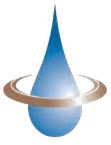


Attachment No. 37

Sierra West Report



TECHNICAL MEMORANDUM

Date: October 31, 2022
To: Akin Okupe, EPASD General Manager
From: Jeffrey C. Bensch, P.E.
Cc:



**RE: CCTV Survey Results Evaluation and Pipeline Replacement Priorities
Areas 1, 3, and 4**

Sierra West Consultants, Inc. (Sierra West) is pleased to provide this 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 500 pipelines were inspected in Areas 1, 3, and 4 by National Plant Services, Inc. (NPS), and a video recording with a summary report were made for each pipeline. Surveys for Area 2 and the trunk line were recently contracted and should begin in November 2022.

This technical memorandum evaluates the CCTV survey results for Areas 1, 3, and 4. The results are used to develop a priority list of pipelines to be replaced. This evaluation considers three alternative approaches to developing a priority list for future improvements:

1. Structural Upgrades
2. Structural plus Capacity Upgrades
3. High Priority Upgrades

The evaluation considers the degree of structural deficiencies based on the CCTV results. Pipeline capacity upgrades are based on the projected pipeline diameters to achieve the desired flow capacity. The high priority upgrades consider the most necessary improvements to be addressed under a limited budget. Opinions of probable cost for potential pipeline replacement programs are also presented.

Evaluation of CCTV Survey Results

The following CCTV surveys were completed:

Area	Pipeline Segments	Linear Feet Surveyed
1	182	39,337
3	158	36,832
4	213	41,420
Total	553	117,589

Details of the surveys in each area are provided in Attachments 1, 2, and 3. NPS evaluated each pipeline with respect to its structural integrity and operations and maintenance (O&M) functionality. These evaluations were made in accordance with 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 a root ball or debris. The Structural and O&M calculated scores are shown on the spreadsheets, although only the Structural scores are used to evaluate pipeline repair or replacement needs.

Priority of Pipelines to be Replaced

Structural Upgrades

This 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 adding a substantial number of pipelines to be upgraded compared to only considering the software generated ratings.

The Structural, Notable Defects, and Sagging scores 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 (Table 1). Pipelines with a score greater than 25 from each Area were selected as the group with significant structural defects needing replacement. A geographic information system (GIS) was used to generate Figure 2 showing the pipelines that need to be replaced to resolve structural defects in Areas 1, 3, and 4.

The pipeline segments needing structural upgrades may also be undersized and in need of increased capacity. Nonetheless, the pipelines considered under this alternative have substantial structural deficiencies that need to be addressed.

The priority list was sorted by pipeline diameter in Table 2 to evaluate probable costs. The Engineer's Opinion of Probable Cost for the project (Table 3) was developed 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 76,00 linear feet of pipeline throughout Areas 1, 3, and 4 have a Total Score greater than 25. The opinion of probable construction cost is approximately \$40.5M, with a total project cost opinion of \$53.0M.

Structural and Capacity Upgrades

This evaluation considers the existing hydraulic capacity of each pipeline, along with the structural integrity. As such, this represents a maximum level of wastewater collection system improvements.

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 4 - Table 16 and Figure 10 from the Master Plan). For pipelines designated as undersized, a score was calculated as five times the diameter of the proposed pipeline upgrade.

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 25 were selected as pipelines for replacement (Table 4). The GIS was used to generate Figure 3 showing the pipelines that need to be replaced to resolve structural defects and capacity inadequacies in Areas 1, 3, and 4.

Capacity upgrades are considered independent of whether the pipeline has structural deficiencies. In many cases, pipeline segments may be structurally sound and included in this priority list only because they are undersized as defined in the Master Plan Update.

The priority list was sorted by pipeline diameter in Table 5 to evaluate probable costs. The Engineer's Opinion of Probable Cost for the project (Table 6) was developed 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 90,000 linear feet of pipelines throughout Areas 1, 3, and 4 have a Total Score greater than 25. The opinion of probable construction cost is approximately \$49.5M, with a total project cost opinion of \$64.7M.

High Priority Upgrades

This evaluation considers the hydraulic capacity along with the structural integrity to develop a priority list under a funding limit of approximately \$20M.

This evaluation is weighted to include large diameter pipelines with flow capacity upgrades that are critical to the overall performance of the wastewater collection system. It is also balanced with replacing significantly deteriorated pipelines in need of substantial structural repairs. Considering limited funding, a higher score threshold was used to select the highest priority pipeline segments.

Pipeline segments with a Total Score greater than 75 were selected as the group of pipelines to be replaced (Table 7). A geographic information system (GIS) was used to generate Figure 4 showing the pipelines that need to be replaced.

The priority list was sorted by pipeline diameter in Table 8 to evaluate probable costs. The Engineer's Opinion of Probable Cost for the project (Table 9) 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, 25,500 linear feet of pipeline throughout Areas 1, 3, and 4 have a Total Score greater than 75. The opinion of probable construction cost is approximately \$16.0M, while the opinion of total project cost is \$20.9M.

Summary

The following table summarizes the opinions of costs presented above:

Program Alternative	Linear Feet	Opinion of Probable Cost (millions)
Structural Upgrades ¹	76,000	\$53.0
Includes Capacity Upgrades ²	13,000	\$9.1
Structural + Capacity Upgrades	90,000	\$64.7
Includes Capacity Upgrades	25,000	\$22.0
Includes Capacity Only Upgrades ³	13,000	\$12.9
High Priority Program ⁴	25,500	\$20.9
Includes Capacity Upgrades	17,500	\$14.3
Includes Capacity Only Upgrades	4,900	\$4.9

1. Structural Upgrades = Replacement of Pipelines with Substantial Structural Defects (may include Capacity Upgrades)
2. Capacity Upgrades = Replacement of Pipelines with Larger Capacity Pipelines per the Master Plan Update (independent of Structural condition)
3. Capacity Only Upgrades = Replacement of Pipelines that are Structurally Sound with Larger Capacity Pipelines per the Master Plan Update
4. High Priority Program = \$20M project to address High Priority pipelines considering both Structural and Capacity Upgrades

The Total Scores, GIS figures, and the opinion of probable costs can be used together to evaluate other project alternatives in terms of adding or eliminating pipelines to work within available resources. Further evaluations and secondary priority listings may be useful in developing or updating EPASD's current Capital Improvement Plan (CIP).

Tables

Table 1	Priority List of Pipelines for Structural Upgrades
Table 2	Priority List Sorted by Diameter, Pipelines for Structural Upgrades
Table 3	Opinion of Probable Construction Cost – Structural Upgrades
Table 4	Priority List of Pipelines for Structural and Capacity Upgrades
Table 5	Priority List Sorted by Diameter, Structural and Capacity Upgrades
Table 6	Opinion of Probable Construction Cost – Structural and Capacity Upgrades
Table 7	Priority List of High Priority Pipelines to be Replaced
Table 8	Priority List of High Priority Pipelines, Sorted by Diameter
Table 9	Opinion of Probable Construction Cost – High Priority Upgrades

Figures

Figure 1	CCTV Survey Areas
Figure 2	Structural Upgrades, Areas 1, 3, 4
Figure 3	Structural + Capacity Upgrades, Areas 1, 3, 4
Figure 4	High Priority Upgrades, Areas 1, 3, 4

Attachments

Attachment 1	Area 1 CCTV Survey Results and Evaluation
Attachment 2	Area 3 CCTV Survey Results and Evaluation
Attachment 3	Area 4 CCTV Survey Results and Evaluation
Attachment 4	Table 16 and Figure 10 from Master Plan Addendum

Tables

Table 1
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of Pipelines for Structural Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (* Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
O	West Bayshore Road	O4 - O3		8	VCP	277	85% sag, 10% grease build up	86	0	0	25	111
J	Pulgas Avenue	J7 - J6		8	VCP	441	Pipe is broken at 124ft and 197ft	73	0	10	25	108
A	Demeter Street	A13 - A12		8	Unknown	412	Broken pipe at 129 ft and 139 ft with sags.	70	0	20	15	105
J	Garden Street	J9 - J9A		8	VCP	365	Pipe is broken at 8ft, 32ft, 81ft, 223ft & 318ft.	51	0	30	20	101
A	Pulgas Avenue	A18 - A16		8	VCP	442	Broken pipe at 44ft.	70	0	10	20	100
H	Runnymede Street	H35 - H34	10	12	VCP	322	Pipeline has a lot of sagging. The high water level	62	0	8	30	100
K	Larkspur Drive	K19 - K18		8	CP	272	Pipe is broken and soil is visible at 144ft, and	58	0	30	10	98
A	Gonzaga Street	A3 - A2		8	VCP	287	Broken pipe at 53, 141, 157, and 159 ft. Also, an	46	0	30	20	96
A	Bay Road	A2 - A5	15	16	Unknown	244	Sagging pipe 75%	70	0	0	25	95
J	Garden Street	J10 - J9		8	VCP	300	Pipe is broken at 228ft and 293ft	70	0	10	15	95
K	Larkspur Drive	K18 - K17		8	CP	269	SMW spots on the line.	80	0	15		95
A	Illinois Street	A6 - A5		8	VCP	287	Broken pipe at 15 and 75ft. Also, an offset joint at	49	0	30	15	94
K	Daisy Lane	K21 - K3		8	CP	246	Pipe has few locations with chunks of pipe missing	53	0	30	10	93
A	Illinois Street	A7 - A6		8	VCP	306	Broken pipe at 82 and 230 ft.	46	0	30	15	91
C	Menalto Avenue	C4 - C3	8	12	PE	436	This is the second inspection after heavy cleaning.	66	0	10	15	91
H	Clarke Avenue	H14 - H13	12	14	VCP	446	Pipe at 425.5ft, 429ft with multiple cracks	66	0	0	25	91
K	Wisteria Drive	K13 - K12		8	VCP	362	Pipe is broken at 9ft and 91ft.	56	0	20	15	91
A	Bay Road	A5 - A8	18	20	PE	124	Sagging pipe 50%-100%	80	0	0	10	90
C	Elliot Drive	C41 - C40		8	VCP	191	substantial breakage throughout their entire	70	0	20		90
C	Elliot Drive	C42 - C41		8	VCP	300	substantial breakage throughout their entire	70	0	20		90
F	Weeks Street	F23 - F8		8	VCP	327	This pipeline was F9A-F8	70	0	0	20	90
C	Elliot Drive	C40 - C36		8	VCP	257	MSA/Root tap barrel. Reverse inspection	67	0	20		87
A	Tara Street	A27 - A26		8	VCP	311	Broken pipe and soil is visible at 254.10 ft at 11	35	0	30	20	85
C	Hwy 101	C21 - C19		8	VCP	284	MSA/Collapsed pipe. Reverse inspection	55	0	30		85
H	Clarke Avenue	H12 - H11	12	14	VCP	333	Broken at 111ft, 231ft, 331.9ft	70	0	0	15	85
L	Wisteria Drive	L29 - L28		8	VCP	366	Pipe is broken at 348ft, and soil is visible	35	0	30	20	85
D	Hwy 101	D10 - D3	10	12	Not Known	489	MSA/80% grease in line. No heavy cleaning	54	0	20	10	84
K	Larkspur Drive	K16 - K4		8	CP	274	SMW spots on the line	53	0	15	15	83
O	Woodland Avenue	O23 - O22		8	VCP	470	MSA/TBI. Reverse Inspection complete. Pipe had	62	0	20		82
A	Bay Road	A10 - A15	18	20	ACP	299	Surface Damage Roughness Increased	61	0	0	20	81
H	Clarke Avenue	H64 - H71	12	14	VCP	99	H60-H3. Line has about 30%-40% grease that is	42	0	24	15	81
I	Beech Street	I20 - I9		8	VCP	278	Pipe has MSA at 267 due to hard	40	0	20	20	80
D	Donohoe Street	D9 - D8		8	VCP	496	Broken at 21ft, multiple cracks	70	0	8		78
D	Donohoe Street	D8 - D7		8	VCP	158	broken pipe at 100.08 ft from upstream	37	0	30	10	77
A	Demeter Street	A12 - A11		8	VCP	485	Sagging pipeline 55%	55	0	0	20	75
A	Bay Road	A15 - A16	18	20	ACP	435	Surface damage roughness. Sagging 75%	50	0	0	25	75
D	West Bayshore Road	D7 - D6		8	VCP	398	5% grease build up and 90% sag	60	0	0	15	75
F	Weeks Street	F11 - F10		8	VCP	420	Broken at 176ft, 242ft	70	0	0	5	75
F	Weeks Street	F12 - F11		8	VCP	355	Broken at 414ft, multiple fractures and cracks	70	0	0	5	75
F	Weeks Street	F19 - F20		8	VCP	216	MH was F19 - F21	70	0	0	5	75
I	Pulgas Avenue	I15 - I14	15	16	PVC	386	Sagging pipe 85%	50	0	0	25	75
J	Garden Street	J8 - J6		8	VCP	442	Broken at 33ft, 81.4ft, 164ft, 223ft, 286ft, 318ft	70	0	0	5	75
C	Menalto Avenue	C43 - C8		8	VCP	101	Proteus. MSA/TBI. Heavy cleaning was performed.	58	0	16		74
G	Runnymede Street	G7 - G6		8	PVC	295	-	48	0	0	25	73
C	Menalto Avenue	C6 - C5	8	12	PE	87	Pipeline has lots of debris	42	0	20	10	72
K	Camellia Drive	K35 - K34		8	VCP	280	Broken pipe at 9ft.	42	0	10	20	72
C	Ralmar Avenue	C15 - C14		8	VCP	565	MSA/JAM. Camera is unable to get past this point.	50	0	20		70
C	Oak Court	C47 - C46		8	VCP	309	This is the second inspection after heavy cleaning	70	0	0		70
D	West Bayshore Road	D51 - D7		8	VCP	458	MSA/JOL. Camera cannot move any further.	45	0	20	5	70
F	Pulgas Avenue	F14 - F8		8	PVC	463	Sagging pipe up to 75%	50	0	0	20	70
O	Woodland Avenue	O20 - O19		8		116	After removing roots and debris from the exit of	50	0	20		70
H	Donohoe Street	H21A - H55		8	VCP	157	H21A - H21. Broken at 61ft, 101ft	48	0	0	20	68
K	Camellia Drive	K36 - K35		8	VCP	282	Broken pipe at 264ft.	38	0	20	10	68
C	O'Connor Street	C35 - C7		8	Unknown	403	Proteus. This is the second inspection. First	50	0	12	5	67
F	Weeks Street	F8 - F8A		8	VCP	281	New Line segment	46	0	0	20	66
O	Woodland Avenue	O21 - O19		8	VCP	394	MSA/Reverse Inspection performed.	46	0	20		66
M/I	Pulgas Avenue	I43 - I15		12	PVC	60	I15A - I15. Sagging pipe 90%	35	0	0	30	65
K	Azalia Drive	K9 - K8		8	VCP	356	Pipe is broken at 158ft, 183ft, 296ft. At 104ft a	25	0	40	65	65
H	Clarke Avenue	H13 - H12	12	14	VCP	108	Broken at 18ft with 55% sagging pipe	54	0	0	10	64
H	Clarke Avenue	H24 - H20		8	VCP	333	MSA/Broken pipe. The USMH is a cleanout so no	14	0	30	20	64
K	Wisteria Drive	K11 - K5		8	VCP	370	MSA/Joint offset. Reverse inspection performed	34	0	20	10	64
C	Hwy 101	C20 - C19		8	VCP	199	Broken at 5.1 ft, surface damage at 30 ft	42	0	20		62
D	Green Street	D68 - D67		8	VCP	139	Surface Damage at 59ft, pipeline has multiple	50	0	12		62
I	Myrtle Street	I23 - I28		8	VCP	166	Broken at 59ft. This pipe line was I23 - I23A	32	0	30		62
L	Gaillardia Way	L11 - L10		8	VCP	360	Pipe is broken at 240ft and soil is visible	22	0	30	10	62
O/N	Highway 101	O3 - N8		12	Unknown	205	O3 was surcharged.	44	0	8	10	62
A	Bay Road	A1 - A2	15	16	Unknown	80	MH A1 does not exist. Inspection started from B2-	50	0	10	0	60
A	Bay Road	B2 - A2	15	16	PE	181	A1 is buried, operator surveyed B2-A2 for total of	50	0	0	10	60
D	West Bayshore Road	D21 - D19	10	12	HDPE	391	Heavy Cleaning/high flow. Night work. HDPE. This	40	0	20		60
G	Runnymede Street	G4 - G3		8	PVC	213	-	50	0	0	10	60
H	Runnymede Street	H34 - H17	10	12	VCP	269	Submerged pipe with a line down alignment.	34	0	16	10	60
J	Garden Street	J5C - T21		8	PVC	62	New Line Segment. Sagging pipe 75%	40	0	0	20	60
K	Daisy Lane	K22 - K21		8	CP	256	Surface Damage Missing Wall along the pipeline	60	0	0		60
K	Camellia Drive	K33 - K32		8	VCP	131	Sagging pipe 75%	40	0	0	20	60
K/L	Larkspur Drive	L21 - K28	14	16	PVC	68	Sagging pipe 75%	40	0	0	20	60
L	Wisteria Drive	L26 - L25		8	VCP	216	Pipe has a lot of sagging, and an offset joint	16	0	24	20	60
L	Jasmine Way	L43 - L44		8	PVC	334	Joint Separated Large at 331.7ft	60	0	0		60
O	Cooley Avenue	O51A - O13		8	VCP	236	5% grease build up, 60% sag	50	0	0	10	60
C	Menalto Avenue	C2 - C1	10	12	Unknown	204	MSA/Grease. Heavy grease blockage at 136.9	38	0	16	5	59

Table 1
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of Pipelines for Structural Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
C	Green Street	C23 - C3		8	VCP	400	Pipe has grease and is under water for about 360'	34	0	20	5	59
G	Runnymede Street	G14 - G17		8	VCP	151	Pipe is broken at 17ft.	14	0	20	25	59
O	West Bayshore Road	O5 - O4		8	Unknown	399	Noteable sagging	44	0	0	15	59
C	Oak Court	C44 - C10		8	VCP	155	MSA/LR. Camera cannot move past bend.	42	0	16		58
C	Oak Court	C46 - C45		8	VCP	256	Broken at 153ft with multiple cracks	58	0	0		58
D	O'Connor Street	D26 - D25		8	VCP	157	broken pipe due to tree roots between 23-26 ft.	38	0	20		58
D	East Bayshore Road	D65 - D64		8	VCP	448	Pipe is damaged. MSA/Crawler cannot move any	38	0	20		58
D	Oakwood Dive	D71 - D52		8	VCP	130	Proteus. This is the second inspection. First	46	0	12		58
C	Menalto Avenue	C7 - C6	8	12	PE	448	Pipeline has lots of debris	20	0	12	25	57
O	Capitol Avenue	O16 - O15		8	VCP	235	Broken at 131.9 ft	42	0	15		57
C/D	Donohoe Street	C26 - D9		8	VCP	436	This is the second inspection after heavy cleaning	36	0	20		56
D	French Court	D40 - D37		8	VCP	194	This is the second inspection after using a root	25	0	30		55
F	Weeks Street	F20 - F17		8	VCP	253	MH was F20 - F21	55	0	0		55
G	Runnymede Street	G6 - G4		8	PVC	388	-	50	0	0	5	55
K	Larkspur Drive	K17 - K16		8	CP	267	Surface Damage Missing Wall along the pipeline	55	0	0		55
C	Poplar Avenue	C13 - C12		8	Unknown	481	MSA/Lined pipe. Camera could not move any	34	0	20		54
C	Menalto Avenue	C2A - C2	8	12	VCP	28	New line segment - Broken at 19.9 ft	34	0	20		54
D	O'Connor Street	D29 - D28		8	VCP	465	Clogged, extensive cleaning required	46	0	8		54
D	Oak Court	D37 - D36		8	VCP	368	MSA/Reverse inspection complete	54	0	0		54
D	East O'Keefe Street	D43 - D41		8	VCP	517	MSA/Broken. Reverse inspection complete. broken	46	0	8		54
D	Woodland Avenue	D56 - D35		8	VCP	286	Offset joint 4' from MH	42	0	12		54
G	Buchanon Court	G10 - G9		8	CP	271	Pipe is broken and soil is visible at 10 ft and 221 ft	24	0	30		54
H	Donohoe Street	H21 - H56		8	VCP	151	H22 - H55. Broken at 14ft and 110ft	54	0	0		54
O	Woodland Avenue	O29 - O30		8	VCP	220	Surcharged MH with substantial crud on water	42	0	12		54
C	Oak Court	C45 - C44		8	VCP	166	Broken pipe at 6ft, 41ft, 24ft	43	0	10		53
O	Woodland Avenue	O22 - O21		8	VCP	348	broken at 81.02 ft, 311 ft, and 320 ft.	33	0	20		53
D	O'Connor Street	D25 - D24	8	12	VCP	301	large offset between joints and unable to video it	36	0	16		52
G	Mandela Court	G15 - G14		8	PVC	215	-	42	0	0	10	52
I	Myrtle Street	I21 - I13	8	12	VCP	600	As I24 should be between them as shown in the	47	0	0	5	52
D	East O'Keefe Street	D47 - D22		8	VCP	299	Grease build up at 269 ft	41	0	5	5	51
O	Woodland Avenue	O28 - O26		8	VCP	434	MSA/Reverse inspection complete. Proteous.	41	0	10		51
A	Demeter Street	A14 - A13		8	Unknown	288	-	50	0	0		50
A	Pulgas Avenue	A20 - A19		8	VCP	340	Broken pipe at 225ft, and separated joints at 281ft.	20	0	30		50
C	Addison Avenue	C18 - C17		8	VCP	370	MSA/Proteus could not crawl any farther due to	34	0	16		50
D	Manhattan Avenue	D19 - D10	10	12	PVC	48	Line is sagging. Camera was under water for most	30	0	0	20	50
D	O'Connor Street	D41 - D24		8	VCP	191	Broken at 51 ft and 122 ft	50	0	0		50
D	Addison Avenue	D55 - D54		8	VCP	252	MSA/Reverse inspection complete. broken at	34	0	16		50
F	Weeks Street	F10 - F9		8	VCP	463	Broken at 32.2ft & 247ft & 297ft & 314ft	45	0	0	5	50
F	Clarke Avenue	F15 - F11		8	VCP	301	Multiple cracks along the pipe	50	0	0		50
H	Donohoe Street	H23 - H22		8	VCP	405	H23 - H56. Broken at 133.9ft, 316.9ft	50	0	0		50
K/L	Gardenia Way	K31 - L1		8	PVC	148	-	30	0	0	20	50
L	Verbina Drive	L17 - L16		8	VCP	236	-	50	0	0		50
L	Daphine Way	L35 - L34		8	VCP	250	-	50	0	0		50
L	Azalia Drive	L47 - L4		8	VCP	88	Heavy grease was found on a sewer line cleaning	20	0	30		50
O	Clarke Avenue	O26 - O25		8	VCP	333	Broken at 125ft	50	0	0		50
O	Newell Road	O35 - O34		8	ACP	316	-	50	0	0		50
O	Scofield Street	O52 - O51		8	VCP	213	-	50	0	0		50
O	Woodland Avenue	O55 - O54		8	VCP	399	MSA/Reverse Inspection Complete.	42	0	8		50
M/I	Pulgas Avenue	M2 - I43		12	PVC	42	M2 - I15A. Sagging pipeline 100%	25	0	0	25	50
A	Bay Road	A16 - A21	18	20	ACP	296	-	44	0	0	5	49
G	Buchanon Court	G9 - G6		8	CP	291	Pipe is broken and soil is visible at 84 ft	14	0	30	5	49
J	Garden Street	J9A - J8		8	VCP	35	Pipe is broken at 115ft, 176ft, and 359ft.	19	0	30		49
O	West Bayshore Road	O59 - O7		8	VCP	182	Soil is visible at 167ft, 50% sag	9	0	30	10	49
D	Euclid Avenue	D23 - D22	10	12	PE	73	Pipeline had heavy grease	30	0	8	10	48
D	Green Street	D69 - D67		8	VCP	259	MSA/TBI. No reverse inspection performed	40	0	8		48
F	Weeks Street	F9 - F23		8	VCP	111	This pipeline was F9-F9A	43	0	0	5	48
O	Newell Road	O31 - O30		8	VCP	90	Visible soil	18	0	30		48
O	Woodland Avenue	O33 - O32		8	VCP	263	Visible soil	26	0	12	10	48
C	Palmar Avenue	C25 - C23		8	VCP	303	Medium Joint Offset	42	0	0	5	47
D	Glen Way	D67 - D63		8	VCP	294	Pipe broken at 231.1 ft	17	0	30		47
O	Cooley Avenue	O58 - O57		8	VCP	403	MSA/Tap break in intruding. No reverse inspection	17	0	30		47
C	Addison Avenue	C17 - C16		8	VCP	333	There's a JAM 3' from the DSMH. Camera is unable	38	0	8		46
C	Hwy 101	C19 - C2		8	VCP	264	MSA/OBM. Reverse inspection performed. Pipeline	26	0	20		46
G	Pulgas Avenue	G13 - G3		8	PVC	453	Proteous	46	0	0		46
I	Beech Street	I7 - I6	20	22	CP	259	Surface damage roughness. Sagging 75%	26	0	0	20	46
K/L	Azalia Drive	L10 - K27		8	VCP	275	Broken connection of lateral at 28ft.	11	0	20	15	46
O	Cooley Avenue	O57 - O51		8	VCP	365	Cracks and surface damage along the pipe	46	0	0		46
C/D	O'Connor Street	D29 - C37		8	Unknown	130	Proteus	27	0	8	10	45
D	Oak Court	D36 - D35		8	VCP	251	MSA/Broken. Reverse inspection attempted.	29	0	16		45
D	East O'Keefe Street	D48 - D47		8	VCP	401	5% Grease build up at 335ft	28	0	12	5	45
C	East Bayshore	C14 - C12		8	PVC	282	-	44	0	0		44
C	Woodland Avenue	C51 - C50		8	Unknown	556	Proteous. MSA/Reverse inspection complete. Pipe	32	0	12		44
D	East Bayshore Road	D64 - D63		8	VCP	471	MSA/Reverse inspection complete	19	0	20	5	44
G	Veronica Court	G18 - G17		8	PVC	291	-	39	0	0	5	44
I	Terra Villa Avenue	I17 - I7		8	VCP	526	Broken at 520ft	34	0	0	10	44
L	Azalia Drive	L10 - L9		8	VCP	180	-	44	0	0		44
A	Pulgas Avenue	A17 - A31		8	VCP	241	This pipe line was A17 - A17A	43	0	0		43
A	Bay Road	A9 - A10	18	20	ACP	181	Broken at 172ft	28	0	0	15	43
D	West Bayshore Road	D53 - D52		8	VCP	248	Joint Separated Medium	38	0	0	5	43

Table 1
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of Pipelines for Structural Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
K	Azalia Drive	K7 - K6		8	VCP	362	-	23	0	0	20	43
O	Mission Drive	O41 - O40		8	Unknown	45	Proteous. seemed to be different material	27	0	16		43
O	Scofield Street	O54 - O52		8	VCP	380	Pipe is broken at 26.08 feet.	13	0	30		43
D	O'Connor Street	D27 - D26		8	VCP	392	Clogged, extensive cleaning required	34	0	8		42
F	Weeks Street	F7 - T25		8	VCP	477	Multiple cracks along the pipe	32	0	0	10	42
H	Runnymede Street	H17 - H76	12	14	VCP	397	H17 - H16. Broken pipe at 43.2ft, 144.9ft, 150ft	17	0	20	5	42
H	Donohoe Street	H56 - H21A		8	VCP	157	H55 - H21A. Broken at 1.5ft	42	0	0		42
I	Brentwood Court	I18 - I8		8	PVC	237	-	32	0	0	10	42
K	Hibiscus Court	K24 - K21		8	CP	149	Surface Damage Missing Wall	42	0	0		42
L	Abelia Way	L58 - L57		8	VCP	295	Broken at 13ft, 50ft, 87ft, 236ft	22	0	20		42
C	Woodland Avenue	C49 - C48		8	Unknown	248	Proteous	29	0	12		41
C	Woodland Avenue	C50 - C49		8	Unknown	361	Proteous	29	0	12		41
D	O'Connor Street	D28 - D27		8	VCP	81	Clogged, extensive cleaning required	28	0	8	5	41
H	Cooley Avenue	H32 - H17		8	VCP	550	Broken Soil Visible at 111ft. Broken at 213.8ft,	41	0	0		41
O	West Bayshore Road	O9 - O8	8	12	VCP	140	15% grease buildup at 96ft	36	0	0	5	41
C	East Bayshore	C16 - C14		8	PVC	273		40	0	0		40
G	Runnymede Street	G8 - G7		8	PVC	327		35	0	0	5	40
O	Newell Road	O34 - O10		8	ACP	268		40	0	0		40
A	Pulgas Avenue	A31 - A16		8	PVC	177	This pipe line was A17A - A16	34	0	0	5	39
C	Woodland Avenue	C48 - C11	8	12	Unknown	179	MSA/ Reverse Inspection complete	23	0	16		39
C	Menalto Avenue	C5 - C4	8	12	Unknown	328	Pipeline has lots of debris	29	0	10		39
D	Donohoe Street	D3 - D3A	16	18	VCP	11	Surface Damage Roughness Increased	34	0	0	5	39
D	Oak Court	D38 - D37		8	VCP	238	MSA/Broken. No reverse inspection can be	9	0	30		39
D	Oak Court	D39 - D37		8	Unknown	84	New line segment. Proteus was used to inspect this	9	0	30		39
G	Buchanan Court	G11 - G10		8	CP	266	Pipe is broken at 33 ft and 256 ft.	19	0	20		39
L	Verbina Drive	L13 - L9		8	VCP	311	Broken at 60.2ft	24	0	15		39
L	Verbina Drive	L16 - L15		8	VCP	311	Broken at 169ft	24	0	15		39
L	Gardenia Way	L2 - L1	12	14	PVC	179	Joint Separated Large at 104.9ft, infiltration from	24	0	15		39
L	Aster Way	L31 - L30		8	VCP	179	Pipe is broken at 59ft, and soil is visible	9	0	30		39
O	Woodland Avenue	O32 - O31		8	VCP	258	Broken at 3.2 ft and 226 ft	9	0	30		39
C	Menalto Avenue	C10 - C8	8	12	PE	387	Modified line segment. Could not find C9	23	0	10	5	38
D	Woodland Avenue	D35 - D34	8	12	VCP	178	Fracture Multiple at 73ft	38	0	0		38
H	University Avenue	H37A - H36		8	VCP	149	New Line Segment. Broken 144.3ft, 145ft	38	0	0		38
H	Sacramento Street	H41 - H40		8	VCP	150	Broken at 38ft, 42ft	38	0	0		38
H	Weeks Street	H42 - H37		8	VCP	388	Broken at 304ft	38	0	0		38
H	Donohoe Street	H55 - H54		8	PVC	144	H21 - H54. Broken at 51ft	38	0	0		38
K	Sage Street	K20 - K19		8	CP	135	Surface Damage Missing Wall at 96.4ft	8	0	30		38
L	Camellia Drive	L20 - L16		8	VCP	101	Broken at 6.6ft	38	0	0		38
L	Daphne Way	L37 - L36		8	VCP	312	Hole at 252ft, 93.5ft	38	0	0		38
L	Camellia Drive	L54 - L53		8	VCP	369	Pipe is broken and soil is visible at 3.02ft.	8	0	30		38
M	O'Connor Street	M43 - M42		8	VCP	104	Broken at 109ft	38	0	0		38
N/K	O'Connor Street	N1 - K6		12	PE	253		38	0	0		38
O	Circle Drive	O53 - O52		8	VCP	188	Broken at 204ft	38	0	0		38
O	Woodland Avenue	O56 - O55		8	VCP	377	-	38	0	0		38
H/E	Euclid Avenue	H38 - E42		8	VCP	519	Broken pipe Soil Visible at 146ft, 197ft	17	0	20		37
K	Camellia Drive	K34 - K33		8	VCP	278	-	32	0	0	5	37
C	Menalto Avenue	C8 - C7	8	12	PE	401	broken pipe located 100.08 ft from upstream	20	0	16		36
G	Runnymede Street	G19 - T23		8	VCP	263	This pipeline was G2A-T23	36	0	0		36
H	Schembri Lane	H29 - H12		8	VCP	551	Broken pipe at 257ft, 349ft	16	0	20		36
L	Daphne Court	L62 - L34		8	VCP	147		36	0	0		36
H	Runnymede Street	H57 - H16	12	14	VCP	48	H16A - H16B. Broken at 20.9ft	20	0	15		35
I	Pulgas Avenue	I13 - I12	15	16	PVC	320	-	30	0	0	5	35
I	Beech Street	I3 - T19	24	26	PVC	188	Reported 24" dia; Actual 18"	30	0	0	5	35
L	Camellia Drive	L46 - L45		8	VCP	136	Broken pipe Soil Visible at 135.9ft	35	0	0		35
L	Daphne Way	L36 - L35		8	VCP	278	Hole at 38.4ft	24	0	10		34
D	Donohoe Street	D2 - D1	18	20	VCP	53		34	0	0		34
D	Donohoe Street	D3A - D2	16	18	VCP	355	Broken at 4.2ft	34	0	0		34
D	Donohoe Street	D4 - D3	10	12	VCP	296	Fracture Multiple at 131ft	34	0	0		34
D	O'Connor Street	D42 - D41		8	VCP	100	Crack Multiple at 7.6ft & 69.2ft	34	0	0		34
D	East O'Keefe Street	D44 - D43		8	VCP	113	Broken at 72.2ft	34	0	0		34
D	East O'Keefe Street	D50 - D49		8	VCP	422	Broken at 418.9 ft	34	0	0		34
D	West Bayshore Road	D54 - D53		8	VCP	75	-	34	0	0		34
D	Hwy 101	D6 - D5		8	Unknown	246	Joint Offset Large at 112ft	34	0	0		34
H	Clarke Avenue	H11 - H64	12	14	VCP	198	H11 - H60. Broken at 73.2ft	34	0	0		34
H	Runnymede Street	H38 - H47		8	VCP	205	Broken at 80.3ft	34	0	0		34
H	Weeks Street	H43 - H42		8	VCP	346	Broken at 4.7ft, 303.7ft	34	0	0		34
H	Runnymede Street	H47 - H35		8	VCP	192	Fracture at 8.6 with cracks along the pipeline	29	0	0	5	34
H	Runnymede Street	H76 - H57	12	14	VCP	73	H16 - H16A. Broken at 63.2ft	19	0	15		34
L	Verbina Drive	L19 - L18		8	VCP	333	Broken at 330ft	34	0	0		34
L	Wisteria Drive	L28 - L27		8	VCP	363	Hole at 310.2ft	34	0	0		34
L	Daphne Way	L37 - L38		8	VCP	212	Proteous. Hole at 140.7ft	24	0	10		34
M	O'Connor Street	M42 - M13	12	14	VCP	111	Surface Damage and cracks	34	0	0		34
A	Pulgas Avenue	A19 - A18		8	VCP	214	Fracture multiple along the pipeline	33	0	0		33
H	Donohoe Street	H22 - H21		8	VCP	216	H56 - H22. Broken pipe at 3.9ft, 137.4ft	13	0	20		33
C	O'Connor Street	C37 - C36		8	Unknown	153	Proteus. This is the second inspection because of	15	0	12	5	32
H	Schembri Lane	H30 - H46		8	VCP	135		32	0	0		32
L	Camellia Drive	L53 - L52	6	8	VCP	218	MSA/Reverse Inspection Complete	32	0	0		32
L	Camellia Court	L56 - L54		8	VCP	327		32	0	0		32
H	Clarke Avenue	H31 - H14		8	VCP	404	MSA/JOL. No reverse inspection performed	15	0	16		31

Table 1
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of Pipelines for Structural Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structual Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
K	Daisy Lane	K23 - K22		8	Unknown	100	Material change at 23ft and needs a mini camera	23	0	8		31
K	Azalia Drive	K26 - K6		8	VCP	294	Pipe is broken at 286ft	11	0	20		31
A	Bay Road	A22 - A29	18	18	ACP	369	Reported 18" dia; Actual 15"	30	0	0		30
A	Tara Street	A24 - A23		8	VCP	240	Broken pipe at 228 ft.	10	0	20		30
C	Green Street	C24 - C23		8	VCP	151	MSA/JOM. No reverse inspection performed	10	0	20		30
C	East O'Keefe Street	C30 - C27		8	VCP	163		30	0	0		30
C	East O'Keefe Street	C32 - C30		8	VCP	147		30	0			30
C	East O'Keefe Street	C34 - C32		8	VCP	82	-	30	0	0		30
C	O'Connor Street	C36 - C35		8	Unknown	92	Proteus. This is the second inspection. First	18	0	12		30
F	Weeks Street	F17 - F22		8	VCP	56	This pipe line was F17 - F17A	30	0	0		30
L	Gaillardia Way	L12 - L11		8	VCP	82		30	0	0		30
L	Gardenia Way	L3 - L2	12	14	PVC	83		30	0	0		30
G	Ruth Ct	G12 - G4		8	PVC	273	Broken at 47ft, 170ft	29	0	0		29
H	University Avenue	H37 - H37A		8	VCP	221	New Line Segment. Broken at 162ft	9	0	20		29
H	Sacramento Street	H40 - H36		8	VCP	496	MSA/JOL. Reverse Inspection performed.	29	0	0		29
H	Donohoe Street	H54 - H20		8	VCP	153	Fracture at 14.7ft	19	0	10		29
H	Green Street	H75 - H6	18	20	PE	259	H7C - H6	29	0	0		29
L	Wisteria Drive	L22 - L3		8	VCP	366	Broken at 48.6ft	14	0	15		29
L	Abelia Way	L59 - L58		8	VCP	250	Broken at 220ft, 245ft	9	0	20		29
O	West Bayshore Road	O10 - O9		8	VCP	157		29	0	0		29
D	Euclid Avenue	D24 - D23	10	12	PE	350	Pipeline had heavy grease	20	0	8		28
F	Paul Robeson Court	F18 - F17		8	PVC	198	-	23	0	0	5	28
H	University Avenue	H36 - H35	10	12	VCP	474		23	0	0	5	28
L	Aster Way	L33 - L32		8	VCP	91	Hole at 10.2ft	13	0	15		28
L	Jasmine Way	L40 - L42		8	VCP	346	Broken pipe soil visible at 184ft	8	0	20		28
L	Camellia Drive	L45 - L25		8	VCP	202		23	0	0	5	28
M	O'Connor Street	M13 - M12	12	14	VCP	276	Broken at 193	13	0	15		28
O	Woodland Avenue	O29 - O28		8	VCP	143	Surcharged MH with substantial crud on water	16	0	12		28
O	Mission Drive	O50 - O49		8	VCP	172	Joint Offset Large at 170 ft	28	0	0		28
D	Manhattan Avenue	D76 - D19		12	PVC	99	-	27	0	0		27
H	Camphor Way	H45 - H9		8	PVC	222	Broken at 103ft, 106ft, 167ft	27	0	0		27
L	Daphne Way	L34 - L26		8	VCP	287	Hole at 263.3ft	7	0	15	5	27
L	Gardenia Court	L61 - L5		8	VCP	152	Broken at 98.8	7	0	20		27
M	Clarke Avenue	M14A - M5		8	VCP	75	New Line Segment. Broken at 70.2ft	7	0	20		27
D	Euclid Avenue	D22 - D21	10	12	HDPE	149	Grease/surcharged. Requires heavy cleaning.	0	0	26		26
F	Weeks Street	F22 - F12		8	VCP	54	This pipe line was F17A - F12	26	0	0		26
H	Schembri Lane	H46 - H52		8	VCP	361	Broken at 344.2ft	11	0	15		26
I	Myrtle Street	I28 - I21		8	VCP	315	This pipe line was I23A - I21	26	0	0		26
J	Garden Street	J6 - J5		8	VCP	558	Crack at 404ft	11	0	0	15	26
L	Verbina Drive	L14 - L13		8	VCP	302		26	0	0		26
L	Verbina Drive	L15 - L14		8	VCP	310		26	0	0		26
L	Jasmine Way	L44 - L45		8	PVC	238		26	0	0		26
O	West Bayshore Road	O8 - O59		8	VCP	103	-	26	0	0		26
C	O'Connor Street	C39 - C37		8	VCP	164	Proteus. This is the second inspection. First	9	0	16		25
I	Pulgas Avenue	I16 - I6		8	PVC	493	-	20	0	0	5	25
I	Brentwood Court	I19 - I18		8	PVC	239	-	20	0	0	5	25
K	Camellia Drive	K30 - K31		8	PVC	108	-	20	0	0	5	25
L	Verbina Drive	L18 - L17		8	VCP	331	Broken at 135ft	10	0	15		25
L	Daphne Way	L39 - L40		8	VCP	346	Broken at 296.7ft	10	0	15		25
O	Mission Drive	O46 - O45		8	VCP	213	broken at 3.7ft, joint separated medium along the pipe	25	0	0		25
O	Cooley Avenue	O51 - O51A		8	VCP	234	10% grease build up	20	0	0	5	25

Table 2
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List Sorted by Diameter, Pipelines for Structural Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
I	Beech Street	I3 - T19	24	26	PVC	188	30	0	0	5	35
I	Beech Street	I7 - I6	20	22	CP	259	26	0	0	20	46
A	Bay Road	A5 - A8	18	20	PE	124	80	0	0	10	90
A	Bay Road	A10 - A15	18	20	ACP	299	61	0	0	20	81
A	Bay Road	A15 - A16	18	20	ACP	435	50	0	0	25	75
A	Bay Road	A16 - A21	18	20	ACP	296	44	0	0	5	49
A	Bay Road	A9 - A10	18	20	ACP	181	28	0	0	15	43
D	Donohoe Street	D2 - D1	18	20	VCP	53	34	0	0		34
H	Green Street	H75 - H6	18	20	PE	259	29	0	0		29
D	Donohoe Street	D3 - D3A	16	18	VCP	11	34	0	0	5	39
D	Donohoe Street	D3A - D2	16	18	VCP	355	34	0	0		34
A	Bay Road	A22 - A29	18	18	ACP	369	30	0	0		30
A	Bay Road	A2 - A5	15	16	Unknown	244	70	0	0	25	95
I	Pulgas Avenue	I15 - I14	15	16	PVC	386	50	0	0	25	75
A	Bay Road	A1 - A2	15	16	Unknown	80	50	0	10	0	60
A	Bay Road	B2 - A2	15	16	PE	181	50	0	0	10	60
K/L	Larkspur Drive	L21 - K28	14	16	PVC	68	40	0	0	20	60
I	Pulgas Avenue	I13 - I12	15	16	PVC	320	30	0	0	5	35
H	Clarke Avenue	H14 - H13	12	14	VCP	446	66	0	0	25	91
H	Clarke Avenue	H12 - H11	12	14	VCP	333	70	0	0	15	85
H	Clarke Avenue	H64 - H71	12	14	VCP	99	42	0	24	15	81
H	Clarke Avenue	H13 - H12	12	14	VCP	108	54	0	0	10	64
H	Runnymede Street	H17 - H76	12	14	VCP	397	17	0	20	5	42
L	Gardenia Way	L2 - L1	12	14	PVC	179	24	0	15		39
H	Runnymede Street	H57 - H16	12	14	VCP	48	20	0	15		35
H	Clarke Avenue	H11 - H64	12	14	VCP	198	34	0	0		34
H	Runnymede Street	H76 - H57	12	14	VCP	73	19	0	15		34
M	O'Connor Street	M42 - M13	12	14	VCP	111	34	0	0		34
L	Gardenia Way	L3 - L2	12	14	PVC	83	30	0	0		30
M	O'Connor Street	M13 - M12	12	14	VCP	276	13	0	15		28
H	Runnymede Street	H35 - H34	10	12	VCP	322	62	0	8	30	100
D	Hwy 101	D10 - D3	10	12	Not Known	489	54	0	20	10	84
M/I	Pulgas Avenue	I43 - I15		12	PVC	60	35	0	0	30	65
O/N	Highway 101	O3 - N8		12	Unknown	205	44	0	8	10	62
D	West Bayshore Road	D21 - D19	10	12	HDPE	391	40	0	20		60
H	Runnymede Street	H34 - H17	10	12	VCP	269	34	0	16	10	60
C	Menalto Avenue	C2 - C1	10	12	Unknown	204	38	0	16	5	59
D	Manhattan Avenue	D19 - D10	10	12	PVC	48	30	0	0	20	50
M/I	Pulgas Avenue	M2 - I43		12	PVC	42	25	0	0	25	50
D	Euclid Avenue	D23 - D22	10	12	PE	73	30	0	8	10	48
D	Donohoe Street	D4 - D3	10	12	VCP	296	34	0	0		34
D	Euclid Avenue	D24 - D23	10	12	PE	350	20	0	8		28
H	University Avenue	H36 - H35	10	12	VCP	474	23	0	0	5	28
D	Manhattan Avenue	D76 - D19		12	PVC	99	27	0	0		27
D	Euclid Avenue	D22 - D21	10	12	HDPE	149	0	0	26		26
C	Menalto Avenue	C4 - C3	8	10	PE	436	66	0	10	15	91
C	Menalto Avenue	C6 - C5	8	10	PE	87	42	0	20	10	72
C	Menalto Avenue	C7 - C6	8	10	PE	448	20	0	12	25	57
C	Menalto Avenue	C2A - C2	8	10	VCP	28	34	0	20		54
D	O'Connor Street	D25 - D24	8	10	VCP	301	36	0	16		52
I	Myrtle Street	I21 - I13	8	10	VCP	600	47	0	0	5	52
O	West Bayshore Road	O9 - O8	8	10	VCP	140	36	0	0	5	41
C	Woodland Avenue	C48 - C11	8	10	Unknown	179	23	0	16		39
C	Menalto Avenue	C5 - C4	8	10	Unknown	328	29	0	10		39
C	Menalto Avenue	C10 - C8	8	10	PE	387	23	0	10	5	38
D	Woodland Avenue	D35 - D34	8	10	VCP	178	38	0	0		38
C	Menalto Avenue	C8 - C7	8	10	PE	401	20	0	16		36
O	West Bayshore Road	O4 - O3		8	VCP	277	86	0	0	25	111

Table 2
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List Sorted by Diameter, Pipelines for Structural Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
J	Pulgas Avenue	J7 - J6		8	VCP	441	73	0	10	25	108
A	Demeter Street	A13 - A12		8	Unknown	412	70	0	20	15	105
J	Garden Street	J9 - J9A		8	VCP	365	51	0	30	20	101
A	Pulgas Avenue	A18 - A16		8	VCP	442	70	0	10	20	100
K	Larkspur Drive	K19 - K18		8	CP	272	58	0	30	10	98
A	Gonzaga Street	A3 - A2		8	VCP	287	46	0	30	20	96
J	Garden Street	J10 - J9		8	VCP	300	70	0	10	15	95
K	Larkspur Drive	K18 - K17		8	CP	269	80	0	15		95
A	Illinois Street	A6 - A5		8	VCP	287	49	0	30	15	94
K	Daisy Lane	K21 - K3		8	CP	246	53	0	30	10	93
A	Illinois Street	A7 - A6		8	VCP	306	46	0	30	15	91
K	Wisteria Drive	K13 - K12		8	VCP	362	56	0	20	15	91
C	Elliot Drive	C41 - C40		8	VCP	191	70	0	20		90
C	Elliot Drive	C42 - C41		8	VCP	300	70	0	20		90
F	Weeks Street	F23 - F8		8	VCP	327	70	0	0	20	90
C	Elliot Drive	C40 - C36		8	VCP	257	67	0	20		87
A	Tara Street	A27 - A26		8	VCP	311	35	0	30	20	85
C	Hwy 101	C21 - C19		8	VCP	284	55	0	30		85
L	Wisteria Drive	L29 - L28		8	VCP	366	35	0	30	20	85
K	Larkspur Drive	K16 - K4		8	CP	274	53	0	15	15	83
O	Woodland Avenue	O23 - O22		8	VCP	470	62	0	20		82
I	Beech Street	I20 - I9		8	VCP	278	40	0	20	20	80
D	Donohoe Street	D9 - D8		8	VCP	496	70	0	8		78
D	Donohoe Street	D8 - D7		8	VCP	158	37	0	30	10	77
A	Demeter Street	A12 - A11		8	VCP	485	55	0	0	20	75
D	West Bayshore Road	D7 - D6		8	VCP	398	60	0	0	15	75
F	Weeks Street	F11 - F10		8	VCP	420	70	0	0	5	75
F	Weeks Street	F12 - F11		8	VCP	355	70	0	0	5	75
F	Weeks Street	F19 - F20		8	VCP	216	70	0	0	5	75
J	Garden Street	J8 - J6		8	VCP	442	70	0	0	5	75
C	Menalto Avenue	C43 - C8		8	VCP	101	58	0	16		74
G	Runnymede Street	G7 - G6		8	PVC	295	48	0	0	25	73
K	Camellia Drive	K35 - K34		8	VCP	280	42	0	10	20	72
C	Ralmar Avenue	C15 - C14		8	VCP	565	50	0	20		70
C	Oak Court	C47 - C46		8	VCP	309	70	0	0		70
D	West Bayshore Road	D51 - D7		8	VCP	458	45	0	20	5	70
F	Pulgas Avenue	F14 - F8		8	PVC	463	50	0	0	20	70
O	Woodland Avenue	O20 - O19		8	VCP	116	50	0	20		70
H	Donohoe Street	H21A - H55		8	VCP	157	48	0	0	20	68
K	Camellia Drive	K36 - K35		8	VCP	282	38	0	20	10	68
C	O'Connor Street	C35 - C7		8	Unknown	403	50	0	12	5	67
F	Weeks Street	F8 - F8A		8	VCP	281	46	0	0	20	66
O	Woodland Avenue	O21 - O19		8	VCP	394	46	0	20		66
K	Azalia Drive	K9 - K8		8	VCP	356	25	0	40		65
H	Clarke Avenue	H24 - H20		8	VCP	333	14	0	30	20	64
K	Wisteria Drive	K11 - K5		8	VCP	370	34	0	20	10	64
C	Hwy 101	C20 - C19		8	VCP	199	42	0	20		62
D	Green Street	D68 - D67		8	VCP	139	50	0	12		62
I	Myrtle Street	I23 - I28		8	VCP	166	32	0	30		62
L	Gaillardia Way	L11 - L10		8	VCP	360	22	0	30	10	62
G	Runnymede Street	G4 - G3		8	PVC	213	50	0	0	10	60
J	Garden Street	J5C - T21		8	PVC	62	40	0	0	20	60
K	Daisy Lane	K22 - K21		8	CP	256	60	0	0		60
K	Camellia Drive	K33 - K32		8	VCP	131	40	0	0	20	60
L	Wisteria Drive	L26 - L25		8	VCP	216	16	0	24	20	60
L	Jasmine Way	L43 - L44		8	PVC	334	60	0	0		60
O	Cooley Avenue	O51A - O13		8	VCP	236	50	0	0	10	60
C	Green Street	C23 - C3		8	VCP	400	34	0	20	5	59

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Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
G	Runnymede Street	G14 - G17		8	VCP	151	14	0	20	25	59
O	West Bayshore Road	O5 - O4		8	Unknown	399	44	0	0	15	59
C	Oak Court	C44 - C10		8	VCP	155	42	0	16		58
C	Oak Court	C46 - C45		8	VCP	256	58	0	0		58
D	O'Connor Street	D26 - D25		8	VCP	157	38	0	20		58
D	East Bayshore Road	D65 - D64		8	VCP	448	38	0	20		58
D	Oakwood Dive	D71 - D52		8	VCP	130	46	0	12		58
O	Capitol Avenue	O16 - O15		8	VCP	235	42	0	15		57
C/D	Donohoe Street	C26 - D9		8	VCP	436	36	0	20		56
D	French Court	D40 - D37		8	VCP	194	25	0	30		55
F	Weeks Street	F20 - F17		8	VCP	253	55	0	0		55
G	Runnymede Street	G6 - G4		8	PVC	388	50	0	0	5	55
K	Larkspur Drive	K17 - K16		8	CP	267	55	0	0		55
C	Poplar Avenue	C13 - C12		8	Unknown	481	34	0	20		54
D	O'Connor Street	D29 - D28		8	VCP	465	46	0	8		54
D	Oak Court	D37 - D36		8	VCP	368	54	0	0		54
D	East O'Keefe Street	D43 - D41		8	VCP	517	46	0	8		54
D	Woodland Avenue	D56 - D35		8	VCP	286	42	0	12		54
G	Buchanan Court	G10 - G9		8	CP	271	24	0	30		54
H	Donohoe Street	H21 - H56		8	VCP	151	54	0	0		54
O	Woodland Avenue	O29 - O30		8	VCP	220	42	0	12		54
C	Oak Court	C45 - C44		8	VCP	166	43	0	10		53
O	Woodland Avenue	O22 - O21		8	VCP	348	33	0	20		53
G	Mandela Court	G15 - G14		8	PVC	215	42	0	0	10	52
D	East O'Keefe Street	D47 - D22		8	VCP	299	41	0	5	5	51
O	Woodland Avenue	O28 - O26		8	VCP	434	41	0	10		51
A	Demeter Street	A14 - A13		8	Unknown	288	50	0	0		50
A	Pulgas Avenue	A20 - A19		8	VCP	340	20	0	30		50
C	Addison Avenue	C18 - C17		8	VCP	370	34	0	16		50
D	O'Connor Street	D41 - D24		8	VCP	191	50	0	0		50
D	Addison Avenue	D55 - D54		8	VCP	252	34	0	16		50
F	Weeks Street	F10 - F9		8	VCP	463	45	0	0	5	50
F	Clarke Avenue	F15 - F11		8	VCP	301	50	0	0		50
H	Donohoe Street	H23 - H22		8	VCP	405	50	0	0		50
K/L	Gardenia Way	K31 - L1		8	PVC	148	30	0	0	20	50
L	Verbina Drive	L17 - L16		8	VCP	236	50	0	0		50
L	Daphine Way	L35 - L34		8	VCP	250	50	0	0		50
L	Azalia Drive	L47 - L4		8	VCP	88	20	0	30		50
O	Clarke Avenue	O26 - O25		8	VCP	333	50	0	0		50
O	Newell Road	O35 - O34		8	ACP	316	50	0	0		50
O	Scotfield Street	O52 - O51		8	VCP	213	50	0	0		50
O	Woodland Avenue	O55 - O54		8	VCP	399	42	0	8		50
G	Buchanan Court	G9 - G6		8	CP	291	14	0	30	5	49
J	Garden Street	J9A - J8		8	VCP	35	19	0	30		49
O	West Bayshore Road	O59 - O7		8	VCP	182	9	0	30	10	49
D	Green Street	D69 - D67		8	VCP	259	40	0	8		48
F	Weeks Street	F9 - F23		8	VCP	111	43	0	0	5	48
O	Newell Road	O31 - O30		8	VCP	90	18	0	30		48
O	Woodland Avenue	O33 - O32		8	VCP	263	26	0	12	10	48
C	Palmar Avenue	C25 - C23		8	VCP	303	42	0	0	5	47
D	Glen Way	D67 - D63		8	VCP	294	17	0	30		47
O	Cooley Avenue	O58 - O57		8	VCP	403	17	0	30		47
C	Addison Avenue	C17 - C16		8	VCP	333	38	0	8		46
C	Hwy 101	C19 - C2		8	VCP	264	26	0	20		46
G	Pulgas Avenue	G13 - G3		8	PVC	453	46	0	0		46
K/L	Azalia Drive	L10 - K27		8	VCP	275	11	0	20	15	46
O	Cooley Avenue	O57 - O51		8	VCP	365	46	0	0		46
C/D	O'Connor Street	D29 - C37		8	Unknown	130	27	0	8	10	45

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D	Oak Court	D36 - D35		8	VCP	251	29	0	16		45
D	East O'Keefe Street	D48 - D47		8	VCP	401	28	0	12	5	45
C	East Bayshore	C14 - C12		8	PVC	282	44	0	0		44
C	Woodland Avenue	C51 - C50		8	Unknown	556	32	0	12		44
D	East Bayshore Road	D64 - D63		8	VCP	471	19	0	20	5	44
G	Veronica Court	G18 - G17		8	PVC	291	39	0	0	5	44
I	Terra Villa Avenue	I17 - I7		8	VCP	526	34	0	0	10	44
L	Azalia Drive	L10 - L9		8	VCP	180	44	0	0		44
A	Pulgas Avenue	A17 - A31		8	VCP	241	43	0	0		43
D	West Bayshore Road	D53 - D52		8	VCP	248	38	0	0	5	43
K	Azalia Drive	K7 - K6		8	VCP	362	23	0	0	20	43
O	Mission Drive	O41 - O40		8	Unknown	45	27	0	16		43
O	Scofield Street	O54 - O52		8	VCP	380	13	0	30		43
D	O'Connor Street	D27 - D26		8	VCP	392	34	0	8		42
F	Weeks Street	F7 - T25		8	VCP	477	32	0	0	10	42
H	Donohoe Street	H56 - H21A		8	VCP	157	42	0	0		42
I	Brentwood Court	I18 - I8		8	PVC	237	32	0	0	10	42
K	Hibiscus Court	K24 - K21		8	CP	149	42	0	0		42
L	Abelia Way	L58 - L57		8	VCP	295	22	0	20		42
C	Woodland Avenue	C49 - C48		8	Unknown	248	29	0	12		41
C	Woodland Avenue	C50 - C49		8	Unknown	361	29	0	12		41
D	O'Connor Street	D28 - D27		8	VCP	81	28	0	8	5	41
H	Cooley Avenue	H32 - H17		8	VCP	550	41	0	0		41
C	East Bayshore	C16 - C14		8	PVC	273	40	0	0		40
G	Runnymede Street	G8 - G7		8	PVC	327	35	0	0	5	40
O	Newell Road	O34 - O10		8	ACP	268	40	0	0		40
A	Pulgas Avenue	A31 - A16		8	PVC	177	34	0	0	5	39
D	Oak Court	D38 - D37		8	VCP	238	9	0	30		39
D	Oak Court	D39 - D37		8	Unknown	84	9	0	30		39
G	Buchanan Court	G11 - G10		8	CP	266	19	0	20		39
L	Verbina Drive	L13 - L9		8	VCP	311	24	0	15		39
L	Verbina Drive	L16 - L15		8	VCP	311	24	0	15		39
L	Aster Way	L31 - L30		8	VCP	179	9	0	30		39
O	Woodland Avenue	O32 - O31		8	VCP	258	9	0	30		39
H	University Avenue	H37A - H36		8	VCP	149	38	0	0		38
H	Sacramento Street	H41 - H40		8	VCP	150	38	0	0		38
H	Weeks Street	H42 - H37		8	VCP	388	38	0	0		38
H	Donohoe Street	H55 - H54		8	PVC	144	38	0	0		38
K	Sage Street	K20 - K19		8	CP	135	8	0	30		38
L	Camellia Drive	L20 - L16		8	VCP	101	38	0	0		38
L	Daphne Way	L37 - L36		8	VCP	312	38	0	0		38
L	Camellia Drive	L54 - L53		8	VCP	369	8	0	30		38
M	O'Connor Street	M43 - M42		8	VCP	104	38	0	0		38
O	Circle Drive	O53 - O52		8	VCP	188	38	0	0		38
O	Woodland Avenue	O56 - O55		8	VCP	377	38	0	0		38
H/E	Euclid Avenue	H38 - E42		8	VCP	519	17	0	20		37
K	Camellia Drive	K34 - K33		8	VCP	278	32	0	0	5	37
G	Runnymede Street	G19 - T23		8	VCP	263	36	0	0		36
H	Schembri Lane	H29 - H12		8	VCP	551	16	0	20		36
L	Daphne Court	L62 - L34		8	VCP	147	36	0	0		36
L	Camellia Drive	L46 - L45		8	VCP	136	35	0	0		35
L	Daphne Way	L36 - L35		8	VCP	278	24	0	10		34
D	O'Connor Street	D42 - D41		8	VCP	100	34	0	0		34
D	East O'Keefe Street	D44 - D43		8	VCP	113	34	0	0		34
D	East O'Keefe Street	D50 - D49		8	VCP	422	34	0	0		34
D	West Bayshore Road	D54 - D53		8	VCP	75	34	0	0		34
D	Hwy 101	D6 - D5		8	Unknown	246	34	0	0		34
H	Runnymede Street	H38 - H47		8	VCP	205	34	0	0		34

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H	Weeks Street	H43 - H42		8	VCP	346	34	0	0		34
H	Runnymede Street	H47 - H35		8	VCP	192	29	0	0	5	34
L	Verbina Drive	L19 - L18		8	VCP	333	34	0	0		34
L	Wisteria Drive	L28 - L27		8	VCP	363	34	0	0		34
L	Daphine Way	L37 - L38		8	VCP	212	24	0	10		34
A	Pulgas Avenue	A19 - A18		8	VCP	214	33	0	0		33
H	Donohoe Street	H22 - H21		8	VCP	216	13	0	20		33
C	O'Connor Street	C37 - C36		8	Unknown	153	15	0	12	5	32
H	Schembri Lane	H30 - H46		8	VCP	135	32	0	0		32
L	Camellia Drive	L53 - L52	6	8	VCP	218	32	0	0		32
L	Camellia Court	L56 - L54		8	VCP	327	32	0	0		32
H	Clarke Avenue	H31 - H14		8	VCP	404	15	0	16		31
K	Daisy Lane	K23 - K22		8	Unknown	100	23	0	8		31
K	Azalia Drive	K26 - K6		8	VCP	294	11	0	20		31
A	Tara Street	A24 - A23		8	VCP	240	10	0	20		30
C	Green Street	C24 - C23		8	VCP	151	10	0	20		30
C	East O'Keefe Street	C30 - C27		8	VCP	163	30	0	0		30
C	East O'Keefe Street	C32 - C30		8	VCP	147	30	0	0		30
C	East O'Keefe Street	C34 - C32		8	VCP	82	30	0	0		30
C	O'Connor Street	C36 - C35		8	Unknown	92	18	0	12		30
F	Weeks Street	F17 - F22		8	VCP	56	30	0	0		30
L	Gaillardia Way	L12 - L11		8	VCP	93	30	0	0		30
G	Ruth Ct	G12 - G4		8	PVC	273	29	0	0		29
H	University Avenue	H37 - H37A		8	VCP	221	9	0	20		29
H	Sacramento Street	H40 - H36		8	VCP	496	29	0	0		29
H	Donohoe Street	H54 - H20		8	VCP	153	19	0	10		29
L	Wisteria Drive	L22 - L3		8	VCP	366	14	0	15		29
L	Abelia Way	L59 - L58		8	VCP	250	9	0	20		29
O	West Bayshore Road	O10 - O9		8	VCP	157	29	0	0		29
F	Paul Robeson Court	F18 - F17		8	PVC	198	23	0	0	5	28
L	Aster Way	L33 - L32		8	VCP	91	13	0	15		28
L	Jasmine Way	L40 - L42		8	VCP	346	8	0	20		28
L	Camellia Drive	L45 - L25		8	VCP	202	23	0	0	5	28
O	Woodland Avenue	O29 - O28		8	VCP	143	16	0	12		28
O	Mission Drive	O50 - O49		8	VCP	172	28	0	0		28
H	Camphor Way	H45 - H9		8	PVC	222	27	0	0		27
L	Daphine Way	L34 - L26		8	VCP	287	7	0	15	5	27
L	Gardenia Court	L61 - L5		8	VCP	152	7	0	20		27
M	Clarke Avenue	M14A - M5		8	VCP	75	7	0	20		27
F	Weeks Street	F22 - F12		8	VCP	54	26	0	0		26
H	Schembri Lane	H46 - H52		8	VCP	361	11	0	15		26
I	Myrtle Street	I28 - I21		8	VCP	315	26	0	0		26
J	Garden Street	J6 - J5		8	VCP	558	11	0	0	15	26
L	Verbina Drive	L14 - L13		8	VCP	302	26	0	0		26
L	Verbina Drive	L15 - L14		8	VCP	310	26	0	0		26
L	Jasmine Way	L44 - L45		8	PVC	238	26	0	0		26
O	West Bayshore Road	O8 - O59		8	VCP	103	26	0	0		26
C	O'Connor Street	C39 - C37		8	VCP	164	9	0	16		25
I	Pulgas Avenue	I16 - I6		8	PVC	493	20	0	0	5	25
I	Brentwood Court	I19 - I18		8	PVC	239	20	0	0	5	25
K	Camellia Drive	K30 - K31		8	PVC	108	20	0	0	5	25
L	Verbina Drive	L18 - L17		8	VCP	331	10	0	15		25
L	Daphine Way	L39 - L40		8	VCP	346	10	0	15		25
O	Mission Drive	O46 - O45		8	VCP	213	25	0	0		25
O	Cooley Avenue	O51 - O51A		8	VCP	234	20	0	0	5	25

Table 3
East Palo Alto Sanitary District
Areas 1, 3, and 4 Proposed Pipeline Replacements
Opinion of Probable Construction Cost - Structural Upgrades

ITEM NO.	ITEM	EST. QUANTITY	UNIT OF MEASURE	UNIT PRICE	TOTAL
1	Mobilization	1	LS	\$1,928,000	\$1,928,000
2	Traffic Control	1	LS	\$814,000	\$814,000
3	Project Signage	1	LS	\$2,000	\$2,000
4	City Permits	1	LS	\$3,000	\$3,000
5	Construction Staking	1	LS	\$133,000	\$133,000
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	287	EA	\$2,000	\$574,000
10	8-inch PVC	62,825	LF	\$375	\$23,559,390
11	10-inch PVC	3,513	LF	\$410	\$1,440,195
12	12-inch PVC	3,471	LF	\$435	\$1,509,885
13	14/15-inch PVE or HDPE	2,352	LF	\$500	\$1,175,880
14	16/18-inch PVC	2,014	LF	\$525	\$1,057,306
15	20/21-inch PVC	1,648	LF	\$600	\$988,628
16	22/24-inch PVC or HDPE	259	LF	\$720	\$186,458
17	26/27-inch PVE or HDPE	188	LF	\$795	\$149,746
18	Drain Rock	2,000	TONS	\$50	\$100,000
19	Utility Crossings	1,500	EA	\$250	\$375,000
20	Reconnect Laterals	800	EA	\$850	\$680,000
21	Dewatering	1	LS	\$8,500	\$8,500
22	CCTV Inspections	76,269	LF	\$2.00	\$152,539
23	Cold-Patch Asphalt for Temporary Surfacing	60	TON	\$500	\$30,000
24	Asphalt Repaving	305,078	SF	\$5	\$1,525,389
25	Slurry Seal	2,593,161	SF	\$0.70	\$1,815,212
26	Striping and Pavement Markings	2,593,161	SF	\$0.85	\$2,204,187
Subtotal - Opinion of Probable Construction Costs					\$40,482,315
27	Contingency	%	20%	\$40,482,315	\$8,096,463
Engineering and Administrative					Opinion of Construction Subtotal
					\$48,578,778
	Design	%	2%		\$971,576
	Environmental/Permitting	%	2%		\$971,576
	Construction Management	%	3%		\$1,457,363
	Administration	%	2%		\$971,576
OPINION OF TOTAL PROBABLE PROJECT COST:					\$52,950,868

Table 4
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of Pipelines for Structural and Capacity Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (+ 5" Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
A	Bay Road	A5 - A8	18	20	PE	124	Sagging pipe 50%-100%	80	90	0	10	180
A	Bay Road	A10 - A15	18	20	ACP	299	Surface Damage Roughness Increased	61	90	0	20	171
A	Bay Road	A2 - A5	15	18	Unknown	244	Sagging pipe 75%	70	75	0	25	170
A	Bay Road	A15 - A16	18	20	ACP	435	Surface damage roughness. Sagging 75%	50	90	0	25	165
I	Beech Street	I3 - T19	24	26	PVC	188	Upgrade to 24" per MP	30	120	0	5	155
H	Clarke Avenue	H14 - H13	12	14	VCP	446	Broken at 425.5ft, 429ft with multiple cracks	66	60	0	25	151
H	Runnymede Street	H35 - H34	10	12	VCP	322	Pipeline has a lot of sagging. The high water level	62	50	8	30	150
I	Pulgas Avenue	I15 - I14	15	18	PVC	386	Sagging pipe 85%	50	75	0	25	150
I	Beech Street	I7 - I6	20	22	CP	259	Surface damage roughness. Sagging 75%	26	100	0	20	146
H	Clarke Avenue	H12 - H11	12	14	VCP	333	Broken at 111ft, 231ft, 331.9ft	70	60	0	15	145
H	Clarke Avenue	H64 - H71	12	14	VCP	99	H60-H3. Line has about 30%-40% grease that is	42	60	24	15	141
A / T	Bay Trail	A29 - T29	24	26	ACP	345	-	20	120	0	-	140
A	Bay Road	A16 - A21	18	20	ACP	296	-	44	90	0	5	139
A	Bay Road	A1 - A2	15	18	Unknown	80	MH A1 does not exist. Inspection started from B2-	50	75	10	0	135
A	Bay Road	B2 - A2	15	18	PE	181	A1 is buried, operator surveyed B2-A2 for total of	50	75	0	10	135
D	Hwy 101	D10 - D3	10	12	Not Known	489	MSA/80% grease in line. No heavy cleaning	54	50	20	10	134
A	Bay Road	A9 - A10	18	20	ACP	181	Broken at 172ft	28	90	0	15	133
C	Menaltoa Avenue	C4 - C3	8	12	PE	436	This is the second inspection after heavy cleaning.	66	40	10	15	131
K/L	Larkspur Drive	L21 - K28	14	16	PVC	68	Sagging pipe 75%	40	70	0	20	130
D	Donohoe Street	D2 - D1	18	20	VCP	53	-	34	90	0	-	124
H	Clarke Avenue	H13 - H12	12	14	VCP	108	Broken at 18ft with 55% sagging pipe	54	60	0	10	124
I	Beech Street	I31 - I4	24	26	PVC	300	This pipe line was IS-A-14	0	120	0	-	120
I	Beech Street	I4 - I3	24	26	PVC	243	-	0	120	0	-	120
I	Beech Street	I5 - I31	24	26	PVC	154	This pipe line was IS-15A	0	120	0	-	120
I	Beech Street	I6 - I5	24	26	PVC	411	-	0	120	0	-	120
D	Donohoe Street	D3 - D3A	16	18	VCP	11	Surface Damage Roughness Increased	34	80	0	5	119
H	Green Street	H75 - H6	18	20	PE	259	H7C - H6	29	90	0	-	119
I	Beech Street	I9 - I8	20	22	CP	155	-	18	100	0	-	118
D	Donohoe Street	D3A - D2	16	18	VCP	355	Broken at 4.2ft	34	80	0	-	114
C	Menaltoa Avenue	C6 - C5	8	12	PE	87	Pipeline has lots of debris	42	40	20	10	112
O	West Bayshore Road	O4 - O3	8	8	VCP	277	85% sag, 10% grease build up	86	0	0	25	111
D	West Bayshore Road	D21 - D19	10	12	HDPE	391	Heavy Cleaning/high flow. Night work. HDPE. This	40	50	20	-	110
H	Runnymede Street	H34 - H17	10	12	VCP	269	Submerged pipe with a line down alignment.	34	50	16	10	110
H	Green Street	H7 - H75	18	20	PE	91	H7B - H7C	20	90	0	-	110
H	Green Street	H73 - H74	18	20	PE	104	H8 - H7	20	90	0	-	110
H	Green Street	H74 - H8	18	20	PE	112	H7 - H7A	20	90	0	-	110
H	Green Street	H8 - H7	18	20	PE	235	H7A - H7B	20	90	0	-	110
I	Beech Street	I11 - I10	18	20	CP	380	-	20	90	0	-	110
I	Pulgas Avenue	I13 - I12	15	18	PVC	320	-	30	75	0	5	110
C	Menaltoa Avenue	C2 - C1	10	12	Unknown	204	MSA/Grease. Heavy grease blockage at 136.9	38	50	16	5	109
J	Pulgas Avenue	J7 - J6	8	8	VCP	441	Pipe is broken at 124ft and 197ft	73	0	10	25	108
A	Demeter Street	A13 - A12	8	8	Unknown	412	Broken pipe at 129 ft and 139 ft with sags.	70	0	20	15	105
H	Runnymede Street	H17 - H76	12	14	VCP	397	H17 - H16. Broken pipe at 43.2ft, 144.9ft, 150ft	17	60	20	5	102
J	Garden Street	J9 - J9A	8	8	VCP	365	Pipe is broken at 8ft, 32ft, 81ft, 223ft & 318ft.	51	0	30	20	101
A	Pulgas Avenue	A18 - A16	8	8	VCP	442	Broken pipe at 44ft.	70	0	10	20	100
D	Manhattan Avenue	D19 - D10	10	12	PVC	48	Line is sagging. Camera was under water for most	30	50	0	20	100
H/E	Green Street	E1 - H9	16	18	PE	270	-	20	80	0	-	100
H	Green Street	H9 - H73	16	18	PE	246	H9 - H8	20	80	0	-	100
I	Beech Street	I10 - I9	18	20	CP	221	-	10	90	0	-	100
I	Beech Street	I8 - I7	20	22	CP	238	-	0	100	0	-	100
L	Gardenia Way	L2 - L1	12	14	PVC	179	Joint Separated Large at 104.9ft, infiltration from	24	60	15	-	99
D	Euclid Avenue	D23 - D22	10	12	PE	73	Pipeline had heavy grease	30	50	8	10	98
K	Larkspur Drive	K19 - K18	8	8	CP	272	Pipe is broken and soil is visible at 144ft, and	58	0	30	10	98
C	Menaltoa Avenue	C7 - C6	8	12	PE	448	Pipeline has lots of debris	20	40	12	25	97
A	Gonzaga Street	A3 - A2	8	8	VCP	287	Broken pipe at 53, 141, 157, and 159 ft. Also, an	46	0	30	20	96
H	Runnymede Street	H57 - H16	12	14	VCP	48	H16A - H16B. Broken at 20.9ft	20	60	15	-	95
J	Garden Street	J10 - J9	8	8	VCP	300	Pipe is broken at 228ft and 293ft	70	0	10	15	95
K	Larkspur Drive	K18 - K17	8	8	CP	269	SMW spots on the line.	80	0	15	-	95
A	Illinois Street	A6 - A5	8	8	VCP	287	Broken pipe at 15 and 75ft. Also, an offset joint at	49	0	30	15	94
C	Menaltoa Avenue	C2A - C2	8	12	VCP	28	New line segment - Broken at 19.9 ft	34	40	20	-	94
H	Clarke Avenue	H11 - H64	12	14	VCP	198	H11 - H60. Broken at 73.2ft	34	60	0	-	94
H	Runnymede Street	H76 - H57	12	14	VCP	73	H16 - H16A. Broken at 63.2ft	19	60	15	-	94
M	O'Connor Street	M42 - M13	12	14	VCP	110	Surface Damage and cracks	34	60	0	-	94
K	Daisy Lane	K21 - K3	8	8	CP	246	Pipe has few locations with chunks of pipe missing	53	0	30	10	93
A	Bay Road	A23 - A22	18	20	ACP	14	-	2	90	0	-	92
D	O'Connor Street	D25 - D24	8	12	VCP	301	large offset between joints and unable to video it	36	40	16	-	92
I	Myrtle Street	I21 - I13	8	12	VCP	600	As I24 should be between them as shown in the	47	40	0	5	92
A	Illinois Street	A7 - A6	8	8	VCP	306	Broken pipe at 82 and 230 ft.	46	0	30	15	91

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K	Wisteria Drive	K13 - K12		8	VCP	362	Pipe is broken at 9ft and 91ft.	56	0	20	15	91
A	Bay Road	A21 - A23	18	20	ACP	168	New Line Segment. MH Name changed from A22	0	90	0		90
A	Bay Road	A21 - A23	18	20		155	A21 does not connect to A23 but it connects to	0	90	0		90
A	Bay Road	A8 - A9	18	20	PVC	61		0	90	0		90
C	Elliot Drive	C41 - C40		8	VCP	191	substantial breakage throughout their entire	70	0	20		90
C	Elliot Drive	C42 - C41		8	VCP	300	substantial breakage throughout their entire	70	0	20		90
F	Weeks Street	F23 - F8		8	VCP	327	This pipeline was F9A-F8	70	0	0	20	90
H/I	Beech Street	H2 - I11	18	20		37	Paved over	0	90	0		90
H	Beech Street	H3 - H2	18	20		31	Paved over	0	90	0		90
H	Clarke Avenue	H4 - H3	18	20		7	Paved over	0	90	0		90
H	Clarke Avenue	H5 - H4	18	20		259	Paved over	0	90	0		90
H	Green Street	H6 - H5	18	20		9	Paved over	0	90	0		90
L	Gardenia Way	L3 - L2	12	14	PVC	78		30	60	0		90
M	O'Connor Street	M13 - M12	12	14	VCP	276	Broken at 193	13	60	15		88
C	Elliot Drive	C40 - C36		8	VCP	257	MSA/Root tap barrel. Reverse inspection	67	0	20		87
A	Tara Street	A27 - A26		8	VCP	311	Broken pipe and soil is visible at 254.10 ft at 11	35	0	30	20	85
C	Hwy 101	C21 - C19		8	VCP	284	MSA/Collapsed pipe. Reverse inspection	55	0	30		85
L	Wisteria Drive	L29 - L28		8	VCP	366	Pipe is broken at 348ft, and soil is visible	35	0	30	20	85
D	Donohoe Street	D4 - D3	10	12	VCP	296	Fracture Multiple at 131ft	34	50	0		84
K	Larkspur Drive	K16 - K4		8	CP	274	SMW spots on the line	53	0	15	15	83
O	Woodland Avenue	O23 - O22		8	VCP	470	MSA/TBI. Reverse Inspection complete. Pipe had	62	0	20		82
O	West Bayshore Road	O9 - O8	8	12	VCP	140	15% grease buildup at 96ft	36	40	0	5	81
I	Beech Street	I20 - I9		8	VCP	278	Pipe has MSA at 267 due to hard	40	0	20	20	80
C	Woodland Avenue	C48 - C11	8	12	Unknown	179	MSA/ Reverse Inspection complete	23	40	16		79
C	Menalto Avenue	C5 - C4	8	12	Unknown	328	Pipeline has lots of debris	29	40	10		79
C	Menalto Avenue	C10 - C8	8	12	PE	387	Modified line segment. Could not find C9	23	40	10	5	78
D	Euclid Avenue	D24 - D23	10	12	PE	350	Pipeline had heavy grease	20	50	8		78
D	Woodland Avenue	D35 - D34	8	12	VCP	178	Fracture Multiple at 73ft	38	40	0		78
D	Donohoe Street	D9 - D8		8	VCP	496	Broken at 21ft, multiple cracks	70	0	8		78
H	Runnymede Street	H15 - H62	12	14	Other	201	H15 - H58	18	60	0		78
H	University Avenue	H36 - H35	10	12	VCP	474		23	50	0	5	78
D	Donohoe Street	D8 - D7		8	VCP	158	broken pipe at 100.08 ft from upstream	37	0	30	10	77
C	Menalto Avenue	C8 - C7	8	12	PE	401	broken pipe located 100.08 ft from upstream	20	40	16		76
D	Euclid Avenue	D22 - D21	10	12	HDPE	149	Grease/surcharged. Requires heavy cleaning.	0	50	26		76
A	Demeter Street	A12 - A11		8	VCP	485	Sagging pipeline 55%	55	0	0	20	75
D	West Bayshore Road	D7 - D6		8	VCP	398	5% grease build up and 90% sag	60	0	0	15	75
F	Weeks Street	F11 - F10		8	VCP	420	Broken at 176ft, 242ft	70	0	0	5	75
F	Weeks Street	F12 - F11		8	VCP	533	Broken at 414ft, multiple fractures and cracks	70	0	0	5	75
F	Weeks Street	F19 - F20		8	VCP	216	MH was F19 - F21	70	0	0	5	75
I	Pulgas Avenue	I12 - I6	15	18	PVC	338	-	0	75	0		75
I	Pulgas Avenue	I14 - I13	15	18	PVC	444	-	0	75	0		75
J	Garden Street	J8 - J6		8	VCP	442	Broken at 33ft, 81.4ft, 164ft, 223ft, 286ft, 318ft	70	0	0	5	75
K	Larkspur Drive	K28 - K4	15	18	PVC	242	-	0	75	0		75
L	Larkspur Drive	L1 - L21	14	16	PVC	223	-	0	70	0	5	75
C	Menalto Avenue	C43 - C8		8	VCP	101	Proteus. MSA/TBI. Heavy cleaning was performed.	58	0	16		74
M	East Bayshore Road	M41 - M42	12	14	PVC	104		14	60	0		74
D	Euclid Avenue	D33 - D24	10	12	PE	450	-	23	50	0		73
G	Runnymede Street	G7 - G6		8	PVC	295	-	48	0	0	25	73
K	Camellia Drive	K35 - K34		8	VCP	280	Broken pipe at 9ft.	42	0	10	20	72
C	Ralmar Avenue	C15 - C14		8	VCP	565	MSA/JAM. Camera is unable to get past this point.	50	0	20		70
C	Oak Court	C47 - C46		8	VCP	309	This is the second inspection after heavy cleaning	70	0	0		70
D	West Bayshore Road	D51 - D7		8	VCP	458	MSA/JOL. Camera cannot move any further.	45	0	20	5	70
F	Pulgas Avenue	F14 - F8		8	PVC	463	Sagging pipe up to 75%	50	0	0	20	70
L	Wisteria Drive	L25 - L24	10	12	PVC	342		20	50	0		70
L	Azalia Drive	L49 - L48	10	12	VCP	233		20	50	0		70
O	Woodland Avenue	O20 - O19		8		116	After removing roots and debris from the exit of	50	0	20		70
H	Runnymede Street	H62 - H14	12	12	Other	230	H58 -H14	9	60	0		69
M	O'Connor Street	M12 - M15	12	12	VCP	337		9	60	0		69
H	Donohoe Street	H21A - H55		8	VCP	157	H21A - H21. Broken at 61ft, 101ft	48	0	0	20	68
K	Camellia Drive	K36 - K35		8	VCP	282	Broken pipe at 264ft.	38	0	20	10	68
C	O'Connor Street	C35 - C7		8	Unknown	403	Proteus. This is the second inspection. First	50	0	12	5	67
F	Weeks Street	F8 - F8A		8	VCP	281	New Line segment	46	0	0	20	66
O	Woodland Avenue	O21 - O19		8	VCP	394	MSA/Reverse Inspection performed.	46	0	20		66
M/I	Pulgas Avenue	I43 - I15		12	PVC	60	I15A - I15. Sagging pipe 90%	35	0	0	30	65
K	Azalia Drive	K9 - K8		12	VCP	356	Pipe is broken at 158ft, 183ft, 296ft. At 104ft a	25	0	40		65
H	Runnymede Street	H16 - H60	12	14	PVC	346	H16B - H16C	4	60	0		64
H	Clarke Avenue	H24 - H20		8	VCP	333	MSA/Broken pipe. The USMH is a cleanout so no	14	0	30	20	64
K	Wisteria Drive	K11 - K5		8	VCP	370	MSA/Joint offset. Reverse inspection performed	34	0	20	10	64

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C	Hwy 101	C20 - C19		8	VCP	199	Broken at 5.1 ft, surface damage at 30 ft	42	0	20		62
D	Green Street	D68 - D67		8	VCP	139	Surface Damage at 94ft, pipeline has multiple	50	0	12		62
I	Myrtle Street	I23 - I28		8	VCP	166	Broken at 59ft. This pipe line was I23 - I23A	32	0	30		62
L	Gaillardia Way	L11 - L10		8	VCP	360	Pipe is broken at 240ft and soil is visible	22	0	30	10	62
L	Camellia Drive	L53 - L52	6	8	VCP	218	MSA/Reverse Inspection Complete	32	30	0		62
O/N	Highway 101	O3 - N8		12	Unknown	205	O3 was surcharged.	44	0	8	10	62
C	East Bayshore	C12 - C1	8	12	PVC	265		20	40			60
G	Runnymede Street	G4 - G3		8	PVC	213		50	0	0	10	60
H	Runnymede Street	H60 - H15	12	14	PVC	107	H16C - H15	0	60	0		60
J	Garden Street	J5C - T21		8	PVC	62	New Line Segment. Sagging pipe 75%	40	0	0	20	60
K	Daisy Lane	K22 - K21		8	CP	256	Surface Damage Missing Wall along the pipeline	60	0	0		60
K	Camellia Drive	K33 - K32		8	VCP	131	Sagging pipe 75%	40	0	0	20	60
L	Wisteria Drive	L26 - L25		8	VCP	216	Pipe has a lot of sagging, and an offset joint	16	0	24	20	60
L	Jasmine Way	L43 - L44		8	PVC	334	Joint Separated Large at 331.7ft	60	0	0		60
M	O'Connor Street	M15 - M5	12	14	VCP	264		0	60	0		60
M	East Bayshore Road	M38 - M39	12	14	PVC	158		0	60	0		60
M	East Bayshore Road	M39 - M40	12	14	PVC	158		0	60	0		60
M	East Bayshore Road	M40 - M41	12	14	PVC	263		0	60	0		60
O	Cooley Avenue	O51A - O13		8	VCP	236	5% grease build up, 60% sag	50	0	0	10	60
C	Green Street	C23 - C3		8	VCP	400	Pipe has grease and is under water for about 360'	34	0	20	5	59
G	Runnymede Street	G14 - G17		8	VCP	151	Pipe is broken at 17ft.	14	0	20	25	59
O	West Bayshore Road	O5 - O4		8	Unknown	399	Noteable sagging	44	0	0	15	59
C	Oak Court	C44 - C10		8	VCP	155	MSA/LR. Camera cannot move past bend.	42	0	16		58
C	Oak Court	C46 - C45		8	VCP	256	Broken at 153ft with multiple cracks	58	0	0		58
D	O'Connor Street	D26 - D25		8	VCP	157	broken pipe due to tree roots between 23-26 ft.	38	0	20		58
D	East Bayshore Road	D5 - D4	10	12	Unknown	94		8	50	0		58
D	East Bayshore Road	D65 - D64		8	VCP	448	Pipe is damaged. MSA/Crawler cannot move any	38	0	20		58
D	Oakwood Dive	D71 - D52		8	VCP	130	Proteus. This is the second inspection. First	46	0	12		58
O	Capitol Avenue	O16 - O15		8	VCP	235	Broken at 131.9 ft	42	0	15		57
C/D	Donohoe Street	C26 - D9		8	VCP	436	This is the second inspection after heavy cleaning	36	0	20		56
D	French Court	D40 - D37		8	VCP	204	This is the second inspection after using a root	25	0	30		55
F	Weeks Street	F20 - F17		8	VCP	252	MH was F20 - F21	55	0	0		55
G	Runnymede Street	G6 - G4		8	PVC	388		50	0	0	5	55
K	Larkspur Drive	K17 - K16		8	CP	267	Surface Damage Missing Wall along the pipeline	55	0	0		55
C	Poplar Avenue	C13 - C12		8	Unknown	481	MSA/Lined pipe. Camera could not move any	34	0	20		54
D	O'Connor Street	D29 - D28		8	VCP	465	Clogged, extensive cleaning required	46	0	8		54
D	Oak Court	D37 - D36		8	VCP	368	MSA/Reverse inspection complete	54	0	0		54
D	East O'Keefe Street	D43 - D41		8	VCP	517	MSA/Broken. Reverse inspection complete. broken	46	0	8		54
D	Woodland Avenue	D56 - D35		8	VCP	286	Offset joint 4' from MH	42	0	12		54
G	Buchanan Court	G10 - G9		8	CP	271	Pipe is broken and soil is visible at 10 ft and 221 ft	24	0	30		54
H	Donohoe Street	H21 - H56		8	VCP	151	H22 - H55. Broken at 14ft and 110ft	54	0	0		54
O	Woodland Avenue	O29 - O30		8	VCP	220	Surcharged MH with substantial crud on water	42	0	12		54
C	Oak Court	C45 - C44		8	VCP	166	Broken pipe at 6ft, 41ft, 24ft	43	0	10		53
O	Woodland Avenue	O22 - O21		8	VCP	348	broken at 81.02 ft, 311 ft, and 320 ft.	33	0	20		53
G	Mandela Court	G15 - G14		8	PVC	215		42	0	0	10	52
L	Azalia Drive	L50 - L49	10	12	VCP	224		2	50	0		52
D	East O'Keefe Street	D47 - D22		8	VCP	299	Grease build up at 269 ft	41	0	5	5	51
O	Woodland Avenue	O28 - O26		8	VCP	434	MSA/Reverse inspection complete. Proteus.	41	0	10		51
A	Demeter Street	A14 - A13		8	Unknown	288		50	0	0		50
A	Pulgas Avenue	A20 - A19		8	VCP	340	Broken pipe at 225ft, and separated joints at	20	0	30		50
C	Addison Avenue	C18 - C17		8	VCP	370	MSA/Proteus could not crawl any farther due to	34	0	16		50
D	O'Connor Street	D41 - D24		8	VCP	191	Broken at 51 ft and 122 ft	50	0	0		50
D	Addison Avenue	D55 - D54		8	VCP	252	MSA/Reverse inspection complete. broken at	34	0	16		50
F	Weeks Street	F10 - F9		8	VCP	463	Broken at 32.2ft & 247ft & 297ft & 314ft	45	0	0	5	50
F	Clarke Avenue	F15 - F11		8	VCP	301	Multiple cracks along the pipe	50	0	0		50
H	Donohoe Street	H23 - H22		8	VCP	405	H23 - H56. Broken at 133.9ft, 316.9ft	50	0	0		50
K/L	Gardenia Way	K31 - L1		8	PVC	148		30	0	0	20	50
L	Verbina Drive	L17 - L16		8	VCP	236		50	0	0		50
L	Wisteria Drive	L23 - L3	10	12	PVC	351		0	50	0		50
L	Wisteria Drive	L24 - L23	10	12	PVC	386		0	50	0		50
L	Daphine Way	L35 - L34		8	VCP	250		50	0	0		50
L	Azalia Drive	L47 - L4		8	VCP	88	Heavy grease was found on a sewer line cleaning	20	0	30		50
O	Clarke Avenue	O26 - O25		8	VCP	333	Broken at 125ft	50	0	0		50
O	Newell Road	O35 - O34		8	ACP	316		50	0	0		50
O	Scofield Street	O52 - O51		8	VCP	213		50	0	0		50
O	Woodland Avenue	O55 - O54		8	VCP	399	MSA/Reverse Inspection Complete.	42	0	8		50
M/I	Pulgas Avenue	M2 - I43		12	PVC	42	M2 - I15A. Sagging pipeline 100%	25	0	0	25	50
G	Buchanan Court	G9 - G6		8	CP	291	Pipe is broken and soil is visible at 84 ft	14	0	30	5	49

Table 4
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of Pipelines for Structural and Capacity Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (+ 5 *Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
J	Garden Street	J9A - J8		8	VCP	35	Pipe is broken at 115ft, 176ft, and 359ft.	19	0	30		49
O	West Bayshore Road	O59 - O7		8	VCP	182	Soil is visible at 167ft, 50% sag	9	0	30	10	49
D	Green Street	D69 - D67		8	VCP	259	MSA/TBI. No reverse inspection performed	40	0	8		48
F	Weeks Street	F9 - F23		8	VCP	111	This pipeline was F9-F9A	43	0	0	5	48
O	Newell Road	O31 - O30		8	VCP	45	Visible soil	18	0	30		48
O	Woodland Avenue	O33 - O32		8	VCP	263	Visible soil	26	0	12	10	48
C	Palmar Avenue	C25 - C23		8	VCP	303	Medium Joint Offset	42	0	0	5	47
D	Glen Way	D67 - D63		8	VCP	294	Pipe broken at 231.1 ft	17	0	30		47
O	Cooley Avenue	O58 - O57		8	VCP	403	MSA/Tap break in intruding. No reverse	17	0	30		47
C	Addison Avenue	C17 - C16		8	VCP	333	There's a JAM 3' from the DSMH. Camera is	38	0	8		46
C	Hwy 101	C19 - C2		8	VCP	264	MSA/OBM. Reverse Inspection performed.	26	0	20		46
C	Menalto Avenue	C3 - C2A	8	12	PVC	370	New line segment	6	40	0		46
G	Pulgas Avenue	G13 - G3		8	PVC	453	Proteous	46	0	0		46
K/L	Azalia Drive	L10 - K27		8	VCP	275	Broken connection of lateral at 28ft.	11	0	20	15	46
L	Camellia Drive	L52 - L50	8	12	VCP	224		6	40	0		46
O	Cooley Avenue	O57 - O51		8	VCP	365	Cracks and surface damage along the pipe	46	0	0		46
C/D	O'Connor Street	D29 - C37		8	Unknown	130	Proteus	27	0	8	10	45
D	Oak Court	D36 - D35		8	VCP	251	MSA/Broken. Reverse inspection attempted.	29	0	16		45
D	East O'Keefe Street	D48 - D47		8	VCP	401	5% Grease build up at 335ft	28	0	12	5	45
C	East Bayshore	C14 - C12		8	PVC	282		44	0	0		44
C	Woodland Avenue	C51 - C50		8	Unknown	556	Proteous. MSA/Reverse inspection complete. Pipe	32	0	12		44
D	East Bayshore Road	D64 - D63		8	VCP	471	MSA/Reverse inspection complete	19	0	20	5	44
G	Veronica Court	G18 - G17		8	PVC	291	-	39	0	0	5	44
I	Terra Villa Avenue	I17 - I7		8	VCP	526	Broken at 520ft	34	0	0	10	44
L	Azalia Drive	L10 - L9		8	VCP	180		44	0	0		44
O	West Bayshore Road	O7 - O6	8	12	Unknown	427	-	4	40	0		44
A	Pulgas Avenue	A17 - A31		8	VCP	242	This pipe line was A17 - A17A	43	0	0		43
D	West Bayshore Road	D53 - D52		8	VCP	248	Joint Separated Medium	38	0	0	5	43
K	Azalia Drive	K7 - K6		8	VCP	362	-	23	0	0	20	43
O	Mission Drive	O41 - O40		8	Unknown	45	Proteous. seemed to be different material	27	0	16		43
O	Scofield Street	O54 - O52		8	VCP	380	Pipe is broken at 26.08 feet.	13	0	30		43
D	O'Connor Street	D27 - D26		8	VCP	392	Clogged, extensive cleaning required	34	0	8		42
F	Weeks Street	F7 - T25		8	VCP	477	Multiple cracks along the pipe	32	0	0	10	42
H	Donohoe Street	H56 - H21A		8	VCP	157	H55 - H21A. Broken at 1.5ft	42	0	0		42
I	Brentwood Court	I18 - I8		8	PVC	237	-	32	0	0	10	42
K	Hibiscus Court	K24 - K21		8	CP	149	Surface Damage Missing Wall	42	0	0		42
L	Abelia Way	L58 - L57		8	VCP	295	Broken at 13ft, 50ft, 87ft, 236ft	22	0	20		42
L	Gardenia Way	L7 - L6	6	8	VCP	261		12	30	0		42
L	Azalia Drive	L9 - L4	6	8	VCP	162		12	30	0		42
C	Woodland Avenue	C49 - C48		8	Unknown	248	Proteous	29	0	12		41
C	Woodland Avenue	C50 - C49		8	Unknown	361	Proteous	29	0	12		41
D	O'Connor Street	D28 - D27		8	VCP	81	Clogged, extensive cleaning required	28	0	8	5	41
H	Cooley Avenue	H32 - H17		8	VCP	550	Broken Soil Visible at 111ft. Broken at 213.8ft,	41	0	0		41
C	East Bayshore	C16 - C14		8	PVC	273		40	0	0		40
C	Menalto Avenue	C3 - C2	8	12		398	Line has an uncharted manhole, See C2A	0	40	0		40
D	Euclid Avenue	D34 - D33	8	12	PE	293		0	40	0		40
D	Oakwood Dive	D66 - D65	8	12	Unknown	413		0	40	0		40
G	Runnymede Street	G8 - G7		8	PVC	327	-	35	0	0	5	40
O	Newell Road	O34 - O10		8	ACP	268		40	0	0		40
A	Pulgas Avenue	A31 - A16		8	PVC	177	This pipe line was A17A - A16	34	0	0	5	39
D	Oak Court	D38 - D37		8	VCP	238	MSA/Broken. No reverse inspection can be	9	0	30		39
D	Oak Court	D39 - D37		8	Unknown	84	New line segment. Proteus was used to inspect	9	0	30		39
G	Buchanan Court	G11 - G10		8	CP	266	Pipe is broken at 33 ft and 256 ft.	19	0	20		39
L	Verbina Drive	L13 - L9		8	VCP	311	Broken at 60.2ft	24	0	15		39
L	Verbina Drive	L16 - L15		8	VCP	311	Broken at 169ft	24	0	15		39
L	Aster Way	L31 - L30		8	VCP	179	Pipe is broken at 59ft, and soil is visible	9	0	30		39
O	Woodland Avenue	O32 - O31		8	VCP	258	Broken at 3.2 ft and 226 ft	9	0	30		39
H	University Avenue	H37A - H36		8	VCP	149	New Line Segment. Broken 144.3ft, 145ft	38	0	0		38
H	Sacramento Street	H41 - H40		8	VCP	150	Broken at 38ft, 42ft	38	0	0		38
H	Weeks Street	H42 - H37		8	VCP	388	Broken at 304ft	38	0	0		38
H	Donohoe Street	H55 - H54		8	PVC	144	H21 - H54. Broken at 51ft	38	0	0		38
K	Sage Street	K20 - K19		8	CP	135	Surface Damage Missing Wall at 96.4ft	8	0	30		38
L	Camellia Drive	L20 - L16		8	VCP	101	Broken at 6.6ft	38	0	0		38
L	Daphne Way	L37 - L36		8	VCP	312	Hole at 252ft, 93.5ft	38	0	0		38
L	Camellia Drive	L54 - L53		8	VCP	369	Pipe is broken and soil is visible at 3.02ft.	8	0	30		38
M	O'Connor Street	M43 - M42		8	VCP	104	Broken at 109ft	38	0	0		38
O	Circle Drive	O53 - O52		8	VCP	222	Broken at 204ft	38	0	0		38
O	Woodland Avenue	O56 - O55		8	VCP	377	-	38	0	0		38

Table 4
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Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (+ 5 "Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
H/E	Euclid Avenue	H38 - E42		8	VCP	519	Broken pipe Soil Visible at 146ft, 197ft	17	0	20		37
K	Camellia Drive	K34 - K33		8	VCP	278	-	32	0	0	5	37
G	Runnymede Street	G19 -T23		8	VCP	263	This pipeline was G2A-T23	36	0	0		36
H	Schembri Lane	H29 - H12		8	VCP	551	Broken pipe at 257ft, 349ft	16	0	20		36
L	Daphine Court	L62 - L34		8	VCP	147		36	0	0		36
L	Camellia Drive	L46 - L45		8	VCP	136	Broken pipe Soil Visible at 135.9ft	35	0	0		35
D	O'Connor Street	D42 - D41		8	VCP	100	Crack Multiple at 7.6ft & 69.2ft	34	0	0		34
D	East O'Keefe Street	D44 - D43		8	VCP	75	Broken at 72.2ft	34	0	0		34
D	East O'Keefe Street	D50 - D49		8	VCP	422	Broken at 418.9 ft	34	0	0		34
D	West Bayshore Road	D54 - D53		8	VCP	75	-	34	0	0		34
D	Hwy 101	D6 - D5		8	Unknown	246	Joint Offset Large at 112ft	34	0	0		34
H	Runnymede Street	H38 - H47		8	VCP	205	Broken at 80.3ft	34	0	0		34
H	Weeks Street	H43 - H42		8	VCP	346	Broken at 4.7ft, 303.7ft	34	0	0		34
H	Runnymede Street	H47 - H35		8	VCP	192	Fracture at 8.6 with cracks along the pipeline	29	0	0	5	34
K	Lotus Way / Camellia Drive	K37 - K32		8	VCP	350	Joint Offset Large at 342.9ft	24	0	10		34
L	Verbina Drive	L19 - L18		8	VCP	333	Broken at 330ft	34	0	0		34
L	Wisteria Drive	L28 - L27		8	VCP	363	Hole at 310.2ft	34	0	0		34
L	Daphine Way	L36 - L35		8	VCP	278	Hole at 38.4ft	24	0	10		34
L	Daphine Way	L37 - L38		8	VCP	212	Proteous. Hole at 140.7ft	24	0	10		34
A	Pulgas Avenue	A19 - A18		8	VCP	214	Fracture multiple along the pipeline	33	0	0		33
A	Gonzaga Street	A4 - A3		8	VCP	312	Broken at 205.9ft, multiple fractures	18	0	15		33
H	Donohoe Street	H22 - H21		8	VCP	216	H56 - H22. Broken pipe at 3.9ft, 137.4ft	13	0	20		33
C	O'Connor Street	C37 - C36		8	Unknown	153	Proteus. This is the second inspection. First	15	0	12	5	32
H	Schembri Lane	H30 - H46		8	VCP	135		32	0	0		32
L	Camellia Court	L56 - L54		8	VCP	327		32	0	0		32
H	Clarke Avenue	H31 - H14		8	VCP	404	MSA/JOL. No reverse inspection performed	15	0	16		31
K	Daisy Lane	K23 - K22		8	Unknown	100	Material change at 23ft and needs a mini camera	23	0	8		31
K	Azalia Drive	K26 - K6		8	VCP	294	Pipe is broken at 286ft	11	0	20		31
A	Bay Road	A22 - A29		15	ACP	369	-	30	0	0		30
A	Tara Street	A24 - A23		8	VCP	240	Broken pipe at 228 ft.	10	0	20		30
C	Green Street	C24 - C23		8	VCP	151	MSA/JOL. No reverse inspection performed	10	0	20		30
C	East O'Keefe Street	C30 - C27		8	VCP	163		30	0	0		30
C	East O'Keefe Street	C32 - C30		8	VCP	147		30	0	0		30
C	East O'Keefe Street	C34 - C32		8	VCP	82	-	30	0	0		30
C	O'Connor Street	C36 - C35		8	Unknown	92	Proteus. This is the second inspection. First	18	0	12		30
F	Weeks Street	F17 - F22		8	VCP	56	This pipe line was F17 - F17A	30	0	0		30
L	Gaillardia Way	L12 - L11		8	VCP	93		30	0	0		30
G	Ruth Ct	G12 - G4		8	PVC	273	Broken at 47ft, 170ft	29	0	0		29
H	University Avenue	H37 - H37A		8	VCP	221	New Line Segment. Broken at 162ft	9	0	20		29
H	Sacramento Street	H40 - H36		8	VCP	496	MSA/JOL. Reverse Inspection performed.	29	0	0		29
H	Donohoe Street	H54 - H20		8	VCP	153	Fracture at 14.7ft	19	0	10		29
L	Wisteria Drive	L22 - L3		8	VCP	366	Broken at 48.6ft	14	0	15		29
L	Abelia Way	L59 - L58		8	VCP	250	Broken at 220ft, 245ft	9	0	20		29
O	West Bayshore Road	O10 - O9		8	VCP	157		29	0	0		29
F	Paul Robeson Court	F18 - F17		8	PVC	198	-	23	0	0	5	28
L	Aster Way	L33 - L32		8	VCP	91	Hole at 10.2ft	13	0	15		28
L	Jasmine Way	L40 - L42		8	VCP	346	Broken pipe soil visible at 184ft	8	0	20		28
L	Camellia Drive	L45 - L25		8	VCP	202		23	0	0	5	28
O	Woodland Avenue	O29 - O28		8	VCP	143	Surcharged MH with substantial crud on water	16	0	12		28
O	Mission Drive	O50 - O49		8	VCP	172	Joint Offset Large at 170 ft	28	0	0		28
D	Manhattan Avenue	D76 - D19		12	PVC	55	-	27	0	0		27
H	Camphor Way	H45 - H9		8	PVC	222	Broken at 103ft, 106ft, 167ft	27	0	0		27
L	Daphine Way	L34 - L26		8	VCP	287	Hole at 263.3ft	7	0	15	5	27
L	Gardenia Court	L61 - L5		8	VCP	152	Broken at 98.8	7	0	20		27
M	Clarke Avenue	M14A - M5		8	VCP	75	New Line Segment. Broken at 70.2ft	7	0	20		27
D	East O'Keefe Street	D49 - D48		8	VCP	400	Broken at 264 ft, 90% blockage by a root ball at	11	0	15		26
F	Weeks Street	F22 - F12		8	VCP	54	This pipe line was F17A - F12	26	0	0		26
H	Schembri Lane	H46 - H52		8	VCP	361	Broken at 344.2ft	11	0	15		26
I	Myrtle Street	I28 - I21		8	VCP	315	This pipe line was I23A - I21	26	0	0		26
J	Garden Street	J6 - J5		8	VCP	558	Crack at 404ft	11	0	0	15	26
L	Verbina Drive	L14 - L13		8	VCP	302		26	0	0		26
L	Verbina Drive	L15 - L14		8	VCP	310		26	0	0		26
L	Jasmine Way	L44 - L45		8	PVC	238		26	0	0		26
O	Woodland Avenue	O19 - O17		8	VCP	86	Broken at 83 ft	16	0	10		26
O	Mission Drive	O48 - O47		8	VCP	122	Surface Damage at 119ft	14	0	12		26
O	West Bayshore Road	O8 - O59		8	VCP	103	-	26	0	0		26
C	O'Connor Street	C39 - C37		8	VCP	164	Proteus. This is the second inspection. First	9	0	16		25
I	Pulgas Avenue	I16 - I6		8	PVC	493	-	20	0	0	5	25

Table 4
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CCTV Survey Results Evaluation
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Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structual Total Score	Score for Master Plan Capacity (+ 5 *Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
I	Brentwood Court	I19 - I18		8	PVC	239	-	20	0	0	5	25
K	Camellia Drive	K30 - K31		8	PVC	108	-	20	0	0	5	25
L	Verbina Drive	L18 - L17		8	VCP	331	Broken at 135ft	10	0	15		25
L	Daphine Way	L39 - L40		8	VCP	346	Broken at 296.7ft	10	0	15		25
O	Mission Drive	O46 - O45		8	VCP	213	Broken at 3.7ft, Joint Separated Medium along the	25	0	0		25
O	Cooley Avenue	O51 - O51A		8	VCP	234	10% grease build up	20	0	0	5	25

Table 5
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List Sorted by Diameter, Pipelines for Structural and Capacity Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Diameter	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
A / T	Bay Trail	A29 - T29	18	24	26	ACP	345	20	120	0		140
I	Beech Street	I3 - T19	18	24	26	PVC	188	30	120	0	5	155
I	Beech Street	I31 - I4	18	24	26	PVC	300	0	120	0		120
I	Beech Street	I4 - I3	18	24	26	PVC	243	0	120	0		120
I	Beech Street	I5 - I31	18	24	26	PVC	154	0	120	0		120
I	Beech Street	I6 - I5	18	24	26	PVC	411	0	120	0		120
I	Beech Street	I7 - I6	15	20	22	CP	259	26	100	0	20	146
I	Beech Street	I8 - I7	15	20	22	CP	238	0	100	0		100
I	Beech Street	I9 - I8	15	20	22	CP	155	18	100	0		118
A	Bay Road	A10 - A15	15	18	20	ACP	299	61	90	0	20	171
A	Bay Road	A15 - A16	15	18	20	ACP	435	50	90	0	25	165
A	Bay Road	A16 - A21	15	18	20	ACP	296	44	90	0	5	139
A	Bay Road	A21 - A23	15	18	20	ACP	168	0	90	0		90
A	Bay Road	A21 - A23		18	20		155	0	90	0		90
A	Bay Road	A23 - A22	8	18	20	ACP	14	2	90	0		92
A	Bay Road	A5 - A8	12	18	20	PE	124	80	90	0	10	180
A	Bay Road	A8 - A9	12	18	20	PVC	61	0	90	0		90
A	Bay Road	A9 - A10	15	18	20	ACP	181	28	90	0	15	133
D	Donohoe Street	D2 - D1	10	18	20	VCP	53	34	90	0		124
H/I	Beech Street	H2 - I11	15	18	20		37	0	90	0		90
H	Beech Street	H3 - H2	15	18	20		31	0	90	0		90
H	Clarke Avenue	H4 - H3	15	18	20		7	0	90	0		90
H	Clarke Avenue	H5 - H4	15	18	20		259	0	90	0		90
H	Green Street	H6 - H5	12	18	20		9	0	90	0		90
H	Green Street	H7 - H75	12	18	20	PE	91	20	90	0		110
H	Green Street	H73 - H74	12	18	20	PE	104	20	90	0		110
H	Green Street	H74 - H8	12	18	20	PE	112	20	90	0		110
H	Green Street	H75 - H6	12	18	20	PE	259	29	90	0		119
H	Green Street	H8 - H7	12	18	20	PE	235	20	90	0		110
I	Beech Street	I10 - I9	15	18	20	CP	221	10	90	0		100
I	Beech Street	I11 - I10	15	18	20	CP	380	20	90	0		110
A	Bay Road	A1 - A2	12	15	18	Unknown	80	50	75	10	0	135
A	Bay Road	A2 - A5	12	15	18	Unknown	244	70	75	0	25	170
A	Bay Road	B2 - A2	12	15	18	PE	181	50	75	0	10	135
D	Donohoe Street	D3 - D3A	10	16	18	VCP	11	34	80	0	5	119
D	Donohoe Street	D3A - D2	10	16	18	VCP	355	34	80	0		114
H/E	Green Street	E1 - H9	12	16	18	PE	270	20	80	0		100
H	Green Street	H9 - H73	12	16	18	PE	246	20	80	0		100
I	Pulgas Avenue	I12 - I6	12	15	18	PVC	338	0	75	0		75
I	Pulgas Avenue	I13 - I12	12	15	18	PVC	320	30	75	0	5	110
I	Pulgas Avenue	I14 - I13	12	15	18	PVC	444	0	75	0		75
I	Pulgas Avenue	I15 - I14	12	15	18	PVC	386	50	75	0	25	150
K	Larkspur Drive	K28 - K4	10	15	18	PVC	242	0	75	0		75
L	Larkspur Drive	L1 - L21	12	14	16	PVC	223	0	70	0	5	75
K/L	Larkspur Drive	L21 - K28	10	14	16	PVC	68	40	70	0	20	130
A	Bay Road	A22 - A29	15		15	ACP	369	30	0	0		30
H	Clarke Avenue	H11 - H64	8	12	14	VCP	198	34	60	0		94
H	Clarke Avenue	H12 - H11	8	12	14	VCP	333	70	60	0	15	145
H	Clarke Avenue	H13 - H12	8	12	14	VCP	108	54	60	0	10	124
H	Clarke Avenue	H14 - H13	8	12	14	VCP	446	66	60	0	25	151
H	Runnymede Street	H15 - H62	8	12	14	Other	201	18	60	0		78
H	Runnymede Street	H16 - H60	8	12	14	PVC	346	4	60	0		64
H	Runnymede Street	H17 - H76	8	12	14	VCP	397	17	60	20	5	102
H	Runnymede Street	H57 - H16	8	12	14	VCP	48	20	60	15		95
H	Runnymede Street	H60 - H15	8	12	14	PVC	107	0	60	0		60
H	Clarke Avenue	H64 - H71	8	12	14	VCP	99	42	60	24	15	141
H	Runnymede Street	H76 - H57	8	12	14	VCP	73	19	60	15		94
L	Gardenia Way	L2 - L1	12	12	14	PVC	179	24	60	15		99
L	Gardenia Way	L3 - L2	12	12	14	PVC	78	30	60	0		90
M	O'Connor Street	M13 - M12	8	12	14	VCP	276	13	60	15		88
M	O'Connor Street	M15 - M5	8	12	14	VCP	264	0	60	0		60
M	East Bayshore Road	M38 - M39	6	12	14	PVC	158	0	60	0		60

Table 5
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
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Area	Location/ Street Name	PSR	Diameter	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
M	East Bayshore Road	M39 - M40	6	12	14	PVC	158	0	60	0		60
M	East Bayshore Road	M40 - M41	6	12	14	PVC	263	0	60	0		60
M	East Bayshore Road	M41 - M42	6	12	14	PVC	104	14	60	0		74
M	O'Connor Street	M42 - M13	6	12	14	VCP	110	34	60	0		94
C	Menalto Avenue	C2 - C1	8	10	12	Unknown	204	38	50	16	5	109
D	Hwy 101	D10 - D3	10	10	12	Not Known	489	54	50	20	10	134
D	Manhattan Avenue	D19 - D10	10	10	12	PVC	48	30	50	0	20	100
D	West Bayshore Road	D21 - D19	8	10	12	HDPE	391	40	50	20		110
D	Euclid Avenue	D22 - D21	8	10	12	HDPE	149	0	50	26		76
D	Euclid Avenue	D23 - D22	8	10	12	PE	73	30	50	8	10	98
D	Euclid Avenue	D24 - D23	8	10	12	PE	350	20	50	8		78
D	Euclid Avenue	D33 - D24	8	10	12	PE	450	23	50	0		73
D	Donohoe Street	D4 - D3	8	10	12	VCP	296	34	50	0		84
D	East Bayshore Road	D5 - D4	8	10	12	Unknown	94	8	50	0		58
H	Runnymede Street	H34 - H17	6	10	12	VCP	269	34	50	16	10	110
H	Runnymede Street	H35 - H34	6	10	12	VCP	322	62	50	8	30	150
H	University Avenue	H36 - H35	6	10	12	VCP	474	23	50	0	5	78
H	Runnymede Street	H62 - H14	8	12	12	Other	230	9	60	0		69
M/I	Pulgas Avenue	I43 - I15	12		12	PVC	60	35	0	0	30	65
L	Wisteria Drive	L23 - L3	8	10	12	PVC	351	0	50	0		50
L	Wisteria Drive	L24 - L23	8	10	12	PVC	386	0	50	0		50
L	Wisteria Drive	L25 - L24	8	10	12	PVC	342	20	50	0		70
L	Azalia Drive	L49 - L48	8	10	12	VCP	233	20	50	0		70
L	Azalia Drive	L50 - L49	8	10	12	VCP	224	2	50	0		52
M	O'Connor Street	M12 - M15	8	12	12	VCP	337	9	60	0		69
M/I	Pulgas Avenue	M2 - I43	12		12	PVC	42	25	0	0	25	50
C	Menalto Avenue	C10 - C8	6	8	10	PE	387	23	40	10	5	78
C	East Bayshore	C12 - C1	6	8	10	PVC	265	20	40			60
C	Menalto Avenue	C2A - C2	6	8	10	VCP	28	34	40	20		94
C	Menalto Avenue	C3 - C2		8	10		398	0	40	0		40
C	Menalto Avenue	C3 - C2A	6	8	10	PVC	370	6	40	0		46
C	Menalto Avenue	C4 - C3	6	8	10	PE	436	66	40	10	15	131
C	Woodland Avenue	C48 - C11	6	8	10	Unknown	179	23	40	16		79
C	Menalto Avenue	C5 - C4	6	8	10	Unknown	328	29	40	10		79
C	Menalto Avenue	C6 - C5	6	8	10	PE	87	42	40	20	10	112
C	Menalto Avenue	C7 - C6	6	8	10	PE	448	20	40	12	25	97
C	Menalto Avenue	C8 - C7	6	8	10	PE	401	20	40	16		76
D	O'Connor Street	D25 - D24	6	8	10	VCP	301	36	40	16		92
D	Euclid Avenue	D34 - D33	8	8	10	PE	293	0	40	0		40
D	Woodland Avenue	D35 - D34	6	8	10	VCP	178	38	40	0		78
D	Oakwood Dive	D66 - D65	8	8	10	Unknown	413	0	40	0		40
D	Manhattan Avenue	D76 - D19	10		10	PVC	55	27	0	0		27
I	Myrtle Street	I21 - I13	6	8	10	VCP	600	47	40	0	5	92
L	Camellia Drive	L52 - L50	6	8	10	VCP	224	6	40	0		46
O/N	Highway 101	O3 - N8	10		10	Unknown	205	44	0	8	10	62
O	West Bayshore Road	O7 - O6	8	8	10	Unknown	427	4	40	0		44
O	West Bayshore Road	O9 - O8	8	8	10	VCP	140	36	40	0	5	81
A	Demeter Street	A12 - A11	6		8	VCP	485	55	0	0	20	75
A	Demeter Street	A13 - A12	6		8	Unknown	412	70	0	20	15	105
A	Demeter Street	A14 - A13	6		8	Unknown	288	50	0	0		50
A	Pulgas Avenue	A17 - A31	6		8	VCP	242	43	0	0		43
A	Pulgas Avenue	A18 - A16	6		8	VCP	442	70	0	10	20	100
A	Pulgas Avenue	A19 - A18	6		8	VCP	214	33	0	0		33
A	Pulgas Avenue	A20 - A19	6		8	VCP	340	20	0	30		50
A	Tara Street	A24 - A23	6		8	VCP	240	10	0	20		30
A	Tara Street	A27 - A26	6		8	VCP	311	35	0	30	20	85
A	Gonzaga Street	A3 - A2	6		8	VCP	287	46	0	30	20	96
A	Pulgas Avenue	A31 - A16	6		8	PVC	177	34	0	0	5	39
A	Gonzaga Street	A4 - A3	6		8	VCP	312	18	0	15		33
A	Illinois Street	A6 - A5	6		8	VCP	287	49	0	30	15	94
A	Illinois Street	A7 - A6	6		8	VCP	306	46	0	30	15	91
C	Poplar Avenue	C13 - C12	6		8	Unknown	481	34	0	20		54

Table 5
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Area	Location/ Street Name	PSR	Diameter	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
C	East Bayshore	C14 - C12	6		8	PVC	282	44	0	0		44
C	Ralmar Avenue	C15 - C14	6		8	VCP	565	50	0	20		70
C	East Bayshore	C16 - C14	6		8	PVC	273	40	0	0		40
C	Addison Avenue	C17 - C16	6		8	VCP	333	38	0	8		46
C	Addison Avenue	C18 - C17	6		8	VCP	370	34	0	16		50
C	Hwy 101	C19 - C2	6		8	VCP	264	26	0	20		46
C	Hwy 101	C20 - C19	6		8	VCP	199	42	0	20		62
C	Hwy 101	C21 - C19	6		8	VCP	284	55	0	30		85
C	Green Street	C23 - C3	6		8	VCP	400	34	0	20	5	59
C	Green Street	C24 - C23	6		8	VCP	151	10	0	20		30
C	Palmar Avenue	C25 - C23	6		8	VCP	303	42	0	0	5	47
C/D	Donohoe Street	C26 - D9	6		8	VCP	436	36	0	20		56
C	East O'Keefe Street	C30 - C27	6		8	VCP	163	30	0	0		30
C	East O'Keefe Street	C32 - C30	6		8	VCP	147	30	0			30
C	East O'Keefe Street	C34 - C32	6		8	VCP	82	30	0	0		30
C	O'Connor Street	C35 - C7	6		8	Unknown	403	50	0	12	5	67
C	O'Connor Street	C36 - C35	6		8	Unknown	92	18	0	12		30
C	O'Connor Street	C37 - C36	6		8	Unknown	153	15	0	12	5	32
C	O'Connor Street	C39 - C37	6		8	VCP	164	9	0	16		25
C	Elliot Drive	C40 - C36	6		8	VCP	257	67	0	20		87
C	Elliot Drive	C41 - C40	6		8	VCP	191	70	0	20		90
C	Elliot Drive	C42 - C41	6		8	VCP	300	70	0	20		90
C	Menalto Avenue	C43 - C8	6		8	VCP	101	58	0	16		74
C	Oak Court	C44 - C10	6		8	VCP	155	42	0	16		58
C	Oak Court	C45 - C44	6		8	VCP	166	43	0	10		53
C	Oak Court	C46 - C45	6		8	VCP	256	58	0	0		58
C	Oak Court	C47 - C46	6		8	VCP	309	70	0	0		70
C	Woodland Avenue	C49 - C48	6		8	Unknown	248	29	0	12		41
C	Woodland Avenue	C50 - C49	6		8	Unknown	361	29	0	12		41
C	Woodland Avenue	C51 - C50	6		8	Unknown	556	32	0	12		44
D	O'Connor Street	D26 - D25	6		8	VCP	157	38	0	20		58
D	O'Connor Street	D27 - D26	6		8	VCP	392	34	0	8		42
D	O'Connor Street	D28 - D27	6		8	VCP	81	28	0	8	5	41
C/D	O'Connor Street	D29 - C37	6		8	Unknown	130	27	0	8	10	45
D	O'Connor Street	D29 - D28	6		8	VCP	465	46	0	8		54
D	Oak Court	D36 - D35	6		8	VCP	251	29	0	16		45
D	Oak Court	D37 - D36	6		8	VCP	368	54	0	0		54
D	Oak Court	D38 - D37	6		8	VCP	238	9	0	30		39
D	Oak Court	D39 - D37	6		8	Unknown	84	9	0	30		39
D	French Court	D40 - D37	6		8	VCP	204	25	0	30		55
D	O'Connor Street	D41 - D24	6		8	VCP	191	50	0	0		50
D	O'Connor Street	D42 - D41	6		8	VCP	100	34	0	0		34
D	East O'Keefe Street	D43 - D41	6		8	VCP	517	46	0	8		54
D	East O'Keefe Street	D44 - D43	6		8	VCP	75	34	0	0		34
D	East O'Keefe Street	D47 - D22	8		8	VCP	299	41	0	5	5	51
D	East O'Keefe Street	D48 - D47	6		8	VCP	401	28	0	12	5	45
D	East O'Keefe Street	D49 - D48	6		8	VCP	400	11	0	15		26
D	East O'Keefe Street	D50 - D49	6		8	VCP	422	34	0	0		34
D	West Bayshore Road	D51 - D7	6		8	VCP	458	45	0	20	5	70
D	West Bayshore Road	D53 - D52	6		8	VCP	248	38	0	0	5	43
D	West Bayshore Road	D54 - D53	6		8	VCP	75	34	0	0		34
D	Addison Avenue	D55 - D54	6		8	VCP	252	34	0	16		50
D	Woodland Avenue	D56 - D35	6		8	VCP	286	42	0	12		54
D	Hwy 101	D6 - D5	8		8	Unknown	246	34	0	0		34
D	East Bayshore Road	D64 - D63	6		8	VCP	471	19	0	20	5	44
D	East Bayshore Road	D65 - D64	6		8	VCP	448	38	0	20		58
D	Glen Way	D67 - D63	6		8	VCP	294	17	0	30		47
D	Green Street	D68 - D67	6		8	VCP	139	50	0	12		62
D	Green Street	D69 - D67	6		8	VCP	259	40	0	8		48
D	West Bayshore Road	D7 - D6	6		8	VCP	398	60	0	0	15	75
D	Oakwood Dive	D71 - D52	6		8	VCP	130	46	0	12		58
D	Donohoe Street	D8 - D7	6		8	VCP	158	37	0	30	10	77

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D	Donohoe Street	D9 - D8	6		8	VCP	496	70	0	8		78
F	Weeks Street	F10 - F9	6		8	VCP	463	45	0	0	5	50
F	Weeks Street	F11 - F10	6		8	VCP	420	70	0	0	5	75
F	Weeks Street	F12 - F11	6		8	VCP	533	70	0	0	5	75
F	Pulgas Avenue	F14 - F8	6		8	PVC	463	50	0	0	20	70
F	Clarke Avenue	F15 - F11	6		8	VCP	301	50	0	0		50
F	Weeks Street	F17 - F22	6		8	VCP	56	30	0	0		30
F	Paul Robeson Court	F18 - F17	6		8	PVC	198	23	0	0	5	28
F	Weeks Street	F19 - F20	6		8	VCP	216	70	0	0	5	75
F	Weeks Street	F20 - F17	6		8	VCP	252	55	0	0		55
F	Weeks Street	F22 - F12	6		8	VCP	54	26	0	0		26
F	Weeks Street	F23 - F8	6		8	VCP	327	70	0	0	20	90
F	Weeks Street	F7 - T25	6		8	VCP	477	32	0	0	10	42
F	Weeks Street	F8 - F8A	6		8	VCP	281	46	0	0	20	66
F	Weeks Street	F9 - F23	6		8	VCP	111	43	0	0	5	48
G	Buchanon Court	G10 - G9	6		8	CP	271	24	0	30		54
G	Buchanon Court	G11 - G10	6		8	CP	266	19	0	20		39
G	Ruth Ct	G12 - G4	6		8	PVC	273	29	0	0		29
G	Pulgas Avenue	G13 - G3	6		8	PVC	453	46	0	0		46
G	Runnymede Street	G14 - G17	6		8	VCP	151	14	0	20	25	59
G	Mandela Court	G15 - G14	8		8	PVC	215	42	0	0	10	52
G	Veronica Court	G18 - G17	6		8	PVC	291	39	0	0	5	44
G	Runnymede Street	G19 - T23	6		8	VCP	263	36	0	0		36
G	Runnymede Street	G4 - G3	6		8	PVC	213	50	0	0	10	60
G	Runnymede Street	G6 - G4	6		8	PVC	388	50	0	0	5	55
G	Runnymede Street	G7 - G6	6		8	PVC	295	48	0	0	25	73
G	Runnymede Street	G8 - G7	6		8	PVC	327	35	0	0	5	40
G	Buchanon Court	G9 - G6	6		8	CP	291	14	0	30	5	49
H	Donohoe Street	H21 - H56	6		8	VCP	151	54	0	0		54
H	Donohoe Street	H21A - H55	6		8	VCP	157	48	0	0	20	68
H	Donohoe Street	H22 - H21	6		8	VCP	216	13	0	20		33
H	Donohoe Street	H23 - H22	6		8	VCP	405	50	0	0		50
H	Clarke Avenue	H24 - H20	6		8	VCP	333	14	0	30	20	64
H	Schembri Lane	H29 - H12	6		8	VCP	551	16	0	20		36
H	Schembri Lane	H30 - H46	6		8	VCP	135	32	0	0		32
H	Clarke Avenue	H31 - H14	6		8	VCP	404	15	0	16		31
H	Cooley Avenue	H32 - H17	6		8	VCP	550	41	0	0		41
H	University Avenue	H37 - H37A	6		8	VCP	221	9	0	20		29
H	University Avenue	H37A - H36	6		8	VCP	149	38	0	0		38
H/E	Euclid Avenue	H38 - E42	6		8	VCP	519	17	0	20		37
H	Runnymede Street	H38 - H47	6		8	VCP	205	34	0	0		34
H	Sacramento Street	H40 - H36	6		8	VCP	496	29	0	0		29
H	Sacramento Street	H41 - H40	6		8	VCP	150	38	0	0		38
H	Weeks Street	H42 - H37	6		8	VCP	388	38	0	0		38
H	Weeks Street	H43 - H42	6		8	VCP	346	34	0	0		34
H	Camphor Way	H45 - H9	6		8	PVC	222	27	0	0		27
H	Schembri Lane	H46 - H52	6		8	VCP	361	11	0	15		26
H	Runnymede Street	H47 - H35	6		8	VCP	192	29	0	0	5	34
H	Donohoe Street	H54 - H20	6		8	VCP	153	19	0	10		29
H	Donohoe Street	H55 - H54	6		8	PVC	144	38	0	0		38
H	Donohoe Street	H56 - H21A	6		8	VCP	157	42	0	0		42
I	Pulgas Avenue	I16 - I6	8		8	PVC	493	20	0	0	5	25
I	Terra Villa Avenue	I17 - I7	6		8	VCP	526	34	0	0	10	44
I	Brentwood Court	I18 - I8	6		8	PVC	237	32	0	0	10	42
I	Brentwood Court	I19 - I18	6		8	PVC	239	20	0	0	5	25
I	Beech Street	I20 - I9	6		8	VCP	278	40	0	20	20	80
I	Myrtle Street	I23 - I28	6		8	VCP	166	32	0	30		62
I	Myrtle Street	I28 - I21	6		8	VCP	315	26	0	0		26
J	Garden Street	J10 - J9	6		8	VCP	300	70	0	10	15	95
J	Garden Street	J5C - T21	8		8	PVC	62	40	0	0	20	60
J	Garden Street	J6 - J5	6		8	VCP	558	11	0	0	15	26
J	Pulgas Avenue	J7 - J6	6		8	VCP	441	73	0	10	25	108

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J	Garden Street	J8 - J6	6		8	VCP	442	70	0	0	5	75
J	Garden Street	J9 - J9A	6		8	VCP	365	51	0	30	20	101
J	Garden Street	J9A - J8	6		8	VCP	35	19	0	30		49
K	Wisteria Drive	K11 - K5	6		8	VCP	370	34	0	20	10	64
K	Wisteria Drive	K13 - K12	6		8	VCP	362	56	0	20	15	91
K	Larkspur Drive	K16 - K4	6		8	CP	274	53	0	15	15	83
K	Larkspur Drive	K17 - K16	6		8	CP	267	55	0	0		55
K	Larkspur Drive	K18 - K17	6		8	CP	269	80	0	15		95
K	Larkspur Drive	K19 - K18	6		8	CP	272	58	0	30	10	98
K	Sage Street	K20 - K19	6		8	CP	135	8	0	30		38
K	Daisy Lane	K21 - K3	6		8	CP	246	53	0	30	10	93
K	Daisy Lane	K22 - K21	6		8	CP	256	60	0	0		60
K	Daisy Lane	K23 - K22	6		8	Unknown	100	23	0	8		31
K	Hibiscus Court	K24 - K21	6		8	CP	149	42	0	0		42
K	Azalia Drive	K26 - K6	6		8	VCP	294	11	0	20		31
K	Camellia Drive	K30 - K31	8		8	PVC	108	20	0	0	5	25
K/L	Gardenia Way	K31 - L1	8		8	PVC	148	30	0	0	20	50
K	Camellia Drive	K33 - K32	6		8	VCP	131	40	0	0	20	60
K	Camellia Drive	K34 - K33	6		8	VCP	278	32	0	0	5	37
K	Camellia Drive	K35 - K34	6		8	VCP	280	42	0	10	20	72
K	Camellia Drive	K36 - K35	6		8	VCP	282	38	0	20	10	68
K	Lotus Way / Camellia Drive	K37 - K32	6		8	VCP	350	24	0	10		34
K	Azalia Drive	K7 - K6	8		8	VCP	362	23	0	0	20	43
K	Azalia Drive	K9 - K8	8		8	VCP	356	25	0	40		65
K/L	Azalia Drive	L10 - K27	6		8	VCP	275	11	0	20	15	46
L	Azalia Drive	L10 - L9	6		8	VCP	180	44	0	0		44
L	Gaillardia Way	L11 - L10	6		8	VCP	360	22	0	30	10	62
L	Gaillardia Way	L12 - L11	6		8	VCP	93	30	0	0		30
L	Verbina Drive	L13 - L9	6		8	VCP	311	24	0	15		39
L	Verbina Drive	L14 - L13	6		8	VCP	302	26	0	0		26
L	Verbina Drive	L15 - L14	6		8	VCP	310	26	0	0		26
L	Verbina Drive	L16 - L15	6		8	VCP	311	24	0	15		39
L	Verbina Drive	L17 - L16	6		8	VCP	236	50	0	0		50
L	Verbina Drive	L18 - L17	6		8	VCP	331	10	0	15		25
L	Verbina Drive	L19 - L18	6		8	VCP	333	34	0	0		34
L	Camellia Drive	L20 - L16	6		8	VCP	101	38	0	0		38
L	Wisteria Drive	L22 - L3	6		8	VCP	366	14	0	15		29
L	Wisteria Drive	L26 - L25	8		8	VCP	216	16	0	24	20	60
L	Wisteria Drive	L28 - L27	6		8	VCP	363	34	0	0		34
L	Wisteria Drive	L29 - L28	6		8	VCP	366	35	0	30	20	85
L	Aster Way	L31 - L30	6		8	VCP	179	9	0	30		39
L	Aster Way	L33 - L32	6		8	VCP	91	13	0	15		28
L	Daphne Way	L34 - L26	6		8	VCP	287	7	0	15	5	27
L	Daphne Way	L35 - L34	6		8	VCP	250	50	0	0		50
L	Daphne Way	L36 - L35	6		8	VCP	278	24	0	10		34
L	Daphne Way	L37 - L36	6		8	VCP	312	38	0	0		38
L	Daphne Way	L37 - L38	6		8	VCP	212	24	0	10		34
L	Daphne Way	L39 - L40	6		8	VCP	346	10	0	15		25
L	Jasmine Way	L40 - L42	8		8	VCP	346	8	0	20		28
L	Jasmine Way	L43 - L44	8		8	PVC	334	60	0	0		60
L	Jasmine Way	L44 - L45	8		8	PVC	238	26	0	0		26
L	Camellia Drive	L45 - L25	8		8	VCP	202	23	0	0	5	28
L	Camellia Drive	L46 - L45	6		8	VCP	136	35	0	0		35
L	Azalia Drive	L47 - L4	8		8	VCP	88	20	0	30		50
L	Camellia Drive	L53 - L52	6	6	8	VCP	218	32	30	0		62
L	Camellia Drive	L54 - L53	6		8	VCP	369	8	0	30		38
L	Camellia Court	L56 - L54	6		8	VCP	327	32	0	0		32
L	Abelia Way	L58 - L57	6		8	VCP	295	22	0	20		42
L	Abelia Way	L59 - L58	6		8	VCP	250	9	0	20		29
L	Gardenia Court	L61 - L5	6		8	VCP	152	7	0	20		27
L	Daphne Court	L62 - L34	6		8	VCP	147	36	0	0		36
L	Gardenia Way	L7 - L6	6	6	8	VCP	261	12	30	0		42

Table 5
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List Sorted by Diameter, Pipelines for Structural and Capacity Upgrades - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Diameter	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Structural Total Score	Score for Master Plan Capacity (+ Zero*Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
L	Azalia Drive	L9 - L4	6	6	8	VCP	162	12	30	0		42
M	Clarke Avenue	M14A-M5	6		8	VCP	75	7	0	20		27
M	O'Connor Street	M43 - M42	6		8	VCP	104	38	0	0		38
O	West Bayshore Road	O10 - O9	8		8	VCP	157	29	0	0		29
O	Capitol Avenue	O16 - O15	6		8	VCP	235	42	0	15		57
O	Woodland Avenue	O19 - O17	6		8	VCP	86	16	0	10		26
O	Woodland Avenue	O20 - O19	6		8		116	50	0	20		70
O	Woodland Avenue	O21 - O19	6		8	VCP	394	46	0	20		66
O	Woodland Avenue	O22 - O21	6		8	VCP	348	33	0	20		53
O	Woodland Avenue	O23 - O22	6		8	VCP	470	62	0	20		82
O	Clarke Avenue	O26 - O25	6		8	VCP	333	50	0	0		50
O	Woodland Avenue	O28 - O26	6		8	VCP	434	41	0	10		51
O	Woodland Avenue	O29 - O28	6		8	VCP	143	16	0	12		28
O	Woodland Avenue	O29 - O30	6		8	VCP	220	42	0	12		54
O	Newell Road	O31 - O30	6		8	VCP	45	18	0	30		48
O	Woodland Avenue	O32 - O31	6		8	VCP	258	9	0	30		39
O	Woodland Avenue	O33 - O32	6		8	VCP	263	26	0	12	10	48
O	Newell Road	O34 - O10	6		8	ACP	268	40	0	0		40
O	Newell Road	O35 - O34	6		8	ACP	316	50	0	0		50
O	West Bayshore Road	O4 - O3	8		8	VCP	277	86	0	0	25	111
O	Mission Drive	O41 - O40	6		8	Unknown	45	27	0	16		43
O	Mission Drive	O46 - O45	6		8	VCP	213	25	0	0		25
O	Mission Drive	O48 - O47	6		8	VCP	122	14	0	12		26
O	West Bayshore Road	O5 - O4	8		8	Unknown	399	44	0	0	15	59
O	Mission Drive	O50 - O49	6		8	VCP	172	28	0	0		28
O	Cooley Avenue	O51 - O51A	6		8	VCP	234	20	0	0	5	25
O	Cooley Avenue	O51A - O13	6		8	VCP	236	50	0	0	10	60
O	Scofield Street	O52 - O51	6		8	VCP	213	50	0	0		50
O	Circle Drive	O53 - O52	6		8	VCP	222	38	0	0		38
O	Scofield Street	O54 - O52	6		8	VCP	380	13	0	30		43
O	Woodland Avenue	O55 - O54	6		8	VCP	399	42	0	8		50
O	Woodland Avenue	O56 - O55	6		8	VCP	377	38	0	0		38
O	Cooley Avenue	O57 - O51	6		8	VCP	365	46	0	0		46
O	Cooley Avenue	O58 - O57	6		8	VCP	403	17	0	30		47
O	West Bayshore Road	O59 - O7	8		8	VCP	182	9	0	30	10	49
O	West Bayshore Road	O8 - O59	8		8	VCP	103	26	0	0		26

Table 6
East Palo Alto Sanitary District
Areas 1, 3, and 4 Proposed Pipeline Replacements
Opinion of Probable Construction Cost - Structural and Capacity Upgrades

ITEM NO.	ITEM	EST. QUANTITY	UNIT OF MEASURE	UNIT PRICE	TOTAL
1	Mobilization	1	LS	\$2,356,000	\$2,356,000
2	Traffic Control	1	LS	\$962,000	\$962,000
3	Project Signage	1	LS	\$2,000	\$2,000
4	City Permits	1	LS	\$3,000	\$3,000
5	Construction Staking	1	LS	\$158,000	\$158,000
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	346	EA	\$2,000	\$692,000
10	8-inch PVC	64,657	LF	\$375	\$24,246,395
11	10-inch PVC	6,163	LF	\$410	\$2,526,769
12	12-inch PVC	5,814	LF	\$435	\$2,529,090
13	14/15-inch PVE or HDPE	4,315	LF	\$500	\$2,157,673
14	16/18-inch PVC	3,408	LF	\$525	\$1,789,076
15	20/21-inch PVC	3,532	LF	\$600	\$2,119,187
16	22/24-inch PVC or HDPE	652	LF	\$720	\$469,275
17	26/27-inch PVE or HDPE	1,641	LF	\$795	\$1,304,692
18	Drain Rock	2,000	TONS	\$50	\$100,000
19	Utility Crossings	1,800	EA	\$250	\$450,000
20	Reconnect Laterals	900	EA	\$850	\$765,000
21	Dewatering	1	LS	\$8,500	\$8,500
22	CCTV Inspections	90,182	LF	\$2.00	\$180,364
23	Cold-Patch Asphalt for Temporary Surfacing	60	TON	\$500	\$30,000
24	Asphalt Repaving	360,728	SF	\$5	\$1,803,638
25	Slurry Seal	3,066,184	SF	\$0.70	\$2,146,329
26	Striping and Pavement Markings	3,066,184	SF	\$0.85	\$2,606,256
Subtotal - Opinion of Probable Construction Costs					\$49,475,243
27	Contingency	%	20%	\$49,475,243	\$9,895,049
Engineering and Administrative					Opinion of Construction Subtotal
					\$59,370,291
	Design	%	2%		\$1,187,406
	Environmental/Permitting	%	2%		\$1,187,406
	Construction Management	%	3%		\$1,781,109
	Administration	%	2%		\$1,187,406
OPINION OF TOTAL PROBABLE PROJECT COST:					\$64,713,617

Table 7
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of High Priority Pipelines to be Replaced - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (+ 5" Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
A	Bay Road	A5 - A8	18	20	PE	124	Sagging pipe 50%-100%	80	90	0	10	180
A	Bay Road	A10 - A15	18	20	ACP	299	Surface Damage Roughness Increased	61	90	0	20	171
A	Bay Road	A2 - A5	15	18	Unknown	244	Sagging pipe 75%	70	75	0	25	170
A	Bay Road	A15 - A16	18	20	ACP	435	Surface damage roughness. Sagging 75%	50	90	0	25	165
I	Beech Street	I3 - I19	24	26	PVC	188	Upgrade to 24" per MP	30	120	0	5	155
H	Clarke Avenue	H14 - H13	12	14	VCP	446	Broken at 425.5ft, 429ft with multiple cracks	66	60	0	25	151
I	Pulgas Avenue	I15 - I14	15	18	PVC	386	Sagging pipe 85%	50	75	0	25	150
H	Runnymede Street	H35 - H34	10	12	VCP	322	Pipeline has a lot of sagging. The high water	62	50	8	30	150
I	Beech Street	I7 - I6	20	22	CP	259	Surface damage roughness. Sagging 75%	26	100	0	20	146
H	Clarke Avenue	H12 - H11	12	14	VCP	333	Broken at 111ft, 231ft, 331.9ft	70	60	0	15	145
H	Clarke Avenue	H64 - H71	12	14	VCP	99	H60-H3. Line has about 30%-40% grease that is	42	60	24	15	141
A / T	Bay Trail	A29 - T29	24	26	ACP	345	-	20	120	0	-	140
A	Bay Road	A16 - A21	18	20	ACP	296	-	44	90	0	5	139
A	Bay Road	A1 - A2	15	18	Unknown	80	MH A1 does not exist. Inspection started from	50	75	10	0	135
A	Bay Road	B2 - A2	15	18	PE	181	A1 is buried, operator surveyed B2-A2 for total	50	75	0	10	135
D	Hwy 101	D10 - D3	10	12	Unknown	489	MSA/80% grease in line. No heavy cleaning	54	50	20	10	134
A	Bay Road	A9 - A10	18	20	ACP	181	Broken at 172ft	28	90	0	15	133
C	Menalto Avenue	C4 - C3	8	12	PE	436	This is the second inspection after heavy	66	40	10	15	131
K/L	Larkspur Drive	L21 - K28	14	16	PVC	68	Sagging pipe 75%	40	70	0	20	130
D	Donohoe Street	D2 - D1	18	20	VCP	53	-	34	90	0	-	124
H	Clarke Avenue	H13 - H12	12	14	VCP	108	Broken at 18ft with 55% sagging pipe	54	60	0	10	124
I	Beech Street	I31 - I4	24	26	PVC	300	This pipe line was ISA-14	0	120	0	-	120
I	Beech Street	I4 - I3	24	26	PVC	243	-	0	120	0	-	120
I	Beech Street	I5 - I31	24	26	PVC	155	This pipe line was IS-ISA	0	120	0	-	120
I	Beech Street	I6 - I5	24	26	PVC	411	-	0	120	0	-	120
H	Green Street	H75 - H6	18	20	PE	259	H7C - H6	29	90	0	-	119
D	Donohoe Street	D3 - D3A	16	18	VCP	11	Surface Damage Roughness Increased	34	80	0	5	119
I	Beech Street	I9 - I8	20	22	CP	155	-	18	100	0	-	118
D	Donohoe Street	D3A - D2	16	18	VCP	355	Broken at 4.2ft	34	80	0	-	114
C	Menalto Avenue	C6 - C5	8	12	PE	87	Pipeline has lots of debris	42	40	20	10	112
O	West Bayshore Road	O4 - O3	8	8	VCP	277	85% sag, 10% grease build up	86	0	0	25	111
I	Beech Street	I11 - I10	18	20	CP	380	-	20	90	0	-	110
H	Green Street	H7 - H75	18	20	PE	91	H7B - H7C	20	90	0	-	110
H	Green Street	H73 - H74	18	20	PE	233	H8 - H7	20	90	0	-	110
H	Green Street	H74 - H8	18	20	PE	112	H7 - H7A	20	90	0	-	110
H	Green Street	H8 - H7	18	20	PE	235	H7A - H7B	20	90	0	-	110
I	Pulgas Avenue	I13 - I12	15	18	PVC	320	-	30	75	0	5	110
D	West Bayshore Road	D21 - D19	10	12	HDPE	391	Heavy Cleaning/high flow. Night work. HDPE.	40	50	20	-	110
H	Runnymede Street	H34 - H17	10	12	VCP	269	Submerged pipe with a line down alignment.	34	50	16	10	110
C	Menalto Avenue	C2 - C1	10	12	Unknown	204	MSA/Grease. Heavy grease blockage at 136.9	38	50	16	5	109
J	Pulgas Avenue	J7 - J6	8	8	VCP	441	Pipe is broken at 124ft and 197ft	73	0	10	25	108
A	Demeter Street	A13 - A12	8	8	Unknown	412	Broken pipe at 129 ft and 139 ft with sags.	70	0	20	15	105
H	Runnymede Street	H17 - H76	12	14	VCP	397	H17 - H16. Broken pipe at 43.2ft, 144.9ft, 150ft	17	60	20	5	102
J	Garden Street	J9 - J9A	8	8	VCP	365	Pipe is broken at 8ft, 32ft, 81ft, 223ft & 318ft.	51	0	30	20	101
I	Beech Street	I8 - I7	20	22	CP	238	-	0	100	0	-	100
I	Beech Street	I10 - I9	18	20	CP	221	-	10	90	0	-	100
H/E	Green Street	E1 - H9	16	18	PE	270	-	20	80	0	-	100
H	Green Street	H9 - H73	16	18	PE	246	H9 - H8	20	80	0	-	100
D	Manhattan Avenue	D19 - D10	10	12	PVC	48	Line is sagging. Camera was under water for	30	50	0	20	100
A	Pulgas Avenue	A18 - A16	12	8	VCP	442	Broken pipe at 44ft.	70	0	10	20	100
L	Gardenia Way	L2 - L1	12	14	PVC	179	Joint Separated Large at 104.9ft, infiltration	24	60	15	-	99
D	Euclid Avenue	D23 - D22	10	12	PE	73	Pipeline had heavy grease	30	50	8	10	98
K	Larkspur Drive	K19 - K18	8	8	CP	272	Pipe is broken and soil is visible at 144ft, and	58	0	30	10	98
C	Menalto Avenue	C7 - C6	8	12	PE	448	Pipeline has lots of debris	20	40	12	25	97
A	Gonzaga Street	A3 - A2	8	8	VCP	287	Broken pipe at 53, 141, 157, and 159 ft. Also,	46	0	30	20	96
H	Runnymede Street	H57 - H16	12	14	VCP	48	H16A - H16B. Broken at 20.9ft	20	60	15	-	95
K	Larkspur Drive	K18 - K17	8	8	CP	269	SMW spots on the line.	80	0	15	-	95
J	Garden Street	J10 - J9	8	8	VCP	300	Pipe is broken at 228ft and 293ft	70	0	10	15	95
H	Clarke Avenue	H11 - H64	12	14	VCP	198	H11 - H60. Broken at 73.2ft	34	60	0	-	94
M	O'Connor Street	M42 - M13	12	14	VCP	37	Surface Damage and cracks	34	60	0	-	94
H	Runnymede Street	H76 - H57	12	14	VCP	73	H16 - H16A. Broken at 63.2ft	19	60	15	-	94
C	Menalto Avenue	C2A - C2	8	12	VCP	28	New line segment - Broken at 19.9 ft	34	40	20	-	94
A	Illinois Street	A6 - A5	8	8	VCP	287	Broken pipe at 15 and 75ft. Also, an offset	49	0	30	15	94
K	Daisy Lane	K21 - K3	8	8	CP	246	Pipe has few locations with chunks of pipe	53	0	30	10	93
A	Bay Road	A23 - A22	18	20	ACP	14	-	2	90	0	-	92
I	Myrtle Street	I21 - I13	8	12	VCP	600	As I24 should be between them as shown in	47	40	0	5	92
D	O'Connor Street	D25 - D24	8	12	VCP	301	large offset between joints and unable to	36	40	16	-	92
K	Wisteria Drive	K13 - K12	8	8	VCP	362	Pipe is broken at 9ft and 91ft.	56	0	20	15	91
A	Illinois Street	A7 - A6	8	8	VCP	306	Broken pipe at 82 and 230 ft.	46	0	30	15	91
A	Bay Road	A21 - A23	18	20	ACP	155	New Line Segment. MH Name changed from	0	90	0	-	90
A	Bay Road	A21 - A23	18	20	ACP	155	A21 does not connect to A23 but it connects	0	90	0	-	90
A	Bay Road	A8 - A9	18	20	PVC	61	-	0	90	0	-	90
H/I	Beech Street	H2 - I11	18	20	-	37	Paved over	0	90	0	-	90
H	Beech Street	H3 - H2	18	20	-	31	Paved over	0	90	0	-	90
H	Clarke Avenue	H4 - H3	18	20	-	7	Paved over	0	90	0	-	90
H	Clarke Avenue	H5 - H4	18	20	-	259	Paved over	0	90	0	-	90
H	Green Street	H6 - H5	18	20	-	9	Paved over	0	90	0	-	90
L	Gardenia Way	L3 - L2	12	14	PVC	83	-	30	60	0	-	90
C	Elliot Drive	C42 - C41	8	8	VCP	300	substantial breakage throughout their entire	70	0	20	-	90
C	Elliot Drive	C41 - C40	8	8	VCP	191	substantial breakage throughout their entire	70	0	20	-	90
F	Weeks Street	F23 - F8	8	8	VCP	327	This pipeline was F9A-F8	70	0	0	20	90
M	O'Connor Street	M13 - M12	12	14	VCP	276	Broken at 193	13	60	15	-	88

Table 7
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of High Priority Pipelines to be Replaced - Areas 1, 3, 4

Area	Location/ Street Name	PSR	Master Plan Proposed Diameter	Recommended Design Diameter	Pipe Material	Pipe Length (ft)	Notes	Structural Total Score	Score for Master Plan Capacity (+ 5" Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
C	Elliot Drive	C40 - C36		8	VCP	257	MSA/Root tap barrel. Reverse inspection	67	0	20		87
C	Hwy 101	C21 - C19		8	VCP	284	MSA/Collapsed pipe. Reverse inspection	55	0	30		85
A	Tara Street	A27 - A26		8	VCP	311	Broken pipe and soil is visible at 254.10 ft at 11	35	0	30	20	85
L	Wisteria Drive	L29 - L28		8	VCP	366	Pipe is broken at 348ft, and soil is visible	35	0	30	20	85
D	Donohoe Street	D4 - D3	10	12	VCP	296	Fracture Multiple at 131ft	34	50	0		84
K	Larkspur Drive	K16 - K4		8	CP	274	SMW spots on the line	53	0	15	15	83
O	Woodland Avenue	O23 - O22		8	VCP	470	MSA/TBI. Reverse Inspection complete. Pipe	62	0	20		82
O	West Bayshore Road	O9 - O8	8	12	VCP	140	15% grease buildup at 96ft	36	40	0	5	81
D	Donohoe Street	D3 - D2	16	18	Unknown	363	Line has an unchartered manhole, See D3 -	0	80	0		80
I	Beech Street	I20 - I9		8	VCP	278	Pipe has MSA at 267 due to hard	40	0	20	20	80
C	Menalto Avenue	C5 - C4	8	12	Unknown	328	Pipeline has lots of debris	29	40	10		79
C	Woodland Avenue	C48 - C11	8	12	Unknown	179	MSA/ Reverse Inspection complete	23	40	16		79
H	Runnymede Street	H15 - H62	12	14	Other	201	H15 - H58	18	60	0		78
D	Woodland Avenue	D35 - D34	8	12	VCP	178	Fracture Multiple at 73ft	38	40	0		78
H	University Avenue	H36 - H35	10	12	VCP	474		23	50	0	5	78
C	Menalto Avenue	C10 - C8	8	12	PE	387	Modified line segment. Could not find C9	23	40	10	5	78
D	Euclid Avenue	D24 - D23	10	12	PE	350	Pipeline had heavy grease	20	50	8		78
D	Donohoe Street	D9 - D8		8	VCP	496	Broken at 21ft, multiple cracks	70	0	8		78
D	Donohoe Street	D8 - D7		8	VCP	158	broken pipe at 100.08 ft from upstream	37	0	30	10	77
C	Menalto Avenue	C8 - C7	8	12	PE	401	broken pipe located 100.08 ft from upstream	20	40	16		76
D	Euclid Avenue	D22 - D21	10	12	HDPE	149	Grease/surcharged. Requires heavy cleaning.	0	50	26		76

Table 8
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of High Priority Pipelines, Sorted by Diameter - Areas 1, 3, 4

Area	Location/ Street Name	PSR	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
I	Beech Street	I3 - T19	24	26	PVC	188	30	120	0	5	155
A / T	Bay Trail	A29 - T29	24	26	ACP	345	20	120	0		140
I	Beech Street	I31 - I4	24	26	PVC	300	0	120	0		120
I	Beech Street	I4 - I3	24	26	PVC	243	0	120	0		120
I	Beech Street	I5 - I31	24	26	PVC	155	0	120	0		120
I	Beech Street	I6 - I5	24	26	PVC	411	0	120	0		120
I	Beech Street	I7 - I6	20	22	CP	259	26	100	0	20	146
I	Beech Street	I9 - I8	20	22	CP	155	18	100	0		118
I	Beech Street	I8 - I7	20	22	CP	238	0	100	0		100
A	Bay Road	A5 - A8	18	20	PE	124	80	90	0	10	180
A	Bay Road	A10 - A15	18	20	ACP	299	61	90	0	20	171
A	Bay Road	A15 - A16	18	20	ACP	435	50	90	0	25	165
A	Bay Road	A16 - A21	18	20	ACP	296	44	90	0	5	139
A	Bay Road	A9 - A10	18	20	ACP	181	28	90	0	15	133
D	Donohoe Street	D2 - D1	18	20	VCP	53	34	90	0		124
H	Green Street	H75 - H6	18	20	PE	259	29	90	0		119
I	Beech Street	I11 - I10	18	20	CP	380	20	90	0		110
H	Green Street	H7 - H75	18	20	PE	91	20	90	0		110
H	Green Street	H73 - H74	18	20	PE	233	20	90	0		110
H	Green Street	H74 - H8	18	20	PE	112	20	90	0		110
H	Green Street	H8 - H7	18	20	PE	235	20	90	0		110
I	Beech Street	I10 - I9	18	20	CP	221	10	90	0		100
A	Bay Road	A23 - A22	18	20	ACP	14	2	90	0		92
A	Bay Road	A21 - A23	18	20	ACP	155	0	90	0		90
A	Bay Road	A21 - A23	18	20	ACP	155	0	90	0		90
A	Bay Road	A8 - A9	18	20	PVC	61	0	90	0		90
H/I	Beech Street	H2 - I11	18	20		37	0	90	0		90
H	Beech Street	H3 - H2	18	20		31	0	90	0		90
H	Clarke Avenue	H4 - H3	18	20		7	0	90	0		90
H	Clarke Avenue	H5 - H4	18	20		259	0	90	0		90
H	Green Street	H6 - H5	18	20		9	0	90	0		90
A	Bay Road	A2 - A5	15	18	Unknown	244	70	75	0	25	170
I	Pulgas Avenue	I15 - I14	15	18	PVC	386	50	75	0	25	150
A	Bay Road	A1 - A2	15	18	Unknown	80	50	75	10	0	135
A	Bay Road	B2 - A2	15	18	PE	181	50	75	0	10	135
D	Donohoe Street	D3 - D3A	16	18	VCP	11	34	80	0	5	119
D	Donohoe Street	D3A - D2	16	18	VCP	355	34	80	0		114
I	Pulgas Avenue	I13 - I12	15	18	PVC	320	30	75	0	5	110
H/E	Green Street	E1 - H9	16	18	PE	270	20	80	0		100
H	Green Street	H9 - H73	16	18	PE	246	20	80	0		100
D	Donohoe Street	D3 - D2	16	18	Unknown	363	0	80	0		80
K/L	Larkspur Drive	L21 - K28	14	16	PVC	68	40	70	0	20	130
H	Clarke Avenue	H14 - H13	12	14	VCP	446	66	60	0	25	151
H	Clarke Avenue	H12 - H11	12	14	VCP	333	70	60	0	15	145
H	Clarke Avenue	H64 - H71	12	14	VCP	99	42	60	24	15	141
H	Clarke Avenue	H13 - H12	12	14	VCP	108	54	60	0	10	124
H	Runnymede Street	H17 - H76	12	14	VCP	397	17	60	20	5	102
L	Gardenia Way	L2 - L1	12	14	PVC	179	24	60	15		99
H	Runnymede Street	H57 - H16	12	14	VCP	48	20	60	15		95
H	Clarke Avenue	H11 - H64	12	14	VCP	198	34	60	0		94
M	O'Connor Street	M42 - M13	12	14	VCP	37	34	60	0		94
H	Runnymede Street	H76 - H57	12	14	VCP	73	19	60	15		94
L	Gardenia Way	L3 - L2	12	14	PVC	83	30	60	0		90
M	O'Connor Street	M13 - M12	12	14	VCP	276	13	60	15		88
H	Runnymede Street	H15 - H62	12	14	Other	201	18	60	0		78
H	Runnymede Street	H35 - H34	10	12	VCP	322	62	50	8	30	150
D	Hwy 101	D10 - D3	10	12	Unknown	489	54	50	20	10	134
D	West Bayshore Road	D21 - D19	10	12	HDPE	391	40	50	20		110
H	Runnymede Street	H34 - H17	10	12	VCP	269	34	50	16	10	110

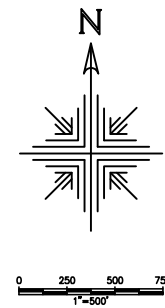
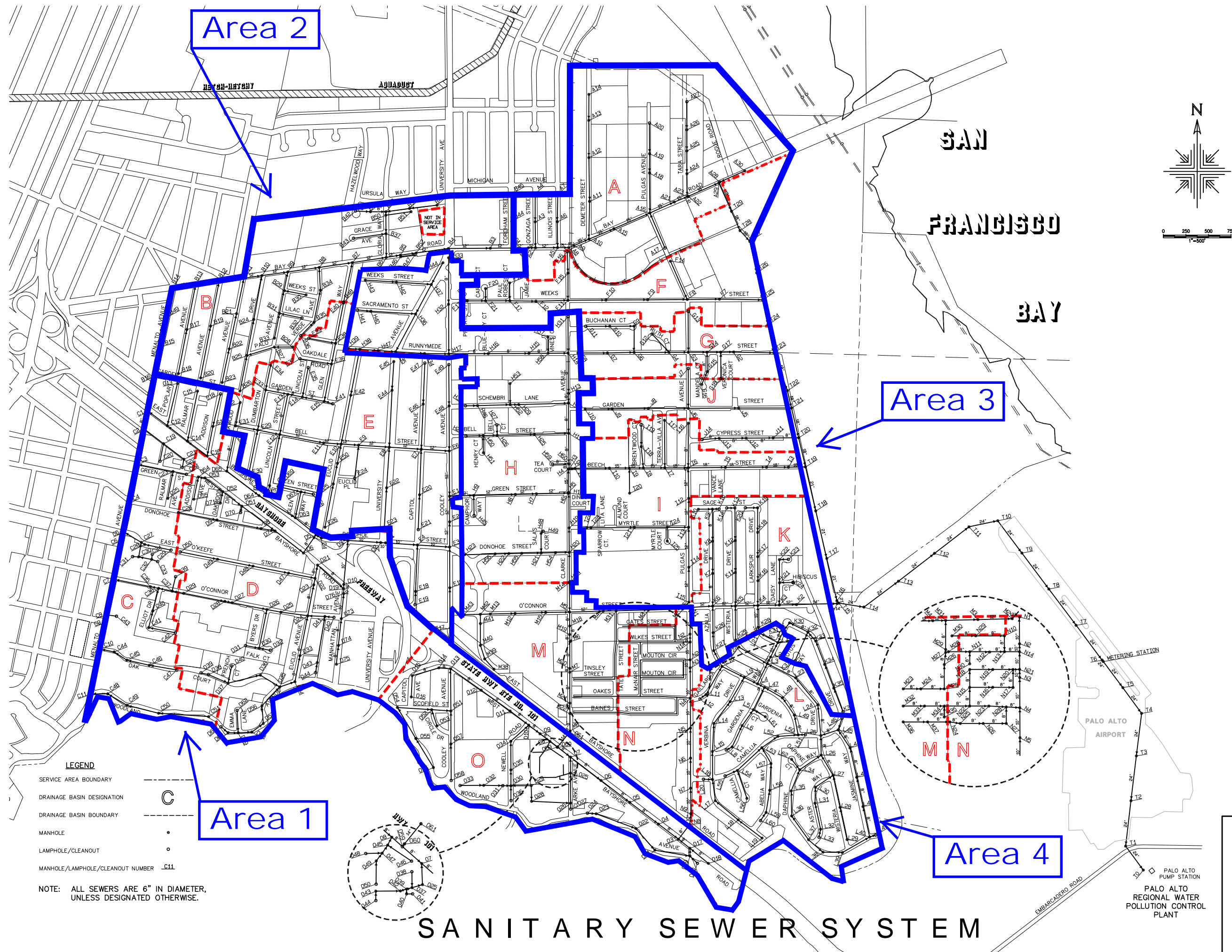
Table 8
East Palo Alto Sanitation District
CCTV Survey Results Evaluation
Priority List of High Priority Pipelines, Sorted by Diameter - Areas 1, 3, 4

Area	Location/ Street Name	PSR	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
C	Menalto Avenue	C2 - C1	10	12	Unknown	204	38	50	16	5	109
D	Manhattan Avenue	D19 - D10	10	12	PVC	48	30	50	0	20	100
D	Euclid Avenue	D23 - D22	10	12	PE	73	30	50	8	10	98
D	Donohoe Street	D4 - D3	10	12	VCP	296	34	50	0		84
H	University Avenue	H36 - H35	10	12	VCP	474	23	50	0	5	78
D	Euclid Avenue	D24 - D23	10	12	PE	350	20	50	8		78
D	Euclid Avenue	D22 - D21	10	12	HDPE	149	0	50	26		76
C	Menalto Avenue	C4 - C3	8	10	PE	436	66	40	10	15	131
C	Menalto Avenue	C6 - C5	8	10	PE	87	42	40	20	10	112
C	Menalto Avenue	C7 - C6	8	10	PE	448	20	40	12	25	97
C	Menalto Avenue	C2A - C2	8	10	VCP	28	34	40	20		94
I	Myrtle Street	I21 - I13	8	10	VCP	600	47	40	0	5	92
D	O'Connor Street	D25 - D24	8	10	VCP	301	36	40	16		92
O	West Bayshore Road	O9 - O8	8	10	VCP	140	36	40	0	5	81
C	Menalto Avenue	C5 - C4	8	10	Unknown	328	29	40	10		79
C	Woodland Avenue	C48 - C11	8	10	Unknown	179	23	40	16		79
D	Woodland Avenue	D35 - D34	8	10	VCP	178	38	40	0		78
C	Menalto Avenue	C10 - C8	8	10	PE	387	23	40	10	5	78
C	Menalto Avenue	C8 - C7	8	10	PE	401	20	40	16		76
O	West Bayshore Road	O4 - O3		8	VCP	277	86	0	0	25	111
J	Pulgas Avenue	J7 - J6		8	VCP	441	73	0	10	25	108
A	Demeter Street	A13 - A12		8	Unknown	412	70	0	20	15	105
J	Garden Street	J9 - J9A		8	VCP	365	51	0	30	20	101
A	Pulgas Avenue	A18 - A16		8	VCP	442	70	0	10	20	100
K	Larkspur Drive	K19 - K18		8	CP	272	58	0	30	10	98
A	Gonzaga Street	A3 - A2		8	VCP	287	46	0	30	20	96
K	Larkspur Drive	K18 - K17		8	CP	269	80	0	15		95
J	Garden Street	J10 - J9		8	VCP	300	70	0	10	15	95
A	Illinois Street	A6 - A5		8	VCP	287	49	0	30	15	94
K	Daisy Lane	K21 - K3		8	CP	246	53	0	30	10	93
K	Wisteria Drive	K13 - K12		8	VCP	362	56	0	20	15	91
A	Illinois Street	A7 - A6		8	VCP	306	46	0	30	15	91
C	Elliot Drive	C42 - C41		8	VCP	300	70	0	20		90
C	Elliot Drive	C41 - C40		8	VCP	191	70	0	20		90
F	Weeks Street	F23 - F8		8	VCP	327	70	0	0	20	90
C	Elliot Drive	C40 - C36		8	VCP	257	67	0	20		87
C	Hwy 101	C21 - C19		8	VCP	284	55	0	30		85
A	Tara Street	A27 - A26		8	VCP	311	35	0	30	20	85
L	Wisteria Drive	L29 - L28		8	VCP	366	35	0	30	20	85
K	Larkspur Drive	K16 - K4		8	CP	274	53	0	15	15	83
O	Woodland Avenue	O23 - O22		8	VCP	470	62	0	20		82
I	Beech Street	I20 - I9		8	VCP	278	40	0	20	20	80
D	Donohoe Street	D9 - D8		8	VCP	496	70	0	8		78
D	Donohoe Street	D8 - D7		8	VCP	158	37	0	30	10	77

Table 9
East Palo Alto Sanitary District
Areas 1, 3, and 4 Proposed Pipeline Replacements
Opinion of Probable Construction Cost - High Priority Upgrades

ITEM NO.	ITEM	EST. QUANTITY	UNIT OF MEASURE	UNIT PRICE	TOTAL
1	Mobilization	1	LS	\$762,000	\$762,000
2	Traffic Control	1	LS	\$272,000	\$272,000
3	Project Signage	1	LS	\$2,000	\$2,000
4	City Permits	1	LS	\$3,000	\$3,000
5	Construction Staking	1	LS	\$45,000	\$45,000
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	103	EA	\$2,000	\$206,000
10	8-inch PVC	7,978	LF	\$375	\$2,991,622
11	10-inch PVC	3,513	LF	\$410	\$1,440,195
12	12-inch PVC	3,065	LF	\$435	\$1,333,275
13	14/15-inch PVE or HDPE	2,479	LF	\$500	\$1,239,380
14	16/18-inch PVC	2,524	LF	\$525	\$1,324,985
15	20/21-inch PVC	3,648	LF	\$600	\$2,188,848
16	22/24-inch PVC or HDPE	652	LF	\$720	\$469,275
17	26/27-inch PVE or HDPE	1,642	LF	\$795	\$1,305,487
18	Drain Rock	1,000	TONS	\$50	\$50,000
19	Utility Crossings	510	EA	\$250	\$127,500
20	Reconnect Laterals	285	EA	\$850	\$242,250
21	Dewatering	1	LS	\$8,500	\$8,500
22	CCTV Inspections	25,500	LF	\$2.00	\$51,000
23	Cold-Patch Asphalt for Temporary Surfacing	30	TON	\$500	\$15,000
24	Asphalt Repaving	101,999	SF	\$5	\$509,997
25	Slurry Seal	866,995	SF	\$0.70	\$606,896
26	Striping and Pavement Markings	866,995	SF	\$0.85	\$736,945
Subtotal - Opinion of Probable Construction Costs					\$16,001,155
27	Contingency	%	20%	\$16,001,155	\$3,200,231
Engineering and Administrative					Opinion of Construction Subtotal
					\$19,201,386
	Design	%	2%		\$384,028
	Environmental/Permitting	%	2%		\$384,028
	Construction Management	%	3%		\$576,042
	Administration	%	2%		\$384,028
OPINION OF TOTAL PROBABLE PROJECT COST:					\$20,929,511

Figures



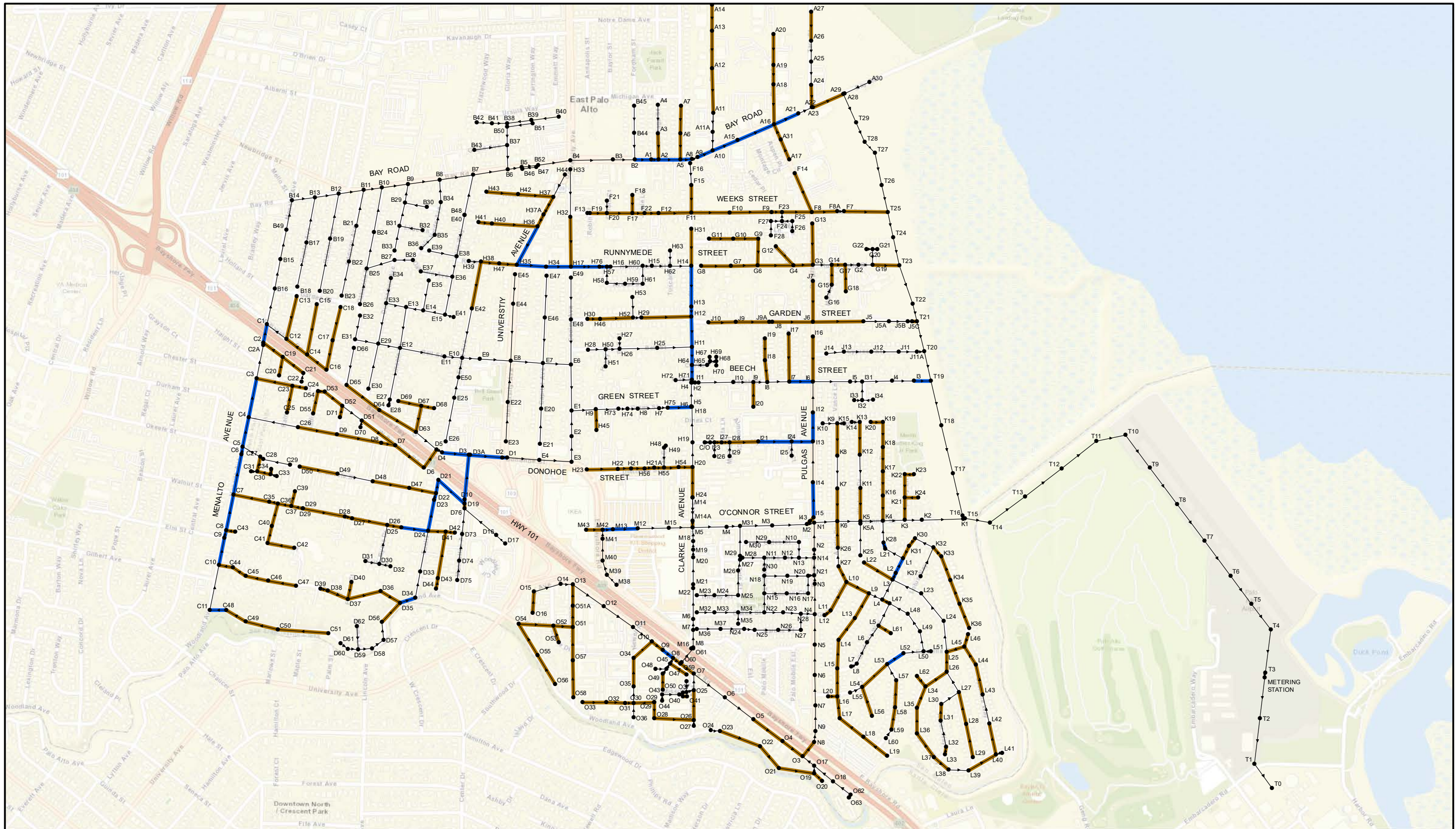
- LEGEND**
- SERVICE AREA BOUNDARY
 - DRAINAGE BASIN DESIGNATION
 - DRAINAGE BASIN BOUNDARY
 - MANHOLE
 - LAMPHOLE/CLEANOUT
 - MANHOLE/LAMPHOLE/CLEANOUT NUMBER

NOTE: ALL SEWERS ARE 6" IN DIAMETER, UNLESS DESIGNATED OTHERWISE.

**Figure 1
CCTV Survey Areas**

Kennedy/Jenks Consultants
 EAST PALO ALTO SANITARY DISTRICT
 EAST PALO ALTO, CA
**COLLECTION SYSTEM
 DRAINAGE BASINS**

PALO ALTO PUMP STATION
 PALO ALTO REGIONAL WATER POLLUTION CONTROL PLANT



LEGEND

- SEWER MANHOLE
- SEWER PIPELINE

PIPELINE UPGRADES

- STRUCTURAL ONLY
- STRUCTURAL, INCLUDES CAPACITY UPGRADE

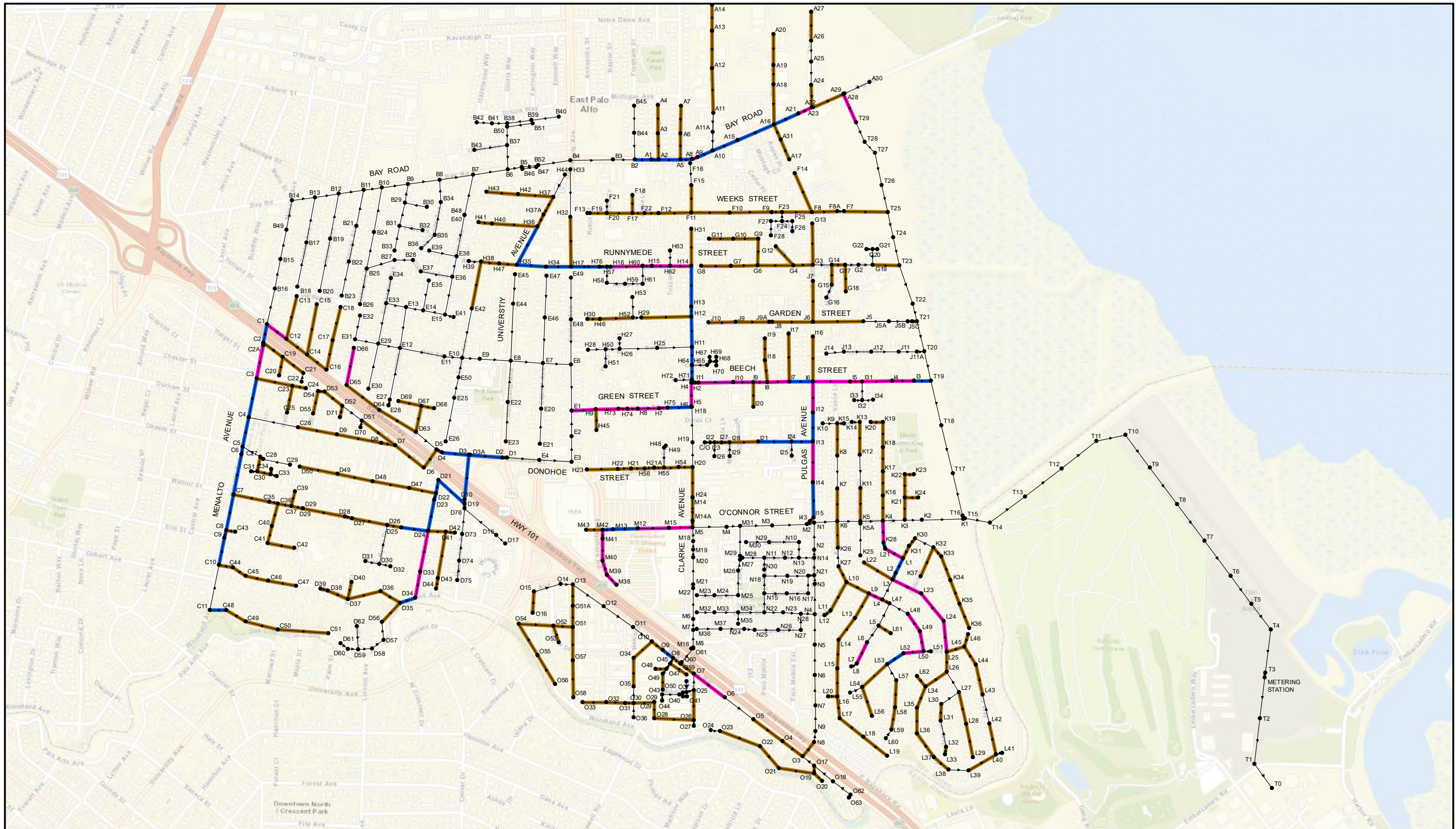


EAST PALO ALTO SANITARY DISTRICT

STRUCTURAL UPGRADES
AREAS 1, 3, 4

FIGURE

2



LEGEND

- SEWER MANHOLE
- SEWER PIPELINE

PIPELINE UPGRADES

- STRUCTURAL ONLY
- STRUCTURAL, INCLUDES CAPACITY UPGRADE
- CAPACITY ONLY

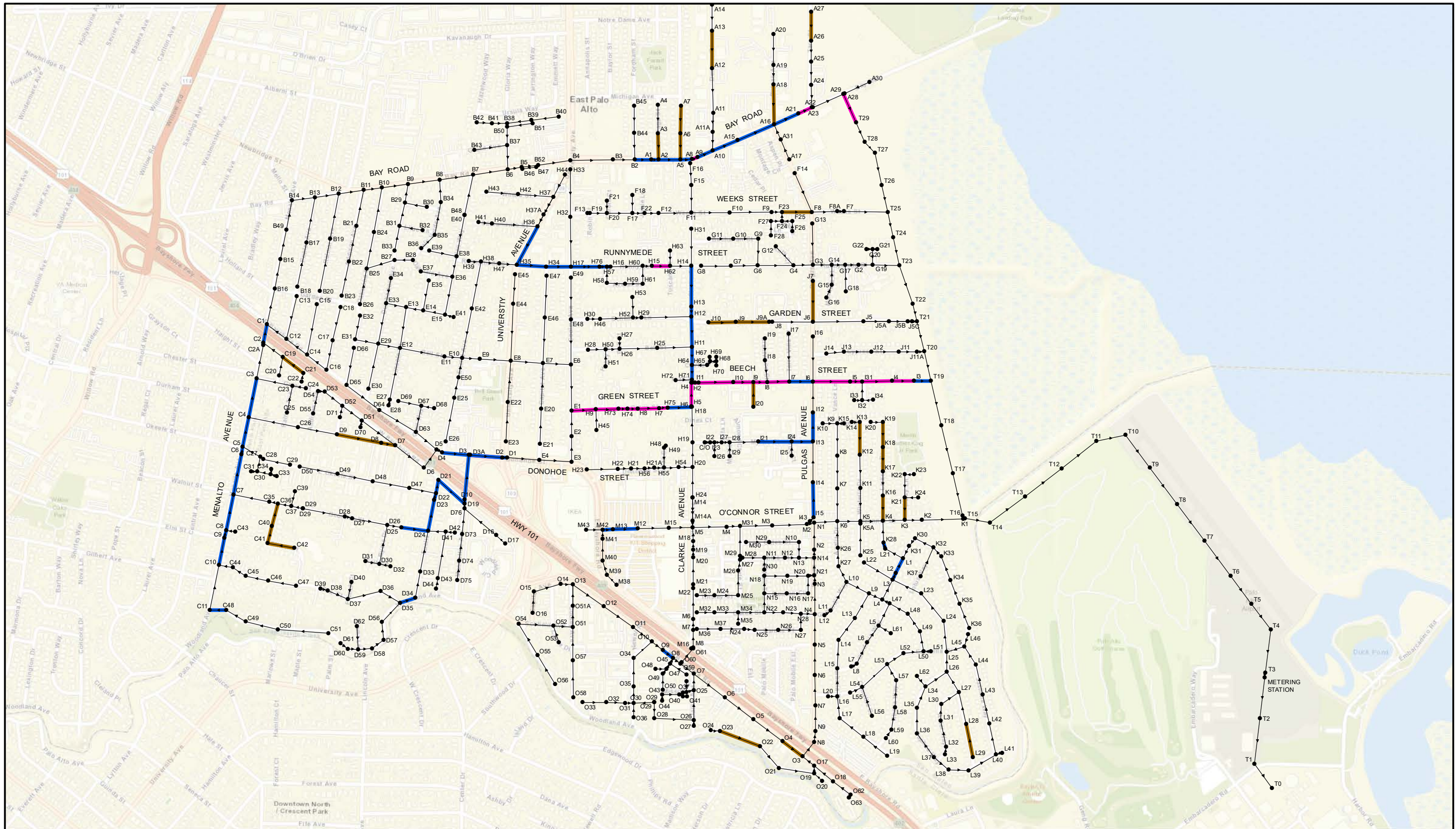


EAST PALO ALTO SANITARY DISTRICT

**STRUCTURAL + CAPACITY UPGRADES
AREAS 1, 3, 4**

FIGURE

3



LEGEND

- SEWER MANHOLE
- SEWER PIPELINE

PIPELINE UPGRADES

- STRUCTURAL ONLY
- STRUCTURAL, INCLUDES CAPACITY UPGRADE
- CAPACITY ONLY



EAST PALO ALTO SANITARY DISTRICT

**HIGH PRIORITY UPGRADES
AREAS 1, 3, 4**

FIGURE

4



Attachment 1

Area 1 CCTV Survey Results and Evaluation

**East Palo Alto Sanitary District
Area 1 CCTV Survey Results and Evaluation**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	US MH #	DS MH #	Reported Pipe Dia (in)	Actual Diameter	Master Plan Proposed Diameter	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Total Score	Score for Master Plan Capacity (+ 5 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
2	7/14/2022	D	Hwy 101	D10 - D3	D10	D3	10	10	10	Not Known	489	109.76	MSA/80% grease in line. No heavy cleaning performed because of	463C	54	4800	32	3	54	50	20	10	134
3	7/12/2022	C	Menalto Avenue	C4 - C3	C4	C3	6	6	8	PE	436	437.26	This is the second inspection after heavy cleaning. The first	493B	66	3421	14	2	66	40	10	15	131
4	7/14/2022	D	Donohoe Street	D2 - D1	D2	D1	10	10	18	VCP	53	51.98		3A22	34	0000	0	2	34	90	0		124
5	7/14/2022	D	Donohoe Street	D3 - D3A	D3	D3A	10	10	16	VCP	11	10.8	Surface Damage Roughness Increased	413J	34	211B	12	1	34	80	0	5	119
6	7/14/2022	D	Donohoe Street	D3A - D2	D3A	D2	10	10	16	VCP	355	354.98	Broken at 4.2ft	413J	34	211B	12	2	34	80	0		114
7	7/12/2022	C	Menalto Avenue	C6 - C5	C6	C5	6	6	8	PE	87	86.97	Pipeline has lots of debris	4636	42	0000	0	3	42	40	20	10	112
8	8/11/2022	O	West Bayshore Road	O4 - O3	O4	O3	8	8		VCP	277	276.11	85% sag, 10% grease build up	5A49	86	312B	23	2	86	0	0	25	111
9	N/A	D	West Bayshore Road	D21 - D19	D21	D19	8	8	10	HDPE	391		Heavy Cleaning/high flow. Night work. HDPE. This line cannot be		40	3A	30		40	50	20		110
10	7/7/2022	C	Menalto Avenue	C2 - C1	C2	C1	8	8	10	Unknown	204	136.75	MSA/Grease. Heavy grease blockage at 136.9	3D24	38	5300	15	3	38	50	16	5	109
11	6/23/2022	D	Manhattan Avenue	D19 - D10	D19	D10	10	10	10	PVC	48	49.38	Line is sagging. Camera was under water for most of the	3A00	30	4222	12	3	30	50	0	20	100
12	8/17/2022	D	Euclid Avenue	D23 - D22	D23	D22	8	8	10	PE	73	72.58	Pipeline had heavy grease	3B00	30	412A	14	2	30	50	8	10	98
13	7/6/2022	C	Menalto Avenue	C7 - C6	C7	C6	6	6	8	PE	448	449.15	Pipeline has lots of debris	2F00	20	4137	25	2	20	40	12	25	97
14	7/7/2022	C	Menalto Avenue	C2A - C2	C2A	C2	8	6	8	VCP	28	27.59	New line segment - Broken at 19.9 ft	4436	34	0000	0	2	34	40	20		94
15	6/16/2022	D	O'Connor Street	D25 - D24	D25	D24	6	6	8	VCP	301	229.03	large offset between joints and unable to video it at length of 159	4338	36	311A	13	2	36	40	16		92
16	6/17/2022	C	Elliot Drive	C41 - C40	C41	C40	6	6		VCP	191	191.74	substantial breakage throughout their entire length	4A3A	70	0000	0	3	70	0	20		90
17	6/17/2022	C	Elliot Drive	C42 - C41	C42	C41	6	6		VCP	300	300.2	substantial breakage throughout their entire length	4C3B	70	3223	12	3	70	0	20		90
18	6/17/2022	C	Elliot Drive	C40 - C36	C40	C36	6	6		VCP	257	257.61	MSA/Root tap barrel. Reverse inspection performed. substantial	4A39	67	362A	38	2	67	0	20		87
19	8/19/2022	C	Hwy 101	C21 - C19	C21	C19	6	6		VCP	284	152.45	MSA/Collapsed pipe. Reverse inspection performed. Pipeline is	534A	55	211A	12	2	55	0	30		85
20	7/14/2022	D	Donohoe Street	D4 - D3	D4	D3	8	8	10	VCP	296	255.52	Fracture Multiple at 131ft	413I	34	2300	6	2	34	50	0		84
21	8/12/2022	O	Woodland Avenue	O23 - O22	O23	O22	6	6		VCP	470	377.87	MSA/TBI. Reverse Inspection complete. Pipe had multiple breaks	483H	62	4333	21	2	62	0	20		82
22	7/18/2022	O	West Bayshore Road	O9 - O8	O9	O8	6	8	8	VCP	140	141.35	15% grease buildup at 96ft	3A23	36	3622	22	2	36	40	0	5	81
23	N/A	D	Donohoe Street	D3 - D2	D3	D2	10		16		363		Line has an uncharted manhole, See D3 - D3A						0	80	0		80
24	7/6/2022	C	Woodland Avenue	C48 - C11	C48	C11	6	6	8	Unknown	179	178.14	MSA/ Reverse Inspection complete	312B	23	0000	0	2	23	40	16		79
25	7/5/2022	C	Menalto Avenue	C5 - C4	C5	C4	6	6	8	Unknown	328	329.29	Pipeline has lots of debris	332C	29	0000	0	2	29	40	10		79
26	7/6/2022	C	Menalto Avenue	C10 - C8	C10	C8	6	6	8	PE	387	387.17	Modified line segment. Could not find C9	312C	23	4100	4	2	23	40	10	5	78
27	6/23/2022	D	Euclid Avenue	D24 - D23	D24	D23	8	8	10	PE	350	350.88	Pipeline had heavy grease	2A00	20	443C	46	2	20	50	8		78
28	6/21/2022	D	Woodland Avenue	D35 - D34	D35	D34	6	6	8	VCP	178	173.94	Fracture Multiple at 73ft	423F	38	211A	12	2	38	40	0		78
29	6/14/2022	D	Donohoe Street	D9 - D8	D9	D8	6	6		VCP	496	498.04	Broken at 21ft, multiple cracks	4B3R	70	4132	10	2	70	0	8		78
30	6/15/2022	D	Donohoe Street	D8 - D7	D8	D7	6	6		VCP	158	153.95	broken pipe at 100.08 ft from upstream	5148	37	4332	18	2	37	0	30	10	77
31	7/6/2022	C	Menalto Avenue	C8 - C7	C8	C7	6	6	8	PE	401	401.77	broken pipe located 100.08 ft from upstream	2C00	20	0000	0	2	20	40	16		76
32	N/A	D	Euclid Avenue	D22 - D21	D22	D21	8	8	10	HDPE	149		Grease/surcharged. Requires heavy cleaning. HDPE. This line			3A	30		0	50	26		76
33	8/12/2022	D	West Bayshore Road	D7 - D6	D7	D6	6	6		VCP	398	399.27	5% grease build up and 90% sag	544F	60	3128	19	3	60	0	0	15	75
34	7/12/2022	C	Menalto Avenue	C43 - C8	C43	C8	6	6		VCP	101	52.9	Proteus. MSA/TBI. Heavy cleaning was performed. There is roots	473A	58	5142	13	2	58	0	16		74
35	6/21/2022	D	Euclid Avenue	D33 - D24	D33	D24	8	8	10	PE	450	448.65	-	312E	23	0000	0	2	23	50	0		73
36	6/24/2022	C	Ralmar Avenue	C15 - C14	C15	C14	6	6		VCP	565	565.12	MSA/JAM. Camera is unable to get past this point. Reverse	4530	50	3311	10	2	50	0	20		70
37	7/13/2022	C	Oak Court	C47 - C46	C47	C46	6	6		VCP	309	305.8	This is the second inspection after heavy cleaning and removing	4C3C	70	4132	10	3	70	0	0		70
38	6/24/2022	D	West Bayshore Road	D51 - D7	D51	D7	6	6		VCP	458	444.15	MSA/JOL. Camera cannot move any further. Reverse inspection	514A	45	4215	23	2	45	0	20	5	70
39	N/A	O	Woodland Avenue	O20 - O19	O20	O19	6	6			116		After removing roots and debris from the exit of the pipe at	5A	50				50	0	20		70
40	7/11/2022	C	O'Connor Street	C35 - C7	C35	C7	6	6		Unknown	403	400.9	Proteus. This is the second inspection. First inspection performed	3B2A	50	4337	33	2	50	0	12	5	67
41	6/30/2022	O	Woodland Avenue	O21 - O19	O21	O19	6	6		VCP	394	394.97	MSA/Reverse Inspection performed.	443N	46	423A	38	2	46	0	20		66
42	8/19/2022	C	Hwy 101	C20 - C19	C20	C19	6	6		VCP	199	198.63	Broken at 5.1 ft, surface damage at 30 ft	433C	42	3113	6	2	42	0	20		62
43	7/1/2022	D	Green Street	D68 - D67	D68	D67	6	6		VCP	139	141.75	Surface Damage at 94ft, pipeline has multiple cracks	3C2A	50	3215	11	2	50	0	12		62
44	8/11/2022	O/N	Highway 101	O3 - N8	O3	N8	8	10		Unknown	205	208.33	O3 was surcharged.	3H27	44	0000	0	2	44	0	8	10	62
45	7/5/2022	C	East Bayshore	C12 - C1	C12	C1	6	6	8	PVC	265	265.01		2D00	20	0000	0	2	20	40			60
46	8/17/2022	O	Cooley Avenue	O51A - O13	O51A	O13	6	6		VCP	236	236.12	5% grease build up, 60% sag	4836	50	2100	2	2	50	0	0	10	60
47	6/15/2022	C	Green Street	C23 - C3	C23	C3	6	6		VCP	400	400.17	Pipe has grease and is under water for about 360' till the	413G	34	4834	44	2	34	0	20	5	59
48	8/11/2022	O	West Bayshore Road	O5 - O4	O5	O4	8	8		Unknown	399	398.77	Noteable sagging	462E	44	4435	32	2	44	0	0	15	59
49	6/21/2022	C	Oak Court	C44 - C10	C44	C10	6	6		VCP	155	153.05	MSA/LR. Camera cannot move past bend.	433H	42	2111	3	2	42	0	16		58
50	6/17/2022	C	Oak Court	C46 - C45	C46	C45	6	6		VCP	256	255.42	Broken at 153ft with multiple cracks	473E	58	4234	20	2	58	0	0		58
51	6/16/2022	D	O'Connor Street	D26 - D25	D26	D25	6	6		VCP	157	157.25	broken pipe due to tree roots between 23-26 ft.	423D	38	1500	5	2	38	0	20		58
52	7/14/2022	D	East Bayshore Road	D5 - D4	D5	D4	8	8	10	Unknown	70	93.97	-	2400	8	0000	0	2	8	50	0		58
53	7/19/2022	D	East Bayshore Road	D65 - D64	D65	D64	6	6		VCP	448	456.4	Pipe is damaged. MSA/Crawler cannot move any further. Reverse	3G24	38	4117	11	2	38	0	20		58
54	7/11/2022	D	Oakwood Dive	D71 - D52	D71	D52	6	6		VCP	130	128.8	Proteus. This is the second inspection. First inspection performed	443D	46	3114	7	2	46	0	12		58
55	7/1/2022	O	Capitol Avenue	O16 - O15	O16	O15	6	6		VCP	235	233.82	Broken at 131.9 ft	433E	42	3118	11	2	42	0	15		57
56	7/18/2022	C/D	Donohoe Street	C26 - D9	C26	D9	6	6		VCP	436	109.07	This is the second inspection after heavy cleaning and attempting	5444	36	3124	11	2	36	0	20		56
57	7/18/2022	D	French Court	D40 - D37	D40	D37	6	6		VCP	194	204.73	This is the second inspection after using a root cutter. The first	5145	25	4332	18	2	25	0	30		55
58	7/5/2022	C	Poplar Avenue	C13 - C12	C13	C12	6	6		Unknown	481	335.79	MSA/Lined pipe. Camera could not move any further. Reverse	3D22	34	3100	3	2	34	0	20		54
59	6/15/2022	D	O'Connor Street	D29 - D28	D29	D28	6	6		VCP	130	464.75	Clogged, extensive cleaning required	443H	46	4132	10	2	46	0	8		54
60	6/21/2022	D	Oak Court	D37 - D36	D37	D36	6	6		VCP	368	370.18	MSA/Reverse inspection complete	4630	54	4533	29	2	54	0	0		54
61	6/23/2022	D	East O'Keefe Street	D43 - D41	D43	D41	6	6		VCP	517	543.42	MSA/Broken. Reverse inspection complete.broken pipe at 249ft	443L	46	312D	23	2	46	0	8		54
62	6/22/2022	D	Woodland Avenue	D56 - D35	D56	D35	6	6		VCP	286	287.51	Offset joint 4' from MH	433N	42	4231	11	2	42	0	12		54

**East Palo Alto Sanitary District
Area 1 CCTV Survey Results and Evaluation**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	US MH #	DS MH #	Reported Pipe Dia (in)	Actual Diameter	Master Plan Proposed Diameter	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Total Score	Score for Master Plan Capacity (+ 5 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
63	8/17/2022	O	Woodland Avenue	O29 - O30	O29	O30	6	6		VCP	220	225.93	Surcharged MH with substantial crud on water surface.	433E	42	312B	23	2	42	0	12		54
64	6/21/2022	C	Oak Court	C45 - C44	C45	C44	6	6		VCP	166	165.95	Broken pipe at 6ft, 41ft, 24ft	4439	43	3221	8	2	43	0	10		53
65	6/30/2022	O	Woodland Avenue	O22 - O21	O22	O21	6	6		VCP	348	347.89	broken at 81.02 ft, 311 ft, and 320 ft.	5147	33	4232	14	2	33	0	20		53
66	6/14/2022	D	East O'Keefe Street	D47 - D22	D47	D22	6	8		VCP	299	299	Grease build up at 269 ft	372D	41	312B	23	2	41	0	5	5	51
67	8/18/2022	O	Woodland Avenue	O28 - O26	O28	O26	6	6		VCP	434	443.76	MSA/Reverse inspection complete. Proteous. pipeline has a major	5149	41	4235	23	2	41	0	10		51
68	7/19/2022	C	Addison Avenue	C18 - C17	C18	C17	6	6		VCP	370	236.1	MSA/Proteus could not crawl any farther due to offset joint. No	413M	34	4135	19	2	34	0	16		50
69	6/23/2022	D	O'Connor Street	D41 - D24	D41	D24	6	6		VCP	191	183.04	Broken at 51 ft and 122 ft	453D	50	312D	23	2	50	0	0		50
70	6/23/2022	D	Addison Avenue	D55 - D54	D55	D54	6	6		VCP	252	251.62	MSA/Reverse inspection complete. broken at 146.7 ft	413C	34	2300	6	2	34	0	16		50
71	6/28/2022	O	Clarke Avenue	O26 - O25	O26	O25	6	6		VCP	333	332.89	Broken at 125ft	453F	50	3122	7	2	50	0	0		50
72	6/29/2022	O	Newell Road	O35 - O34	O35	O34	6	6		ACP	316	318.99		3A2D	50	2112	4	1	50	0	0		50
73	6/27/2022	O	Scotfield Street	O52 - O51	O52	O51	6	6		VCP	213	210.83	-	3D2D	50	0000	0	2	50	0	0		50
74	7/1/2022	O	Woodland Avenue	O55 - O54	O55	O54	6	6		VCP	399	398.39	MSA/Reverse Inspection Complete.	433L	42	3125	13	2	42	0	8		50
75	7/18/2022	O	West Bayshore Road	O59 - O7	O59	O7	8	8		VCP	182	182.34	Soil is visible at 167ft, 50% sag	5141	9	4131	7	2	9	0	30	10	49
76	7/1/2022	D	Green Street	D69 - D67	D69	D67	6	6		VCP	259	109.76	MSA/TBI. No reverse inspection performed because the upstream	523C	40	5121	7	3	40	0	8		48
77	6/29/2022	O	Newell Road	O31 - O30	O31	O30	6	6		VCP	90	44.79	Visible soil	5242	18	0000	0	2	18	0	30		48
78	6/29/2022	O	Woodland Avenue	O33 - O32	O33	O32	6	6		VCP	263	227.22	Visible soil	4236	26	2312	8	2	26	0	12	10	48
79	6/15/2022	C	Palmar Avenue	C25 - C23	C25	C23	6	6		VCP	303	302.5	Medium Joint Offset	433I	42	4632	30	2	42	0	0	5	47
80	7/1/2022	D	Glen Way	D67 - D63	D67	D63	6	6		VCP	294	294.7	Pipe broken at 231.1 ft	5143	17	3100	3	2	17	0	30		47
81	6/27/2022	O	Cooley Avenue	O58 - O57	O58	O57	6	6		VCP	403	184.54	MSA/Tap break in intruding. No reverse inspection performed	5143	17	5100	5	3	17	0	30		47
82	6/24/2022	C	Addison Avenue	C17 - C16	C17	C16	6	6		VCP	333	315.4	There's a JAM 3' from the DSMH. Camera is unable to go past this	4230	38	0000	0	3	38	0	8		46
83	8/18/2022	C	Hwy 101	C19 - C2	C19	C2	6	6		VCP	264	73.18	MSA/OBM. Reverse Inspection performed. Pipeline was CCTV for	5244	26	413A	34	2	26	0	20		46
84	7/12/2022	C	Menalto Avenue	C3 - C2A	C3	C2A	8	6	8	PVC	370	370.18	New line segment	2300	6	0000	0	2	6	40	0		46
85	6/27/2022	O	Cooley Avenue	O57 - O51	O57	O51	6	6		VCP	365	365.48	Cracks and surface damage along the pipe	443A	46	2116	8	2	46	0	0		46
86	7/12/2022	C/D	O'Connor Street	D29 - C37	D29	C37	6	6		Unknown	130	130.2	Proteus	3900	27	3111	4	2	27	0	8	10	45
87	6/21/2022	D	Oak Court	D36 - D35	D36	D35	6	6		VCP	251	221.23	MSA/Broken. Reverse inspection attempted. broken pipe at 152ft	5146	29	411A	14	2	29	0	16		45
88	6/14/2022	D	East O'Keefe Street	D48 - D47	D48	D47	6	6		VCP	401	401.37	5% Grease build up at 335ft	4138	28	2213	7	2	28	0	12	5	45
89	7/1/2022	C	East Bayshore	C14 - C12	C14	C12	6	6		PVC	282	282.51		382A	44	0000	0	2	44	0	0		44
90	7/8/2022	C	Woodland Avenue	C51 - C50	C51	C50	6	6		Unknown	556	558.7	Proteous. MSA/Reverse inspection complete. Pipe is deformed	3A21	32	4111	5	2	32	0	12		44
91	7/5/2022	D	East Bayshore Road	D64 - D63	D64	D63	6	6		VCP	471	472.65	MSA/Reverse inspection complete	4135	19	1300	3	2	19	0	20	5	44
92	7/19/2022	O	West Bayshore Road	O7 - O6	O7	O6	8	8	8	Unknown	427	428.46	-	2200	4	0000	0	2	4	40	0		44
93	6/24/2022	D	West Bayshore Road	D53 - D52	D53	D52	6	6		VCP	248	247.62	Joint Separated Medium	423A	38	4211	9	2	38	0	0	5	43
94	7/19/2022	O	Mission Drive	O41 - O40	O41	O40	6	6		Unknown	45	45.4	Proteous. seemed to be different material assuming to be Cast	3900	27	0000	0	3	27	0	16		43
95	6/27/2022	O	Scotfield Street	O54 - O52	O54	O52	6	6		VCP	380	380.17	Pipe is broken at 26.08 feet.	5142	13	1A00	10	2	13	0	30		43
96	6/16/2022	D	O'Connor Street	D27 - D26	D27	D26	6	6		VCP	392	392.97	Clogged, extensive cleaning required	413G	34	2117	9	2	34	0	8		42
97	7/8/2022	C	Woodland Avenue	C49 - C48	C49	C48	6	6		Unknown	248	245	Proteous	332C	29	3200	6	2	29	0	12		41
98	7/8/2022	C	Woodland Avenue	C50 - C49	C50	C49	6	6		Unknown	361	358.3	Proteous	332A	29	3311	10	2	29	0	12		41
99	6/15/2022	D	O'Connor Street	D28 - D27	D28	D27	6	6		VCP	81	80.57	Clogged, extensive cleaning required	4138	28	1A00	10	1	28	0	8	5	41
100	7/1/2022	C	East Bayshore	C16 - C14	C16	C14	6	6		PVC	273	274.31		3A25	40	0000	0	2	40	0	0		40
101	N/A	C	Menalto Avenue	C3 - C2	C3	C2	6	6	8		398		Line has an uncharted manhole, See C2A						0	40	0		40
102	6/21/2022	D	Euclid Avenue	D34 - D33	D34	D33	8	8	8	PE	293	294.9		0000	0	0000	0	0	0	40	0		40
103	7/5/2022	D	Oakwood Dive	D66 - D65	D66	D65	8	8	8	Unknown	413	410.36		0000	0	0000	0	0	0	40	0		40
104	6/29/2022	O	Newell Road	O34 - O10	O34	O10	6	6		ACP	268	267.41		3H1I	40	3111	4	2	40	0	0		40
105	6/21/2022	D	Oak Court	D38 - D37	D38	D37	6	6		VCP	238	3.2	MSA/Broken. No reverse inspection can be performed because	5141	9	1100	1	3	9	0	30		39
106	7/13/2022	D	Oak Court	D39 - D37	D39	D37	6	6		Unknown	84	342.1	New line segment. Proteus was used to inspect this line. Broken	5141	9	1500	5	2	9	0	30		39
107	6/29/2022	O	Woodland Avenue	O32 - O31	O32	O31	6	6		VCP	258	258.41	Broken at 3.2 ft and 226 ft	5141	9	4432	22	2	9	0	30		39
108	6/27/2022	O	Circle Drive	O53 - O52	O53	O52	6	6		VCP	188	222.13	Broken at 204ft	423I	38	3121	5	2	38	0	0		38
109	7/1/2022	O	Woodland Avenue	O56 - O55	O56	O55	6	6		VCP	377	378.18	-	3N24	38	3221	8	2	38	0	0		38
110	6/23/2022	D	O'Connor Street	D42 - D41	D42	D41	6	6		VCP	100	100.67	Crack Multiple at 7.6ft & 69.2ft	413A	34	0000	0	2	34	0	0		34
111	6/23/2022	D	East O'Keefe Street	D44 - D43	D44	D43	6	6		VCP	113	74.78	Broken at 72.2ft	413A	34	2216	10	2	34	0	0		34
112	7/7/2022	D	East O'Keefe Street	D50 - D49	D50	D49	6	6		VCP	422	419.56	Broken at 418.9 ft	413C	34	3221	8	2	34	0	0		34
113	6/23/2022	D	West Bayshore Road	D54 - D53	D54	D53	6	6		VCP	75	73.38	-	3A22	34	0000	0	2	34	0	0		34
114	8/12/2022	D	Hwy 101	D6 - D5	D6	D5	8	8		Unknown	246	263.21	Joint Offset Large at 112ft	413I	34	0000	0	2	34	0	0		34
115	7/11/2022	C	O'Connor Street	C37 - C36	C37	C36	6	6		Unknown	153	153.3	Proteus. This is the second inspection. First inspection performed	3500	15	3200	6	3	15	0	12	5	32
116	6/15/2022	C	Green Street	C24 - C23	C24	C23	6	6		VCP	151	41.09	MSA/JOM. No reverse inspection performed because the	4132	10	1100	1	2	10	0	20		30
117	6/29/2022	C	East O'Keefe Street	C30 - C27	C30	C27	6	6		VCP	163	161.85		3E00	30	0000	0	3	30	0	0		30
118	7/7/2022	C	East O'Keefe Street	C32 - C30	C32	C30	6	6		VCP	147	147.55		3C00	30	2100	2	3	30	0	0		30
119	7/7/2022	C	East O'Keefe Street	C34 - C32	C34	C32	6	6		VCP	57	81.57	-	3A00	30	3121	5	2	30	0	0		30
120	7/11/2022	C	O'Connor Street	C36 - C35	C36	C35	6	6		Unknown	92	91.6	Proteus. This is the second inspection. First inspection performed	3226	18	0000	0	2	18	0	12		30
121	7/18/2022	O	West Bayshore Road	O10 - O9	O10	O9	8	8		VCP	157	156.65		332A	29	2811	21	2	29	0	0		29
122	8/18/2022	O	Woodland Avenue	O29 - O28	O29	O28	6	6		VCP	143	160.5	Surcharged MH with substantial crud on water surface.	4127	16	4113	7	2	16	0	12		28
123	6/28/2022	O	Mission Drive	O50 - O49	O50	O49	6	6		VCP	172	171.84	Joint Offset Large at 170 ft	4138	28	0000	0	3	28	0	0		28

**East Palo Alto Sanitary District
Area 1 CCTV Survey Results and Evaluation**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	US MH #	DS MH #	Reported Pipe Dia (in)	Actual Diameter	Master Plan Proposed Diameter	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Total Score	Score for Master Plan Capacity (+ 5 * Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
124	6/23/2022	D	Manhattan Avenue	D76 - D19	D76	D19	10	10		PVC	99	55.78	-	3900	27	4100	4	3	27	0	0		27
125	6/28/2022	O	Mission Drive	O48 - O47	O48	O47	6	6		VCP	122	120.36	Surface Damage at 119ft	3421	14	0000	0	2	14	0	12		26
126	7/18/2022	O	West Bayshore Road	O8 - O59	O8	O59	8	8		VCP	103	102.77	-	3427	26	4123	10	1	26	0	0		26
127	7/11/2022	C	O'Connor Street	C39 - C37	C39	C37	6	6		VCP	164	166.4	Proteus. This is the second inspection. First inspection performed	3300	9	0000	0	3	9	0	16		25
128	6/28/2022	O	Mission Drive	O46 - O45	O46	O45	6	6		VCP	213	174.04	Broken at 3.7ft, Joint Separated Medium along the pipe	4137	25	0000	0	2	25	0	0		25
129	8/17/2022	O	Cooley Avenue	O51 - O51A	O51	O51A	6	6		VCP	234	233.82	10% grease build up	2E00	20	432A	32	2	20	0	0	5	25
130	6/29/2022	O	Newell Road	O30 - O35	O30	O35	6	6		ACP	176	176.34	-	271F	24	0000	0	1	24	0	0		24
131	6/14/2022	D	East O'Keefe Street	D49 - D48	D49	D48	6	6		VCP	400	399.77	Broken at 264 ft, 90% blockage by a root ball at 137 ft	4231	11	4231	11	1	11	0	12		23
132	6/27/2022	O	West Bayshore Road	O11 - O10	O11	O10	8	8		VCP	259	260.21	-	312A	23	412A	24	2	23	0	0		23
133	6/28/2022	O	Mission Drive	O37 - O25	O37	O25	6	6		VCP	81	70.48	50% sagging pipe	3400	12	4200	8	3	12	0	0	10	22
134	7/19/2022	O	West Bayshore Road	O6 - O5	O6	O5	8	8		Other	399	400.67	-	3700	21	3111	4	2	21	0	0		21
135	7/5/2022	D	East Bayshore Road	D63 - D5	D63	D5	8	8		VCP	297	307.1	-	2B00	20	3123	9	2	20	0	0		20
136	6/27/2022	O	West Bayshore Road	O12 - O11	O12	O11	8	8		VCP	394	395.57	-	2C00	20	3123	9	1	20	0	0		20
137	6/27/2022	O	West Bayshore Road	O13 - O12	O13	O12	8	8		Other	415	417.56	-	2A00	20	4111	5	2	20	0	0		20
138	8/11/2022	O	West Bayshore Road	O17 - O3	O17	O3	8	8		VCP	161	159.15	-	2B00	20	4131	7	1	20	0	0		20
139	6/28/2022	O	Clarke Avenue	O27 - O26	O27	O26	6	6		VCP	65	65.98	-	3622	20	1100	1	2	20	0	0		20
140	7/14/2022	O	West Bayshore Road	O60 - O61	O60	O61	14	14		PVC	199	203.63	-	2B00	20	2F00	20	2	20	0	0		20
141	8/18/2022	O	Clarke Avenue	O25 - O7	O25	O7	6	6		VCP	177	177.34	This is the second inspection. The first inspection on 6.29 can be	4231	11	4132	10	2	11	0	8		19
142	7/7/2022	C	East O'Keefe Street	C31 - C30	C31	C30	6	6		VCP	67	63.18	-	3600	18	0000	0	3	18	0	0		18
143	8/11/2022	O	West Bayshore Road	O18 - O17	O18	O17	8	8		VCP	264	162.35	-	3226	18	1A00	10	1	18	0	0		18
144	6/24/2022	D	West Bayshore Road	D52 - D51	D52	D51	6	6		VCP	267	267.21	Broken at 262 ft	4122	8	1300	3	1	8	0	8		16
145	6/22/2022	D	Woodland Avenue	D61 - D60	D61	D60	6	6		VCP	101	95.07	Joint Offset Large at 91 ft	4100	4	3100	3	3	4	0	12		16
146	6/30/2022	O	Woodland Avenue	O19 - O17	O19	O17	6	6		VCP	86	85.57	Broken at 83 ft	4127	16	1300	3	1	16	0	0		16
147	6/24/2022	D	Dumbarton Avenue	D70 - D51	D70	D51	6	6		VCP	71	66.68	-	3323	15	1100	1	2	15	0	0		15
148	8/18/2022	C	West Bayshore Road	C22 - C21	C22	C21	6	6		VCP	92	91.17	Broken at 6 ft	4131	7	3A2A	50	2	7	0	5		12
149	6/22/2022	D	Emma Lane	D62 - D59	D62	D59	6	6		VCP	248	240.92	D62 is cleanout with "water" lid	3100	3	4131	7	1	3	0	8		11
150	7/7/2022	C	East O'Keefe Street	C27 - C5	C27	C5	6	6		VCP	222	222.93	Broken at 1.7ft	4132	10	4121	6	1	10	0	0		10
151	7/7/2022	C	East O'Keefe Street	C33 - C32	C33	C32	6	6		VCP	71	65.68	-	3300	9	0000	0	3	9	0	0		9
152	7/6/2022	C	Menalto Avenue	C11 - C10	C11	C10	6	6		PE	508	510.13	-	2400	8	0000	0	2	8	0	0		8
153	N/A	D	Oak Court	D39 - D38	D39	D38	6	6			84		Cleanout D38 does not exist. Line ends at MH D37. 7.13.22.						0	0	8		8
154	6/28/2022	O	Mission Drive	O39 - O37	O39	O37	6	6		VCP	41	41.29	-	2400	8	0000	0	2	8	0	0		8
155	6/28/2022	O	Mission Drive	O44 - O43	O44	O43	6	6		VCP	69	68.48	Joint Separated Large at 3.6ft	4131	7	0000	0	3	7	0	0		7
156	6/28/2022	O	Mission Drive	O45 - O8	O45	O8	6	6		VCP	66	42.39	Broken at 38.7ft	4131	7	0000	0	2	7	0	0		7
157	7/7/2022	C	East O'Keefe Street	C29 - C28	C29	C28	6	6		PVC	298	295.9	-	3200	6	4733	37	1	6	0	0		6
158	7/1/2022	O	West Bayshore Road	O15 - O14	O15	O14	8	8		Unknown	308	308.6	-	2300	6	1100	1	1	6	0	0		6
159	6/30/2022	O	Woodland Avenue	O24 - O23	O24	O23	6	6		VCP	97	95.77	-	3200	6	5141	9	2	6	0	0		6
160	6/28/2022	O	Mission Drive	O43 - O42	O43	O42	6	6		VCP	182	181.44	-	3200	6	0000	0	3	6	0	0		6
161	6/28/2022	O	Mission Drive	O38 - O37	O38	O37	6	6		VCP	117	115.36	-	3121	5	4100	4	3	5	0	0		5
162	6/28/2022	O	Mission Drive	O42 - O39	O42	O39	6	6		VCP	48	48.08	-	3100	3	0000	0	3	3	0	0		3
163	6/28/2022	O	Mission Drive	O49 - O47	O49	O47	6	6		VCP	73	72.28	Crack at 68.7 ft	1100	2	0000	0	1	2	0	0	0	2
164	N/A	C	Menalto Avenue	C10 - C9	C10	C9	6	6			301		Could not find MH C9. C10 connects to C8. 7.6.22						0	0	0		0
165	7/7/2022	C	East O'Keefe Street	C28 - C27	C28	C27	6	6		PVC	43	41.19	-	0000	0	0000	0	0	0	0	0	0	0
166	N/A	C	Menalto Avenue	C9 - C8	C9	C8	6	6			84		Line does not exist. C8 connects to C10. 7.6.22						0	0	0		0
167	6/16/2022	D	Byers Drive	D30 - D26	D30	D26	6	6		VCP	436	437.56	-	0000	0	4100	4	4	0	0	0		0
168	6/16/2022	D	Falk Court	D31 - D30	D31	D30	6	6		VCP	153	146.85	-	0000	0	0000	0	0	0	0	0		0
169	6/16/2022	D	Falk Court	D32 - D30	D32	D30	6	6		VCP	126	121.76	-	0000	0	3300	9	3	0	0	0		0
170	6/22/2022	D	Woodland Avenue	D57 - D56	D57	D56	6	6		VCP	197	196.64	-	0000	0	1600	6	1	0	0	0		0
171	6/22/2022	D	Woodland Avenue	D58 - D57	D58	D57	6	6		VCP	158	156.95	-	0000	0	3C12	32	2	0	0	0		0
172	6/22/2022	D	Woodland Avenue	D59 - D58	D59	D58	6	6		VCP	151	152.25	-	0000	0	4133	13	1	0	0	0		0
173	6/22/2022	D	Woodland Avenue	D60 - D59	D60	D59	6	6		VCP	113	111.66	-	0000	0	321A	16	1	0	0	0		0
174	6/23/2022	D	Manhattan Avenue	D73 - D76	D73	D76	10	10		PVC	297	277.11	-	0000	0	0000	0	0	0	0	0		0
175	6/23/2022	D	Manhattan Avenue	D74 - D73	D74	D73	8	8		Unknown	210	300.9	-	0000	0	0000	0	0	0	0	0		0
176	6/23/2022	D	Manhattan Avenue	D75 - D74	D75	D74	8	8		Unknown	195	187.44	-	0000	0	0000	0	0	0	0	0		0
177	6/27/2022	O	West Bayshore Road	O14 - O13	O14	O13	8	8		VCP	130	128.86	-	0000	0	0000	0	0	0	0	0		0
178	6/29/2022	O	Newell Road	O36 - O30	O36	O30	6	6		ACP	164	159.85	-	0000	0	312D	23	2	0	0	0		0
179	6/28/2022	O	Mission Drive	O40 - O39	O40	O39	6	6		VCP	37	34.89	-	0000	0	0000	0	0	0	0	0		0
180	6/28/2022	O	Mission Drive	O47 - O45	O47	O45	6	6		VCP	72	71.38	-	0000	0	0000	0	0	0	0	0		0
181	N/A	O	Cooley Avenue	O51 - O13	O51	O13	6	6			468		Line has an unchartered manhole, see MH O51A						0	0	0		0
182	7/14/2022	O	Highway 102	O59 - O60	O59	O60	14	10		VCP	40	8.7	-	0000	0	2100	2	2	0	0	0		0
183	N/A	O/M	East Bayshore Road	O61 - M8	O61	M8	14	14			12		O61 is buried. The crew attempted to inspect it from O60 but the						0	0	0		0



Attachment 2

Area 3 CCTV Survey Results and Evaluation

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	Upstream MH #	Downstream MH #	Reported Pipe Dia (in)	Actual Diameter	Master Plan Proposed Diameter	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Total scoring	Score for Master Plan Capacity (+ 5 *Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
2	8/2/2022	A	Bay Road	A5 - A8	A5	A8	15	12	18	PE	124	121.74	Sagging pipe 50%-100%	5A3A	80	2300	6	3	80	90	0	10	180
3	8/3/2022	A	Bay Road	A10 - A15	A10	A15	15	15	18	ACP	299	298.89	Surface Damage Roughness Increased	4C37	61	3111	4	3	61	90	0	20	171
4	8/2/2022	A	Bay Road	A2 - A5	A2	A5	12	12	15	Unknown	244	244.08	Sagging pipe 75%	4B3A	70	0000	0	3	70	75	0	25	170
5	8/3/2022	A	Bay Road	A15 - A16	A15	A16	6	15	18	ACP	435	433.85	Surface damage roughness. Sagging 75%	453F	50	3100	3	1	50	90	0	25	165
6	8/1/2022	I	Beech Street	I3 - T19	I3	T19	24	18	24	PVC	188	189.17	Upgrade to 24" per MP	3D00	30	0000	0	3	30	120	0	5	155
7	7/31/2022	I	Pulgas Avenue	I15 - I14	I15	I14	12	12	15	PVC	386	384.45	Sagging pipe 85%	5A00	50	0000	0	5	50	75	0	25	150
8	8/1/2022	I	Beech Street	I7 - I6	I7	I6	15	15	20	CP	259	260.01	Surface damage roughness. Sagging 75%	441H	26	0000	0	1	26	100	0	20	146
9	8/3/2022	A / T	Bay Trail	A29 - T29	A29	T29	18	18	24	ACP	345	342.97	-	251K	20	0000	0	1	20	120	0		140
10	8/3/2022	A	Bay Road	A16 - A21	A16	A21	15	15	18	ACP	296	296.78	-	3F27	44	0000	0	1	44	90	0	5	139
11	N/A	A	Bay Road	A1 - A2	A1	A2	12	12	15	Unknown	80	80.00	MH A1 does not exist. Inspection started from B2-	3E2A	50	4300	12	2	50	75	10	0	135
12	8/2/2022	A	Bay Road	B2 - A2	B2	A1/A2	12	12	15	PE	181	180.50	A1 is buried, operator surveyed B2-A2 for total of	3E2A	50	4300	12	2	50	75	0	10	135
13	8/3/2022	A	Bay Road	A9 - A10	A9	A10	15	15	18	ACP	181	180.05	Broken at 172ft	4138	28	0000	0	1	28	90	0	15	133
14	8/1/2022	K/L	Larkspur Drive	L21 - K28	L21	K28	10	10	14	PVC	68	67.43	Sagging pipe 75%	4A00	40	4800	32	4	40	70	0	20	130
15	8/2/2022	I	Beech Street	I31 - I4	I31	I4	18	18	24	PVC	135	300.09	This pipe line was ISA-I4	0000	0	4431	19	3	0	120	0	0	120
16	8/2/2022	I	Beech Street	I4 - I3	I4	I3	18	18	24	PVC	243	240.17	-	0000	0	4100	4	4	0	120	0	0	120
17	8/2/2022	I	Beech Street	I5 - I31	I5	I31	18	18	24	PVC	135	154.30	This pipe line was I5-ISA	0000	0	0000	0	0	0	120	0	0	120
18	8/1/2022	I	Beech Street	I6 - I5	I6	I5	18	18	24	PVC	411	409.00	-	0000	0	0000	0	0	0	120	0	0	120
19	8/1/2022	I	Beech Street	I9 - I8	I9	I8	15	15	20	CP	155	154.10	-	241E	18	2100	2	1	18	100	0	118	
20	8/1/2022	I	Beech Street	I11 - I10	I11	I10	15	15	18	CP	380	380.45	-	251M	20	0000	0	1	20	90	0	110	
21	7/31/2022	I	Pulgas Avenue	I13 - I12	I13	I12	12	12	15	PVC	320	319.73	-	3F00	30	0000	0	3	30	75	0	5	110
22	7/22/2022	J	Pulgas Avenue	J7 - J6	J7	J6	6	6		VCP	441	435.35	Pipe is broken at 124ft and 197ft	5947	73	3300	9	3	73	0	10	25	108
23	7/7/2022	A	Demeter Street	A13 - A12	A13	A12	6	6		Unknown	412	412.51	Broken pipe at 129 ft and 139 ft with sags.	4A3D	70	3100	3	2	70	0	20	15	105
24	7/21/2022	J	Garden Street	J9 - J9A	J9	J9A	6	6		VCP	365	365.02	Pipe is broken at 8ft, 32ft, 81ft, 223ft & 318ft.	4935	51	1400	4	2	51	0	30	20	101
25	7/7/2022	A	Pulgas Avenue	A18 - A16	A18	A16	6	6		VCP	442	439.26	Broken pipe at 44ft.	4A3E	70	2A00	20	2	70	0	10	20	100
26	7/31/2022	I	Beech Street	I10 - I9	I10	I9	15	15	18	CP	221	220.03	-	1G00	10	0000	0	1	10	90	0	100	
27	8/1/2022	I	Beech Street	I8 - I7	I8	I7	15	15	20	CP	238	237.07	-	0000	0	0000	0	0	0	100	0	0	100
28	7/27/2022	K	Larkspur Drive	K19 - K18	K19	K18	6	6		CP	272	272.84	Pipe is broken and soil is visible at 144ft, and	5A42	58	0000	0	3	58	0	30	10	98
29	7/8/2022	A	Gonzaga Street	A3 - A2	A3	A2	6	6		VCP	287	281.55	Broken pipe at 53, 141, 157, and 159 ft. Also, an	4A32	46	3111	4	2	46	0	30	20	96
30	7/21/2022	J	Garden Street	J10 - J9	J10	J9	6	6		VCP	300	298.99	Pipe is broken at 228ft and 293ft	4A3A	70	3112	5	2	70	0	10	15	95
31	7/27/2022	K	Larkspur Drive	K18 - K17	K18	K17	6	6		CP	269	268.13	SMW spots on the line.	5A3A	80	0000	0	3	80	0	15	95	
32	7/8/2022	A	Illinois Street	A6 - A5	A6	A5	6	6		VCP	287	286.26	Broken pipe at 15 and 75ft. Also, an offset joint at	4B33	49	331D	19	2	49	0	30	15	94
33	7/27/2022	K	Daisy Lane	K21 - K3	K21	K3	6	6		CP	246	244.88	Pipe has few locations with chunks of pipe missing	5A31	53	2100	2	3	53	0	30	10	93
34	8/3/2022	A	Bay Road	A23 - A22	A23	A22	15	8	18	ACP	14	12.02	-	1200	2	0000	0	1	2	90	0		92
35	7/25/2022	I	Myrtle Street	I21 - I13	I21	I13	6	6	8	VCP	600	600.08	As I24 should be between them as shown in the	4539	47	311F	13	1	47	40	0	5	92
36	7/8/2022	A	Illinois Street	A7 - A6	A7	A6	6	6		VCP	306	287.97	Broken pipe at 82 and 230 ft.	4736	46	3300	9	2	46	0	30	15	91
37	7/26/2022	K	Wisteria Drive	K13 - K12	K13	K12	6	6		VCP	362	362.11	Pipe is broken at 9ft and 91ft.	492D	56	0000	0	2	56	0	20	15	91
38	8/3/2022	A	Bay Road	A21 - A23	A21	A23	15	15	18	ACP	155	168.33	New Line Segment. MH Name changed from A22	0000	0	0000	0	0	0	90	0	0	90
39	N/A	A	Bay Road	A21 - A23	A21	A23	15		18		155		A21 does not connect to A23 but it connects to						0	90	0		90
40	8/2/2022	A	Bay Road	A8 - A9	A8	A9	15	12	18	PVC	61	60.82	-	0000	0	0000	0	0	0	90	0	0	90
41	7/12/2022	F	Weeks Street	F23 - F8	F23	F8	6	6		VCP	327	326.54	This pipeline was F9A-F8	4C3C	70	4200	8	3	70	0	0	20	90
42	7/6/2022	A	Tara Street	A27 - A26	A27	A26	6	6		VCP	311	306.60	Broken pipe and soil is visible at 254.10 ft at 11	513C	35	0000	0	2	35	0	30	20	85
43	7/27/2022	K	Larkspur Drive	K16 - K4	K16	K4	6	6		CP	274	273.04	SMW spots on the line	5C31	53	4122	8	3	53	0	15	15	83
44	7/22/2022	I	Beech Street	I20 - I9	I20	I9	6	6		VCP	278	270.33	Pipe has MSA at 267 due to hard	5800	40	4100	4	4	40	0	20	20	80
45	7/7/2022	A	Demeter Street	A12 - A11	A12	A11	6	6		VCP	485	483.95	Sagging pipeline 55%	4D35	55	4132	10	2	55	0	0	20	75
46	7/12/2022	F	Weeks Street	F11 - F10	F11	F10	6	6		VCP	420	420.53	Broken at 176ft, 242ft	4D3C	70	1100	1	2	70	0	0	5	75
47	7/11/2022	F	Weeks Street	F12 - F11	F12	F11	6	6		VCP	355	533.45	Broken at 414ft, multiple fractures and cracks	4C3D	70	352A	35	2	70	0	0	5	75
48	7/11/2022	F	Weeks Street	F19 - F20	F19	F20	6	6		VCP	189	216.63	MH was F19 - F21	4A3A	70	3121	5	2	70	0	0	5	75
49	8/1/2022	I	Pulgas Avenue	I12 - I6	I12	I6	12	12	15	PVC	338	333.86	-	0000	0	0000	0	0	0	75	0	0	75
50	7/31/2022	I	Pulgas Avenue	I14 - I13	I14	I13	12	12	15	PVC	444	444.67	-	0000	0	3121	5	2	0	75	0	0	75
51	7/21/2022	J	Garden Street	J8 - J6	J8	J6	6	6		VCP	442	441.97	Broken at 33ft, 81.4ft, 164ft, 223ft, 286ft, 318ft	4E3B	70	3300	9	2	70	0	0	5	75
52	8/1/2022	K	Larkspur Drive	K28 - K4	K28	K4	10	10	15	PVC	242	241.97	-	0000	0	4C2D	60	2	0	75	0	0	75
53	7/20/2022	G	Runnymede Street	G7 - G6	G7	G6	6	6		PVC	295	297.68	-	382C	48	0000	0	2	48	0	0	25	73
54	7/28/2022	K	Camellia Drive	K35 - K34	K35	K34	6	6		VCP	280	280.05	Broken pipe at 9ft.	4932	42	3121	5	2	42	0	10	20	72
55	7/12/2022	F	Pulgas Avenue	F14 - F8	F14	F8	6	6		PVC	463	467.72	Sagging pipe up to 75%	453C	50	4500	20	2	50	0	0	20	70
56	7/28/2022	K	Camellia Drive	K36 - K35	K36	K35	6	6		VCP	282	281.15	Broken pipe at 264ft.	423B	38	0000	0	2	38	0	20	10	68
57	7/12/2022	F	Weeks Street	F8 - F8A	F8	F8A	6	6		VCP	281	281.15	New Line segment	443B	46	4122	8	2	46	0	0	20	66
58	7/26/2022	K	Azalia Drive	K9 - K8	K9	K8	6	8		VCP	356	353.39	Pipe is broken at 158ft, 183ft, 296ft. At 104ft a	5145	25	3422	16	2	25	0	40		65
59	7/26/2022	K	Wisteria Drive	K11 - K5	K11	K5	6	6		VCP	370	366.42	MSA/Joint offset. Reverse inspection performed	413B	34	412A	24	2	34	0	20	10	64
60	7/25/2022	I	Myrtle Street	I23 - I28	I23	I28	6	6		VCP	166	166.43	Broken at 59ft. This pipe line was I23 - I23A	432A	32	3100	3	2	32	0	30		62
61	7/20/2022	G	Runnymede Street	G4 - G3	G4	G3	6	6		PVC	213	213.02	-	3B2C	50	0000	0	2	50	0	0	10	60
62	7/22/2022	J	Garden Street	J5C - T21	J5C	T21	6	8		PVC	62	61.82	New Line Segment. Sagging pipe 75%	4A00	40	4131	7	3	40	0	0	20	60
63	7/27/2022	K	Daisy Lane	K22 - K21	K22	K21	6	6		CP	256	257.00	Surface Damage Missing Wall along the pipeline	5B25	60	2100	2	4	60	0	0		60
64	7/28/2022	K	Camellia Drive	K33 - K32	K33	K32	6	6		VCP	131	129.25	Sagging pipe 75%	4C00	40	4800	40	4	40	0	0	20	60

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	Upstream MH #	Downstream MH #	Reported Pipe Dia (in)	Actual Diameter	Master Plan Proposed Diameter	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Total scoring	Score for Master Plan Capacity (+ 5 *Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
65	7/21/2022	G	Runnymede Street	G14 - G17	G14	G17	6	6		VCP	151	150.80	Pipe is broken at 17ft.	5241	14	3100	3	2	14	0	20	25	59
66	7/11/2022	F	Weeks Street	F20 - F17	F20	F17	6	6		VCP	136	252.60	MH was F20 - F21	4A35	55	1500	5	2	55	0	0		55
67	7/20/2022	G	Runnymede Street	G6 - G4	G6	G4	6	6		PVC	388	384.15	-	3A2D	50	0000	0	2	50	0	0	5	55
68	7/27/2022	K	Larkspur Drive	K17 - K16	K17	K16	6	6		CP	267	267.12	Surface Damage Missing Wall along the pipeline	572D	55	0000	0	2	55	0	0		55
69	7/20/2022	G	Buchanon Court	G10 - G9	G10	G9	6	6		CP	271	270.53	Pipe is broken and soil is visible at 10 ft and 221 ft	5441	24	0000	0	3	24	0	30		54
70	7/21/2022	G	Mandela Court	G15 - G14	G15	G14	8	8		PVC	215	215.52	-	3C26	42	0000	0	2	42	0	0	10	52
71	7/7/2022	A	Demeter Street	A14 - A13	A14	A13	6	6		Unknown	288	287.86	-	3J2B	50	0000	0	2	50	0	0		50
72	7/7/2022	A	Pulgas Avenue	A20 - A19	A20	A19	6	6		VCP	340	338.97	Broken pipe at 225ft, and separated joints at 281ft.	4234	20	3100	3	2	20	0	30		50
73	7/12/2022	F	Weeks Street	F10 - F9	F10	F9	6	6		VCP	463	461.91	Broken at 32.2ft & 247ft & 297ft & 314ft	514D	45	0000	0	2	45	0	0	5	50
74	7/8/2022	F	Clarke Avenue	F15 - F11	F15	F11	6	6		VCP	301	299.99	Multiple cracks along the pipe	453A	50	4329	30	2	50	0	0		50
75	8/3/2022	K/L	Gardenia Way	K31 - L1	K31	L1	8	8		PVC	148	146.99	-	3D00	30	4800	32	3	30	0	0	20	50
76	7/20/2022	G	Buchanon Court	G9 - G6	G9	G6	6	6		CP	291	292.67	Pipe is broken and soil is visible at 84 ft	5241	14	3100	3	2	14	0	30	5	49
77	7/21/2022	J	Garden Street	J9A - J8	J9A	J8	6	6		VCP	35	35.37	Pipe is broken at 115ft, 176ft, and 359ft.	4431	19	3100	3	3	19	0	30		49
78	7/12/2022	F	Weeks Street	F9 - F23	F9	F23	6	6		VCP	111	111.02	This pipeline was F9-F9A	4735	43	0000	0	2	43	0	0	5	48
79	7/29/2022	G	Pulgas Avenue	G13 - G3	G13	G3	6	6		PVC	453	441.50	Proteous	4636	46	4700	28	2	46	0	0		46
80	7/27/2022	K/L	Azalia Drive	L10 - K27	L10	K27	6	6		VCP	275	195.98	Broken connection of lateral at 28ft.	4231	11	3100	3	2	11	0	20	15	46
81	7/21/2022	G	Veronica Court	G18 - G17	G18	G17	6	6		PVC	291	290.27	-	3926	39	3100	3	2	39	0	0	5	44
82	7/25/2022	I	Terra Villa Avenue	I17 - I7	I17	I7	6	6		VCP	526	526.13	Broken at 520ft	413B	34	0000	0	2	34	0	0	10	44
83	7/11/2022	A	Pulgas Avenue	A17 - A31	A17	A31	6	6		VCP	241	241.57	This pipe line was A17 - A17A	4439	43	2100	2	2	43	0	0		43
84	7/26/2022	K	Azalia Drive	K7 - K6	K7	K6	6	8		VCP	362	362.61	-	312I	23	2F13	23	2	23	0	0	20	43
85	7/20/2022	F	Weeks Street	F7 - T25	F7	T25	6	6		VCP	477	475.83	Multiple cracks along the pipe	4238	32	3223	12	2	32	0	0	10	42
86	7/25/2022	I	Brentwood Court	I18 - I8	I18	I8	6	6		PVC	237	238.37	-	342C	32	0000	0	2	32	0	0	10	42
87	7/27/2022	K	Hibiscus Court	K24 - K21	K24	K21	6	6		CP	149	144.78	Surface Damage Missing Wall	5626	42	0000	0	3	42	0	0		42
88	7/20/2022	G	Runnymede Street	G8 - G7	G8	G7	6	6		PVC	327	326.04	-	352B	35	0000	0	2	35	0	0	5	40
89	7/11/2022	A	Pulgas Avenue	A31 - A16	A31	A16	6	6		PVC	413A	177.15	This pipe line was A17A - A16	413A	34	4100	4	2	34	0	0	5	39
90	7/20/2022	G	Buchanon Court	G11 - G10	G11	G10	6	6		CP	266	260.91	Pipe is broken at 33 ft and 256 ft.	4431	19	3100	3	2	19	0	20		39
91	7/27/2022	K	Sage Street	K20 - K19	K20	K19	6	6		CP	135	132.86	Surface Damage Missing Wall at 96.4ft	5131	8	0000	0	2	8	0	30		38
92	7/28/2022	K	Camellia Drive	K34 - K33	K34	K33	6	6		VCP	278	278.05	-	322F	32	3122	7	2	32	0	0	5	37
93	7/21/2022	G	Runnymede Street	G19 - T23	G19	T23	6	6		VCP	154	263.22	This pipeline was G2A-T23	442D	36	4133	13	2	36	0	0		36
94	7/7/2022	A	Pulgas Avenue	A19 - A18	A19	A18	6	6		VCP	214	206.51	Fracture multiple alonge the pipeline	4633	33	0000	0	2	33	0	0		33
95	7/29/2022	K	Daisy Lane	K23 - K22	K23	K22	6	6		Unknown	100	94.00	Material change at 23ft and needs a mini camera	5129	23	1100	1	2	23	0	8		31
96	7/27/2022	K	Azalia Drive	K26 - K6	K26	K6	6	6		VCP	294	294.08	Pipe is broken at 286ft	4231	11	312E	23	2	11	0	20		31
97	8/3/2022	A	Bay Road	A22 - A29	A22	A29	18	15		ACP	369	367.52	-	2G1M	30	0000	0	1	30	0	0		30
98	7/7/2022	A	Tara Street	A24 - A23	A24	A23	6	6		VCP	240	250.19	Broken pipe at 228 ft.	4132	10	4828	48	2	10	0	20		30
99	7/11/2022	F	Weeks Street	F17 - F22	F17	F22	6	6		VCP	56	55.81	This pipe line was F17 - F17A	4632	30	1200	2	2	30	0	0		30
100	7/29/2022	G	Ruth Ct	G12 - G4	G12	G4	6	6		PVC	273	273.00	Broken at 47ft, 170ft	4533	29	1700	7	2	29	0	0		29
101	7/11/2022	F	Paul Robeson Court	F18 - F17	F18	F17	6	6		PVC	198	195.68	-	312C	23	4800	32	2	23	0	0	5	28
102	7/11/2022	F	Weeks Street	F22 - F12	F22	F12	6	6		VCP	54	53.91	This pipe line was F17A - F12	4532	26	4100	4	2	26	0	0		26
103	7/25/2022	I	Myrtle Street	I28 - I21	I28	I21	6	6		VCP	315	315.02	This pipe line was I23A - I21	322F	26	1300	3	2	26	0	0		26
104	7/22/2022	J	Garden Street	J6 - J5	J6	J5	6	6		VCP	558	558.40	Crack at 404ft	4231	11	3223	12	2	11	0	0	15	26
105	7/25/2022	I	Pulgas Avenue	I16 - I6	I16	I6	8	8		PVC	493	492.07	-	2F00	20	0000	0	2	20	0	0	5	25
106	7/25/2022	I	Brentwood Court	I19 - I18	I19	I18	6	6		PVC	239	234.06	-	2D00	20	3100	3	2	20	0	0	5	25
107	7/28/2022	K	Camellia Drive	K30 - K31	K30	K31	8	8		PVC	108	107.01	-	2800	20	0000	0	2	20	0	0	5	25
108	7/29/2022	K	Lotus Way / Camellia Drive	K37 - K32	K37	K32	6	6		VCP	350	345.00	Joint Offset Large at 342.9ft	412E	24	2500	10	2	24	0	0		24
109	7/21/2022	G	Runnymede Street	G17 - G2	G17	G2	6	6		VCP	144	144.08	-	312B	23	3322	13	2	23	0	0		23
110	7/26/2022	K	Sage Street	K10 - K9	K10	K9	6	6		VCP	156	155.10	-	312A	23	2100	2	2	23	0	0		23
111	7/26/2022	K	Wisteria Drive	K12 - K11	K12	K11	6	6		VCP	354	352.89	-	312H	23	2400	8	2	23	0	0		23
112	7/8/2022	A	Demeter Street	A11 - A11A	A11	A11A	6	6		PVC	209	209.01	Uncharted MH was found between A11-A10 on	2D00	20	5131	8	2	20	0	0		20
113	7/8/2022	A	Demeter Street	A11A - A10	A11A	A10	6	6		PVC	206	208.21	Uncharted MH was found between A11-A10 on	2A00	20	3200	6	2	20	0	0		20
114	7/6/2022	A	Tara Street	A25 - A24	A25	A24	6	6		VCP	253	252.30	-	2800	20	3100	3	2	20	0	0		20
115	8/3/2022	A	Bay Road	A30 - A28	A30	A28	6	6		VCP	301	300.99	-	2A00	20	0000	0	2	20	0	0		20
116	7/22/2022	J	Cypress Street	J11 - J11A	J11	J11A	8	8		PVC	200	199.79	New Line Segment	2D00	20	0000	0	2	20	0	0		20
117	7/22/2022	J	Cypress Street	J11A - T20	J11A	T20	8	8		PVC	81	81.06	New Line Segment	2800	20	0000	0	2	20	0	0		20
118	7/22/2022	J	Cypress Street	J12 - J11	J12	J11	8	8		PVC	299	299.09	-	2A00	20	0000	0	2	20	0	0		20
119	7/22/2022	J	Cypress Street	J13 - J12	J13	J12	8	8		PVC	299	296.98	-	2A00	20	0000	0	2	20	0	0		20
120	7/27/2022	K	Azalia Drive	K27 - K26	K27	K26	6	6		VCP	200	198.59	-	2A00	20	2300	6	2	20	0	0		20
121	7/28/2022	K	Camellia Drive	K32 - K30	K32	K30	8	8		PVC	227	226.24	-	2A00	20	0000	0	2	20	0	0		20
122	7/26/2022	K	Azalia Drive	K8 - K7	K8	K7	6	8		VCP	356	354.90	-	2G00	20	2612	14	2	20	0	0		20
123	7/20/2022	G	Runnymede Street	G3 - G14	G3	G14	6	6		PVC	208	208.01	Multiple cracks along the pipe	4232	14	4200	8	2	14	0	0	5	19
124	7/8/2022	A	Gonzaga Street	A4 - A3	A4	A3	6	6		VCP	312	286.76	Broken ar 205.9ft, multiple fractures	4332	18	0000	0	2	18	0	0		18
125	7/26/2022	K	Sage Street	K14 - K13	K14	K13	6	6		VCP	90	81.56	Intruding lateral at 81ft and camera can not move	3100	3	5123	11	2	3	0	15		18
126	7/8/2022	F	Clarke Avenue	F16 - F15	F16	F15	6	6		VCP	238	171.94	-	2800	16	4100	4	2	16	0	0		16
127	7/29/2022	K	Wisteria Drive	K5A - K5	K5A	K5	12	6		Other	30	30.00	New MH - Proteous	3300	9	0000	0	3	9	0	0	5	14

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	Upstream MH #	Downstream MH #	Reported Pipe Dia (in)	Actual Diameter	Master Plan Proposed Diameter	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Total scoring	Score for Master Plan Capacity (+ 5 *Pipe Dia)	Score for Notable Defects	Sag >40%	Total Score
128	7/12/2022	F	Weeks Street	F8A - F7	F8A	F7	6	6		VCP	75	75.45	New Line Segment	2600	12	3121	5	2	12	0	0	0	12
129	7/6/2022	A	Tara Street	A26 - A25	A26	A25	6	6		VCP	234	234.86	-	3124	11	0000	0	2	11	0	0		11
130	7/26/2022	K	Sage Street	K15 - K9	K15	K9	6	6		VCP	74	73.84	-	2500	10	1200	2	1	10	0	0		10
131	7/21/2022	G	Runnymede Street	G2 - G19	G2	G19	6	6		VCP	154	176.35	This pipeline was G2-G2A	5141	9	312A	23	2	9	0	0		9
132	7/25/2022	I	Myrtle Street	C/O - I22	C/O	I22	6	6		VCP	61	60.72	New Line Segment - uncharted clean out	3221	8	0000	0	2	8	0	0		8
133	7/22/2022	J	Garden Street	J5 - J5A	J5	J5A	6	8		PVC	275	274.64	New Line Segment	2400	8	0000	0	2	8	0	0		8
134	7/25/2022	I	Myrtle Street	I22 - I23	I22	I23	6	6		VCP	44	44.99	-	3122	7	0000	0	2	7	0	0		7
135	7/22/2022	J	Garden Street	J5A - J5B	J5A	J5B	6	8		PVC	212	212.42	New Line Segment	2200	4	0000	0	2	4	0	0		4
136	7/11/2022	F	Weeks Street	F13 - F19	F13	F19	6	6		VCP	24	23.75	-	2100	2	0000	0	2	2	0	0		2
137	7/21/2022	G	Mandela Court	G16 - G15	G16	G15	8	8		PVC	154	154.00	-	2100	2	0000	0	2	2	0	0		2
138	N/A	A	Demeter Street	A11 - A10	A11	A10	6				418		Line has an uncharted manhole.						0	0	0		0
139	N/A	A	Bay Road	A17 - A16	A17	A16	6				423		Line has an uncharted manhole						0	0	0		0
140	8/3/2022	A	Bay Road	A28 - A29	A28	A29	6	6		ACP	15	15.13	-	0000	0	4121	6	3	0	0	0		0
141	7/11/2022	F	Carole Court	F21 - F20	F20	F21	6	6		PVC	281	134.96	MH was F20 - F21	0000	0	0000	0	0	0	0	0		0
142	N/A	F	Weeks Street	F8 - F7	F8	F7	6				357		Line has an uncharted manhole.						0	0	0		0
143	N/A	I	Myrtle Street	I21 - I24	I21	I24	6				364		MH I24 does not exist. Inspection ended at I13.						0	0	0		0
144	N/A	I	Myrtle Street	I24 - I13	I24	I13	6				237		MH I24 does not exist. Inspection started from I21,						0	0	0		0
145	N/A	I	Myrtle Court	I25 - I24	I25	I24	6				154		Line does not exist. 7.25						0	0	0		0
146	7/29/2022	I	Sparrow Ct	I26 - I23	I26	I23	6	6		PVC	166	163.00	This pipe line was I23 - I23C. New Line Segment.	0000	0	0000	0	0	0	0	0		0
147	7/28/2022	I	Myrtle Pl	I29 - I28	I29	I28	6	6		PVC	166	174.24	New Line Segment. This pipe line was I23B - I23A	0000	0	0000	0	0	0	0	0		0
148	N/A	I	Beech Street	I5 - I4	I5	I4	18				135		Line has an uncharted manhole.						0	0	0		0
149	N/A	J	Cypress Street	J11 - T20	J11	T20	8				282		Line has an uncharted manhole.						0	0	0		0
150	7/22/2022	J	Cypress Street	J14 - J13	J14	J13	8	8		PVC	190	186.87	-	0000	0	0000	0	0	0	0	0		0
151	N/A	J	Garden Street	J5 - T21	J5	T21	6				585		Line has uncharted manholes						0	0	0		0
152	7/22/2022	J	Garden Street	J5B - J5C	J5B	J5C	6	8		PVC	41	41.18	New Line Segment	0000	0	0000	0	0	0	0	0		0
153	N/A	J	Garden Street	J9 - J8	J9	J8	6				401		Line has an uncharted manhole						0	0	0		0
154	N/A	K	O'Connor Street	K2 - K1	K2	K1	14		15		451		Light Tree Project. Cleaned twice via EPASD, and						0	75	30	25	0
155	7/28/2022	K	Wisteria Drive	K25 - K5A	K25	K5A	6	6		PVC	376	350.39	New Line Segment	0000	0	0000	0	0	0	0	0		0
156	7/28/2022	K	O'Connor Street	K3 - K2	K3	K2	12	12	15	PE	190	188.57	Light Tree Project	3D25	40	2800	20	2	40	75	0	10	0
157	7/28/2022	K	O'Connor Street	K4 - K3	K4	K3	12	12	15	PE	238	236.66	Light Tree Project Grease deposits 5%. Sagging	463E	54	2700	14	3	54	75	0	10	0
158	7/28/2022	K	O'Connor Street	K5 - K4	K5	K4	12	12		PE	248	248.99	Light Tree Project	3E29	48	2800	20	2	48	0	0	15	0
159	7/28/2022	K	O'Connor Street	K6 - K5	K6	K5	12	12		PE	251	250.99	Light Tree Project	3B2C	50	2100	2	2	50	0	0		0



Attachment 3

Area 4 CCTV Survey Results and Evaluation

**East Palo Alto Sanitary District
Area 4 CCTV Survey Results and Evaluation**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	Upstream MH #	Downstream MH #	Reported Diameter	Actual Diameter	Master Plan Proposed	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Score	Score for Master Plan Capacity (+ 5 * Pipe Dia)	Score for Notable Defects	Sag > 40%	Total Score
2	8/2/2022	H	Clarke Avenue	H14 - H13	H14	H13	8	8	12	VCP	446	446.65	Broken at 425.5ft, 429ft with multiple	5A44	66	4132	10	2	66	60	0	25	151
3	8/4/2022	H	Runnymede Street	H35 - H34	H35	H34	6	6	10	VCP	322	325.19	Pipeline has a lot of sagging. The high	483G	62	0000	0	2	62	50	8	30	150
4	8/2/2022	H	Clarke Avenue	H12 - H11	H12	H11	8	8	12	VCP	333	334.39	Broken at 111ft, 231ft, 331.9ft	4B3B	70	3127	17	2	70	60	0	15	145
5	8/2/2022	H	Clarke Avenue	H64 - H71	H64	H71	12	8	12	VCP	99	54.28	H60-H3. Line has about 30%-40% grease	4A21	42	2711	14	3	42	60	24	15	141
6	8/2/2022	H	Clarke Avenue	H13 - H12	H13	H12	8	8	12	VCP	108	108.46	Broken at 18ft with 55% sagging pipe	463A	54	0000	0	3	54	60	0	10	124
7	8/8/2022	H	Green Street	H75 - H6	H75	H6	12	12	18	PE	259	258.51	H7C - H6	332F	29	4131	7	2	29	90	0		119
8	8/5/2022	H	Runnymede Street	H34 - H17	H34	H17	6	6	10	VCP	269	88.17	Submerged pipe with a line down	413B/5241	34	0000	0	2	34	50	16	10	110
9	8/8/2022	H	Green Street	H7 - H75	H7	H75	12	12	18	PE	91	91.47	H7B - H7C	2B00	20	0000	0	2	20	90	0		110
10	8/8/2022	H	Green Street	H73 - H74	H73	H74	12	12	18	PE	233	104.07	H8 - H7	2B00	20	0000	0	2	20	90	0		110
11	8/8/2022	H	Green Street	H74 - H8	H74	H8	12	12	18	PE	112	111.76	H7 - H7A	2B00	20	1100	1	1	20	90	0		110
12	8/8/2022	H	Green Street	H8 - H7	H8	H7	12	12	18	PE	235	235.02	H7A - H7B	2D00	20	0000	0	2	20	90	0		110
13	7/20/2022	H	Runnymede Street	H17 - H76	H17	H76	8	8	12	VCP	397	314.3	H17 - H16. Broken pipe at 43.2ft,	5143	17	3121	5	2	17	60	20	5	102
14	8/8/2022	H/E	Green Street	E1 - H9	E1	H9	12	12	16	PE	270	271.31		2D00	20	0000	0	2	20	80	0		100
15	8/8/2022	H	Green Street	H9 - H73	H9	H73	12	12	16	PE	246	247.72	H9 - H8	2D00	20	0000	0	2	20	80	0		100
16	8/1/2022	L	Gardenia Way	L2 - L1	L2	L1	10	12	12	PVC	179	179.74	Joint Separated Large at 104.9ft,	412F	24	2500	10	2	24	60	15		99
17	7/20/2022	H	Runnymede Street	H57 - H16	H57	H16	8	8	12	VCP	48	48.38	H16A - H16B. Broken at 20.9ft	4422	20	0000	0	3	20	60	15		95
18	8/2/2022	H	Clarke Avenue	H11 - H64	H11	H64	8	8	12	VCP	198	192.24	H11 - H60. Broken at 73.2ft	413C	34	0000	0	2	34	60	0		94
19	7/20/2022	H	Runnymede Street	H76 - H57	H76	H57	12	8	12	VCP	73	73.38	H16 - H16A. Broken at 63.2ft	4135	19	0000	0	2	19	60	15		94
20	7/29/2022	M	O'Connor Street	M42 - M13	M42	M13	6	6	12	VCP	37	110.66	Surface Damage and cracks	413B	34	0000	0	2	34	60	0		94
21	N/A	H/I	Beech Street	H2 - I11	H2	I11	15	15	18		37		Paved over						0	90	0		90
22	N/A	H	Beech Street	H3 - H2	H3	H2	15	15	18		31		Paved over						0	90	0		90
23	N/A	H	Clarke Avenue	H4 - H3	H4	H3	15	15	18		7		Paved over						0	90	0		90
24	N/A	H	Clarke Avenue	H5 - H4	H5	H4	15	15	18		259		Paved over						0	90	0		90
25	N/A	H	Green Street	H6 - H5	H6	H5	12	12	18		9		Paved over						0	90	0		90
26	8/1/2022	L	Gardenia Way	L3 - L2	L3	L2	10	12	12	PVC	83	77.97		3B00	30	2200	4	2	30	60	0		90
27	7/29/2022	M	O'Connor Street	M13 - M12	M13	M12	6	8	12	VCP	276	276.81	Broken at 193	4133	13	0000	0	3	13	60	15		88
28	7/27/2022	L	Wisteria Drive	L29 - L28	L29	L28	6	6		VCP	366	367.48	Pipe is broken at 348ft, and soil is visible	513M	35	4100	4	2	35	0	30	20	85
29	7/20/2022	H	Runnymede Street	H15 - H62	H15	H62	8	8	12	Other	201	206.03	H15 - H58	3226	18	0000	0	2	18	60	0		78
30	8/4/2022	H	University Avenue	H36 - H35	H36	H35	6	6	10	VCP	474	473.24		312B	23	2100	2	2	23	50	0	5	78
31	8/1/2022	L	Larkspur Drive	L1 - L21	L1	L21	10	12	14	PVC	223	219.53		0000	0	2700	14	2	0	70	0	5	75
32	8/5/2022	M	East Bayshore Road	M41 - M42	M41	M42	6	6	12	PVC	17	104.37		2700	14	0000	0	2	14	60	0		74
33	7/28/2022	L	Wisteria Drive	L25 - L24	L25	L24	8	8	10	PVC	342	343.09		2100	20	0000	0	2	20	50	0		70
34	7/27/2022	L	Azalia Drive	L49 - L48	L49	L48	8	8	10	VCP	233	233.52		2B00	20	2A00	20	2	20	50	0		70
35	8/2/2022	H	Runnymede Street	H62 - H14	H62	H14	12	8	12	Other	185	230.12	H58 - H14	3123	9	2200	4	2	9	60	0		69
36	7/29/2022	M	O'Connor Street	M12 - M15	M12	M15	6	8	12	VCP	337	339.49		3300	9	0000	0	3	9	60	0		69
37	8/5/2022	H	Donohoe Street	H21A - H55	H21A	H55	6	6		VCP	157	102.97	H21A - H21. Broken at 61ft, 101ft	4638	48	0000	0	2	48	0	0	20	68
38	7/29/2022	M/I	Pulgas Avenue	I43 - I15	I43	I15	12	12		PVC	20	60.08	I15A - I15. Sagging pipe 90%	513A	35	0000	0	3	35	0	0	30	65
39	7/20/2022	H	Runnymede Street	H16 - H60	H16	H60	8	8	12	PVC	346	345.69	H16B - H16C	2200	4	0000	0	2	4	60	0		64
40	8/18/2022	H	Clarke Avenue	H24 - H20	H24	H20	6	6		VCP	333	25.69	MSA/Broken pipe. The USMH is a	5133	14	2400	8	2	14	0	30	20	64
41	7/25/2022	L	Gaillardia Way	L11 - L10	L11	L10	6	6		VCP	360	360.18	Pipe is broken at 240ft and soil is visible	5243	22	2316	12	2	22	0	30	10	62
42	7/26/2022	L	Camellia Drive	L53 - L52	L53	L52	6	6	6	VCP	218	219.73	MSA/Reverse Inspection Complete	342A	32	2100	2	2	32	30	0		62
43	7/20/2022	H	Runnymede Street	H60 - H15	H60	H15	8	8	12	PVC	107	106.76	H16C - H15	0000	0	0000	0	0	0	60	0		60
44	7/28/2022	L	Wisteria Drive	L26 - L25	L26	L25	8	8		VCP	216	215.13	Pipe has a lot of sagging, and an offset	4134	16	2A00	20	2	16	0	24	20	60
45	7/28/2022	L	Jasmine Way	L43 - L44	L43	L44	8	8		PVC	334	334.09	Joint Separated Large at 331.7ft	4L2B	60	0000	0	3	60	0	0		60
46	7/29/2022	M	O'Connor Street	M15 - M5	M15	M5	6	8	12	VCP	250	264.21		0000	0	0000	0	0	0	60	0		60
47	8/5/2022	M	East Bayshore Road	M38 - M39	M38	M39	8	6	12	PVC	158	153.45		0000	0	0000	0	0	0	60	0		60
48	8/5/2022	M	East Bayshore Road	M39 - M40	M39	M40	8	6	12	PVC	241	158.55		0000	0	0000	0	0	0	60	0		60
49	8/5/2022	M	East Bayshore Road	M40 - M41	M40	M41	6	6	12	PVC	263	242.32		0000	0	0000	0	0	0	60	0		60
50	8/5/2022	H	Donohoe Street	H21 - H56	H21	H56	6	6		VCP	151	148.15	H22 - H55. Broken at 14ft and 110ft	463B	54	3114	7	2	54	0	0		54
51	7/27/2022	L	Azalia Drive	L50 - L49	L50	L49	8	8	10	VCP	224	223.43		2100	2	2700	14	2	2	50	0		52
52	8/5/2022	H	Donohoe Street	H23 - H22	H23	H22	6	6		VCP	405	339.29	H23 - H56. Broken at 133.9ft, 316.9ft	453U	50	4131	7	2	50	0	0		50
53	7/25/2022	L	Verbina Drive	L17 - L16	L17	L16	6	6		VCP	236	236.52		3H2C	50	2100	2	2	50	0	0		50
54	8/1/2022	L	Wisteria Drive	L23 - L3	L23	L3	8	8	10	PVC	351	351.38		0000	0	312H	23	2	0	50	0		50
55	8/1/2022	L	Wisteria Drive	L24 - L23	L24	L23	8	8	10	PVC	386	387.17		0000	0	2800	14	2	0	50	0		50
56	7/27/2022	L	Daphne Way	L35 - L34	L35	L34	6	6		VCP	250	253.92		3G2C	50	2100	2	2	50	0	0		50

**East Palo Alto Sanitary District
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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	Upstream MH #	Downstream MH #	Reported Diameter	Actual Diameter	Master Plan Proposed	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Score	Score for Master Plan Capacity (+ 5 * Pipe Dia)	Score for Notable Defects	Sag > 40%	Total Score
57	7/27/2022	L	Azalia Drive	L47 - L4	L47	L4	8	8		VCP	88	87.57	Heavy grease was found on a sewer line	2A00	20	2900	18	2	20	0	30		50
58	7/29/2022	M/I	Pulgas Avenue	M2 - I43	M2	I43	12	12		PVC	20	42.39	M2 - I15A. Sagging pipeline 100%	5500	25	2300	6	3	25	0	0	25	50
59	7/26/2022	L	Camellia Drive	L52 - L50	L52	L50	6	6	8	VCP	224	223.63		3200	6	2200	4	2	6	40	0		46
60	7/25/2022	L	Azalia Drive	L10 - L9	L10	L9	6	6		VCP	180	273.01		3G27	44	2112	4	2	44	0	0		44
61	8/5/2022	H	Donohoe Street	H56 - H21A	H56	H21A	6	6		VCP	157	106.06	H55 - H21A. Broken at 1.5ft	433A	42	1900	9	2	42	0	0		42
62	7/26/2022	L	Abelia Way	L58 - L57	L58	L57	6	6		VCP	295	295.4	Broken at 13ft, 50ft, 87ft, 236ft	5243	22	0000	0	3	22	0	20		42
63	7/26/2022	L	Gardenia Way	L7 - L6	L7	L6	6	6	6	VCP	261	261.11		3223	12	1300	3	1	12	30	0		42
64	7/25/2022	L	Azalia Drive	L9 - L4	L9	L4	6	6	6	VCP	162	161.75		2600	12	3C29	48	2	12	30	0		42
65	7/20/2022	H	Cooley Avenue	H32 - H17	H32	H17	6	6		VCP	550	547.52	Broken Soil Visible at 111ft. Broken at	5544	41	4231	11	2	41	0	0		41
66	7/25/2022	L	Verbina Drive	L13 - L9	L13	L9	6	6		VCP	311	311.4	Broken at 60.2ft	412C	24	2F00	20	2	24	0	15		39
67	7/25/2022	L	Verbina Drive	L16 - L15	L16	L15	6	6		VCP	311	311.5	Broken at 169ft	412A	24	4131	7	1	24	0	15		39
68	7/27/2022	L	Aster Way	L31 - L30	L31	L30	10	6		VCP	179	178.74	Pipe is broken at 59ft, and soil is visible	5141	9	2300	6	2	9	0	30		39
69	8/3/2022	H	University Avenue	H37A - H36	H37A	H36	6	6		VCP	149	148.95	New Line Segment. Broken 144.3ft,	423C	38	3121	5	2	38	0	0		38
70	8/3/2022	H	Sacramento Street	H41 - H40	H41	H40	6	6		VCP	150	141.15	Broken at 38ft, 42ft	423B	38	2112	4	2	38	0	0		38
71	8/3/2022	H	Weeks Street	H42 - H37	H42	H37	6	6		VCP	388	386.77	Broken at 304ft	423J	38	4133	10	2	38	0	0		38
72	8/5/2022	H	Donohoe Street	H55 - H54	H21	H54	6	6		PVC	144	165.55	H21 - H54. Broken at 51ft	423C	38	2100	2	2	38	0	0		38
73	7/25/2022	L	Camellia Drive	L20 - L16	L20	L16	6	6		VCP	101	99.87	Broken at 6.6ft	423A	38	4131	7	2	38	0	0		38
74	7/27/2022	L	Daphine Way	L37 - L36	L37	L36	6	6		VCP	312	323.29	Hole at 252ft, 93.5ft	423K	38	4113	7	2	38	0	0		38
75	7/26/2022	L	Camellia Drive	L54 - L53	L54	L53	6	6		VCP	369	369.78	Pipe is broken and soil is visible at	5131	8	0000	0	2	8	0	30		38
76	7/29/2022	M	O'Connor Street	M43 - M42	M43	M42	6	6		VCP	104	109.56	Broken at 109ft	423D	38	0000	0	3	38	0	0		38
77	8/9/2022	H/E	Euclid Avenue	H38 - E42	H38	E42	6	6		VCP	519	520.63	Broken pipe Soil Visible at 146ft, 197ft	5143	17	0000	0	2	17	0	20		37
78	8/9/2022	H	Schembri Lane	H29 - H12	H29	H12	6	6		VCP	551	551.52	Broken pipe at 257ft, 349ft	5143	16	2111	3	2	16	0	20		36
79	7/27/2022	L	Daphine Court	L62 - L34	L62	L34	6	6		VCP	147	146.75		3C23	36	0000	0	2	36	0	0		36
80	7/28/2022	L	Camellia Drive	L46 - L45	L46	L45	6	6		VCP	136	135.86	Broken pipe Soil Visible at 135.9ft	513D	35	0000	0	2	35	0	0		35
81	8/4/2022	H	Runnymede Street	H38 - H47	H38	H47	6	6		VCP	205	205.23	Broken at 80.3ft	413G	34	3100	3	2	34	0	0		34
82	8/3/2022	H	Weeks Street	H43 - H42	H43	H42	6	6		VCP	346	347.09	Broken at 4.7ft, 303.7ft	5246	34	321A	16	2	34	0	0		34
83	8/4/2022	H	Runnymede Street	H47 - H35	H47	H35	6	6		VCP	192	192.24	Fracture at 8.6 with cracks along the	4237	29	2400	8	2	29	0	0	5	34
84	7/25/2022	L	Verbina Drive	L19 - L18	L19	L18	6	6		VCP	333	333.09	Broken at 330ft	413I	34	1600	6	2	34	0	0		34
85	7/27/2022	L	Wisteria Drive	L28 - L27	L28	L27	6	6		VCP	363	363.08	Hole at 310.2ft	413M	34	2100	2	2	34	0	0		34
86	7/27/2022	L	Daphine Way	L36 - L35	L36	L35	6	6		VCP	278	278.01	Hole at 38.4ft	412A	24	1500	5	1	24	0	10		34
87	8/12/2022	L	Daphine Way	L37 - L38	L37	L38	6	6		VCP	212	202.9	Proteous. Hole at 140.7ft	412A	24	4131	7	2	24	0	10		34
88	8/5/2022	H	Donohoe Street	H22 - H21	H56	H22	6	6		VCP	216	158.25	H56 - H22. Broken pipe at 3.9ft, 137.4ft	5142	13	1300	3	2	13	0	20		33
89	8/2/2022	H	Schembri Lane	H30 - H46	H30	H46	6	6		VCP	135	134.66		3D21	32	4131	7	2	32	0	0		32
90	7/26/2022	L	Camellia Court	L56 - L54	L56	L54	6	6		VCP	327	326.99		3C21	32	0000	0	3	32	0	0		32
91	8/2/2022	H	Clarke Avenue	H31 - H14	H31	H14	6	6		VCP	404	24.19	MSA/JOL. No reverse inspection	4331	15	2100	2	3	15	0	16		31
92	7/25/2022	L	Gaillardia Way	L12 - L11	L12	L11	6	6		VCP	82	93.27		3B00	30	3111	4	2	30	0	0		30
93	8/3/2022	H	University Avenue	H37 - H37A	H37	H37A	6	6		VCP	221	221.33	New Line Segment. Broken at 162ft	5141	9	3121	5	3	9	0	20		29
94	8/3/2022	H	Sacramento Street	H40 - H36	H40	H36	6	6		VCP	496	459.65	MSA/JOL. Reverse Inspection	5146	29	3524	23	2	29	0	0		29
95	8/5/2022	H	Donohoe Street	H54 - H20	H54	H20	6	6		VCP	153	144.95	Fracture at 14.7ft	4135	19	3121	6	2	19	0	10		29
96	8/1/2022	L	Wisteria Drive	L22 - L3	L22	L3	6	6		VCP	366	361.58	Broken at 48.6ft	4232	14	4131	7	2	14	0	15		29
97	7/26/2022	L	Abelia Way	L59 - L58	L59	L58	6	6		VCP	250	250.12	Broken at 220ft, 245ft	5141	9	2112	4	2	9	0	20		29
98	7/27/2022	L	Aster Way	L33 - L32	L33	L32	6	6		VCP	91	89.07	Hole at 10.2ft	4133	13	0000	0	3	13	0	15		28
99	7/28/2022	L	Jasmine Way	L40 - L42	L40	L42	8	8		VCP	346	346.49	Broken pipe soil visible at 184ft	5131	8	2100	2	2	8	0	20		28
100	7/28/2022	L	Camellia Drive	L45 - L25	L45	L25	8	8		VCP	202	201.33		312F	23	4122	8	2	23	0	0	5	28
101	8/8/2022	H	Camphor Way	H45 - H9	H45	H9	6	6		PVC	222	221.83	Broken at 103ft, 106ft, 167ft	4631	27	0000	0	3	27	0	0		27
102	7/27/2022	L	Daphine Way	L34 - L26	L34	L26	6	6		VCP	287	287.11	Hole at 263.3ft	4131	7	412A	24	2	7	0	15	5	27
103	7/26/2022	L	Gardenia Court	L61 - L5	L61	L5	6	6		VCP	152	152.85	Broken at 98.8	4131	7	2911	19	2	7	0	20		27
104	8/9/2022	M	Clarke Avenue	M14A - M5	M14A	M5	6	6		VCP	75	75.28	New Line Segment. Broken at 70.2ft	4131	7	0000	0	2	7	0	20		27
105	8/2/2022	H	Schembri Lane	H46 - H52	H46	H52	6	6		VCP	361	362.08	Broken at 344.2ft	4231	11	413A	34	2	11	0	15		26
106	7/25/2022	L	Verbina Drive	L14 - L13	L14	L13	6	6		VCP	302	302.1		322E	26	3123	9	2	26	0	0		26
107	7/25/2022	L	Verbina Drive	L15 - L14	L15	L14	6	6		VCP	310	311.2		322B	26	0000	0	2	26	0	0		26
108	7/28/2022	L	Jasmine Way	L44 - L45	L44	L45	8	8		PVC	238	242.52		322F	26	2400	8	2	26	0	0		26
109	7/25/2022	L	Verbina Drive	L18 - L17	L18	L17	6	6		VCP	331	330.29	Broken at 135ft	4132	10	0000	0	2	10	0	15		25
110	7/28/2022	L	Daphine Way	L39 - L40	L39	L40	6	6		VCP	346	345.59	Broken at 296.7ft	4132	10	1200	2	2	10	0	15		25
111	8/12/2022	L	Aster Way	L30 - L27	L30	L27	6	6		VCP	236	231	Proteous. Broken at 0.0 ft	5141	9	2300	6	2	9	0	15		24

**East Palo Alto Sanitary District
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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	Upstream MH #	Downstream MH #	Reported Diameter	Actual Diameter	Master Plan Proposed	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Score	Score for Master Plan Capacity (+ 5 * Pipe Dia)	Score for Notable Defects	Sag > 40%	Total Score
112	8/1/2022	L	Gardenia Way	L4 - L3	L4	L3	10	12		VCP	248	246.62		312A	23	4133	10	2	23	0	0		23
113	7/29/2022	M	O'Connor Street	M3 - M2	M3	M2	12	12	0	PVC	380	382.17		312A	23	2600	20	2	23	0	0		23
114	8/9/2022	H	Schembri Lane	H52 - H29	H52	H29	6	6		VCP	94	94.17	Fracture at 43.7ft	4131	7	2112	4	2	7	0	15		22
115	7/26/2022	L	Abelia Way	L57 - L53	L57	L53	6	6		VCP	203	202.23		3228	22	0000	0	2	22	0	0		22
116	8/4/2022	N	Pulgas Avenue	N8 - N9	N8	N9	10	12		PE	119	119.66	Joint Separated Large at 9.5ft	4131	7	2100	2	2	7	0	15		22
117	7/20/2022	H	Cooley Avenue	H33 - H32	H33	H32	8	8		Other	515	486.24		3700	21	0000	0	3	21	0	0		21
118	7/28/2022	L	Wisteria Drive	L27 - L26	L27	L26	8	8		VCP	260	259.41		2D00	20	2200	4	2	20	0	0		20
119	7/28/2022	L	Daphine Way	L38 - L39	L38	L39	6	6		VCP	215	215.43		2B00	20	0000	0	2	20	0	0		20
120	7/27/2022	L	Azalia Drive	L48 - L47	L48	L47	8	8		VCP	229	228.52		2C00	20	322D	26	2	20	0	0		20
121	7/26/2022	L	Gardenia Way	L5 - L47	L5	L47	6	6		VCP	276	276.21		2A00	20	2600	20	2	20	0	0		20
122	8/10/2022	M	Clarke Avenue	M21 - M20	M21	M20	8	12		VCP	78	314.2	M20 - M6	2D00	20	3121	5	2	20	0	0		20
123	7/22/2022	M	Tate Street	M29 - M31	M29	M31	8	8		PVC	329	322.99		2B00	20	0000	0	2	20	0	0		20
124	7/29/2022	M	O'Connor Street	M31 - M3	M31	M3	10	12	0	PVC	357	357.08		2C00	20	2E00	20	2	20	0	0		20
125	7/29/2022	M	O'Connor Street	M5 - M4	M5	M4	12	12	0	PVC	373	372.18		2B00	20	0000	0	2	20	0	0		20
126	8/8/2022	N	Pulgas Avenue	N5 - N4	N5	N4	10	12		PE	332	332.69		2B00	20	4131	7	2	20	0	0		20
127	8/4/2022	N	Pulgas Avenue	N6 - N5	N6	N5	10	12		PE	333	334.49		2B00	20	0000	0	2	20	0	0		20
128	8/4/2022	N	Pulgas Avenue	N9 - N7	N9	N7	10	12		PE	284	285.31		2A00	20	0000	0	2	20	0	0		20
129	7/27/2022	L	Aster Way	L32 - L31	L32	L31	6	6		VCP	293	293.7	Hole at 157ft	4122	8	0000	0	2	8	0	10		18
130	7/21/2022	N	McNair Street	N22 - N15	N22	N15	8	8		PVC	212	199.73	Pipeline has reverse sag allowing an	0000	0	0000	0	0	0	0	8	10	18
131	8/3/2022	H	Sacramento Street	H40 - H36	H40	H36	6	6		VCP	496	39.39	MSA/Reverse Inspection Complete	3500	15	2600	14	2	15	0	0		15
132	8/10/2022	M	Clarke Avenue	M16 - M8	M16	M8	6	12		VCP	67	66.58	M8 - M8A	3400	12	0000	0	3	12	0	0		12
133	8/9/2022	H	Schembri Lane	H53 - H52	H53	H52	6	6		VCP	233	234.42		2500	10	0000	0	2	10	0	0		10
134	8/9/2022	M	Clarke Avenue	M14 - M14A	M14	M14A	6	6		VCP	252	252.42	New Line Segment	3222	10	0000	0	2	10	0	0		10
135	8/3/2022	H	University Avenue	H44 - H37	H44	H37	6	6		VCP	269	271.71		3300	9	3121	5	2	9	0	0		9
136	7/28/2022	L	Jasmine Way	L42 - L43	L42	L43	8	8		VCP	330	332.79		3123	9	3100	3	2	9	0	0		9
137	7/26/2022	L	Gardenia Way	L6 - L5	L6	L5	6	6		VCP	215	215.53		2400	8	2A00	20	2	8	0	0		8
138	7/26/2022	L	Gardenia Way	L8 - L7	L8	L7	6	6		VCP	73	69.38		2400	8	0000	0	2	8	0	0		8
139	7/29/2022	N	Wilkes Street	N13 - N14	N13	N14	8	8		PVC	167	166.74		2400	8	2300	6	2	8	0	0		8
140	8/4/2022	N	Pulgas Avenue	N7 - N6	N7	N6	10	12		PE	333	334.39		2400	8	0000	0	2	8	0	0		8
141	8/5/2022	H	Salas Court	H48 - H55	H48	H55	6	6		PVC	217	216.53	H48 - H21	3122	7	0000	0	2	7	0	0		7
142	8/10/2022	M	Clarke Avenue	M18 - M5	M18	M5	8	12		VCP	154	154.25		2300	6	0000	0	2	6	0	0		6
143	8/5/2022	N	Mouton Circle	N20 - N21	N20	N21	8	8		PVC	72	72.78		2300	6	2100	2	2	6	0	0		6
144	8/10/2022	M	Clarke Avenue	M22 - M21	M22	M21	8	12		VCP	116	27.19	M7 - M20	2200	4	0000	0	2	4	0	0		4
145	7/21/2022	M	Tate Street	M27 - M29	M27	M29	8	8		PVC	35	42.39		2200	4	0000	0	2	4	0	0		4
146	8/12/2022	H	Vines Court	H63 - H62	H63	H62	12	6		PVC	40	172.34	H57 - H58	3100	3	2100	2	2	3	0	0		3
147	7/28/2022	L	Daphine Way	L41 - L40	L41	L40	6	6		VCP	71	68.28		3100	3	0000	0	3	3	0	0		3
148	7/26/2022	L	Camellia Drive	L55 - L54	L55	L54	6	6		VCP	149	146.65		3100	3	0000	0	3	3	0	0		3
149	7/26/2022	L	Abelia Way	L60 - L59	L60	L59	6	6		VCP	109	106.36		3100	3	1100	1	2	3	0	0		3
150	7/22/2022	M/N	Gates Street	M30 - N29	M30	N29	8	8		PVC	255	259.91		3100	3	0000	0	3	3	0	0		3
151	7/22/2022	N	Mouton Circle	N15 - N16	N15	N16	8	8		PVC	252	251.62		3100	3	0000	0	3	3	0	0		3
152	8/10/2022	M	Clarke Avenue	M19 - M18	M19	M18	8	12		VCP	95	92.57		2100	2	0000	0	2	2	0	0		2
153	8/10/2022	M	Clarke Avenue	M7 - M6	M7	M6	8	12		VCP	297	336.99	M21 - M7	2100	2	0000	0	2	2	0	0		2
154	N/A	H	Runnymede Street	H16 - H15	H16	H15	8				351		Line has unchartered manholes.						0	0	0		0
155	N/A	H	Clarke Avenue	H18 - H5	H18	H5	8				8		Paved over						0	0	0		0
156	N/A	H	Clarke Avenue	H19 - H18	H19	H6	8				387		Paved over						0	0	0		0
157	N/A	H	Clarke Avenue	H20 - H19	H20	H19	6				271		Paved over						0	0	0		0
158	N/A	H	Bell Street	H25 - H11	H25	H11	6				378		Paved over						0	0	0		0
159	N/A	H	Bell Street	H26 - H25	H26	H25	6				413		Paved over						0	0	0		0
160	N/A	H	Bell Court	H27 - H26	H27	H26	6				115		Paved over						0	0	0		0
161	N/A	H	Bell Street	H28 - H50	H28	H50	6				192		Paved over						0	0	0		0
162	N/A	H	University Avenue	H37 - H36	H37	H36	6				370		Line has an unchartered manhole						0	0	0		0
163	N/A	H	Runnymede Street	H39 - H38	H39	H38	6				132		MH39 and a pipeline to H38 do not						0	0	0		0
164	8/5/2022	H	Salas Court	H49 - H48	H49	H48	6	6		PVC	45	30.09		0000	0	0000	0	0	0	0	0		0
165	N/A	H	Bell Street	H50 - H26	H50	H26	6				154		Paved over						0	0	0		0
166	N/A	H	Henry Court	H51 - H50	H51	H50	6				189		Paved over						0	0	0		0

**East Palo Alto Sanitary District
Area 4 CCTV Survey Results and Evaluation**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Date Inspected	Area	Location/ Street Name	PSR	Upstream MH #	Downstream MH #	Reported Diameter	Actual Diameter	Master Plan Proposed	Pipe Material	Pipe Length (ft)	Length Surveyed	Notes	Structural Grade	Structural Score	O&M Grade	O&M Score	Overall Pipe Index	Structural Score	Score for Master Plan Capacity (+ 5 * Pipe Dia)	Score for Notable Defects	Sag > 40%	Total Score
167	N/A	H	Donohoe Street	H55 - H21	H55	H21	6				157		Line has an unchartered manhole						0	0	0		0
168	N/A	H	Green Street	H7 - H6	H7	H6	12				90		Line has unchartered manholes.						0	0	0		0
169	N/A	H	Tea Court	H72 - H71	H72	H71	12				238		H59 - H60. Paved over						0	0	0		0
170	7/26/2022	L	Camellia Drive	L51 - L50	L51	L50	6	6		VCP	80	76.17		0000	0	2300	6	2	0	0	0		0
171	N/A	M	Clarke Avenue	M14 - M5	M14	M5	6				328		Line has unchartered manholes.						0	0	0		0
172	N/A	M/I	O'Connor Street	M2 - I15	M2	I15	12				20		Repeat naming. Already inspected						0	0	0		0
173	N/A	M/I	Pulgas Avenue	M2 - I15	M2	I15	12				20		Line has unchartered manholes.						0	0	0		0
174	8/10/2022	M	Clarke Avenue	M20 - M19	M20	M19	8	12		VCP	341	80.47	M6 - M19	0000	0	0000	0	0	0	0	0		0
175	7/21/2022	M	Tinsley Street	M23 - M24	M23	M24	8	8		PVC	195	191.54		0000	0	0000	0	0	0	0	0		0
176	7/21/2022	M	Tinsley Street	M24 - M25	M24	M25	8	8		PVC	260	258.01		0000	0	0000	0	0	0	0	0		0
177	7/21/2022	M	Tate Street	M25 - M26	M25	M26	8	8		PVC	270	267.41		0000	0	0000	0	0	0	0	0		0
178	7/21/2022	M	Tate Street	M26 - M27	M26	M27	8	8		PVC	125	131.46		0000	0	0000	0	0	0	0	0		0
179	N/A	M	Wilkes Street	M27 - M28	M27	M28	8				35		This line has does not exist.						0	0	0		0
180	7/22/2022	M/N	Wilkes Street	M28 - N11	M28	N11	8	8		PVC	236	206.73		0000	0	0000	0	0	0	0	0		0
181	7/21/2022	M	Oakes Street	M32 - M33	M32	M33	8	8		PVC	195	221.13		0000	0	0000	0	0	0	0	0		0
182	7/21/2022	M	Oakes Street	M33 - M34	M33	M34	8	8		PVC	288	226.03		0000	0	0000	0	0	0	0	0		0
183	7/21/2022	M/N	Oakes Street	M34 - N22	M34	N22	8	8		PVC	253	267.01		0000	0	0000	0	0	0	0	0		0
184	7/21/2022	M	Tate Street	M35 - M34	M35	M34	8	8		PVC	124	119.16		0000	0	0000	0	0	0	0	0		0
185	7/21/2022	M	Baines Street	M36 - M37	M36	M37	8	8		PVC	257	242.02		0000	0	0000	0	0	0	0	0		0
186	7/21/2022	M/N	Baines Street	M37 - N24	M37	N24	8	8		PVC	259	247.02		0000	0	0000	0	0	0	0	0		0
187	7/29/2022	M	O'Connor Street	M4 - M31	M4	M31	12	12	0	PVC	143	144.05		0000	0	2700	14	2	0	0	0		0
188	8/10/2022	M	Clarke Avenue	M6 - M22	M6	M22	8	12		VCP	43	109.16	M22 - M21	0000	0	0000	0	0	0	0	0		0
189	N/A	M	Clarke Avenue	M8 - M22	M8	M22	8				192		Line has an unchartered manhole						0	0	0		0
190	8/10/2022	M	Clarke Avenue	M8 - M7	M8	M7	8	12		VCP	137	137.35	M8A - M22	0000	0	0000	0	0	0	0	0		0
191	8/10/2022	N/K	O'Connor Street	N1 - K6	N1	K6	12	12		PE	253	254.52	Light Tree Project	362D	38	4132	10	2	38	0	0		0
192	7/22/2022	N	Gates Street	N10 - N13	N10	N13	8	8		PVC	176	174.94		0000	0	0000	0	0	0	0	0		0
193	7/22/2022	N	Wilkes Street	N11 - N12	N11	N12	8	8		PVC	227	228.42		0000	0	2100	2	2	0	0	0		0
194	7/22/2022	N	Wilkes Street	N12 - N13	N12	N13	8	8		PVC	158	160.25		0000	0	0000	0	0	0	0	0		0
195	8/8/2022	N	Pulgas Avenue	N14 - N2	N14	N2	10	10	10	PE	88	85.87	Light Tree Project	2A00	20	2400	8	2	20	50	0		0
196	7/22/2022	N	McNair Street	N15 - N18	N15	N18	8	8		PVC	190	195.14		0000	0	0000	0	0	0	0	0		0
197	7/22/2022	N	Mouton Circle	N16 - N17	N16	N17	8	8		PVC	228	216.93		0000	0	0000	0	0	0	0	0		0
198	7/22/2022	N	Mouton Circle	N17 - N20	N17	N20	8	8		PVC	197	195.44		0000	0	0000	0	0	0	0	0		0
199	7/22/2022	N	Mouton Circle	N18 - N19	N18	N19	8	8		PVC	256	253.62		0000	0	0000	0	0	0	0	0		0
200	7/22/2022	N	Mouton Circle	N19 - N20	N19	N20	8	8		PVC	224	222.53		0000	0	0000	0	0	0	0	0		0
201	8/8/2022	N	Pulgas Avenue	N2 - N1	N2	N1	10	10	10	PE	296	297.5	Light Tree Project	2D00	20	2B00	20	2	20	50	0		0
202	8/8/2022	N	Pulgas Avenue	N21 - N14	N21	N14	10	12	10	PE	196	198.73	Light Tree Project	2A00	20	2A00	20	2	20	50	0		0
203	7/21/2022	N	Oakes Street	N22 - N23	N22	N23	8	8		PVC	212	211.53		0000	0	0000	0	0	0	0	0		0
204	7/21/2022	N	Oakes Street	N23 - N28	N23	N28	8	8		PVC	193	179.04		0000	0	0000	0	0	0	0	0		0
205	7/21/2022	N	Baines Street	N24 - N25	N24	N25	8	8		PVC	116	117.96		0000	0	0000	0	0	0	0	0		0
206	7/21/2022	N	Baines Street	N25 - N26	N25	N26	8	8		PVC	262	249.92		0000	0	0000	0	0	0	0	0		0
207	7/21/2022	N	Baines Street	N26 - N27	N26	N27	8	8		PVC	248	251.42		0000	0	0000	0	0	0	0	0		0
208	7/21/2022	N	Baines Street	N27 - N28	N27	N28	8	8		PVC	183	181.14		0000	0	0000	0	0	0	0	0		0
209	8/5/2022	N	Oakes Street	N28 - N4	N28	N4	8	8		PVC	150	150.05	Light Tree Project	2B00	20	0000	0	2	20	0	0		0
210	7/22/2022	N	Gates Street	N29 - N10	N29	N10	8	8		PVC	326	314.2		0000	0	0000	0	0	0	0	0		0
211	8/8/2022	N	Pulgas Avenue	N3 - N21	N3	N21	10	12	10	PE	89	88.17	Light Tree Project	2200	4	2300	6	2	4	50	0		0
212	7/22/2022	N	McNair Street	N30 - N11	N30	N11	8	8		PVC	134	130.86		0000	0	0000	0	0	0	0	0		0
213	8/8/2022	N	Pulgas Avenue	N4 - N3	N4	N3	10	12		PE	335	336.39	Light Tree Project	2500	10	2800	16	2	10	0	0		0



Attachment 4

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

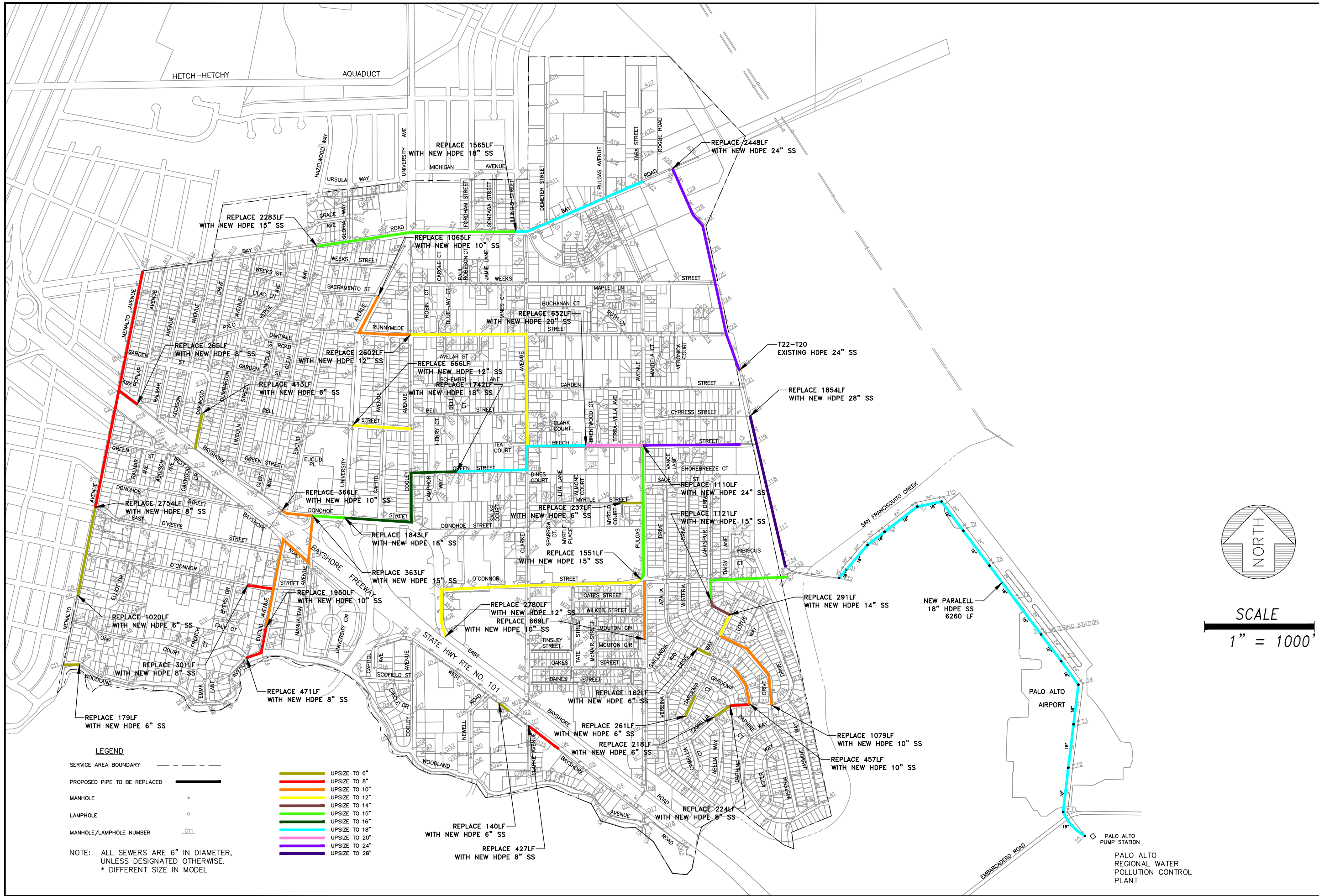
Manhole (1)	Length (Feet) --	Existing Diameter (Inches) (2)	PDWF Predicted d/D (3)	PWWF Predicted d/D (3)	Proposed Diameter (Inches) (2)	PDWF Proposed d/D (4)	PWWF Proposed d/D (4)
A29-T29	345	18	0.39	0.51	24	0.26	0.33
T29-T28	234	18	0.37	0.48	24	0.25	0.32
T28-T27	162	18	0.77	1	24	0.47	0.62
T27-T26	356	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