple fractures	18	0	0	0	18
7/7/2022	C	East O'Keefe Street	C31 - C30	6			VCP	67	-	18	0	0	0	18
7/12/2022	F	Weeks Street	F8A - F7	6			VCP	75	New Line Segment	17	0	0	0	17
6/24/2022	D	Dumbarton Avenue	D70 - D51	6			VCP	71	-	16	0	0	0	16
7/7/2022	C	East O'Keefe Street	C27 - C5	6			VCP	222	Broken at 1.7ft	16	0	0	0	16
6/22/2022	D	Woodland Avenue	D60 - D59	6			VCP	113	-	16	0	0	0	16
12/16/2022	B	Gloria Way	B38 - B50	6			VCP	39	-	15	0	0	0	15
6/30/2022	O	Woodland Avenue	O24 - O23	6			VCP	97	-	15	0	0	0	15
8/3/2022	H	University Avenue	H44 - H37	6			VCP	269	-	14	0	0	0	14
7/29/2022	N	Wilkes Street	N13 - N14	8			PVC	167	-	14	0	0	0	14
6/22/2022	D	Woodland Avenue	D59 - D58	6			VCP	151	-	13	0	0	0	13
1/23/2023	E	Cooley Avenue	E3 - E3A	6			PVC	52	-	12	0	0	0	12
1/23/2023	h	Cooley Avenue	H50 - H51	6			CI	190	-	12	0	0	0	12
8/10/2022	M	Clarke Avenue	M16 - M8	12			VCP	67	M8 - M8A	12	0	0	0	12
7/26/2022	K	Sage Street	K15 - K9	6			VCP	74	-	12	0	0	0	12
7/28/2022	L	Jasmine Way	L42 - L43	8			VCP	330	-	12	0	0	0	12
7/6/2022	A	Tara Street	A26 - A25	6			VCP	234	-	11	0	0	0	11
12/15/2022	B	Palo Verde Avenue	B36 - B35A	6			UNK	49	badly broken at 13.7 ft	0	0	10	0	10
7/21/2022	N	McNair Street	N22 - N15	8			PVC	212	Pipeline has reverse sag allowing an opposite flow	0	0	8	2	10
7/29/2022	K	Wisteria Drive	K5A - K5	6			Other	30	New MH - Proteous	9	0	0	1	10
8/9/2022	H	Schembri Lane	H53 - H52	6			VCP	233	-	10	0	0	0	10
8/9/2022	M	Clarke Avenue	M14 -	6			VCP	252	New Line Segment	10	0	0	0	10
7/7/2022	C	East O'Keefe Street	C33 - C32	6			VCP	71	-	9	0	0	0	9
6/28/2022	O	Mission Drive	O38 - O37	6			VCP	117	-	9	0	0	0	9
6/16/2022	D	Falk Court	D32 - D30	6			VCP	126	-	9	0	0	0	9
N/A	D	Oak Court	D39 - D38	6			-	84	Cleanout D38 does not exist. Line ends at MH D37.	0	0	8	0	8
7/25/2022	I	Myrtle Street	C/O - I22	6			VCP	61	New Line Segment - uncharted clean out	8	0	0	0	8
7/6/2022	C	Menalto Avenue	C11 - C10	6			PE	508	-	8	0	0	0	8
7/22/2022	J	Garden Street	J5 - J5A	8			PVC	275	New Line Segment	8	0	0	0	8
7/26/2022	L	Gardenia Way	L8 - L7	6			VCP	73	-	8	0	0	0	8
8/4/2022	N	Pulgas Avenue	N7 - N6	12			PE	333	-	8	0	0	0	8
6/28/2022	O	Mission Drive	O39 - O37	6			VCP	41	-	8	0	0	0	8
8/5/2022	N	Mouton Circle	N20 - N21	8			PVC	72	-	8	0	0	0	8
12/21/2022	E	Lincoln Street	E28 - E27	6			VCP	62	One fracture	7	0	0	0	7
8/5/2022	H	Salas Court	H48 - H55	6			PVC	217	H48 - H21	7	0	0	0	7
7/25/2022	I	Myrtle Street	I22 - I23	6			VCP	44	-	7	0	0	0	7
6/28/2022	O	Mission Drive	O44 - O43	6			VCP	69	Joint Separated Large at 3.6ft	7	0	0	0	7
6/28/2022	O	Mission Drive	O45 - O8	6			VCP	66	Broken at 38.7ft	7	0	0	0	7
7/1/2022	O	West Bayshore Road	O15 - O14	8			Unknown	308	-	7	0	0	0	7
8/10/2022	M	Clarke Avenue	M18 - M5	12			VCP	154	-	6	0	0	0	6
6/28/2022	O	Mission Drive	O43 - O42	6			VCP	182	-	6	0	0	0	6
1/18/2023	T	Bay Trail	T22 - T21	18			RCP	197	-	6	0	0	0	6
8/3/2022	A	Bay Road	A28 - A29	6			ACP	15	-	6	0	0	0	6
6/22/2022	D	Woodland Avenue	D57 - D56	6			VCP	197	-	6	0	0	0	6
12/9/2022	H	Clarke Avenue	H18 - H5	8			PE	8	pipeline has lots of debris	0	0	5	0	5
1/11/2023	B	Bay Road	B8 - B7	12			PVC	371	the pipe had numerous 85% sags	0	0	0	5	5
8/12/2022	H	Vines Court	H63 - H62	6			PVC	40	H57 - H58	5	0	0	0	5
12/12/2022	B	Poplar Avenue	B18 - B17	8			PVC	497	New pipeline	4	0	0	0	4
1/13/2023	E	Cooley Avenue	E38 - E3A	6			Unknown	13	-	4	0	0	0	4
12/8/2022	H	Clarke Court	H68 - H66	6			PVC	70	-	4	0	0	0	4
7/22/2022	J	Garden Street	J5A - J5B	8			PVC	212	New Line Segment	4	0	0	0	4
8/10/2022	M	Clarke Avenue	M22 - M21	12			VCP	116	M7 - M20	4	0	0	0	4
7/21/2022	M	Tate Street	M27 - M29	8			PVC	35	-	4	0	0	0	4
7/26/2022	L	Abelia Way	L60 - L59	6			VCP	109	-	4	0	0	0	4
6/16/2022	D	Byers Drive	D30 - D26	6			VCP	436	-	4	0	0	0	4

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Date Inspected	Area	Location/ Street Name	PSR	Actual Diameter (inch)	Master Plan Proposed Diameter (inch)	Recommended Design Diameter (inches)	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (3 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
1/23/2023	B	Bay Road	B46 - B5	6			PVC	17		3	0	0	0	3
7/28/2022	L	Daphne Way	L41 - L40	6			VCP	71		3	0	0	0	3
7/26/2022	L	Camellia Drive	L55 - L54	6			VCP	149		3	0	0	0	3
7/22/2022	M/N	Gates Street	M30 - N29	8			PVC	255		3	0	0	0	3
7/22/2022	N	Mouton Circle	N15 - N16	8			PVC	252		3	0	0	0	3
6/28/2022	O	Mission Drive	O42 - O39	6			VCP	48		3	0	0	0	3
1/18/2023	T	Bay Trail	T20A - T20	18			PE	340	unmapped MH found 83 ft from T21, named T20A during	3	0	0	0	3
1/18/2023	T	Bay Trail	T21 - T20	18			PE	83	unmapped MH found 83 ft from T21, named T20A during	3	0	0	0	3
7/11/2022	F	Weeks Street	F13 - F19	6			VCP	24		2	0	0	0	2
7/21/2022	G	Mandela Court	G16 - G15	8			PVC	154		2	0	0	0	2
12/8/2022	H	Clarke Court	H69 - H68	6			PVC	45		2	0	0	0	2
8/10/2022	M	Clarke Avenue	M19 - M18	12			VCP	95		2	0	0	0	2
8/10/2022	M	Clarke Avenue	M7 - M6	12			VCP	297	M21 - M7	2	0	0	0	2
6/28/2022	O	Mission Drive	O49 - O47	6			VCP	73	Crack at 68.7 ft	2	0	0	0	2
7/14/2022	O	Highway 102	O59 - O60	10			VCP	40		2	0	0	0	2
N/A	K	O'Connor Street	K2 - K1		15		Unknown	451	Light Tree Project. Cleaned twice via EPASD, and Twice by	0	45	30	25	0
1/27/2023	T	Airport - Embarcadero Road	T3 - T2A	30	24		RCP	192	Trunk Expansion Project. unmapped MH was found	12	72	10	0	0
12/9/2022	H	Clarke Avenue	H5 - H4	15	18		VCP	259	Beech St. Project pipeline has lots of debris	72	54	5	0	0
12/9/2022	H	Clarke Avenue	H64-H71	8	12		VCP	166	Beech St. Project pipeline has a lot of accumulated	124	36	5	25	0
1/27/2023	T	Airport - Embarcadero Road	T2 - T1	30	24		RCP	506	Trunk Expansion Project. Pipeline is 75% sagging with	16	72	5	20	0
8/8/2022	H	Green Street	H7 - H75	12	18		PE	91	Beech St. Project H7B - H7C	20	54	0	0	0
N/A	A	Demeter Street	A11 - A10				Unknown	418	Line has an unchartered manhole. See A11-A11A-A10	0	0	0	0	0
N/A	A	Bay Road	A17 - A16				Unknown	423	Line has an unchartered manhole. See A17-A31-A16	0	0	0	0	0
N/A	A	Bay Road	A21 - A23				Unknown	155	A21 does not connect to A23 but it connects to A22.	0	0	0	0	0
12/13/2022	B	Addison Avenue	B23 - B22	8			PVC	380	New pipeline	0	0	0	0	0
12/16/2022	B	Ursula Way	B41 - B38	0			N.A.	170	MH B41 on Ursula way appearing to be nonexistant, it is	0	0	0	0	0
12/16/2022	B		B42 - B41	0			N.A.	166	MH B41 on Ursula way appearing to be nonexistant, it is	0	0	0	0	0
1/23/2023	B	Bay Road	B47 - B46	6			PVC	158		0	0	0	0	0
N/A	C	Menalto Avenue	C10 - C9				-	301	Could not find MH C9. C10 connects to C8. 7.6.22	0	0	0	0	0
7/7/2022	C	East O'Keefe Street	C28 - C27	6			PVC	43		0	0	0	0	0
N/A	C	Menalto Avenue	C3 - C2				-	398	Line has an unchartered manhole, See C2A	0	0	0	0	0
N/A	D	Donohoe Street	D3 - D2				-	363	Line has an unchartered manhole, See D3 - D3A	0	0	0	0	0
6/16/2022	D	Falk Court	D31 - D30	6			VCP	153		0	0	0	0	0
6/23/2022	D	Manhattan Avenue	D73 - D76	10			PVC	277		0	0	0	0	0
6/23/2022	D	Manhattan Avenue	D74 - D73	8			Unknown	210		0	0	0	0	0
6/23/2022	D	Manhattan Avenue	D75 - D74	8			Unknown	195		0	0	0	0	0
8/8/2022	H/E	Green Street	E1 - H9	12	16		PE	270	Beech St Project	20	48	0	0	0
1/13/2023	E	Cooley Avenue	E16 - E3				N.A.	390	Pipeline does not connect as shown on the map; instead,	#VALUE!	0	0	0	0
1/13/2023	E	Cooley Avenue	E17 - E16	0			N.A.	430	Pipeline does not connect as shown on the map; instead,	#VALUE!	0	0	0	0
1/13/2023	E	Capitol Avenue	E18 - E4				N.A.	500	EPASD Staff Darrin, mentioned that these manholes do	#VALUE!	0	0	0	0
1/13/2023	E	Capitol Avenue	E19 - E18				N.A.	190	EPASD Staff Darrin, mentioned that these manholes do	#VALUE!	0	0	0	0
1/10/2023	E	Capitol Avenue	E21 - E21A	6			PVC	67		0	0	0	0	0
12/22/2022	E	Euclid Place	E24 - E9	6			PVC	100	Pipeline was reported to be 340 f; however, the pipeline	0	0	0	0	0
1/13/2023	E	Cooley Avenue	E3 - E3A	6			Unknown			0	0	0	0	0
1/13/2023	E	Cooley Avenue	E3C - E3D	6			Unknown	125		0	0	0	0	0
7/11/2022	F	Carole Court	F21 - F20	6			PVC	281	MH was F20 - F21	0	0	0	0	0
N/A	F	Weeks Street	F8 - F7				Unknown	357	Line has an unchartered manhole. See F8-F8A-F7	0	0	0	0	0
8/2/2022	H	Clarke Avenue	H11 - H64	8	12		VCP	198	Beech St. Project H11 - H60. Broken at 73.2ft	34	36	0	0	0
N/A	H	Runnymede Street	H16 - H15				Unknown	351	Line has unchartered manholes.	0	0	0	0	0
12/9/2022	H	Clarke Avenue	H2 - H11	15	18		VCP	37		0	54	0	0	0
12/9/2022	H	Beech Street	H3 - H2	15	18		VCP	31	MH H3 is paved over	0	54	0	0	0
N/A	H	University Avenue	H37 - H36				Unknown	370	Line has an unchartered manhole	0	0	0	0	0
N/A	H	Runnymede Street	H39 - H38				Unknown	132	MH39 and a pipeline to H38 do not exist. H38 appears to	0	0	0	0	0
12/9/2022	H	Clarke Avenue	H4 - H3	15	18		VCP	7	Beech St. Project MH H3 is paved over	0	54	0	0	0
8/5/2022	H	Salas Court	H49 - H48	6			PVC	45		0	0	0	0	0
N/A	H	Donohoe Street	H55 - H21				Unknown	157	Line has an unchartered manhole	0	0	0	0	0
12/9/2022	H	Green Street	H6 - H5	12	18		PE	9	Beech St. Project	0	54	0	0	0
12/8/2022	H	Clarke Court	H65 - H64	6			PVC	168		0	0	0	0	0
12/8/2022	H	Clarke Court	H66 - H65	6			PVC	55		0	0	0	0	0
12/8/2022	H	Clarke Court	H67 - H66	6			PVC	45		0	0	0	0	0
N/A	H	Green Street	H7 - H6				Unknown	90	Beech St. Project Line has unchartered manholes.	0	0	0	0	0
12/8/2022	H	Clarke Court	H70 - H68	6			PVC	50		0	0	0	0	0
12/9/2022	H	Clarke Avenue	H71 - H3	8	12		VCP	35	Beech St. Project survey abandoned at 29 ft as camera	55	36	0	0	0
12/8/2022	H	Tea Court	H72 - H71	6			PVC	180	H59 - H60. Paved over	0	0	0	0	0
8/8/2022	H	Green Street	H73 - H74	12	18		PE	104	Beech St. Project H8 - H7	20	54	0	0	0
8/8/2022	H	Green Street	H74 - H8	12	18		PE	112	Beech St. Project H7 - H7A	21	54	0	0	0
8/8/2022	H	Green Street	H75 - H6	12	18		PE	259	Beech St. Project H7C - H6	36	54	0	0	0
8/8/2022	H	Green Street	H8 - H7	12	18		PE	235	Beech St. Project H7A - H7B	20	54	0	0	0
8/8/2022	H	Green Street	H9 - H73	12	16		PE	246	Beech St. Project H9 - H8	20	48	0	0	0
7/31/2022	I	Beech Street	I10 - I9	15	18		CP	221	Beech St. Project	10	54	0	0	0
8/1/2022	I	Beech Street	I11 - I10	15	18		CP	380	Beech St. Project	20	54	0	0	0
N/A	I	Myrtle Street	I21 - I24				Unknown	364	MH I24 does not exist. Inspection ended at I13.	0	0	0	0	0
N/A	I	Myrtle Street	I24 - I13				Unknown	237	MH I24 does not exist. Inspection started from I21, see I21	0	0	0	0	0
N/A	I	Myrtle Court	I25 - I24				Unknown	154	Line does not exist. 7.25	0	0	0	0	0
7/29/2022	I	Sparrow Ct	I26 - I23	6			PVC	166	This pipe line was I23 - I23C. New Line Segment. Proteous	0	0	0	0	0
7/28/2022	I	Myrtle Pl	I29 - I28	6			PVC	166	New Line Segment. This pipe line was I23B - I23A	0	0	0	0	0
8/1/2022	I	Beech Street	I3 - I19	18	24		PVC	188	Beech St. Project Upgrade to 24" per MP	30	72	0	5	0
8/2/2022	I	Beech Street	I31 - I4	18	24		PVC	320	Beech St. Project This pipe line was I5A-I4	19	72	0	0	0
8/2/2022	I	Beech Street	I4 - I3	18	24		PVC	243	Beech St. Project	4	72	0	0	0
8/2/2022	I	Beech Street	I5 - I31	18	24		PVC	154	Beech St. Project This pipe line was I5-I5A	0	72	0	0	0
N/A	I	Beech Street	I5 - I4				Unknown	135	Beech St. Project Line has an unchartered manhole. See	0	0	0	0	0
8/1/2022	I	Beech Street	I6 - I5	18	24		PVC	411	Beech St. Project	0	72	0	0	0
8/1/2022	I	Beech Street	I7 - I6	15	20		CP	259	Beech St. Project Surface damage roughness. Sagging	26	60	0	20	0
8/1/2022	I	Beech Street	I8 - I7	15	20		CP	238	Beech St. Project	0	60	0	0	0
8/1/2022	I	Beech Street	I9 - I8	15	20		CP	155	Beech St. Project Pipe is broken at 228ft and 298ft	20	60	0	0	0
N/A	J	Cypress Street	J11 - T20				Unknown	282	Line has an unchartered manhole. See J11-J11A-T20	0	0	0	0	0
7/22/2022	J	Cypress Street	J14 - J13	8			PVC	190		0	0	0	0	0
N/A	J	Garden Street	J5 - T21				Unknown	585	Line has unchartered manholes. See J5-J5A-J5B-J5C-T21	0	0	0	0	0
7/22/2022	J	Garden Street	J5B - J5C	8			PVC	41	New Line Segment	0	0	0	0	0
N/A	J	Garden Street	J9 - J8				Unknown	401	Line has an unchartered manhole. See J9-J9A-J8	0	0	0	0	0
7/28/2022	K	Wisteria Drive	K25 - K5A	6			PVC	376	New Line Segment	0	0	0	0	0

Table 1
East Palo Alto Sanitary District
Summary of CCTV Survey Evaluation - All Areas and Trunk Line
Ranking Pipelines for Replacement

Date Inspected	Area	Location/ Street Name	PSR	Actual Diameter (inch)	Master Plan Proposed Diameter (inch)	Recommended Design Diameter (inches)	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (3 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
7/28/2022	K	O'Connor Street	K3 - K2	12	15		PE	190	Light Tree Project	60	45	0	10	0
7/28/2022	K	O'Connor Street	K4 - K3	12	15		PE	238	Light Tree Project Grease deposits 5%. Sagging pipe 55%	68	45	0	10	0
7/28/2022	K	O'Connor Street	K5 - K4	12			PE	248	Light Tree Project	68	0	0	15	0
7/28/2022	K	O'Connor Street	K6 - K5	12			PE	251	Light Tree Project	52	0	0	0	0
7/26/2022	L	Camelli Drive	L51 - L50	6			VCP	80	-	6	0	0		0
N/A	M	Clarke Avenue	M14 - M5				Unknown	328	Line has unchartered manholes. See M14-M14A-M5	0	0	0		0
N/A	M/I	O'Connor Street	M2 - I15				Unknown	20	Repeat naming. Already inspected. See M2-I43-I15	0	0	0		0
N/A	M/J	Pulgas Avenue	M2 - I15				Unknown	20	Line has unchartered manholes. See M2-I43-I15	0	0	0		0
8/10/2022	M	Clarke Avenue	M20 - M19	12			VCP	80	M6 - M19	0	0	0		0
7/21/2022	M	Tinsley Street	M23 - M24	8			PVC	195	-	0	0	0		0
7/21/2022	M	Tinsley Street	M24 - M25	8			PVC	260	-	0	0	0		0
7/21/2022	M	Tate Street	M25 - M26	8			PVC	270	-	0	0	0		0
7/21/2022	M	Tate Street	M26 - M27	8			PVC	125	-	0	0	0		0
N/A	M	Wilkes Street	M27 - M28				Unknown	35	This line has does not exist.	0	0	0		0
7/22/2022	M/N	Wilkes Street	M28 - N11	8			PVC	236	-	0	0	0		0
7/21/2022	M	Oakes Street	M32 - M33	8			PVC	195	-	0	0	0		0
7/21/2022	M	Oakes Street	M33 - M34	8			PVC	288	-	0	0	0		0
7/21/2022	M/N	Oakes Street	M34 - N22	8			PVC	253	-	0	0	0		0
7/21/2022	M	Tate Street	M35 - M34	8			PVC	124	-	0	0	0		0
7/21/2022	M	Baines Street	M36 - M37	8			PVC	257	-	0	0	0		0
7/21/2022	M/N	Baines Street	M37 - N24	8			PVC	259	-	0	0	0		0
7/29/2022	M	O'Connor Street	M4 - M31	12	12		PVC	143	-	14	36	0		0
8/10/2022	M	Clarke Avenue	M6 - M22	12			VCP	43	M22 - M21	0	0	0		0
N/A	M	Clarke Avenue	M8 - M22				Unknown	192	Line has an unchartered manhole	0	0	0		0
8/10/2022	M	Clarke Avenue	M8 - M7	12			VCP	137	M8A - M22	0	0	0		0
8/10/2022	N/K	O'Connor Street	N1 - K6	12			PE	253	Light Tree Project	48	0	0		0
7/22/2022	N	Gates Street	N10 - N13	8			PVC	176	-	0	0	0		0
7/22/2022	N	Wilkes Street	N11 - N12	8			PVC	227	-	2	0	0		0
7/22/2022	N	Wilkes Street	N12 - N13	8			PVC	158	-	0	0	0		0
8/8/2022	N	Pulgas Avenue	N14 - N2	10	10		PE	88	Light Tree Project	28	30	0		0
7/22/2022	N	McNair Street	N15 - N18	8			PVC	190	-	0	0	0		0
7/22/2022	N	Mouton Circle	N16 - N17	8			PVC	228	-	0	0	0		0
7/22/2022	N	Mouton Circle	N17 - N20	8			PVC	197	-	0	0	0		0
7/22/2022	N	Mouton Circle	N18 - N19	8			PVC	256	-	0	0	0		0
7/22/2022	N	Mouton Circle	N19 - N20	8			PVC	224	-	0	0	0		0
8/8/2022	N	Pulgas Avenue	N2 - N1	10	10		PE	296	Light Tree Project	40	30	0		0
8/8/2022	N	Pulgas Avenue	N21 - N14	12	10		PE	196	Light Tree Project	40	30	0		0
7/21/2022	N	Oakes Street	N22 - N23	8			PVC	212	-	0	0	0		0
7/21/2022	N	Oakes Street	N23 - N28	8			PVC	193	-	0	0	0		0
7/21/2022	N	Baines Street	N24 - N25	8			PVC	116	-	0	0	0		0
7/21/2022	N	Baines Street	N25 - N26	8			PVC	262	-	0	0	0		0
7/21/2022	N	Baines Street	N26 - N27	8			PVC	248	-	0	0	0		0
7/21/2022	N	Baines Street	N27 - N28	8			PVC	183	-	0	0	0		0
8/5/2022	N	Oakes Street	N28 - N4	8			PVC	150	Light Tree Project	20	0	0		0
7/22/2022	N	Gates Street	N29 - N10	8			PVC	326	-	0	0	0		0
8/8/2022	N	Pulgas Avenue	N3 - N21	12	10		PE	89	Light Tree Project	10	30	0		0
7/22/2022	N	McNair Street	N30 - N11	8			PVC	134	-	0	0	0		0
8/8/2022	N	Pulgas Avenue	N4 - N3	12			PE	335	Light Tree Project	26	0	0		0
6/27/2022	O	West Bayshore Road	O14 - O13	8			VCP	130	-	0	0	0		0
6/28/2022	O	Mission Drive	O40 - O39	6			VCP	37	-	0	0	0		0
6/28/2022	O	Mission Drive	O47 - O45	6			VCP	72	-	0	0	0		0
N/A	O	Cooley Avenue	O51 - O13				-	468	Line has an unchartered manhole, see MH O51A	0	0	0		0
N/A	O/M	East Bayshore Road	O61 - M8				-	12	O61 is buried. The crew attempted to inspect it from O60	0	0	0		0
-	T	Airport - Embarcadero Road	T1 - T0	-	24		Unknown	329	Trunk Expansion Project. not surveyed because of access	#VALUE!	72	0	-	0
1/26/2023	T	Airport runway	T10 - T9	30	24		Unknown	447	Trunk Expansion Project.	14	72	0	0	0
1/20/2023	T	Airport runway	T11 - T10	30	24		Unknown	326	Trunk Expansion Project.	3	72	0	0	0
1/20/2023	T	San Fransquito Creek	T12 - T11	30	24		Unknown	482	Trunk Expansion Project.	0	72	0	0	0
1/20/2023	T	Bay Trail	T16-T33	22			PE	56	Trunk Expansion Project.	2	0	0	0	0
1/27/2023	T	Airport - Embarcadero Road	T2A-T2	30	24		RCP	311	Trunk Expansion Project. unmapped MH was found	7	72	0	0	0
1/20/2023	T	San Fransquito Creek	T30-T12	30	24		Unknown	215	Trunk Expansion Project.	6	72	0	0	0
1/20/2023	T	Bay Trail	T31-T30	30	24		Unknown	315	Trunk Expansion Project.	3	72	0	0	0
1/20/2023	T	San Fransquito Creek	T32-T31	30	24		RCP	100	Trunk Expansion Project. MH T32 had an additional 30-	1	72	0	0	0
-	T	Bay Trail	T33-T32	-			Unknown	435	SIPHON	#VALUE!	0	0	-	0
1/20/2023	T	Bay Trail	T34-T33	30			PE	140	Trunk Expansion Project.	6	0	0	0	0
1/26/2023	T	Airport - Embarcadero Road	T4 - T3	30	24		Unknown	475	Trunk Expansion Project. MH T4 on Airport runway is	12	72	0	0	0
1/26/2023	T	Airport runway	T5 - T4	30	24		Unknown	352	Trunk Expansion Project. MH T4 on Airport runway is	3	72	0	0	0
1/26/2023	T	Bay Trail	T5A - T5	30	24		Unknown	362	Trunk Expansion Project. unmapped manhole was found	0	72	0	0	0
1/26/2023	T	Airport runway	T6 - T5A	30	24		Unknown	20	Trunk Expansion Project. unmapped manhole was found	0	72	0	0	0
1/26/2023	T	Airport runway	T7 - T6	30	24		Unknown	481	Trunk Expansion Project. Pipeline is 60% sagging	8	72	0	10	0
1/26/2023	T	Airport runway	T8 - T7	30	24		Unknown	502	Trunk Expansion Project. Pipeline is 60% sagging	7	72	0	15	0
1/26/2023	T	Airport runway	T9 - T8	30	24		Unknown	498	Trunk Expansion Project.	3	72	0	0	0
N/A	C	Menalto Avenue	C9 - C8				-	84	Line does not exist. C8 connects to C10. 7.6.22	0	0			0

Table 2
East Palo Alto Sanitary District
Priority List of Pipelines to be Replaced
All Areas and Trunk Line

Area	Location/ Street Name	PSR	US MH #	DS MH #	Reported Pipe Dia (in)	Diameter	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ 5" Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
D/E	Donohoe Street	D1 - E4	D1	E4	10	10	16	18	VCP	354	113	48	5	4	170
E	Donohoe Street	E4 - E3	E4	E3	10	10	16	18	VCP	357	107	48	10	0	165
O	Woodland Avenue	O21 - O19	O21	O19	6	6		8	VCP	394	84	0	60		144
A	Bay Road	A5 - A8	A5	A8	15	12	18	21	PE	124	86	54	0	2	142
D	Hwy 101	D10 - D3	D10	D3	10	10	10	12	Unknown	489	86	30	20	2	138
B	Bay Road	B5 - B52	B5	B52	12	12	15	18	PVC	176	82	45	5	6	138
C	Elliot Drive	C40 - C36	C40	C36	6	6		8	VCP	257	82	0	50		132
T	Bay Trail	T27 - T26	T27	T26	18	18	24	30	RCP	356	29	72	30	0	131
B	Palo Verde Avenue	B27 - B25	B27	B25	6	6		8	VCP	318	120	0	10	0	130
B	Bay Road	B6 - B5	B6	B5	12	12	15	18	PVC	158	79	45	0	5	129
B	Bay Road	B12 - B11	B12	B11	12	12		12	PVC	277	120	0	5	3	128
C	Hwy 101	C21 - C19	C21	C19	6	6		8	VCP	284	67	0	60		127
E	Capitol Avenue	E20 - E7	E20	E7	6	6		8	VCP	504	113	0	10	4	127
H	Clarke Avenue	H12 - H11	H12	H11	8	8	12	15	VCP	333	87	36	0	3	126
A	Bay Road	A10 - A15	A10	A15	15	15	18	21	ACP	299	65	54	0	4	123
D	West Bayshore Road	D21 - D19	D21	D19	8	8	10	12	HDPE	391	70	30	20		120
A	Bay Road	A2 - A5	A2	A5	12	12	15	18	Unknown	244	70	45	0	5	120
E	Cooley Avenue	E3 - E2	E3	E2	12	12	16	18	PE	280	70	48	0	0	118
C	Menalto Avenue	C4 - C3	C4	C3	6	6	8	12	PE	436	80	24	10	3	117
A	Bay Road	A1 - A2	A1	A2	12	12	15	18	Unknown	80	62	45	10	0	117
H	Clarke Avenue	H14 - H13	H14	H13	8	8	12	15	VCP	446	76	36	0	5	117
B	Gloria Way	B37 - B6	B37	B6	6	6		8	VCP	262	102	0	10	3	115
E	Capitol Avenue	E46 - E7	E46	E7	6	6		8	VCP	501	105	0	10	0	115
C	Menalto Avenue	C2 - C1	C2	C1	8	8	10	12	Unknown	204	53	30	30	1	114
O	West Bayshore Road	O4 - O3	O4	O3	8	8		8	VCP	277	109	0	0	5	114
D	O'Connor Street	D25 - D24	D25	D24	6	6	8	8	VCP	301	49	24	40		113
E	Glen Way	E36 - E15	E36	E15	6	6		8	VCP	420	83	0	30	0	113
A	Bay Road	A15 - A16	A15	A16	6	15	18	21	ACP	435	53	54	0	5	112
K	Larkspur Drive	K19 - K18	K19	K18	6	6		8	CP	272	58	0	50	2	110
L	Gardenia Way	L2 - L1	L2	L1	10	12	12	15	PVC	179	34	36	40		110
C	Elliot Drive	C41 - C40	C41	C40	6	6		8	VCP	191	70	0	40		110
O	Woodland Avenue	O20 - O19	O20	O19	6	6		8	-	116	50	0	60		110
H	Clarke Avenue	H20 - H19	H20	H19	6	6		8	vcp	271	110	0	0	0	110
D	West Bayshore Road	D51 - D7	D51	D7	6	6		8	VCP	458	68	0	40	1	109
E	Cooley Avenue	E2 - E1	E2	E1	12	12	16	18	PE	283	58	48	0	3	109
B/A	Bay Road	B2 - A1	B2	A1	12	12	15	18	PE	181	62	45	0	2	109
B	Lilac Lane	B32 - B31	B32	B31	6	6		8	VCP	254	48	0	60	0	108
T	Bay Trail	T17-T34	T17	T34	21	21	28	30	RCP	464	15	84	5	4	108
E	Dumbarton Avenue	E33 - E29	E33	E29	6	6		8	VCP	229	75	0	30	2	107
T	Bay Trail	T19 - T18	T19	T18	21	21	28	30	RCP	500	13	84	5	5	107
H	Runnymede Street	H35 - H34	H35	H34	6	6	10	12	VCP	322	62	30	8	6	106
F	Weeks Street	F12 - F11	F12	F11	6	6		8	VCP	355	105	0	0	1	106
B	Poplar Avenue	B17 - B13	B17	B13	6	6		8	VCP	501	95	0	10	0	105

Table 3
East Palo Alto Sanitary District
Priority List of Pipelines, Sorted by Diameter
All Areas and Trunk Line

Area	Location/ Street Name	PSR	Reported Pipe Dia (in)	Diameter	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ 3*Pipe Dia)	Score for Notable Defects	Sag>40%	Total Score
T	Bay Trail	T27 - T26	18	18	24	30	RCP	356	29	72	30	0	131
T	Bay Trail	T17-T34	21	21	28	30	RCP	464	15	84	5	4	108
T	Bay Trail	T19 - T18	21	21	28	30	RCP	500	13	84	5	5	107
A	Bay Road	A5 - A8	15	12	18	21	PE	124	86	54	0	2	142
A	Bay Road	A10 - A15	15	15	18	21	ACP	299	65	54	0	4	123
A	Bay Road	A15 - A16	6	15	18	21	ACP	435	53	54	0	5	112
D/E	Donohoe Street	D1 - E4	10	10	16	18	VCP	354	113	48	5	4	170
E	Donohoe Street	E4 - E3	10	10	16	18	VCP	357	107	48	10	0	165
B	Bay Road	B5 - B52	12	12	15	18	PVC	176	82	45	5	6	138
B	Bay Road	B6 - B5	12	12	15	18	PVC	158	79	45	0	5	129
A	Bay Road	A2 - A5	12	12	15	18	Unknown	244	70	45	0	5	120
E	Cooley Avenue	E3 - E2	12	12	16	18	PE	280	70	48	0	0	118
A	Bay Road	A1 - A2	12	12	15	18	Unknown	80	62	45	10	0	117
E	Cooley Avenue	E2 - E1	12	12	16	18	PE	283	58	48	0	3	109
B/A	Bay Road	B2 - A1	12	12	15	18	PE	181	62	45	0	2	109
H	Clarke Avenue	H12 - H11	8	8	12	15	VCP	333	87	36	0	3	126
H	Clarke Avenue	H14 - H13	8	8	12	15	VCP	446	76	36	0	5	117
L	Gardenia Way	L2 - L1	10	12	12	15	PVC	179	34	36	40		110
D	Hwy 101	D10 - D3	10	10	10	12	Unknown	489	86	30	20	2	138
B	Bay Road	B12 - B11	12	12	12	12	PVC	277	120	0	5	3	128
D	West Bayshore Road	D21 - D19	8	8	10	12	HDPE	391	70	30	20		120
C	Menalto Avenue	C4 - C3	6	6	8	12	PE	436	80	24	10	3	117
C	Menalto Avenue	C2 - C1	8	8	10	12	Unknown	204	53	30	30	1	114
H	Runnymede Street	H35 - H34	6	6	10	12	VCP	322	62	30	8	6	106
O	Woodland Avenue	O21 - O19	6	6	8	8	VCP	394	84	0	60		144
C	Elliot Drive	C40 - C36	6	6	8	8	VCP	257	82	0	50		132
B	Palo Verde Avenue	B27 - B25	6	6	8	8	VCP	318	120	0	10	0	130
C	Hwy 101	C21 - C19	6	6	8	8	VCP	284	67	0	60		127
E	Capitol Avenue	E20 - E7	6	6	8	8	VCP	504	113	0	10	4	127
B	Gloria Way	B37 - B6	6	6	8	8	VCP	262	102	0	10	3	115
E	Capitol Avenue	E46 - E7	6	6	8	8	VCP	501	105	0	10	0	115
O	West Bayshore Road	O4 - O3	8	8	8	8	VCP	277	109	0	0	5	114
D	O'Connor Street	D25 - D24	6	6	8	8	VCP	301	49	24	40		113
E	Glen Way	E36 - E15	6	6	8	8	VCP	420	83	0	30	0	113
K	Larkspur Drive	K19 - K18	6	6	8	8	CP	272	58	0	50	2	110
C	Elliot Drive	C41 - C40	6	6	8	8	VCP	191	70	0	40		110
O	Woodland Avenue	O20 - O19	6	6	8	8	-	116	50	0	60		110
H	Clarke Avenue	H20 - H19	6	6	8	8	VCP	271	110	0	0	0	110
D	West Bayshore Road	D51 - D7	6	6	8	8	VCP	458	68	0	40	1	109
B	Lilac Lane	B32 - B31	6	6	8	8	VCP	254	48	0	60	0	108
E	Dumbarton Avenue	E33 - E29	6	6	8	8	VCP	229	75	0	30	2	107
F	Weeks Street	F12 - F11	6	6	8	8	VCP	355	105	0	0	1	106
B	Poplar Avenue	B17 - B13	6	6	8	8	VCP	501	95	0	10	0	105

Table 4
East Palo Alto Sanitary District
Opinion of Probable Cost - Replacement of High Priority Pipelines
All Areas and Trunk Line

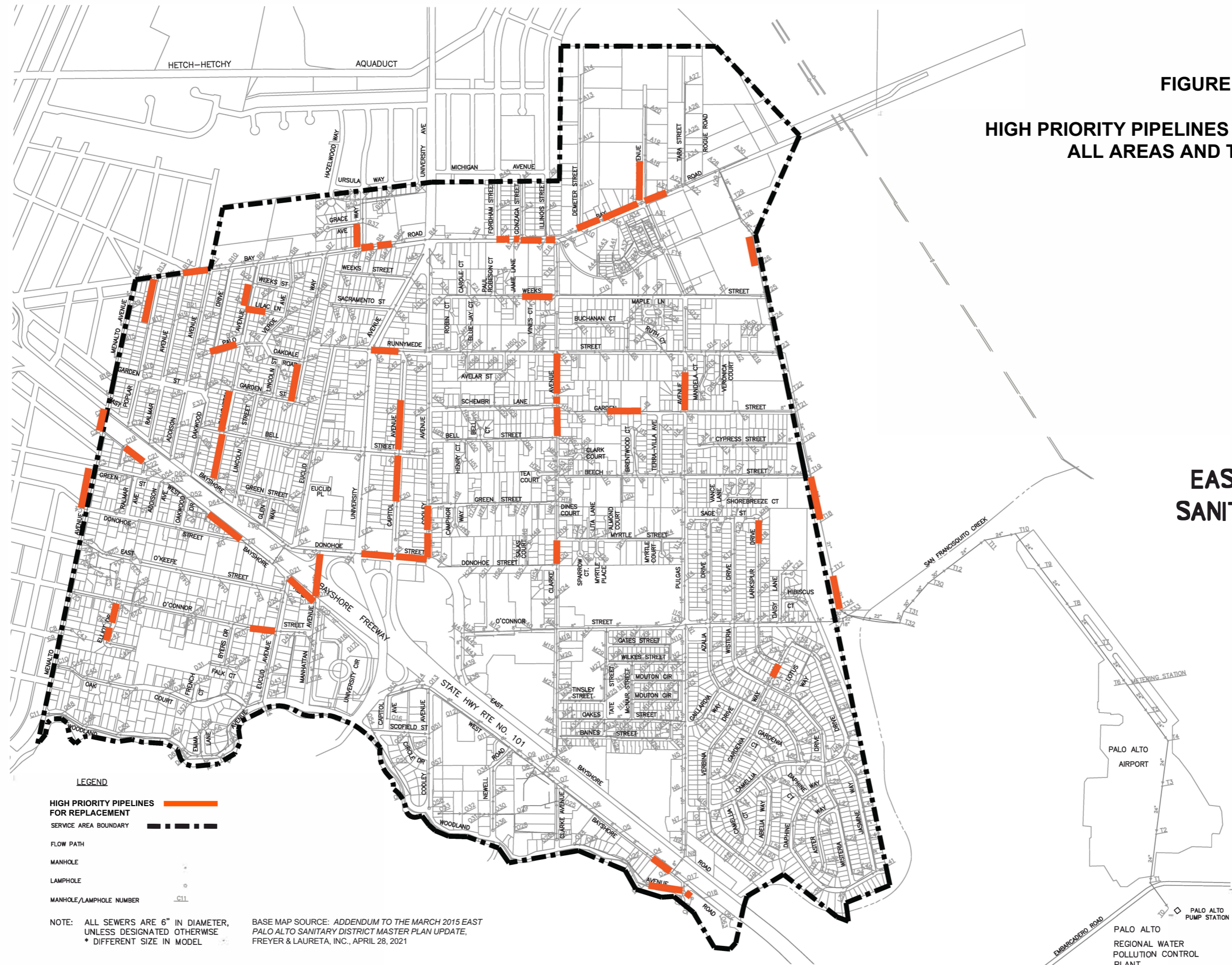
ITEM NO.	ITEM	EST. QUANTITY	UNIT OF MEASURE	UNIT PRICE	TOTAL
1	Mobilization	1	LS	\$451,000	\$451,000
2	Traffic Control	1	LS	\$217,000	\$217,000
3	Project Signage	1	LS	\$2,000	\$2,000
4	Gas Line Avoidance / Utility Plan	1	LS	\$3,000	\$3,000
5	Pothole Verification of Design Intent	10	ea	\$1,000	\$10,000
6	Maintain Access for Services and Residents	1	LS	\$30,000	\$30,000
7	Safety, Sheeting, Shoring, and Bracing	1	LS	\$20,000	\$20,000
8	Dust Control	1	LS	\$20,000	\$20,000
9	Bypassing	43	EA	\$11,000	\$473,000
10	8-inch PVC	6,165	LF	\$375	\$2,311,952
11	10-inch PVC	0	LF	\$410	\$0
12	12-inch PVC	2,119	LF	\$435	\$921,765
13	14/15-inch PVC	958	LF	\$500	\$479,000
14	16-inch PVC	0	LF	\$525	\$0
15	18-inch PVC	2,113	LF	\$575	\$1,214,961
16	20/21-inch PVC	859	LF	\$600	\$515,251
17	22/24-inch PVC	0	LF	\$720	\$0
18	27/30-inch PVC	1,320	LF	\$795	\$1,049,400
19	Point Repairs	5	ea	\$10,000	\$50,000
20	Drain Rock	500	TONS	\$100	\$50,000
21	Utility Crossings	270	EA	\$250	\$67,500
22	Reconnect Laterals	150	EA	\$2,500	\$375,000
23	New Sewer Manholes	5	EA	\$13,000	\$65,000
24	Dewatering	1	LS	\$8,500	\$8,500
25	CCTV Inspections	13,534	LF	\$2.00	\$27,068
26	Cold-Patch Asphalt for Temporary Surfacing	20	TON	\$500	\$10,000
27	Asphalt Repaving	54,136	SF	\$6	\$324,814
28	Grind and Repave	11,150	SF	\$6	\$66,900
29	Slurry Seal	449,004	SF	\$0.70	\$314,303
30	Striping and Pavement Markings	460,154	SF	\$0.85	\$391,131
Subtotal - Opinion of Probable Construction Costs					\$9,468,545
	Contingency	%	20%	\$9,468,545	\$1,893,709
Engineering and Administrative					Opinion of Construction Subtotal
	Design	%	2%		\$227,245
	Environmental/Permitting	%	2%		\$227,245
	Construction Management	%	5%		\$568,113
	Administration	%	2%		\$227,245
OPINION OF TOTAL PROBABLE PROJECT COST:					\$12,612,102

Figures

FIGURE 2

HIGH PRIORITY PIPELINES FOR REPLACEMENT
ALL AREAS AND TRUNK LINE

EAST PALO ALTO
SANITARY DISTRICT





Attachment 1

Area 2 CCTV Survey Results and Evaluation

East Palo Alto Sanitary District
Area 2 CCTV Survey Results and Evaluation

Date Cleaned	Date CCTV	Area	Street Name	PSR	US MH #	DS MH #	Reported Pipe Dia (inch)	Actual Diameter (inch)	Upgrade from Master Plan	Material	Reported Pipeline Length (ft)	Length Surveyed (ft)	NPS NOTES	Inspection Notes	Structural Grade	Structural Total	O&M Grade	O&M scores	Structural Total scoring	Score for Master Plan Capacity (+3" Pipe Dia)	Score for Notable Defects	Sag >40%	Total Scores
-	1/13/2023	D/E	Donohoe Street	D1 - E4	D1	E4	10	10	16	VCP	354	356.6	Heavy TC	Multiple fractures and cracks. Sagging 50-75% Broken at 34, 37, 43, 49, 56, 96, and 355 ft	413F	70	4031	43	113	48	5	20	186
12/9/2022	1/13/2023	E	Donohoe Street	E4 - E3	E4	E3	10	10	16	VCP	357	359.01	Heavy TC - Multiple Broken	Numerous 90% sags. Accumulated grease and debris Broken at 103, 212, 246, 416, and 502 feet	4K3K	70	4911	37	107	48	10	0	165
1/10/2023	1/11/2023	B	Bay Road	B5 - B52	B5	B52	12	12	15	PVC	176	180.56	Heavy TC Heavy Grease & debris	Numerous 85% sags. accumulated grease and debris	5E00	50	342B	32	82	45	5	30	162
1/13/2023	1/11/2023	B	Bay Road	B6 - B5	B6	B5	12	12	15	PVC	158	158.71	Heavy TC-Heavy Grease & debris - spend 2hr cleaning	Broken at 27, 110.3, 237.8, 282.5, 193, and 466 ft. 75% sagging between 360 Grease accumulated on the sides of pipe starting at 100 feet from B12, and pipe Broken at 36, 193 & 260 ft. Multiple Fractures and cracks	4C28	56	312D	23	79	45	0	25	149
1/13/2023	1/10/2023	E	Capitol Avenue	E20 - E7	E20	E7	6	6	6	VCP	504	507.8	Multiple Broken, Sags and Camera underwater.	Broken at 9.3, 103, 136.8, 171.1 and 209.5ft. 60% sag for 25 ft 60% sag for 34 ft	4139	67	4A32	46	113	0	10	20	143
1/11/2023	12/14/2022	B	Bay Road	B12 - B11	B12	B11	12	12	6	PVC	277	280.75	Cleaner - Heavy Grease & Debris! hour jetting	Broken at 41.4, 123, 141, 306.7, and 375.7 ft	5J00	50	4D3H	70	120	0	5	15	140
12/14/2022	12/14/2022	B	Palo Verde Avenue	B27 - B25	B27	B25	6	6	6	VCP	318	320.83		Broken at 123.8 ft. In addition, pipeline is 50% sagging in the last 10ft from E33	4B3C	70	3F28	50	120	0	10	0	130
12/9/2022	12/16/2022	B	Gloria Way	B37 - B6	B37	B6	6	6	6	VCP	262	264.52	Multiple Broken	Broken at 9.3, 103, 136.8, 171.1 and 209.5ft. 60% sag for 25 ft	4D3A	70	3818	32	102	0	10	15	127
12/7/2022	1/13/2023	E	Cooley Avenue	E2 - E1	E2	E1	12	12	16	PE	283	284.86	FLAGGING - located Uncharted MH's	FLAGGING - located Uncharted MH's	473F	58	0000	0	58	48	0	15	121
12/8/2022	1/13/2023	E	Cooley Avenue	E3 - E2	E3	E2	12	12	16	PE	280	283.16	FLAGGING	-	4C3D	70	0000	0	70	48	0	0	118
12/7/2022	12/22/2022	E	Capitol Avenue	E46 - E7	E46	E7	6	6	6	VCP	501	499.98	Multiple Broken Pipe	Broken at 103.1, 200.5 and 348.8 ft	5B4C	90	3500	15	105	0	10	0	115
1/11/2023	12/16/2022	B	Gloria Way	B50 - B37	B50	B37	6	6	6	VCP	205	206.31	Broken @ 111ft	Pipeline is 80% sagging from 50 to 60 ft from B50. Broken at 111.8 and 148.9	544A	60	3116	9	69	0	15	25	109
12/12/2022	12/12/2022	B	Poplar Avenue	B17 - B13	B17	B13	6	6	6	VCP	501	502.79	Multiple Broken Pipe	Broken at 103, 212, 246, 416, and 502 feet	4F3C	70	351A	25	95	0	10	0	105
1/13/2023	12/22/2022	E	Cooley Avenue	E6 - E1	E6	E1	12	12	6	PVC	501	501.19	E6 Surcharge complete 12/22/22 Flaggging - Heavy broken Pipe	Accumulated grease. 75% in few segments	4C3E	70	4132	10	80	0	5	20	105
12/13/2022	12/14/2022	B	Dumbarton Avenue	B31 - B29	B31	B29	6	6	6	VCP	257	258.81		Broken at 5, 15, 33, 76, 220, 222, and 234 ft	4D3B	70	341B	22	92	0	10	0	102
1/10/2023	12/20/2022	E	Dumbarton Avenue	E30 - E29	E30	E29	6	6	6	VCP	502	509.7	Multiple Broken Pipe	Broken at 41.4, 123, 141, 306.7, and 375.7 ft	4D3D	70	2800	20	90	0	10	0	100
1/13/2023	12/20/2022	E	Dumbarton Avenue	E33 - E29	E33	E29	6	6	6	VCP	229	459.4	Multiple Broken Pipe	Broken at 123.8 ft. In addition, pipeline is 50% sagging in the last 10ft from E33	4B3D	70	3121	5	75	0	15	10	100
12/22/2022	12/19/2022	E	Glen Way	E36 - E15	E36	E15	6	6	6	VCP	420	423.83	Multiple Broken Pipe	Broken at 97.2, 207.8, 353, and 46 ft	574E	75	4114	8	83	0	15	0	98
12/20/2022	12/22/2022	E	Bell Street	E9 - E8	E9	E8	12	12	6	PVC	340	344.18	Heavy Debris	A few fractures were noticed	4C2F	60	432A	32	92	0	5	0	97
12/20/2022	1/10/2023	E	Capitol Avenue	E21 - E20	E21	E20	6	6	6	VCP	386	312.21	Multiple Broken	Broken at 262.3 and 187 ft	4D38	64	3721	23	87	0	10	0	97
12/12/2022	12/13/2022	B	Addison Avenue	B21 - B11	B21	B11	6	6	6	VCP	400	401.19		Broken at 176 and 214 feet from B21	4B3B	70	3414	16	86	0	10	0	96
12/9/2022	12/14/2022	B	Bay Road	B11 - B10	B11	B10	12	12	6	VCP	201	203.3	Cleaner - Heavy Grease & Debris! 1/2 Jetting	80% sagging all line long till 20 feet from B10	4F00	40	3E00.0	30	70	0	0	25	95
1/12/2023	12/12/2022	B	Ralmar Avenue	B19 - B12	B19	B12	6	6	6	VCP	500	501.29	Broken Pipe	Broken at 13.52, 60, 163, and 497 feet	4B3F	70	3412	14	84	0	10	0	94
12/9/2022	12/9/2022	B	Menalto Avenue	B16 - B15	B16	B15	8	8	8	VCP	327	329.85		-	4A3E	70	0	0	70	24	0	0	94
12/14/2022	12/16/2022	B	Ursula Way	B40 - B39	B40	B39	6	6	6	VCP	306	356.9	multiple broken thru out pipe. Easement, No Broken Pipe	Broken at 5.8, 180.2, and 253.7 ft	4F3C	70	4432	22	92	0	0	0	92
12/21/2022	12/20/2022	E	Bell Street	E31 - E29	E31	E29	6	6	6	VCP	252	246.18		Broken at 83, 125.4 ft	4B3A	54	2A18	28	82	0	10	0	92
12/21/2022	12/21/2022	E	Euclid Avenue	E42 - E10	E42	E10	6	6	6	VCP	551	553.69		Multiple fractures and cracks	4D3C	70	4134	16	86	0	5	0	91
12/15/2022	12/13/2022	B	Oakwood Drive	B26 - B25	B26	B25	6	6	6	VCP	402	405.4		Broken at 285 and 190 feet from B26. This pipeline has	4D3C	70	3222	10	80	0	10	0	90
12/12/2022	12/15/2022	B	Palo Verde Avenue	B34 - B8	B34	B8	6	6	6	VCP	251	252	Multiple Broken Pipe	Broken at 260, 244-246, and 141 ft	4B3A	70	3311	10	80	0	10	0	90
12/9/2022	1/11/2023	B	Bay Road	B7 - B6	B7	B6	12	12	15	PVC	380	383.35	Heavy TC- Heavy Grease & debris - spend 2hr cleaning	Numerous 85% sags	0000	0	2E00	20	20	45	0	25	90
12/13/2022	12/14/2022	B	Palo Verde Avenue	B28 - B27	B28	B27	6	6	6	PVC	202	204.6		Broken at 163 ft. Multiple cracks along the pipeline	4A3A	70	3115	8	78	0	10	0	88
12/22/2022	12/20/2022	E	Bell Street	E29 - E12	E29	E12	6	6	6	VCP	247	241.78	MSA Due to offset joint.	Broken at 9.6 and 106.8 ft. In addition, pipe was damaged with visible soil at Broken at 148, 200, 299.7, and 330 ft	514B	45	422D	28	73	0	15	0	88
12/20/2022	1/10/2023	E	Cooley Avenue	E48 - E6	E48	E6	6	6	6	VCP	498	502.09	Multiple Broken Pipe - Multiple Broken	-	4G3B	70	3200	6	76	0	10	0	86
12/12/2022	1/12/2023	B	Bay Road	B3 - B2	B3	B2	12	12	15	XXX	239	240.27	Heavy TC	Sagging 50% to 65%	0000	0	322C	26	26	45	0	15	86
1/13/2023	12/9/2022	B	Menalto Avenue	B16A - B16	B16A	B16	8	8	8	PVC	390	389.57		Pipeline is 65% sagging.	4A3F	70	0	0	70	0	0	15	85
1/10/2023	12/22/2022	E	Bell Street	E8 - E7	E8	E7	12	12	12	PVC	355	359.01	Heavy Debris	-	332G	29	2G00	20	49	36	0	0	85
1/12/2023	12/15/2022	B	Weeks Street	B30 - B29	B30	B29	6	6	6	VCP	243	250.09	Broken Pipe	Broken at 8.7, 120.3, and 242.5 ft	4B3A	70	3111	4	74	0	10	0	84
12/22/2022	12/21/2022	E	Euclid Avenue	E26 - E25	E26	E25	6	6	6	VCP	488	492.57	Multiple Broken	Broken at 17.1, 169.6, and 291.2 ft	4A3A	70	3111	4	74	0	10	0	84
12/12/2022	12/13/2022	B	Addison Avenue	B22 - B21	B22	B21	6	6	6	VCP	400	219.43	MSA due to Intruding Lateral	Broken at 20.8, 82.6, 133.3, and 170.3 feet. An intruding	4B39	67	5100	5	72	0	10	0	82
12/15/2022	12/14/2022	B	Dumbarton Avenue	B33 - B31	B33	B31	6	6	6	VCP	280	281.55	Broken Pipe & Broke Soil	Broken at 54, 146, 161, 123, and 249 feet from B9.	514B	45	341B	22	67	0	15	0	82
12/9/2022	12/15/2022	B	Palo Verde Avenue	B35 - B34	B35	B34	6	6	6	VCP	364	365.32	Visible Broken Pipe & Broken with visible soil	Broken and soil is visible at 10.8 and 210.6 ft	524B	50	3511	16	66	0	15	0	81
1/11/2023	12/15/2022	B	Dumbarton Avenue	B29 - B9	B29	B9	6	6	6	VCP	211	210.61	Broken Pipe	Broken at 17 ft	4A3A	70	0	0	70	0	10	0	80
12/22/2022	12/19/2022	E	Garden Street	E15 - E14	E15	E14	8	8	8	VCP	246	250.09	Multiple Broken Pipe	Broken at 88 and 236 ft	4A3A	70	0	0	70	0	10	0	80
12/19/2022	12/20/2022	E	Lincoln Street	E35 - E14	E35	E14	6	6	6	VCP	333	331.65	Multiple Broken Pipe	Broken at 7.1 and 253 ft	4A3A	70	0	0	70	0	10	0	80
12/19/2022	12/20/2022	E	Garden Street	E14 - E13	E14	E13	8	8	8	VCP	186	166.63		Multiple fractures and cracks along the line	4A3A	70	3111	4	74	0	5	0	79
12/12/2022	12/12/2022	B	Ralmar Avenue	B20 - B19	B20	B19	6	6	6	VCP	585	591.06	Broken Pipe & Broken with visible soil	Broken at 297, 391, 394, 416, 493, and 556 feet. Also broken at 414 and 343	524F	50	4232	14	64	0	15	0	79
12/19/2022	12/21/2022	E	Lincoln Street	E13 - E12	E13	E12	8	8	8	VCP	450	458.7	Multiple Broken Pipe, Broken Soil Visible	Broken lateral at 326.6 ft from E13	4A3E	70	3221	8	78	0	10	0	78
12/21/2022	12/21/2022	E	Euclid Avenue	E25 - E50	E25	E50	6	6	6	VCP	232	233.16	Broken Pipe	Broken at 48.4 ft	473A	58	3116	9	67	0	10	0	77
12/19/2022	12/22/2022	E	Bell Street	E7 - E6	E7	E6	12	12	12	PVC	311	311.41	Heavy Debris	-	2H00	20	2K00	20	40	36	0	0	76
12/22/2022	12/20/2022	E	Dumbarton Avenue	E34 - E33	E34	E33	6	6	6	VCP	279	280.85	Multiple Broken Pipe	Broken at 37 and 79.7 ft	4A37	61	3111	4	65				

East Palo Alto Sanitary District
Area 2 CCTV Survey Results and Evaluation

Date Cleaned	Date CCTV	Area	Street Name	PSR	US MH #	DS MH #	Reported Pipe Dia (inch)	Actual Diameter (inch)	Upgrade from Master Plan	Material	Reported Pipeline Length (ft)	Length Surveyed (ft)	NPS NOTES	Inspection Notes	Structural Grade	Structural Total	O&M Grade	O&M scores	Structural Total scoring	Score for Master Plan Capacity (+3" Pipe Dia)	Score for Notable Defects	Sag >40%	Total Scores
12/13/2022	12/14/2022	B	Bay Road	B9 - B8	B9	B8	12	12		PVC	351	354.4		Pipeline is 60% sagging for the last 60 feet from B9	4J38	64	0	0	64	0	0	10	74
1/12/2023	12/16/2022	B	Grace Avenue	B43 - B37	B43	B37	6	6		VCP	363	362.01	Broken 23R 171ft	Broken at 171.6ft	473A	58	1500	5	63	0	10	0	73
12/12/2022	12/16/2022	B	Ursula Way	B39 - B38	B39	B38	6	6		VCP	301	315.02	Broken Soil Visible	Broken with visible soil at 11.9, 133.6-139, 238.2, 293.7, and 306 to 310 ft	514A	45	3513	18	63	0	10	0	73
12/19/2022	12/21/2022	E	Lincoln Street	E27 - E12	E27	E12	6	6		VCP	576	580.94		Broken at 138, 271, and 437 ft. In addition, the pipeline is broken with Multiple fractures and cracks	524B	50	3221	8	58	0	15	0	73
12/21/2022	12/21/2022	E	Euclid Avenue	E50 - E10	E50	E10	6	6		VCP	218	219.93			463A	54	3212	8	62	0	10	0	72
12/13/2022	12/14/2022	B	Bay Road	B13 - B12	B13	B12	12	12		PVC	263	264.32	Cleaner - Heavy Debris	Accumulated grease	4G32	46	2A00	20	66	0	5	0	71
1/10/2023	12/22/2022	E	Capitol Avenue	E47 - E46	E47	E46	6	6		VCP	455	454.89	Broken Pipe, Hole, and Soil Visible	Broken at 171.5, 174.8, 187.3, 235.4, 270.8, 348.2, 368.2, 380.2, 427.8, 429.8, Multiple fractures and cracks along the pipeline	534D	55	3200	6	61	0	10	0	71
12/12/2022	12/13/2022	B	Oakwood Drive	B24 - B10	B24	B10	6	6		VCP	493	496.38			4C38	64	0	0	64	0	5	0	69
12/9/2022	1/12/2023	B	Bay Road	B52 - B4	B52	B4	12	12	15	XXX	360	360.91	Heavy TC - Heavy Debris & Grease. Had to Dewater		0000	0	312K	23	23	45	0	0	68
12/20/2022	1/10/2023	E	Cooley Avenue	E49 - E48	E49	E48	6	6		VCP	458	456.7	Broken Soil Visible & Broken	Broken at 351.6, 225, and 343 ft. Pipeline is broken with visible soil at Broken at 153.1, 216.9, and 219.6 ft	514A	45	3200	6	51	0	15	0	66
12/21/2022	12/19/2022	E	Glen Way	E38 - E36	E38	E36	6	6		VCP	234	235.96	Broken Pipe & Broken Soil Visible	Broken at 10, 48.7, 50.5, 128.9, and 207 ft	514B	45	1A00	10	55	0	10	0	65
12/12/2022	12/15/2022	B	Lilac Lane	B32 - B31	B32	B31	6	6		VCP	254	251.9	Broken Pipe & Collapsed Pipe & FH2 @77ft	Broken at 162 ft, and collapsed at 252 ft (by the clean out)	5147	33	3413	15	48	0	15	0	63
12/21/2022	12/20/2022	E	Oakwood Drive	E32 - E31	E32	E31	6	6		VCP	263	280.65	Multiple Broken Pipe & Broken Soil Visible	Broken at 10, 48.7, 50.5, 128.9, and 207 ft	5146	29	3317	16	45	0	15	0	60
12/15/2022	12/19/2022	B	Fordham Street	B44 - B2	B44	B2	6	6		VCP	296	290.47	MSA due to Large offset. Multiple Broken and Broken	Broken at 56.7, 27, 73, 144.1, 231, 261.8, and 289.9 ft	5249	46	3100	3	49	0	10	0	59
12/12/2022	12/13/2022	B	Oakwood Drive	B25 - B24	B25	B24	6	6		VCP	406	409.2		Broken at 377 and 391 feet	514D	45	1400	4	49	0	10	0	59
12/20/2022	12/19/2022	E	Glen Way	E40 - E38	E40	E38	6	6		VCP	390	272.84	MSA due to Intruding lateral. Multiple Broken Pipe	Broken at 85.1, 146.2, and 266.3 ft. The inspection was abandoned at 272 ft due	5147	33	5132	11	44	0	15	0	59
12/12/2022	12/9/2022	B	Menalto Avenue	B15 - B49	B15	B49	8	8	8	VCP	331	333.86			3C00	30	3100	3	33	24	0	0	57
12/16/2022	12/20/2022	E	Garden Street	E33 - E13	E33	E13	8	6		VCP	455	252.8		Multiple Broken Pipe at 172, 175, 215, ft	4635	39	3521	17	56	0	0	0	56
12/16/2022	12/14/2022	B	Bay Road	B10 - B9	B10	B9	12	12		PVC	290	290.77	Cleaner - 1hr jetting	Pipeline was at full capacity	3F28	46	0	0	46	0	5	0	51
12/20/2022	12/22/2022	E	Bell Street	E11-E10	E11	E10	12	12		PVC	195	195.28			3C2A	50	0	0	50	0	0	0	50
1/10/2023	12/22/2022	E	Bell Street	E12 - E11	E12	E11	12	12		PVC	494	500.48			3A21	50	0	0	50	0	0	0	50
12/16/2022	12/19/2022	E	Oakdale Road	E37 - E36	E37	E36	6	6		VCP	353	250.79	MSA at 250ft a piece of PVC pipe is intruding from Broken Pipe	A piece of PVC coming out a lateral into the main sewer line at 250 ft	4536	38	3223	12	50	0	0	0	50
12/13/2022	12/19/2022	B	Fordham Street	B45 - B44	B45	B44	6	6		VCP	301	299.49		Broken at 65.6ft	4633	33	3114	7	40	0	10	0	50
1/13/2023	12/19/2022	E	Runnymede Street	E39 - E38	E39	E38	6	6		VCP	301	278.45	Broken Pipe. No cap on Clean out at the End of line	Broken at 94.7 ft. E39 is supposed to be an upstream clean out, however, the MH B41 on Ursula Way not found/nonexistent. One pipeline from is a Clean out.	5144	21	3117	14	35	0	15	0	50
12/12/2022	12/16/2022	B	Ursula Way	B42 - B38	B42	B38	6	6		PVC	341.9	341.9	UPDATED LINE - MH B42 is a Clean out.	MH B41 on Ursula Way not found/nonexistent. One pipeline from is a Clean out.	514B	45	0	0	45	0	0	0	45
12/13/2022	1/15/2023	B	Palo Verde Avenue	B35A - B35	B35A	B35	6	6		VCP	207	186.27	UNCHARTED MANHOLE	Unmapped and paved over manhole found at 186 ft from B35, named B35A	433A	42	1100	1	43	0	0	0	43
12/19/2022	1/12/2023	E	University Avenue	E44 - E8A	E44	E8A	6	6		VCP	318	318.13	Heavy TC-Broken	Broken at 146 ft. Unmapped MH was found between them, named E8A during	412B	24	3200	6	30	0	10	0	40
1/12/2023	1/12/2023	E	University Avenue	E23 - E22	E23	E22	6	6		VCP	439	441.57	Heavy TC - Broken Soil Visible	Broken at 158 ft	5131	8	3511	16	24	0	10	0	34
12/19/2022	12/19/2022	E	Garden Street	E41 - E15	E41	E15	6	6		VCP	98	82.06	Broken Pipe & Broken Soil Visible	Broken with visible soil at 6 ft. In addition, it is broken at 81 ft	5143	17	1110	2	19	0	15	0	34
-	12/9/2022	B / C	Menalto Avenue	C1 - B16A	C1	B16A	8	8	8	PVC	17	17.1		Unmapped MH was located 17 ft from C1 named B16A during the inspection	3300	9	0	0	9	24	0	0	33
12/16/2022	1/12/2023	E	University Avenue	E22 - E8	E22	E8	6	6		VCP	450	451.99	Heavy TC		312D	23	3211	7	30	0	0	0	30
12/15/2022	12/9/2022	B	Menalto Avenue	B49 - B14	B49	B14	8	8	8	VCP	328	329.35			3200	6	0	0	6	24	0	0	30
12/15/2022	1/11/2023	B	Bay Road	B8 - B7	B8	B7	12	12		PVC	371	375.14	FLAGGING-Heavy Grease & debris - spend 2hr located Uncharted MH's	Numerous 85% sags	0000	0	0000	0	0	0	0	25	25
1/12/2023	1/13/2023	E	Cooley Avenue	E38 - E3C	E38	E3C	6	6		XXX	44	44.29			2100	20	4100	4	24	0	0	24	
12/19/2022	1/12/2023	E	University Avenue	E8A - E8	E8A	E8	6	6		VCP	316	316.02	Heavy TC	Unmapped MH was found between E44-E8, named E8A during the inspection	312F	23	0000	0	23	0	0	0	23
1/11/2023	12/13/2022	B	Addison Avenue	B22 - B21	B22	B21	6	6		VCP	33	33.47	MSA REV	Broken & @, 20.8, 79, 82 133, and 170 ft	4131	7	5100	5	12	0	10	0	22
12/13/2022	12/14/2022	B	Bay Road	B14 - B13	B14	B13	12	12		PVC	253	255.3			2A00	20	0	0	20	0	0	0	20
12/16/2022	12/15/2022	B	Ursula Way	B51 - B50	B51	B50	6	6		PVC	282	282.76			2D00	20	0	0	20	0	0	0	20
1/12/2023	12/22/2022	E	Bell Street	E10 - E9	E10	E9	12	12		PVC	192	194.28			2D00	20	0	0	20	0	0	0	20
12/19/2022	1/12/2023	E	University Avenue	E45 - E44	E45	E44	6	6		VCP	319	321.53	Heavy TC		2C00	20	0000	0	20	0	0	0	20
12/13/2022	12/19/2022	B	Fordham Street	B44 - B2	B44	B2	6	6		VCP	7	7	Attempt Reversal MSA Large Offset	Broken at 28, 73, 144, 231, and 261 ft. Broken with visible soil at 289 ft	4100	4	0	0	4	0	15	0	19
12/15/2022	12/16/2022	B	Glen Way	B48 - B7	B48	B7	6	6		VCP	450	6.41	Large offset Broken @6ft.	Inspection was abandoned at 4.6 ft from B7 and the upstream is a cleanout.	4200	8	0	0	8	0	10	0	18
12/9/2022	12/16/2022	B	Gloria Way	B38 - B50	B38	B50	6	6		VCP	39	39.78			3126	15	0	0	15	0	0	0	15
1/12/2023	1/23/2023	E	Cooley Avenue	E3 - E3A	E3	E3A	-	-		PVC	52	52	Reversal MSA at the turn. Complete with a Push Cam.		2400	8	4100	4	12	0	0	0	12
12/16/2022	12/15/2022	B	Palo Verde Avenue	B36 - B35A	B36	B35A	6	6		UNK	49	49	Broken Pipe UNCHARTED MANHOLE B35A and is	Broken at 13.7 ft	0	0	0	0	0	0	10	0	10
12/21/2022	12/21/2022	E	Lincoln Street	E28 - E27	E28	E27	6	6		VCP	62	51.3		One fracture	4121	6	1100	1	7	0	0	0	7
12/12/2022	12/12/2022	B	Poplar Avenue	B18 - B17	B18	B17	6	8		PVC	497	502.39		New pipeline	2200	4	0	0	4	0	0	0	4
12/19/2022	1/13/2023	E	Cooley Avenue	E38 - E3A	E38	E3A	6	6		XXX	13	13.03	MSA From E3A camera does not fit into line. @ 50ft from Complete with Push Cam - Reflush Line		0000	0	4100	4	4	0	0	0	4
12/14/2022	1/23/2023	B	Bay Road	B46 - B5	B46	B5	12	6		PVC	17	17			3100	3	0000	0	3	0	0	0	3
12/9/2022	12/13/2022	B	Addison Avenue	B23 - B22	B23	B22	6	8		PVC	380	382.45		New pipeline	0	0	0	0	0	0	0	0	0
12/13/2022	12/16/2022	B	Ursula Way	B41 - B38	B41	B38	8	0		N.A.	170	0	MH B41 - Does not Exist - This line does not exist.	MH B41 on Ursula Way not found/nonexistent. One pipeline from	0	0	0	0	0	0	-	-	0



Attachment 2

Trunk Line CCTV Survey Results and Evaluation

East Palo Alto Sanitary District
Trunk Line CCTV Survey Results and Evaluation

Date Cleaned	Date CCTV	Area	Street Name	PSR	US MH #	DS MH #	Reported Pipe Dia (inch)	Actual Diameter (inch)	Master Plan Upgrade Diameter	Material	Reported Pipeline Length (ft)	Length Surveyed (ft)	Inspection Notes	Structural Grade	Structural Total	O&M Grade	O&M scores	Structural Total scoring	Score for Master Plan Capacity (+3"Pipe Dia)	Score for Notable Defects	Sag >40%	Total Scores
1/18/2023	1/19/2023	T	Bay Trail	T19 - T18	T19	T18	21	24	28	RCP	500	502.988	Excessive cleaning required. Sagging allows debris accumulation in the	5141	9	4100	4	13	84	5	25	127
1/19/2023	1/19/2023	T	Bay Trail	T17-T34	T17	T34	21	21	28	RCP	325	463.511	Over 70% sag that allows debris accumulation in the pipeline	2511	11	2200	4	15	84	5	20	124
1/18/2023	1/19/2023	T	Bay Trail	T18 - T17	T18	T17	21	24	28	RCP	540	543.468	Over 70% sag that allows debris accumulation in the pipeline	4132	10	2300	6	16	84	0	20	120
1/17/2023	1/17/2023	T	Bay Trail	T27 - T26	T27	T26	18	18	24	RCP	356	358.504	Broken at T2.4 with a noticeable infiltration from the hole	412A	24	3121	5	29	72	15	0	116
1/18/2023	1/18/2023	T	Bay Trail	T20 - T19	T20	T19	18	24	28	RCP	332	333.455	Some surface damage. Sagging 75%	4123	10	0000	0	10	84	0	20	114
1/27/2023	1/27/2023	T	Airport - Embarcadero Road	T2 - T1	T2	T1	24	30	24	RCP	506	509.902	75% sagging with some accumulated grease	4123	10	2300	6	16	72	5	20	113
1/27/2023	1/27/2023	T	Airport - Embarcadero Road	T3 - T2A	T3	T2A	24	30	24	RCP	192	192.077	Unmapped MH was found between them, named T2A during the inspection	4123	10	2100	2	12	72	10	0	94
1/26/2023	1/26/2023	T	Airport runway	T8 - T7	T8	T7	24	30	24	XXX	502	506.796	Pipeline is 60% sagging	4131	7	0000	0	7	72	0	15	94
1/26/2023	1/26/2023	T	Airport runway	T7 - T6	T7	T6	24	30	24	XXX	481	479.843	60% sagging	4200	8	0000	0	8	72	0	10	90
1/17/2023	1/18/2023	T	Bay Trail	T23 - T22	T23	T22	18	18	24	RCP	446	376.941	Spalling of concrete lining	3225	16	0000	0	16	72	0	0	88
1/17/2023	1/17/2023	T	Bay Trail	T28 - T27	T28	T27	18	18	24	RCP	162	163.621		2711	15	0000	0	15	72	0	0	87
1/26/2023	1/26/2023	T	Airport runway	T10 - T9	T10	T9	24	30	24	XXX	447	448.681		3421	14	0000	0	14	72	0	0	86
1/26/2023	1/26/2023	T	Airport - Embarcadero Road	T4 - T3	T4	T3	24	30	24	XXX	475	477.638	MH T4 on Airport runway is covered with asphalt	4200	8	2200	4	12	72	0	0	84
1/27/2023	1/27/2023	T	Airport - Embarcadero Road	T2A-T2	T2A	T2	24	30	24	RCP	311	310.71	Unmapped MH was found between them, named T2A during the inspection	2211	5	2100	2	7	72	0	0	79
1/20/2023	1/20/2023	T	San Fransiquito Creek	T30-T12	T30	T12	30	30	24	XXX	215	364.115		3200	6	0000	0	6	72	0	0	78
1/17/2023	1/17/2023	T	Bay Trail	T29 - T28	T29	T28	18	18	24	RCP	234	235.463		2211	5	0000	0	5	72	0	0	77
1/20/2023	1/20/2023	T	Airport runway	T11 - T10	T11	T10	24	30	24	XXX	326	329.848		3100	3	0000	0	3	72	0	0	75
1/20/2023	1/20/2023	T	Bay Trail	T31-T30	T31	T30	30	30	24	XXX	315	304.598		3100	3	0000	0	3	72	0	0	75
1/26/2023	1/26/2023	T	Airport runway	T5 - T4	T5	T4	24	30	24	XXX	352	355.398	MH T4 on Airport runway is covered with asphalt	3100	3	0000	0	3	72	0	0	75
1/26/2023	1/26/2023	T	Airport runway	T9 - T8	T9	T8	24	30	24	XXX	498	501.986		3100	3	0000	0	3	72	0	0	75
1/17/2023	1/18/2023	T	Bay Trail	T24 - T23	T24	T23	18	18	24	RCP	317	319.628		1100	1	0000	0	1	72	0	0	73
1/17/2023	1/18/2023	T	Bay Trail	T25 - T24	T25	T24	18	18	24	RCP	282	279.75		1100	1	0000	0	1	72	0	0	73
1/17/2023	1/17/2023	T	Bay Trail	T26 - T25	T26	T25	18	18	24	RCP	306	308.706		1100	1	0000	0	1	72	0	0	73
1/20/2023	1/20/2023	T	San Fransiquito Creek	T32-T31	T32	T31	30	30	24	RCP	100	147.79	MH T32 had an additional 30-inch pipeline connected to it, that was not	1100	1	0000	0	1	72	0	0	73
1/20/2023	1/20/2023	T	San Fransiquito Creek	T12 - T11	T12	T11	24	30	24	XXX	482	485.754		0000	0	0000	0	0	72	0	0	72
1/26/2023	1/26/2023	T	Bay Trail	T5A - T5	T5A	T5	24	30	24	XXX	362	362.011	Unmapped manhole was found between them, named T5A during the	0000	0	0000	0	0	72	0	0	72
1/26/2023	1/26/2023	T	Airport runway	T6 - T5A	T6	T5A	24	30	24	XXX	20	20.34	Unmapped manhole was found between them, named T5A during the	0000	0	0000	0	0	72	0	0	72
1/19/2023	1/20/2023	T	Bay Trail	K1-T16	K1	T16	18	15		PE	35	31.362	Lots of grease	4100	4	3100	3	7	0	5	0	12
1/17/2023	1/18/2023	T	Bay Trail	T22 - T21	T22	T21	18	24		RCP	197	194.582		3200	6	0000	0	6	0	0	0	6
1/19/2023	1/20/2023	T	Bay Trail	T34-T33	T34	T33	30	30		PE	140	16.332		0000	0	2300	6	6	0	0	0	6
1/17/2023	1/18/2023	T	Bay Trail	T20A - T20	T20A	T20		24		PE	340	339.968	Unmapped MH found 83 ft from T21, named T20A during the inspection	3100	3	0000	0	3	0	0	0	3
1/17/2023	1/18/2023	T	Bay Trail	T21 - T20	T21	T20A	18	24		PE	338	82.963	Unmapped MH found 83 ft from T21, named T20A during the inspection	3100	3	0000	0	3	0	0	0	3
1/20/2023	1/20/2023	T	Bay Trail	T16-T33	T16	T33	22	22		HDPE	56	10.02		0000	0	2100	2	2	0	0	0	2
-	-	T	Airport - Embarcadero Road	T1 - T0	T1	T0	24	-	24	N.A.	329	0	Not surveyed because of access difficulties. Very high flow. Two	0	0	-	-	0	72	-	-	0
-	-	T	Bay Trail	T33-T32	T33	T32	22	-		N.A.	435	0	SIPHON	0	0	-	-	0	0	-	-	0

Attachment 3

Table 16 and Figure 10 from Master Plan Addendum

Table 16
Proposed Capital Improvement Program
EPASD Master Plan Update
East Palo Alto, California

Manhole (1)	Length (Feet) --	Existing Diameter (Inches) (2)	PDWF Predicted d/D (3)	PWWF Predicted d/D (3)	Proposed Diameter (Inches) (2)	PDWF Proposed d/D (4)	PWWF Proposed d/D (4)
I24-I13	237	6	0.48	1	6	0.44	0.72
L25-L24	342	8	0.69	1	10	0.43	0.53
L24-L23	386	8	0.54	0.72	10	0.36	0.43
L23-L3	351	8	0.69	1	10	0.43	0.53
L3-L2	83	10	1	1	12	0.58	0.54
L2-L1	179	10	0.77	0.72	12	0.48	0.46
L1-L21	223	10	1	1	14	0.55	0.5
L21-K28	68	10	1	1	14	0.6	0.55
K28-K4	242	10	1	1	15	0.64	0.58
K4-K3	238	12	1	1	15	0.51	0.45
K3-K2	190	12	1	1	15	0.58	0.5
K2-K1	451	14	0.74	0.74	15	0.54	0.48
N3-N21 (6)	89	10	0.7	0.58	10	0.6	0.38
N21-N14 (6)	196	10	0.74	0.6	10	0.624	0.38
N14-N2 (6)	88	10	0.77	0.6	10	0.624	0.4
N2-N1 (6)	296	10	0.72	0.58	10	0.6	0.38
O9-O8 (6)	140	6	0.72	0.68	6	0.6	0.56
O7-O6 (6)	427	8	0.81	0.66	8	0.66	0.57
L53-L52 (6)	218	6	0.8	0.52	6	0.64	0.48
L52-L50	224	6	1	0.76	8	0.57	0.42
L50-L49	224	8	0.57	0.76	10	0.36	0.26
L49-L48	233	8	1	0.6	10	0.5	0.38
L7-L6 (6)	261	6	0.72	0.4	6	0.6	0.32
L9-L4 (6)	162	6	0.72	0.8	6	0.6	0.64
M38-M39	158	8	0.84	1	12	0.36	0.36
M39-M43	241	8	0.84	1	12	0.36	0.36
M43-M42	104	8	1	1	12	0.44	0.46
M42-M41	37	8	1	0.6	12	0.28	0.28
M41-M13	111	8	0.84	1	12	0.36	0.36
M13-M12	276	8	0.84	1	12	0.36	0.36
M12-M40	337	8	0.84	1	12	0.36	0.36
M40-M5	263	8	0.84	1	12	0.36	0.36
M5-M4	373	8	1	1	12	0.52	0.54
M4-M31	143	8	1	1	12	0.48	0.48
M31-M3	357	10	1	1	12	0.54	0.56
M3-M2	380	10	1	1	12	0.58	0.58
I43-I15	62	12	0.44	0.44	15	0.29	0.29
I15-I14	386	12	1	1	15	0.62	0.64
I14-I13	444	12	1	1	15	0.48	0.48
I13-I12	320	12	1	1	15	0.48	0.51
I12-I6	339	12	1	1	15	0.46	0.51
I6-I5	411	18	1	1	24	0.52	0.69
I5-I31	135	18	1	1	24	0.53	0.69

Table 16
Proposed Capital Improvement Program
EPASD Master Plan Update
East Palo Alto, California

Manhole (1)	Length (Feet) --	Existing Diameter (Inches) (2)	PDWF Predicted d/D (3)	PWWF Predicted d/D (3)	Proposed Diameter (Inches) (2)	PDWF Proposed d/D (4)	PWWF Proposed d/D (4)
I31-I4	321	18	1	1	24	0.53	0.69
I4-I3	243	18	1	1	24	0.52	0.69
H36-H35	474	6	1	1	10	0.34	0.55
H35-H34	322	6	0.44	1	10	0.22	0.34
H34-H17	269	6	0.52	1	10	0.24	0.41
H17-H57	397	8	0.75	1	12	0.34	0.66
H57-H16	40	8	0.36	0.69	12	0.18	0.66
H16-H60	351	8	0.48	1	12	0.24	0.32
H60-H15	99	8	0.45	1	12	0.22	0.42
H15-H62	201	8	0.36	0.75	12	0.18	0.34
H62-H14	233	8	0.36	0.75	12	0.18	0.34
H14-H13	446	8	0.45	1	12	0.24	0.44
H13-H12	108	8	0.42	1	12	0.22	0.42
H12-H11	333	8	0.48	1	12	0.24	0.46
H11-H64	198	8	0.48	1	12	0.24	0.48
H64-H71	161	8	0.57	1	12	0.28	0.48
H71-H3	35	8	0.51	1	12	0.26	0.56
C12-C1	265	6	0.72	1	8	0.39	0.6
C48-C11	179	6	0.56	6	6	0.48	0.8
C9-C8	84	6	0.52	1	6	0.44	0.72
C8-C7	401	6	0.56	1	6	0.48	0.8
C7-C6	448	6	0.52	1	6	0.44	0.72
C6-C5	87	6	0.52	1	6	0.44	0.72
C5-C4	328	6	0.56	1	8	0.33	0.51
C4-C3	436	6	0.56	1	8	0.33	0.48
C3-C2	398	6	0.56	1	8	0.33	0.51
C2-C1	204	6	1	1	8	0.48	0.78
C1-B16 (5)	402	8	0.51	1	8	0.45	0.69
B16-B15 (5)	327	8	0.54	1	8	0.48	0.75
B15-B49 (5)	331	8	0.54	1	8	0.48	0.75
B49-B14 (5)	328	8	0.54	1	8	0.45	0.72
B7-B6	380	12	1	1	15	0.46	0.46
B6-B5	158	12	0.38	0.52	15	0.24	0.24
B5-B52	176	12	0.6	1	15	0.37	0.37
B52-B4	360	12	0.52	0.8	15	0.32	0.32
B4-B3	465	12	0.68	1	15	0.42	0.42
B3-B2	239	12	1	1	15	0.5	0.5
B2-A1	181	12	0.62	1	15	0.38	0.38
A1-A2	80	12	0.82	1	15	0.46	0.46
A2-A5	244	12	1	1	15	0.46	0.46
A5-A8	124	15	1	1	18	0.49	0.67
A8-A9	61	15	0.37	0.48	18	0.25	0.32
A9-A10	181	15	1	1	18	0.53	0.73

Table 16
Proposed Capital Improvement Program
EPASD Master Plan Update
East Palo Alto, California

Manhole (1)	Length (Feet) --	Existing Diameter (Inches) (2)	PDWF Predicted d/D (3)	PWWF Predicted d/D (3)	Proposed Diameter (Inches) (2)	PDWF Proposed d/D (4)	PWWF Proposed d/D (4)
A10-A15	299	15	0.51	0.7	18	0.35	0.44
A15-A16	435	15	1	1	18	0.52	0.7
A16-A21	296	15	0.67	1	18	0.43	0.56
A21-A23	155	15	0.5	0.67	18	0.33	0.43
A23-A22	14	15	0.32	0.42	18	0.23	0.28
D66-D65 (6)	413	6	0.72	0.68	6	0.6	0.6
D25-D24	301	6	0.36	1	8	0.21	0.45
D35-D34	178	6	1	1	8	0.54	0.78
D34-D33	293	6	0.56	0.76	8	0.3	0.42
D33-D24	450	6	0.72	1	10	0.39	0.51
D24-D23	350	8	0.57	1	10	0.38	0.55
D23-D22	73	8	0.66	1	10	0.38	0.58
D22-D21	149	8	0.78	1	10	0.48	0.67
D21-D19	391	8	0.72	1	10	0.46	0.62
D19-D10	48	8	0.45	0.6	10	0.31	0.38
D10-D3	489	8	1	1	10	0.5	0.67
D5-D4	70	8	0.84	1	10	0.46	0.58
D4-D3	296	8	0.84	1	10	0.46	0.58
D3-D2	363	12	1	1	15	0.51	0.69
D2-D1	53	12	1	1	16	0.6	1
D1-E4	354	12	0.82	1	16	0.42	0.54
E4-E3	357	12	0.7	1	16	0.38	0.48
E3-E2	280	12	1	1	16	0.45	0.59
E2-E1	283	12	0.82	1	16	0.42	0.54
E1-H9	270	12	1	1	16	0.56	0.8
H9-H73	246	12	1	1	16	0.51	0.7
H73-H74	101	12	1	1	18	0.48	0.64
H74-H8	113	12	1	1	18	0.43	0.57
H8-H7	233	12	1	1	18	0.51	0.69
H7-H75	90	12	1	1	18	0.44	0.59
H75-H6	260	12	1	1	18	0.44	0.59
H6-H5	9	12	1	1	18	0.36	0.47
H5-H4	260	15	1	1	18	0.57	0.79
H4-H3	7	15	0.82	1	18	0.51	0.67
H3-H2	31	15	0.77	1	18	0.49	0.71
H2-I11	37	15	0.43	0.61	18	0.31	0.41
I11-I10	380	15	0.78	1	18	0.51	0.72
I10-I9	221	15	0.69	1	18	0.45	0.64
I9-I8	155	15	1	1	20	0.53	0.77
I8-I7	238	15	1	1	20	0.36	0.48
I7-I6	259	15	0.67	1	20	0.38	0.52
E8-E7	355	8	1	1	12	0.38	0.52
E7-E6	311	8	1	1	12	0.36	0.48

Table 16
Proposed Capital Improvement Program
 EPASD Master Plan Update
 East Palo Alto, California

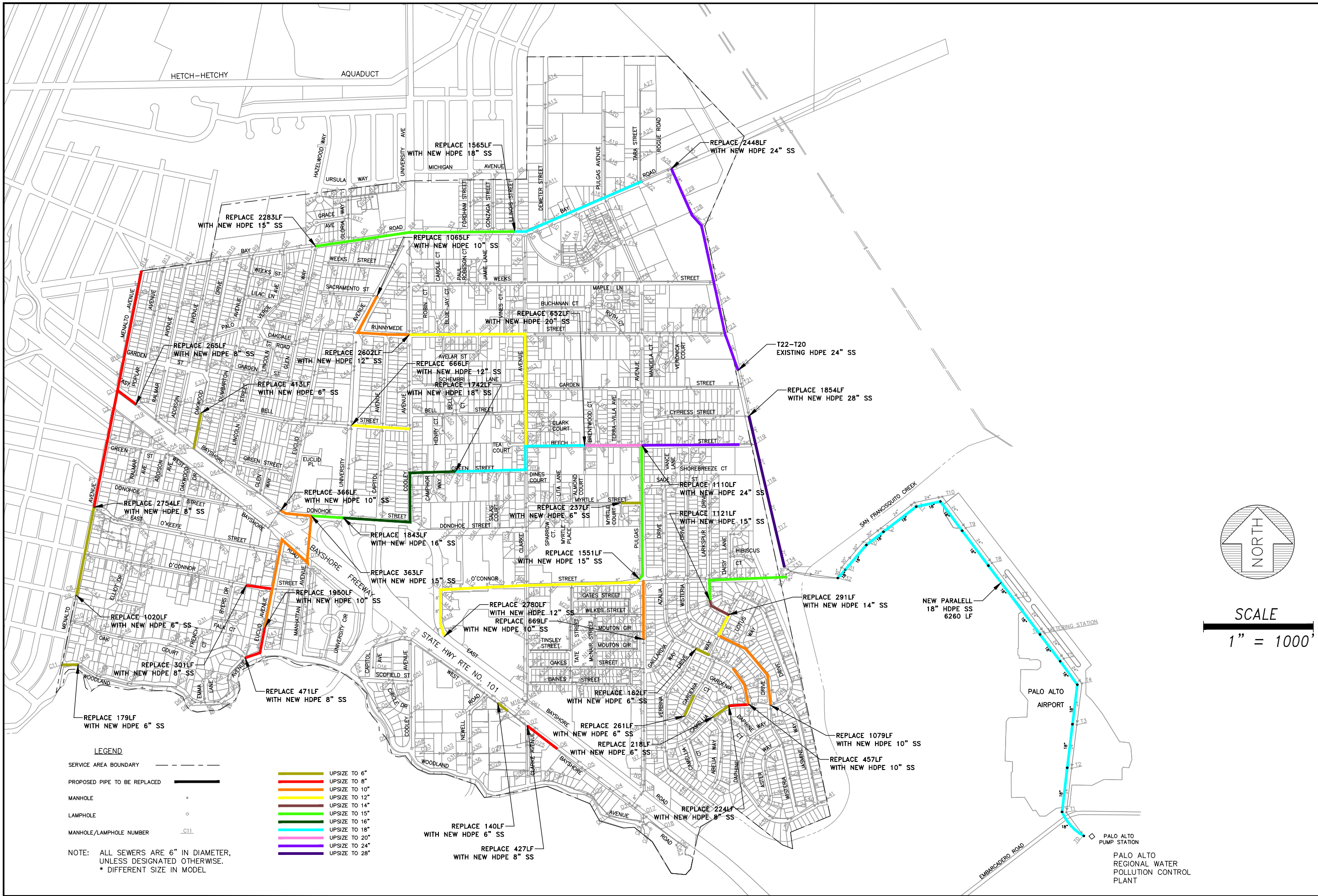
Manhole (1)	Length (Feet) --	Existing Diameter (Inches) (2)	PDWF Predicted d/D (3)	PWWF Predicted d/D (3)	Proposed Diameter (Inches) (2)	PDWF Proposed d/D (4)	PWWF Proposed d/D (4)
A29-T29	345	18	0.39	0.51	24	0.26	0.33
T29-T28	234	18	0.37	0.48	24	0.25	0.32
T28-T27	162	18	0.77	1	24	0.47	0.62
T27-T26	356	18	0.49	0.65	24	0.32	0.42
T26-T25	306	18	0.45	0.6	24	0.3	0.38
T25-T24	282	18	1	1	24	0.53	0.73
T24-T23	317	18	0.47	0.63	24	0.31	0.4
T23-T22	446	18	0.52	0.72	24	0.34	0.44
T20-T19	332	18	0.37	0.49	28	0.21	0.27
T19-T18	500	21	0.78	1	28	0.47	0.62
T18-T17	540	21	0.78	1	28	0.46	0.61
T17-T16	482	21	1	1	28	0.49	0.64
T12-T1	6260	(6)	(6)	(6)	18	1	1

Notes

- (1) Manhole used to find Q and Depth over Diameter value.
- (2) Pipe Diameter directly downstream of Manhole.
- (3) Calculated by dividing the depth of flow by pipe diameter.
This value is evaluated directly downstream of specified manhole under the existing PWWF condition including proposed injections.
- (4) Calculated by dividing the depth of flow by pipe diameter.
This value is evaluated directly downstream of specified manhole under the existing PWWF condition including proposed injections and pipe size upgrades.
- (5) d/D improves with same size HDPE upgrade.
- (6) The new 18-inch diameter pipeline is the wet weather parallel pipeline.

Abbreviations

d/D: Depth over Diameter



SCALE
1" = 1000'

LEGEND

- SERVICE AREA BOUNDARY
- PROPOSED PIPE TO BE REPLACED
- MANHOLE
- LAMPHOLE
- MANHOLE/LAMPHOLE NUMBER

- UPSIZE TO 6"
- UPSIZE TO 8"
- UPSIZE TO 10"
- UPSIZE TO 12"
- UPSIZE TO 14"
- UPSIZE TO 15"
- UPSIZE TO 16"
- UPSIZE TO 18"
- UPSIZE TO 20"
- UPSIZE TO 24"
- UPSIZE TO 28"

NOTE: ALL SEWERS ARE 6" IN DIAMETER, UNLESS DESIGNATED OTHERWISE.
* DIFFERENT SIZE IN MODEL

COMBINED IMPROVEMENTS NO SURCHARGE UNDER PROPOSED CONDITIONS
 EPASD MASTER PLAN UPDATE
 EAST PALO ALTO, CA

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DATE:	4/28/2021
SCALE:	1" = 1000'
DESIGNED:	RAM
DRAWN:	RAM
CHECKED:	JF
PROJ. ENGR:	JJT

FIGURE	10
JOB NO.	2052

PALO ALTO REGIONAL WATER POLLUTION CONTROL PLANT