



ADD-CHANGE FORM

New Project or Budget Change?

Assigned Project #:

Requested by:
Project Manager / Area Manager

Date:

Project Name:

Company: Sanlando Utilities Corp

Business Unit: Sanlando Utilities Corp S

BU Type:

Project Owner:

Budget Owner / RVP: 03

Project Manager:

Region: 04

Start Date: Q2 2015

State:

Estimated End Date: Q3 2015

Project Type:

Will project replace/retire any assets:

Previously Requested:

This Request:

Still to be Requested:

Total Project Budget:

Description:

Light clean and televise approximately 83,190 LF of portions of the sanitary gravity collection system within the Sanlando service area.

Timeline Considerations:

This project will be followed by any needed repairs whether by installing liners or excavation and repair. The rainy season should come to a close in September allowing for any excavation work to be less time consuming as regards dewatering activity.

Inter-dependant Project Project Number: Project Name (If applicable)

Have engineering evaluations been performed? Engineering project number (If applicable)

Justification and Benefits:

The Wekiva WWTF typically treats an average of 2.0 MGD of sanitary flow. During rain events and elevated groundwater tables, the Wekiva WWTF is treating on average between 2.4 to 2.6 MGD. The sudden increase of influent leads to the high probability that portions of the system are being impacted by significant I & I that needs to be identified and corrected. Lift station elapsed time readings were gathered and analyzed to determine the most likely sources of I & I. The results of this analysis revealed six (6) areas where lift station run times have doubled and in some instances tripled as compared to drier periods of the year. In 2014 approximately 49,900 LF of VCP sanitary gravity main was examined under Phase 1. Damaged pipes were lined and excavated to repair as needed. Under Phase 2 approximately 83,190LF of gravity mains will be evaluated. The investigation will allow us to identify sources of I & I and develop a cost for the repair effort to make corrections.

Risk Evaluation

This evaluation will help to identify damaged gravity mains to be repaired that if left alone would continue to be sources of I&I that elevate treatment costs risking the recovery of these expenses when the FPSC compares water consumption to the treated volumes through the WWTF. As well the vast majority of the collection system is located under paved areas where a catastrophic failure of a gravity main could lead to the collapse of a paved roadway potentially leading to unnecessary liability associated with such an event.

Alternatives Considered:

Reduce the number of linear feet evaluated to decrease the capital cost of the evaluation and future repairs.

Technical Review Summary:

QUOTATION

AMERICAN IN-LINE INSPECTION, Inc.

415 Timaquan Trail
Edgewater, FL 32132

Phone (386) 409-5446
Fax (386) 957-4919

Proposal Submitted To:	Sanlando Utilities Corp. Utilities Inc. of Florida	Phone: 800-272-1919 Ext. 1360	Date: 05-05-15
Street	200 Weathersfield Ave.	Job Name:	Sanlando I & I, Vac & CCTV, Phase 2
City, State, Zip Code	Altamonte Springs, FL 32714	Job Location:	Seminole County, FL
ATTN:	Mr. Bryan Gongre	Fax:	BKGongre@uiwater.com

We propose hereby to furnish the following:

To provide cleaner truck & CCTV crew to clean & video approx. 83,000 +/- LF of 8" various existing/active sanitary sewer pipes & manhole structures, locating pipe defects for infiltration, root intrusion & blockages. Our price includes all labor, equipment, material and workmanship to complete the project, along with a clear typed report and video of our findings. One DVD or VHS will be provided. If additional copies are needed, they can be purchased for \$20.00 each.

Cleaner Truck & Crew to Clean approx. 83,000 +/- LF of Various Size Existing SAN Sewer Pipe @ \$0.75 per LF...\$ 62,250.00

CCTV Crew to Video approx. 83,000 + LF of Various Size Existing SAN Sewer Pipe @ \$0.75 per LF.....\$ 62,250.00

Debris disposal Transportation @ \$100.00 Each \$Q/U

Mobilization.....\$ N/C

To be provided by others: Acceptable access to system to perform duties requested, permits, traffic control, water meter or clean water source, bypass pumping, plugging and suitable dump site for debris or transportation & environmental disposal charges will apply.

**** Please note that any downtime out of our control will be billed at an hourly rate of \$185.00 per hour.**

Example - Waiting on MOT to be moved, etc.

**** Please note that Heavy Cleaning will be billed at \$185.00 per hour. Heavy Cleaning is defined as pipe's having more than 20% sediment in pipe.**

We appreciate this opportunity to serve Utilities Inc. of Florida

Note: This proposal may be withdrawn by us if not accepted within **30** days.

Terms: NET 30 DAYS

Representative: Walt Kush

Authorized Signature: _____

Date: 05-05-15

Acceptance of Proposal...The above prices, specifications, and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above. We understand that attorney fees and collection costs will be recovered if contract is not paid in full.

Authorized Signature: _____

Date: _____



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Project Name:

Company: Sanlando Utilities Corp

Business Unit: Sanlando Utilities Corp S

Project Owner:

BU Type:

Project Manager:

Budget Owner / RVP: 03

Start Date: Q2 2016

Region: 04

Estimated End Date: Q4 2016

State:

Project Type:

Will project replace/retire any assets:

Previously Requested:

This Request:	\$1,573,884
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Still to be Requested:	
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Total Project Budget:	\$1,573,884
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Description:

During the second quarter of 2015, under CP# 2015097, Sanlando contracted with American In Line to clean and video approximately 89 000LF of 8" and 10" gravity sewer main within the Sanlando collection system. The videos and reports were reviewed resulting in the identification of 30,000 LF of 8" and 10" VCP pipe with multiple cracks, fractures at joints, joint separation, infiltration, infiltration staining, root intrusion and bellies holding greater than 3" of water. Approximately 10 manhole structures were also observed to contain infiltration at inverts and seams as well as signs of infiltration staining. This project will address these issues by installing full segment CIPP liners within 23,798 LF of 8" and 10" VCP, installation of 82 LF of short liners, reinstatement and grouting of 164 6" laterals, rehabilitation of 10 manholes using cementitious materials, open excavation and replacement of approximately 147 LF of 8" VCP at 17 locations between manhole segments to include ROW permitting, MOT, dewatering, bypass operations and restoration of curb, pavement and driveways.

Timeline Considerations:

Repairs need to be completed in order to decrease flows to the Wekiva WWTF that will allow the rehabilitation of the WWTF under a current open project and will allow for accommodation of the additional flows at Wekiva as a result of the Shadow Hills WWTF Diversion project that is currently under design.

Inter-dependant Project Project Number: Project Name: (If applicable)

Have engineering evaluations been performed? Engineering project number (If applicable)

Justification and Benefits:

The Sanlando service area provides sanitary sewer service to approximately 10,250 connections through a network of approximately 490,000 LF of gravity collection mains. A vast majority of the gravity collection system was constructed in the 1970's and consists of a combination of vetrified clay pipe (VCP) and PVC. The WW flows are received and treated at the Wekiva WWTF. The Wekiva WWTF is rated at 2.9 MGD with an average daily flow of 2.0 MGD. As a result of wet weather conditions in 2013, the Wekiva facility reached flows upwards to the permit limit of 2.9MGD and above. This condition led to the investigation of the collection system's lift stations and associated run times under a phase 1 study to determine where possible inflow/infiltration existed. Several lift stations were determined to have excessive run times leading to the video inspection of the gravity collection system within those areas that the lift stations support. The phase 1 study focused on the areas where receiving lift stations were not repumping from upstream stations and possibly skewing the run times. After reviewing the data of the video survey, the VCP pipe segments and several manholes show obvious signs infiltration that are the direct result of cracks and fractures from settling over time. The deficiencies identified in the phase 1 study were corrected under a separate capital project and run times at the stations were cut in half. The phase 2 study addressed the areas served by lift stations with elevated run times downstream of stations within the phase 1 project. In order to further reduce the infiltration of groundwater into the collection system these damages must be repaired through a combination of CIPP lining and excavation and replacment. Doing so will reduce operating expense in the form of electric and chemical cost, wear and tear on equipment, improve the operational aspects of the Wekiva WWTF and extend the service life of the collection system by restoring the integrity of the gravity main and manholes. The benefit in the reduction of operating expense is not calculable at this time as the quantity of infiltration is not readily measurable and is based upon seasonal groundwater tables that vary according to weather patterns.

The phase 2 deficiency corrections will address I&I that currently increases the flows received by the Wekiva WWTF. These additional flows will have an impact upon the currently open project to rehabilitate the Wekiva WWTF as one treatment train at a time will need to be taken off line to complete the project. By reducing the flow to the plant, the plant rehab project will be more manageable. Furthermore, the Utility is currently under design to decommission the Shadow Hills WWTF and divert the WW flow to the Wekiva WWTF. The average daily flows at Wekiva will increase by approximately 0.376 MGD making I&I reduction that much more critical.

Risk Evaluation

This project will repair damaged gravity sewer mains that if not addressed, would continue to be sources of significant I&I that elevate treatment costs risking the recovery of these expenses when the FPSC compares water consumption to the treated volumes through the WWTF. As well, the vast majority of the collection system is located under paved areas where a catastrophic failure of a gravity main could lead to the collapse of a paved roadway potentially leading to significant damage associated with such an event.

Alternatives Considered:

This is a pro forma project to the Sanlando 2016 rate case. Recovery of this investment is timely not only from a rate making perspective but also due to the condition of the aging infrastructure and the need to address the many failures throughout the collection system thereby reducing O&M and extending the life of the assets. The longer these conditions exist the worse they will become eventually leading to collapse and complete failure. There are two components to this project. CIPP lining/root removal/manhole rehabilitation and excavate/repair activity. The lining and excavation were bid out separately. Three vendors bid the lining/rehab portion and three vendors bid the excavation/replacement work. This was necessary as most lining/rehab companies do not perform excavation services and those that do would skew the lining costs provided by the vendors that do not perform excavation services. The manhole segments were evaluated by degree of severity using a scale of high to low priority. A high priority was given those segments with visual signs of infiltration, multiple fractures, voids, etc. A lesser ranking of low was given to segments with multiple hair line cracks and no obvious signs of infiltration staining. To take advantage of economies of scale all segments that either ranked high, medium or low were included under this project. Also, although not yet evaluated, is the possibility of a cost reduction by lining an entire segment as opposed to the cost to install a short liner. Short liner costs are significantly higher as compared to LF cost to line an entire segment. This will be fleshed out prior to going to contract with the selected vendor.

Technical Review Summary:

Project was presented to the CPRT on 6/16/2016 without the need for revisions or corrections.

SANLANDO I & I DEFICIENCY CORRECTIONS PHASE 1

Partial to Full Liner Cost Comparison

DVD #	Lift Station	Subdivision	Street	Location	Length	Short Liner Cost	Line Run Cost	Lateral Cost	Laterals	Line Size	Corrective Action	Priority Rank	Comments
1			Devonshire Blvd.	1 to 2	310.7				1	8	Line run	High	Multiple cracks over half the distance
1			Devonshire Blvd.	4 to 5	264.4				1	8	Remove roots and apply product	High	Significant root intrusion
1			Cambridge Court	13 to 16	304.5				1	8	Remove roots and apply product	High	Medium roots found at several locations throughout
2			Poplar Place	20 to 19	224.3				0	8	Remove roots and apply product	High	Medium roots found at several locations throughout
2			Stoney Ridge Drive	23 to 22	343.6				3	8	Line run	High	Multiple cracks/Fractures/No infiltration signs
2			Cedarwood Circle	24 to 25	232.2				2	8	Line run	High	Infil runners/Infil stain/Infil weeper/Multiple cracks
2			Cedarwood Circle	50 to 49	136				1	8	6/8 liner at MH 49	High	Broken pipe soil visible 3' from MH 49
3			Aimee Place	42 to 43	90.5				1	8	Remove roots and apply product	High	Medium roots found at several locations throughout
3			Rosebriar Drive	43 to 44	216.6				1	8	Line run	High	Multiple cracks and fractures
3			Rosebriar Drive	44 to 45	279.8				3	8	Line run	High	Multiple cracks and fractures
3			Cedar Oak Trail	41 to 40	203				2	8	Line run	High	Multiple cracks and fractures
3			Nicole Lane	35 to 34	271.9				4	10	Line run	High	Fractures/Cracks/Infil Staining
4			Eastern Fork	34 to 33	279.4				3	8	Line run	High	Multiple cracks and fractures
4			Maria Lane	32 to 31	213.8				1	8	Line run	Medium	Multiple cracks and fracture
4			Aspen Place	30 to 29A	197.9				3	8	Dig/Line run	High	50% Belly from 192 - 198'/Offset joint/Several fractures/Soil visible/Collapse
4			Sweetbriar Branch	28 to 27	153.9				3	8	Line run	Medium	Multiple cracks/ (1) Fracture
4			Sweetbriar Branch	27 to 26	261.3				1	8	Dig/Line run	High	Belly 248' - 257' >60%/Broken pipe/Soil visible/Multiple fractures
4			Sweetbriar Branch	16 to 17	216.1				3	8	Dig	Medium	Belly 173' -180' >30% pipe
4			Sweetbriar Branch	17 to 17A	115.3				2	8	Dig/Replace	Medium	CIP 4' to 14.5'/Heavy tuberculation
5			Sweetbriar Branch	19 to 21	296.3				2	8	Line run/Remove roots and apply product	Medium	Roots in lateral at 172.5'/Multiple fractures and cracks
5			Sweetbriar Branch	21 to 21A	112.9				0	8	Line run	High	Multiple cracks/Infil stains
5			Sweetbriar Branch	25 to LS	223.4				3	8	Line run	High	Infiltration/Cracks
5			Old Hickory Court	57 to 58	180.1				3	8	Line run	Medium	Multiple fractures
5			Tollgate Trail	60 to 59	190.8				1	8	Line run	High	Multiple fractures/Cracks
5			Cedar Oak Trail	62 to 63	298.5				3	8	Line run	High	Multiple fractures/Cracks
5			Tollgate Trail	63 to 64	227				3	8	Line run	High	Multiple fractures/Cracks
5			Rosebriar Drive	65 to 64	303.1				1	8	Line run	Medium	Multiple cracks throughout
5			Huntswood Court	67 to 66	291.1				1	8	Line run	Medium	Multiple cracks throughout/(3) fractures
6			Hickory Tree Road	61 to 74	348.2				4	8	Line run	Medium	(9) Fractures/Cracks
7			Sweetbriar Branch	84 to 83	361				4	8	Line Run	High	Multiple fractures/Soil visible
7			Sweetbriar Branch	83 to 82	225.1				1	8	Line Run	High	Multiple fractures/Soil visible/Holes in pipe
7			Timberlane Trail	87 to 88	158.7				0	8	Line Run	High	Multiple fractures/Soil visible
7			Tollgate Trail	88 to 89	149.6				1	8	Line run	High	Multiple fractures/Soil visible
7			Tollgate Trail	89 to 90	356.7				3	8	Line run	High	Multiple fractures/Soil visible/Holes in pipe
9			Foxridge Run	79 to 78	246.7				2	8	Line run	High	Multiple fractures/Soil visible/Broken pipe
9			Staq Ridge Drive	98A to 98	293.2				2	8	Remove roots and apply product	High	Medium roots found at several locations throughout
9			Staq Ridge Drive	98 to 94	336.5				1	8	Dig/Remove roots and apply product	Medium	Belly 50% 284' to 295'
9			Eastern Fork	97 to 96	380.7				6	8	Dig or line/Apply root kill product	High	Fracture at 278.3'/Roots/Soil visible
9			Eastern Fork	96 to 95	77.8				0	8	Line run	Medium	Multiple fractures
9			Eastern Fork	95 to 94	188.6				1	8	Line run/Apply root kill product	Medium	Fracture/Cracks/Roots
9			Eastern Fork	94 to 91	240.1				1	8	Dig	Low	HDD pipe through main from 91' to 94' (62.8' from MH 91)
9			Willow Tree Lane	80 to 79	283.2				2	10	Clean or dig	Medium	282.9' CIP to MH heavily tuberculated
10			Des Pinar Lane	114 to 115	273.6				4	8	Investigate lateral at 128.7' from MH 114	Low	Possible abandoned lateral
11			Tollgate Trail	146 to 144	186.4				1	8	Line run	High	Multiple fractures/Soil visible
11			Meadow Creek Cove	145 to 144	315.8				2	8	Dig/Line run	High	Fracture/Soil visible/Concrete in pipe at 55.3'
11			Tollgate Trail	144 to 143	314.4				3	8	Line run	High	Multiple fractures/Soil visible/Hole in pipe
11			Tollgate Trail	143 to 139	188.1				1	8	Line run	High	Multiple fractures/Soil visible/Hole in pipe
11			Weatheravne Way	142 to 140A	109.9				1	8	Line run	High	Broken pipe/Soil visible/Multiple cracks
11			Weatheravne Way	140A to 140	193.5				2	8	Line run	High	Multiple fractures/Soil visible/Broken pipe
11			Tollgate Trail	141 to 140	237.7				8	8	Line run	High	Multiple fractures/Soil visible
11			Tollgate Trail	140 to 139	318				2	8	Line run	High	Multiple fractures/Soil visible/Broken pipe
12			Tollgate Trail	130 to 129	398.1				2	8	Line run	High	Multiple fractures/Soil visible
12			Tollgate Trail	129 to 128	294.4				2	8	Line run	Medium	Multiple minor cracks/Fractures
12			Post & Rail	126 to 125	361.6				4	8	Line run	Medium	Multiple minor cracks/Fractures
13			Post & Rail	124 to 123	341.3				2	8	Line run	High	Multiple fractures/Soil visible/Roots/Multiple cracks
13			Shady Vale	101 to 102	197.1				1	8	Line run	High	Multiple fractures/Broken pipe/Infil Stains/Multiple cracks
14			Heather Hill	138 to 137	258				2	10	Line run	High	Multiple fractures/Infil stains
14			Heather Hill	137 to 136	192.7				2	10	Line run	High	Multiple fractures/Infil stains
14			Glendale Drive	152 to 151	175.1				2	8	Remove roots and apply product	High	Root intrusion throughout run
14			Glendale Drive	151 to 150	396				4	8	Line run	High	Fracture/Infil runner/Infil stains
15			Slade Drive	171 to 172	394				4	8	Line run	Medium	Infil stains/Cracks
15			Slade Drive	172 to 173	135.1				0	8	Line run	High	Fracture/Infil stain
15			Rock Lake Road	173 to 165	202				0	8	Line run	High	(2) Infil runners/Infil stain
16			Ardsdale Court	162 to 163	256.4				4	8	4/8 liner	High	254.1' 2' from MH 162/Infil runner
16			Ardsdale Court	163 to 164	200.1				1	8	Dig	High	78' to 85' >50% belly
16			Dellwood Drive	163 to 164	280.8				2	8	Dig/Line	High	70' to 80' >40% belly/Infil dripper, weeper & runner
16			Dellwood Drive	160 to 159	236.7				3	8	Investigate lateral at 52.7' from MH 160	High	Sand in lateral/Possibly broken
17			Sheridan Avenue	199 to 196	404.4				3	8	6/8 liner	High	Infil runner at 401.3 from MH 199
17			Sheridan Court	197 to 196	197.7				4	8	4/8 liner	High	Infil stain/Circumferential crack at 195.9' from MH 197
17			Sheridan Avenue	196 to 194	300.9				2	8	Dig	High	285' to 300' belly >50%/Joint separated
17			Sheridan Avenue	194 to 193	175.2				0	8	4/8 liner	High	Infil weeper 1' inside of MH 193
17			Slade Drive	177 to 179	315.2				1	8	4/8 liner	High	Infil runner at 312.5' from MH 177
17			Slade Drive	179 to 181	301.7				0	8	4/8 liner	High	Infil runner at 1' inside of MH 179
17			Dellwood Drive	156 to 199	192				0	8	Line run	High	Infil runners/Infil stains
18			Sheridan Avenue	193 to 192	140				1	8	4/8 liner	High	Infil quisher 1.0' inside MH 193
18			Sheridan Avenue	181 to 182	402.6				4	8	Dig	High	275.8' Infil runner at lateral
18			Sheridan Avenue	182 to 183	139.4				2	8	(2) 4/8 liners	High	Infil stains just inside each MH
18			Sheridan Avenue	183 to 184	91.1				2	8	4/8 liner	High	Infil runner at 88.8' at MH 184
18A			Sheridan Avenue	184 to 190	302.1				0	8	Line run	High	Infil dripper/Infil stains

18A		Sheridan Avenue	191 to 192	388.2				2	8	4/8 liner	High	Infil runner 1.0' inside of MH 191
18A		Marcy Boulevard	45 to 40	337				2	8	Line run	High	Multiple fractures/Broken pipe
18A		Marcy Boulevard	40 to 39	239.6				2	8	Line run	High	Multiple fractures/Broken pipe
19		Marcy Boulevard	39 to 38	122.3				0	10	Line run	High	Multiple fractures/Infil runner/Infil qusher
19		Marcy Boulevard	38 to 36	277.9				2	10	Line run	High	Multiple fractures/Infil runners
19		Marcy Boulevard	36 to 33	340.7				1	10	Line run	High	Multiple fractures/Infil runners/Broken pipe
19		Eastern Fork	33 to 31	297.5				1	10	Line run	High	Multiple fractures/Infil runners
19		Eastern Fork	31 to 29	216.3				1	10	Line run	High	Multiple fractures/Infil runners
19		Eastern Fork	29 to 29A	8.3				0	10	Line run	High	Fracture/Infil runner
19		Eastern Fork	29A to 26	279				1	10	Line run	High	Multiple fractures/Infil runners/Infil qushers
20		Hickory Tree Road	75 to 76	275				2	10	Line run	High	Multiple fractures/Broken Pipe 8' from MH 76/Multiple cracks
20		Foxridge Run	78 to 77	282				1	10	Clean	Medium	Tuberculated DIP from 213' to 250'
21		Monerrey South	201 to 202	133				2		Investigate laterals	High	Lateral at 12.7' and 82.6'
22		Penelope Drive	121 to 121A	380.6				3	10	Investigate lateral	High	Clean lateral at 372.9'
22		Willow Creek Drive	135 to 134	273.5				2	10	Line run/Remove Roots	High	Multiple fractures/Multiple cracks
22		Tollgate Trail	127 to 123	327.4				2	10	Remove roots and apply product	High	Roots throughout run
22		Tollgate Trail	91 to 100	163.5				0	10	Remove roots and apply product	High	Roots throughout run
22		Western Fork	100 to 102	290.1				2	10	Remove roots and apply product	High	Roots throughout run
23		Western Fork	102 to 103	108				0	8	Remove roots and apply product	High	Roots throughout run
23		Shadow Bay Boulevard	208 to 209	350.5				7	8	Repair MH 209	High	Infiltration
23		Nighthawk Court	230 to 231	88.6				2	8	Repair MH 230	High	Infil qusher at invert
23		Nighthawk Court	228 to 227	287.2				5	8	Repair MH 228	High	Infil qusher at invert
23		Shadow Bay Blvd., South	232 to 209	250.6				4	8	Repair MH 250/Lateral Investigation	High	Infiltration at invert/Camera lateral at 232.7'
24		Shadow Bay Boulevard	212 to 214	112.8				1	8	8/8 Short liner	High	Hole in pipe at 107.7'
24		Shadow Bay Boulevard	227 to 232	242.2				3	8	Investigate lateral	Low	Dirt in lateral at 42.4'
25		Riverbend Boulevard	285 to 286	148.2				0	8	Line run	High	Infil weepers/Fracture
25		Riverbend Boulevard	283 to 284	229				1	10	Line run	High	Infil runner
25		Riverbend Boulevard	283 to 282	388.1				6	10	Dig and repair	High	Break in tap at 172.3' leaking/Hole at 177'/Offset at 246.0' >50% belly
25		Riverbend Boulevard	304 to 303	229.8				1	10	Line run	High	Infil weeper /Infil runner
25		Riverbend Boulevard	294 to 293	397.4				6	10	Dig and repair	High	Break in lateral leaking at 295.6'
26		Riverbend Boulevard	235 to 236	244.1				1	8	Line run	Low	17.2' broken pipe
26		Riverbend Boulevard	236 to 237	259.6				2	8	4/8 liner	High	Broken pipe 257.7' at MH 237
26		Riverbend Boulevard	237 to 238	198				0	8	Remove roots and apply product	Medium	Roots in several locations
26		Laurel Drive	239 to 238	319.1				3	8	4/8 liner/Remove roots and apply product	High	Broken pipe 316.7' at MH 238
26		Riverbend Boulevard	242 to 241	119.1				0	8	Dig and repair/Remove roots and apply product	High	Broken pipe/Offset at 115.9'
26		Riverbend Boulevard	238 to 241	355				3	8	Line run	High	Infil runners/Sand in line
26		Riverbend Boulevard	241 to 243	347.3				2	8	Line run	High	Infil runners/Infil stains
26		Riverbend Boulevard	244 to 243	184.2				1	8	Line run	High	Multiple infil stains
26		Laurel Drive	245 to 244	296.8				2	8	Line run	High	Infil runner/Infil stains
27		Riverbend Boulevard	244 to 250	261.8				1	8	Line run	High	Multiple cracks throughout/staining/Infil runner
27		Riverbend Boulevard	250 to 252	273.4				1	8	(2) 4/8 liners	High	Infil runner offset at 2.0' from MH 250/Infil runner at 270.9 at MH 252
27		Riverbend Boulevard	257 to 260	203.2				2	8	Repair bench at MH 260	High	Infil runner
28		Riverbend Court	263 to 262	141.3				0	8	Line run	High	Infil runners
28		Riverbend Boulevard	262 to 261	153.5				0	10	Line run	Medium	Infil runners
28		Riverbend Boulevard	288 to 289	379.8				3	10	Line run	High	Infil runner/Infil stain
28		Riverbend Boulevard	290 to 291	345.4				2	8	Repair MH 290 and MH 291	High	Infil leak in structures
28		Riverbend Boulevard	265 to LS	18.4				0	8	Repair invert in LS	High	Infil leak around invert
30		Sweetwater Island Circle	278 to 279	332.2				2	8	Line run	High	Hole in pipe/Infil qusher
33		Watercrest Drive	322 to LS	1				0	8	Clean run	High	Heavy tuberculation
33		Watercrest Drive	321 to 322	193.1				3	8	Investigate lateral at 147'	High	Heavy flow from lateral
34		Royal Palm Court	333 to 334	245.4				0	8	Line run	High	Multiple cracks/Fracture/Broken pipe
34		Royal Oaks Circle	334 to 335	175.8				0	8	Line run	High	Multiple cracks/Broken pipe
34		Blue Lake Drive	336 to 337	344.1				3	8	Line run	High	Multiple cracks/Infil runner/Infil Stains/Fracture
34		Blue Lake Drive	353 to 355	271.6				3	8	Line run	High	Cracks/Infil staining
34		Blue Lake Drive	355 to 356	296				1	8	Line run	High	Multiple infil runners/Infil stains
37		Devonshire Boulevard	343 to 348	193.4				0	8	Line run	High	Multiple longitudinal cracks/Infil runner
37		Blue Lake Court	352 to 353	118.8				1	8	Remove roots and apply product	Medium	Roots throughout run
38		Blue Lake Drive	379 to 378	283.7				2	8	Line run	High	Infil stains/Infil runner
38		Blue Lake Drive	361 to 360	266.8				3	10	Line run	High	Multiple cracks/Infil staining/Fracture
39		Squirrel Trail	395 to 397	275				2	8	Dig and repair/Apply root kill product	Medium	Broken pipe at 6.8'/Broken pipe at 26.7'
39		Valley Drive	397 to 398	292				3	8	Investigate lateral at 188.7' & 260.3'	Medium	Lat at 188 is an infil qusher/Lat at 260.3 is capped but an infil runner
39		Valley Drive	398 to 399	137.6				2	8	Repair MH 398	High	Infil around pipe at invert
39		Valley Drive	399 to 400	123.3				0	8	Line run	High	Infil runner/Infil dripper/Multiple cracks
39		Valley Drive	400 to 401	126.1				1	8	Line run/Repair MH 401	High	Multiple cracks/Infil runner
40		Green Lake Circle	378 to 381	305.1				2	10	Line run	Low	Infil staining
40		Green Lake Circle	381 to 382	378.6				3	10	Line run	High	Infil weepers/Infil runners/Infil stains/Separated joint
40		Countryside Drive	370 to 369	278.8				3	8	Line run	High	Several infil stains/Infil runner
41		Blue Lake Drive	357 to 360	258.2				0	10	Line run	High	Multiple cracks/Infil stains
41		Green Lake Drive	360 to 362	114.5				0	10	Line run	High	Multiple cracks/Infil runners
41		Sweetwater Boulevard	382 to 385	256.5				2	10	Line run/Investigate lateral at 6.2' from MH 382	High	Infil runner/Multiple cracks.
42		Sweetwater Boulevard	388 to 387	348.5				2	8	6/8 liner	Medium	Broken pipe at 344' outside of MH 387 (drop connection)
44		Valley Drive	401 to 402	275.7				4	8	Invest Lateral at 128' from MH 401/Dig/Line run Dig & Repair/Remove concrete from invert at MH 403	High	Sand coming from lateral/Break in tap at 98.5' needs to be installed correctly to line/Infil runners/Infil qusher
44		Valley Drive	403 to 402	31.5				1	8		High	Broken pipe at 30.3'/Infil qusher
45		Sweetwater Boulevard	387 to 386	247.3				2	10	Dig and Repair	Medium	Belly at 80' to 100' >50%/Fracture at 117.5'
45		Sweetwater Boulevard	386 to 385	244.8				2	10	Line run	High	Infil qusher/Broken pipe at two locations

47		Fox Ridge Run	103 to 104	223.2				2	10	Remove roots and apply product	High	Roots throughout run
47		Fox Ridge Run	104 to 105	244.5				2	10	Remove roots and apply product	High	Roots throughout run
47		Sheridan Avenue	192 to LS	38.3				0	8	Repair invert at MH 192	High	Infil quisher

Root Removal
 MH to MH Liner
 Short Liner
 Dig & Repair
 MH/LS Repair

Priority	Number by Rank	MH to MH Runs		Partial Runs	Lateral Reinstatement	Root removal & Product		Manhole Repairs
		LF	LF			LF	Quantity	
High	81	20,296.60	76		137	5,214.30	10	
Medium	13	3,256.40	6		26			
Low	1	244.9	0		1			
Totals	95	23,797.90	82		164	5,214.30	10	

DIG & REPAIR

DVD #	Lift Station	Subdivision	Street	Location	Length	Laterals	Line Size	Corrective Action	Priority Rank	Comments
4			Aspen Place	30 to 29A	197.9	3	8	Dig and Repair	High	50% Belly from 192 - 198'/Offset joint/Several cracks
4			Sweetbriar Branch	27 to 26	261.3	1	8	Dig	High	Belly 248' - 257' /Broken pipe/Soil visible
4			Sweetbriar Branch	16 to 17	216.1	3	8	Dig	Medium	Belly 173' - 180' /> 30% pipe
4			Sweetbriar Branch	17 to 17A	115.3	2	8	Dig/Replace	Medium	CIP 4' to 14.5'/Heavy tuberculation
9			Slag Ridge Drive	98 to 94	336.5	1	8	Dig/Remove roots and apply product	Medium	Belly 50% 284' to 295'
9			Eastern Fork	97 to 96	380.7	6	8	Dig or line/Apply root kill product	High	Fracture at 278.3'/Roots/Soil visible
9			Eastern Fork	94 to 91	240.1	1	8	Dig	Low	HDD pipe through main from 91' to 94' (62.8' from MH 91)
9			Willow Tree Lane	80 to 79	283.2	2	10	Clean or dig	Medium	282.9' CIP to MH heavily tuberculated
11			Meadow Creek Cove	145 to 144	315.8	2	8	Dig/Line run	High	Fracture/Soil visible/Concrete in pipe at 55.3'
16			Ardsdale Court	163 to 164	200.1	1	8	Dig	High	78' to 85' >50% belly
16			Dellwood Drive	165 to 164	280.8	2	8	Dig/Line	High	70' to 80' >40% belly/Infil dripper, weeper & runner
17			Sheridan Avenue	196 to 194	300.9	2	8	Dig	High	285' to 300' belly >50%/Joint separated
25			Riverbend Boulevard	283 to 282	388.1	6	10	Dig and repair	High	Break in tap at 172.3' leaking/Hole at 177'/Offset at 246.0' .50% belly
25			Riverbend Boulevard	294 to 293	397.4	6	10	Dig and repair	High	Break in lateral leaking at 295.6'
26			Riverbend Boulevard	242 to 241	119.1	0	8	Dig and repair/Remove roots and apply product	High	Broken pipe/Offset at 115.9'
39			Squirrel Trail	395 to 397	275	2	8	Dig and repair/Apply root kill product	Medium	Broken pipe at 6.8'/Broken pipe at 26.7'
44			Valley Drive	403 to 402	31.5	1	8	Dig & Repair/Remove concrete from invert at MH 403	High	Broken pipe at 30.3'/Infil quisher
45			Sweetwater Boulevard	387 to 386	247.3	2	10	Dig and Repair	Medium	Belly at 80' to 100' >50%/Fracture at 117.5'

MH to MH Lining

DVD #	Lift Station	Subdivision	Street	Location	Length	Laterals	Priority Rank	Comments
1			Devonshire Blvd.	1 to 2	310.7	1	High	Multiple cracks over half the distance
2			Stoney Ridge Drive	23 to 22	343.6	3	High	Multiple cracks/Fractures/No infiltration signs
2			Cedarwood Circle	24 to 25	232.2	2	High	Infil runners/Infil stain/Infil weeper/Multiple cracks
3			Rosebriar Drive	43 to 44	216.6	1	High	Multiple cracks and fractures
3			Rosebriar Drive	44 to 45	279.8	3	High	Multiple cracks and fractures
3			Cedar Oak Trail	41 to 40	203	2	High	Multiple cracks and fractures
3			Nicole Lane	35 to 34	271.9	4	High	Fractures/Cracks/Infil Staining
4			Eastern Fork	34 to 33	279.4	3	High	Multiple cracks and fractures
4			Maria Lane	32 to 31	213.8	1	Medium	Multiple cracks and fracture
4			Aspen Place	30 to 29A	197.9	3	High	50% Belly from 192 -198'/Offset joint/Several fractures/Soil visible/Collapse
4			Sweetbriar Branch	28 to 27	153.9	3	Medium	Multiple cracks/ (1) Fracture
4			Sweetbriar Branch	27 to 26	261.3	1	High	Belly 248' - 257' >60%/Broken pipe/Soil visible/Multiple fractures
5			Sweetbriar Branch	19 to 21	296.3	2	Medium	Roots in lateral at 172.5'/Multiple fractures and cracks
5			Sweetbriar Branch	21 to 21A	112.9	0	High	Multiple cracks/Infil stains
5			Sweetbriar Branch	25 to LS	223.4	3	High	Infiltration/Cracks
5			Old Hickory Court	57 to 58	180.1	3	Medium	Multiple fractures
5			Tollgate Trail	60 to 59	190.8	1	High	Multiple fractures/Cracks
5			Cedar Oak Trail	62 to 63	298.5	3	High	Multiple fractures/Cracks
5			Tollgate Trail	63 to 64	227	3	High	Multiple fractures/Cracks
5			Rosebriar Drive	65 to 64	303.1	1	Medium	Multiple cracks throughout
5			Huntswood Court	67 to 66	291.1	1	Medium	Multiple cracks throughout/(3) fractures
6			Hickory Tree Road	61 to 74	348.2	4	Medium	(9) Fractures/Cracks
7			Sweetbriar Branch	84 to 83	361	4	High	Multiple fractures/Soil visible
7			Sweetbriar Branch	83 to 82	225.1	1	High	Multiple fractures/Soil visible/Holes in pipe
7			Timberlane Trail	87 to 88	158.7	0	High	Multiple fractures/Soil visible
7			Tollgate Trail	88 to 89	149.6	1	High	Multiple fractures/Soil visible
7			Tollgate Trail	89 to 90	356.7	3	High	Multiple fractures/Soil visible/Holes in pipe
9			Foxridge Run	79 to 78	246.7	2	High	Multiple fractures/Soil visible/Broken pipe
9			Eastern Fork	97 to 96	380.7	6	High	Fracture at 278.3'/Roots/Soil visible
9			Eastern Fork	96 to 95	77.8	0	Medium	Multiple fractures
9			Eastern Fork	95 to 94	188.6	1	Medium	Fracture/Cracks/Roots
11			Tollgate Trail	146 to 144	186.4	1	High	Multiple fractures/Soil visible
11			Meadow Creek Cove	145 to 144	315.8	2	High	Fracture/Soil visible/Concrete in pipe at 55.3'
11			Tollgate Trail	144 to 143	314.4	3	High	Multiple fractures/Soil visible/Hole in pipe
11			Tollgate Trail	143 to 139	188.1	1	High	Multiple fractures/Soil visible/Hole in pipe
11			Weathervane Way	142 to 140A	109.9	1	High	Broken pipe/Soil visible/Multiple cracks
11			Weathervane Way	140A to 140	193.5	2	High	Multiple fractures/Soil visible/Broken pipe
11			Tollgate Trail	141 to 140	237.7	2	High	Multiple fractures/Soil visible
11			Tollgate Trail	140 to 139	318	1	High	Multiple fractures/Soil visible/Broken pipe
12			Tollgate Trail	130 to 129	398.1	2	High	Multiple fractures/Soil visible
12			Tollgate Trail	129 to 128	294.4	2	Medium	Multiple minor cracks/Fractures
12			Post & Rail	126 to 125	361.6	4	Medium	Multiple minor cracks/Fractures
13			Post & Rail	124 to 123	341.3	2	High	Multiple fractures/Soil visible/Roots/Multiple cracks
13			Shady Vale	101 to 102	197.1	1	High	Multiple fractures/Broken pipe/Infil Stains/Multiple cracks
14			Heather Hill	138 to 137	258	2	High	Multiple fractures/Infil stains
14			Heather Hill	137 to 136	192.7	2	High	Multiple fractures/Infil stains
14			Glendale Drive	151 to 150	396	4	High	Fracture/Infil runner/Infil stains
15			Slade Drive	171 to 172	394	4	Medium	Infil stains/Cracks
15			Slade Drive	172 to 173	135.1	0	High	Fracture/Infil stain
15			Rock Lake Road	173 to 165	202	0	High	(2) Infil runners/Infil stain

16		Dellwood Drive	165 to 164	280.8	2	High	70' to 80' >40% belly/Infil dripper, weeper & runner
17		Dellwood Drive	156 to 199	192	0	High	Infil runners/Infil stains
18A		Sheridan Avenue	184 to 190	302.1	0	High	Infil dripper/Infil stains
18A		Marcy Boulevard	45 to 40	337	2	High	Multiple fractures/Broken pipe
18A		Marcy Boulevard	40 to 39	239.6	2	High	Multiple fractures/Broken pipe
19		Marcy Boulevard	39 to 38	122.3	0	High	Multiple fractures/Infil runner/Infil gusher
19		Marcy Boulevard	38 to 36	277.9	2	High	Multiple fractures/Infil runners
19		Marcy Boulevard	36 to 33	340.7	1	High	Multiple fractures/Infil runners/Broken pipe
19		Eastern Fork	33 to 31	297.5	1	High	Multiple fractures/Infil runners
19		Eastern Fork	31 to 29	216.3	1	High	Multiple fractures/Infil runners
19		Eastern Fork	29 to 29A	8.3	0	High	Fracture/Infil runner
19		Eastern Fork	29A to 26	279	1	High	Multiple fractures/Infil runners/Infil gushers
20		Hickory Tree Road	75 to 76	275	2	High	Multiple fractures/Broken Pipe 8' from MH 76/Multiple cracks
22		Willow Creek Drive	135 to 134	273.5	2	High	Multiple fractures/Multiple cracks
25		Riverbend Boulevard	285 to 286	148.2	0	High	Infil weepers/Fracture
25		Riverbend Boulevard	283 to 284	229	1	High	Infil runner
25		Riverbend Boulevard	304 to 303	229.8	1	High	Infil weeper /Infil runner
26		Riverbend Boulevard	235 to 236	244.1	1	Low	17.2' broken pipe
26		Riverbend Boulevard	238 to 241	355	3	High	Infil runners/Sand in line
26		Riverbend Boulevard	241 to 243	347.3	2	High	Infil runners/Infil stains
26		Riverbend Boulevard	244 to 243	184.2	1	High	Multiple infil stains
26		Laurel Drive	245 to 244	296.8	2	High	Infil runner/Infil stains
27		Riverbend Boulevard	244 to 250	261.8	1	High	Multiple cracks throughout/staining/Infil runner
28		Riverbend Court	263 to 262	141.3	0	High	Infil runners
28		Riverbend Boulevard	262 to 261	153.5	0	Medium	Infil runners
28		Riverbend Boulevard	288 to 289	379.8	3	High	Infil runner/Infil stain
30		Sweetwater Island Circle	278 to 279	332.2	2	High	Hole in pipe/Infil gusher
34		Royal Palm Court	333 to 334	245.4	0	High	Multiple cracks/Fracture/Broken pipe
34		Royal Oaks Circle	334 to 335	175.8	0	High	Multiple cracks/Broken pipe
34		Blue Lake Drive	336 to 337	344.1	3	High	Multiple cracks/Infil runner/Infil Stains/Fracture
34		Blue Lake Drive	353 to 355	271.6	3	High	Cracks/Infil staining
34		Blue Lake Drive	355 to 356	296	1	High	Multiple infil runners/Infil stains
37		Devonshire Boulevard	343 to 348	193.4	0	High	Multiple longitudinal cracks/Infil runner
38		Blue Lake Drive	379 to 378	283.7	2	High	Infil stains/Infil runner
38		Blue Lake Drive	361 to 360	266.8	3	High	Multiple cracks/Infil staining/Fracture
39		Valley Drive	399 to 400	123.3	0	High	Infil runner/Infil dripper/Multiple cracks
39		Valley Drive	400 to 401	126.1	1	High	Multiple cracks/Infil runner
40		Green Lake Circle	378 to 381	305.1	2	Low	Infil staining
40		Green Lake Circle	381 to 382	378.6	3	High	Infil weepers/Infil runners/Infil stains/Separated joint
40		Countryside Drive	370 to 369	278.8	3	High	Several infil stains/Infil runner
41		Blue Lake Drive	357 to 360	258.2	0	High	Multiple cracks/Infil stains
41		Green Lake Drive	360 to 362	114.5	0	High	Multiple cracks/Infil runners
41		Sweetwater Boulevard	382 to 385	256.5	2	High	Infill runner/Multiple cracks.
44		Valley Drive	401 to 402	275.7	4	High	Sand coming from lateral/Break in tap at 98.5' needs to be installed correctly to line/Infil runners/Infil gusher
45		Sweetwater Boulevard	386 to 385	244.8	2	High	Infil gusher/Broken pipe at two locations

Partial Liners

DVD #	Lift Station	Subdivision	Street	Location	Length	Short Liner Cost	Line Run Cost	Lateral Cost	Laterals	Line Size	Corrective Action	Priority Rank	Comments
2			Cedarwood Circle	50 to 49	136				1	8	6/8 liner at MH 49	High	Broken pipe soil visible 3' from MH 49
16			Ardsdale Court	162 to 163	256.4				4	8	4/8 liner	High	254.1' 2' from MH 162/Infil runner
17			Sheridan Avenue	199 to 196	404.4				3	8	6/8 liner	High	Infil runner at 401.3 from MH 199
17			Sheridan Court	197 to 196	197.7				4	8	4/8 liner	High	Infil stain/Circumferential crack at 195.9' from MH 197
17			Sheridan Avenue	194 to 193	175.2				0	8	4/8 liner	High	Infil weeper 1' inside of MH 193
17			Slade Drive	177 to 179	315.2				1	8	4/8 liner	High	Infil runner at 312.5' from MH 177
17			Slade Drive	179 to 181	301.7				0	8	4/8 liner	High	Infil runner at 1' inside of MH 179
18			Sheridan Avenue	193 to 192	140				1	8	4/8 liner	High	Infil gusher 1.0' inside MH 193
18			Sheridan Avenue	182 to 183	139.4				2	8	(2) 4/8 liners	High	Infil stains just inside each MH
18			Sheridan Avenue	183 to 184	91.1				2	8	4/8 liner	High	Infil runner at 88.8' at MH 184
18A			Sheridan Avenue	191 to 192	388.2				2	8	4/8 liner	High	Infil runner 1.0' inside of MH 191
24			Shadow Bay Boulevard	212 to 214	112.8				1	8	8/8 Short liner	High	Hole in pipe at 107.7'
26			Riverbend Boulevard	236 to 237	259.6				2	8	4/8 liner	High	Broken pipe 257.7' at MH 237
26			Laurel Drive	239 to 238	319.1				3	8	4/8 liner/Remove roots and apply product	High	Broken pipe 316.7' at MH 238
27			Riverbend Boulevard	250 to 252	273.4				1	8	(2) 4/8 liners	High	Infil runner offset at 2.0' from MH 250/Infil runner at 270.9 at MH 252
42			Sweetwater Boulevard	388 to 387	348.5				2	8	6/8 liner	Medium	Broken pipe at 344' outside of MH 387 (drop connection)

Root Kill Application Sites

Subdivision	Street	Location	Length	Short Liner Cost	Line Run Cost	Lateral Cost	Laterals	Line Size	Corrective Action	Priority Rank	Comments
	Devonshire Blvd.	4 to 5	264.4				1	8	Remove roots and apply product	High	Significant root intrusion
	Cambridge Court	13 to 16	304.5				1	8	Remove roots and apply product	High	Medium roots found at several locations throughout
	Poplar Place	20 to 19	224.3				0	8	Remove roots and apply product	High	Medium roots found at several locations throughout
	Aimee Place	42 to 43	90.5				1	8	Remove roots and apply product	High	Medium roots found at several locations throughout
	Sweetbriar Branch	19 to 21	296.3				2	8	Line run/Remove roots and apply product	Medium	Roots in lateral at 172.5'/Multiple fractures and cracks
	Stag Ridge Drive	98A to 98	293.2				2	8	Remove roots and apply product	High	Medium roots found at several locations throughout
	Stag Ridge Drive	98 to 94	336.5				1	8	Dig/Remove roots and apply product	Medium	Belly 50% 284' to 295"
	Eastern Fork	97 to 96	380.7				6	8	Dig or line/Apply root kill product	High	Fracture at 278.3'/Roots/Soil visible
	Eastern Fork	95 to 94	188.6				1	8	Line run/Apply root kill product	Medium	Fracture/Cracks/Roots
	Glendale Drive	152 to 151	175.1				2	8	Remove roots and apply product	High	Root intrusion throughout run
	Willow Creek Drive	135 to 134	273.5				2	10	Line run/Remove Roots	High	Multiple fractures/Multiple cracks
	Tollgate Trail	127 to 123	327.4				2	10	Remove roots and apply product	High	Roots throughout run
	Tollgate Trail	91 to 100	163.5				0	10	Remove roots and apply product	High	Roots throughout run
	Western Fork	100 to 102	290.1				2	10	Remove roots and apply product	High	Roots throughout run
	Western Fork	102 to 103	108				0	8	Remove roots and apply product	High	Roots throughout run
	Riverbend Boulevard	237 to 238	198				0	8	Remove roots and apply product	Medium	Roots in several locations
	Laurel Drive	239 to 238	319.1				3	8	4/8 liner/Remove roots and apply product	High	Broken pipe 316.7' at MH 238
	Riverbend Boulevard	242 to 241	119.1				0	8	Dig and repair/Remove roots and apply product	High	Broken pipe/Offset at 115.9'
	Blue Lake Court	352 to 353	118.8				1	8	Remove roots and apply product	Medium	Roots throughout run
	Squirrel Trail	395 to 397	275				2	8	Dig and repair/Apply root kill product	Medium	Broken pipe at 6.8'/Broken pipe at 26.7'
	Fox Ridge Run	103 to 104	223.2				2	10	Remove roots and apply product	High	Roots throughout run
	Fox Ridge Run	104 to 105	244.5				2	10	Remove roots and apply product	High	Roots throughout run

Manhole Rehab List

Subdivision	Street	Location	Length	Short Liner Cost	Line Run Cost	Lateral Cost	Laterals	Line Size	Corrective Action	Priority Rank	Comments
	Shadow Bay Boulevard	208 to 209	350.5				7	8	Repair MH 209	High	Infiltration
	Nighthawk Court	230 to 231	88.6				2	8	Repair MH 230	High	Infil gusher at invert
	Nighthawk Court	228 to 227	287.2				5	8	Repair MH 228	High	Infil gusher at invert
	Shadow Bay Blvd. South	232 to 209	250.6				4	8	Repair MH 250/Lateral Investigation	High	Infiltration at invert/Camera lateral at 232.7'
	Riverbend Boulevard	257 to 260	203.2				2	8	Repair bench at MH 260	High	Infil runner
	Riverbend Boulevard	290 to 291	345.4				2	8	Repair MH 290 and MH 291	High	Infil leak in structures
	Riverbend Boulevard	265 to LS	18.4				0	8	Repair invert in LS	High	Infil leak around invert
	Valley Drive	398 to 399	137.6				2	8	Repair MH 398	High	Infil around pipe at invert
	Valley Drive	400 to 401	126.1				1	8	Line run/Repair MH 401	High	Multiple cracks/Infil runner
	Sheridan Avenue	192 to LS	38.3				0	8	Repair invert at MH 192	High	Infil gusher

Dig & Repair Sites

DVD #	Lift Station	Subdivision	Street	Location	Length				Laterals	Line Size	Corrective Action	Priority Rank	Comments
4			Aspen Place	30 to 29A	197.9				3	8	Dig and Repair	High	50% Belly from 192 -198'/Offset joint/Several cracks
4			Sweetbriar Branch	27 to 26	261.3				1	8	Dig	High	Belly 248' - 257' /Broken pipe/Soil visible
4			Sweetbriar Branch	16 to 17	216.1				3	8	Dig	Medium	Belly173' -180' />30% pipe
4			Sweetbriar Branch	17 to 17A	115.3				2	8	Dig/Replace	Medium	CIP 4' to 14.5'/Heavy tuberculation
9			Stag Ridge Drive	98 to 94	336.5				1	8	Dig/Remove roots and apply product	Medium	Belly 50% 284' to 295"
9			Eastern Fork	97 to 96	380.7				6	8	Dig or line/Apply root kill product	High	Fracture at 278.3'/Roots/Soil visible
9			Eastern Fork	94 to 91	240.1				1	8	Dig	Low	HDD pipe through main from 91' to 94' (62.8' from MH 91)
9			Willow Tree Lane	80 to 79	283.2				2	10	Clean or dig	Medium	282.9' CIP to MH heavily tuberculated
11			Meadow Creek Cove	145 to 144	315.8				2	8	Dig/Line run	High	Fracture/Soil visible/Concrete in pipe at 55.3'
16			Ardsdale Court	163 to 164	200.1				1	8	Dig	High	78' to 85' >50% belly
16			Dellwood Drive	165 to 164	280.8				2	8	Dig/Line	High	70' to 80' >40% belly/Infil dripper, weeper & runner
17			Sheridan Avenue	196 to 194	300.9				2	8	Dig	High	285' to 300' belly >50%/Joint separated
25			Riverbend Boulevard	283 to 282	388.1				6	10	Dig and repair	High	Break in tap at 172.3' leaking/Hole at 177'/Offset at 246.0' 50% belly
25			Riverbend Boulevard	294 to 293	397.4				6	10	Dig and repair	High	Break in lateral leaking at 295.6'
26			Riverbend Boulevard	242 to 241	119.1				0	8	Dig and repair/Remove roots and apply product	High	Broken pipe/Offset at 115.9'
39			Squirrel Trail	395 to 397	275				2	8	Dig and repair/Apply root kill product	Medium	Broken pipe at 6.8'/Broken pipe at 26.7'
44			Valley Drive	403 to 402	31.5				1	8	Dig & Repair/Remove concrete from invert at MH 403	High	Broken pipe at 30.3'/Infil gusher
45			Sweetwater Boulevard	387 to 386	247.3				2	10	Dig and Repair	Medium	Belly at 80' to 100' >50%/Fracture at 117.5'



17988 Edison Avenue
Chesterfield, MO 63005
www.insituform.com

Andrew Costa
Business Development Manager

Phone: (813) 309-0385
Fax: (813) 627-0006
Email: acosta@insituform.com

June 10, 2016

AAJA-SREZNH

Bryan K. Gongre
Utilities Inc. of Florida
200 Weathersfield Avenue
Altamonte Springs, FL 32714

Re: Sanlando I&I Deficiency Corrections – Phase 2

Dear Mr. Gongre,

Insituform Technologies, LLC, ("ITLLC") is pleased to provide the following proposal to **Utilities Inc. of Florida**, hereinafter referred to as "Customer", for the scope of work detailed below for the above-referenced Project.

INSITUFORM SCOPE OF WORK / RESPONSIBILITIES

ITLLC will provide the following:

1. Mobilization and demobilization of personnel, equipment, and materials to and from the Project site. The price presented is based upon one (1) instance of mobilization and demobilization.
2. Install **polyester** resin impregnated CIPP liner in accordance with ASTM F1216 or F1743 using either water or air/pull-in/steam, at the discretion of ITLLC. We have not included any costs associated with the disposal of inversion water.
3. Internal reinstatement of all service connections as directed by the Customer or their representative.
4. CCTV inspection of the pipe before and after the lining is complete.
5. Standard ITLLC one-year warranty from date of installation, excluding any required warranty TV inspection and/or testing.
6. Standard insurance coverage with the following limits:
 - General Liability: \$2,000,000 per occurrence/\$4,000,000 aggregate
 - Auto: \$2,000,000 Combined Single Limit
 - Workers Compensation: Statutory with \$1,000,000 Employer's LiabilityThe above insurance shall not include Primary and Non-Contributory Coverage and ITLLC shall not provide a Waiver of Subrogation endorsement.

NOTE: Modifications to the Scope of Work/Responsibilities of ITLLC may result in a change in price and/or duration.

ASSUMPTIONS AND QUALIFICATIONS

ITLLC's Proposal Pricing is based upon the following assumptions and clarifications:

1. ITLLC assumes the work will be completed during dry weather conditions.
2. Quantities are estimated. Customer shall be invoiced for actual quantities at the above unit prices.
3. ITLLC is an open-shop company and shall not be subject to any union requirements or agreements and will not enter into any Project Labor Agreement or any such similar agreement for this Project. Where

required by the Contract Documents, ITLLC will pay the Prevailing Wages then in effect for the Project and will submit Certified Payroll Reports in a timely manner.

PROPOSAL PRICING

ITLLC proposes the following pricing for the scope of services described herein:

Item	Description	Unit	Qty	Unit Price	Total Price
1	CIPP 8"	LF	18,168	\$23.40	\$425,135.88
2	CIPP 10"	LF	5,630	\$26.60	\$149,750.02
3	Reinstate and Grout Laterals	LF	164	\$512.30	\$84,017.20
4	Manhole Rehab (Assume 4' dia x 5' deep avg)	VF	50	\$222.10	\$11,105.00
5	Manhole Invert Repairs	EA	3	\$370.20	\$1,110.60
6	LS Repairs (Assume 6' dia)	VF	15	\$481.30	\$7,219.50
7	Short Liners	EA	16	\$1,692.50	\$27,080.00
8	Root Removal	LF	5,212	\$2.60	\$13,551.20
	TOTAL				\$718,969.40

EXCLUSIONS:

The following items are excluded from ITLLC's above Pricing and Scope of Services / Responsibilities stated in this Proposal. These items, if necessary, applicable or otherwise required, shall be furnished by Customer, at Customer's direction and at no cost to ITLLC or may, upon mutual agreement in writing between ITLLC and Customer, be provided by ITLLC at an additional cost:

1. Permits, licenses and construction easements.
2. Manual operation of any pumping and/or metering stations.
3. Environmental/erosion controls (i.e., hay bales, silt fence etc.) that may be required adjacent to manholes, access points and/or water supply hose.
4. Access to and use of fire hydrants and/or sufficient water supply (within 500 ft. of the installation site) to complete flushing and CIPP installation.
5. Burial and/or raming of discharge or bypass hose/pipe.
6. External service reconnections.
7. Obstruction removal (calcium, concrete, mineral deposits, etc.) and/or protruding tap removal.
8. Point repairs.
9. Bypassing of services or laterals.
10. Repair of pipe damaged during any industry standard high-pressure jet cleaning operations, preparation or lining and any subsequent cleaning necessary to remove debris that has fallen into the pipe as a result of any such collapse or repair.
11. Directives setting forth which service connections must be reinstated prior to final CCTV inspection.
12. Locations of and access (of ITLLC equipment and/or personnel) to all manholes associated with the project and as required by ITLLC's work plan.
13. Equivalent pipe diameter access from the invert to the street level. This may include removal of the frame, cover and/or cone section of the liner installation manhole(s) such that the opening at the street level is no less than equivalent to the pipe diameter.
14. Payment and Performance bonds. If payment and performance bonds are required, add 2.5% to the total Project cost.
15. Removal and disposal of any hazardous or toxic materials encountered during the Project.

16. Holiday work, rush delivery or adverse weather work (as defined by ITLLC).
17. Complete independent testing of liner samples from each installation. Will be provided if required per specifications.
18. Certified Professional Engineer stamped designs. Will be provided if required in specifications.
19. State and local sales and/or use taxes.
20. Additional premiums for special insurance coverage(s) specific to this project.

GENERAL TERMS AND CONDITIONS:

1. ITLLC's Proposal is conditioned upon Customer's acceptance of the terms and conditions set forth herein. Customer's ordering of material or services by purchase order or otherwise, shall be treated as Customer's acceptance of such terms and conditions. All terms and conditions in Customer's purchase order or in any other communication to ITLLC, whether submitted previously or subsequently to this Proposal, which are additional to or inconsistent with the terms and conditions of this Proposal are not binding upon ITLLC and shall not be applicable to this Proposal, except to the extent accepted in writing by ITLLC. Any change or amendment to this Proposal, to be binding upon ITLLC, must be accepted in writing by ITLLC.
2. ITLLC has based its Proposal on a nominal wall thickness for the Insitutube as shown in the price. This is based on the best available information at the time of this Proposal. Existing pipe deterioration in excess of the conditions assumed, ground water loads in excess of those assumed, or other loads or conditions may increase the recommended thickness for all or portions of the work. Final recommendations may be submitted to you following the completion of the preliminary TV phase of the project. Stated prices are subject to adjustment if design changes are agreed upon.
3. Specific service connections will be reconnected only when written directions are received from the Customer. The Customer will indemnify and hold ITLLC harmless from all claims arising from backups and other effects of such actions or inaction's from services not opened at the owner's request. In the event that Insituform is unable to locate or reconnect a service lateral internally, the Customer will externally reconnect the service at no cost to ITLLC.
4. This Proposal is valid for 30 days, unless otherwise extended by ITLLC.
5. PAYMENT: Payment is due in full, without exception or retention, within 30 days of the date of the invoice. Monthly partial progress payments may be requested for the value of work in progress or completed, including materials delivered to the Project site. Payments due and unpaid shall bear interest at the rate of 1½ % per month from the date payment is due. Should ITLLC incur costs or expenses to collect monies claimed due hereunder from Customer, Customer shall pay to ITLLC, in addition to all other sums due to ITLLC, attorneys' fees, consultants' costs, and other expenses and costs, including but not limited to litigation and/or arbitration expenses and arbitrator compensation, in connection therewith.
6. ITLLC is not a union shop and shall not be subject to any union requirements or agreements or project labor agreements. On public projects where required, ITLLC will pay prevailing wages as identified by Customer prior to submission of this Proposal.
7. Should ITLLC learn of any information that causes ITLLC concern about Customer's ability to pay and/or perform any of its obligations owing to ITLLC under Proposal, ITLLC has the right to request Customer to provide ITLLC adequate assurance of due performance on such terms as are deemed reasonable by ITLLC when acting in good faith, including the right to await full or partial payment from Customer as required by ITLLC. In such an instance, ITLLC may suspend its performance pending ITLLC's receipt of adequate assurance of due payment and/or performance in a manner found acceptable by ITLLC.
8. ITLLC shall not be responsible for any inability to perform under this Proposal or for any loss or damage due to delays or disruptions resulting directly or indirectly from, or contributed to by, any act of God, action or omission of Customer, act of civil or military authorities, fire, strike or other labor dispute, accident, flood, adverse weather, war, riot, terrorism, transportation delay, inability to obtain material or fuel supplies, or any other circumstances beyond ITLLC's reasonable control, whether similar or dissimilar to any of the foregoing. If ITLLC crews are delayed on site for reasons beyond the control of ITLLC, then ITLLC's standby time will be invoiced to Customer at an hourly rate of **\$1,200** per hour.
9. Claims for Changed, Concealed or Unknown Conditions: If conditions are encountered at the site which are (1) materially changed; (2) subsurface or otherwise concealed physical conditions which differ materially from the information upon which this Proposal is based or (3) unknown physical conditions of

an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for herein, then the Proposal Price and Time shall be equitably adjusted to address the conditions, where prior written notification and approval of claims exist.

10. LIMITED WARRANTY: ITLLC WARRANTS TO CORRECT ANY DEFECT IN THE MATERIALS OR SERVICES PROVIDED BY ITLLC WHICH ARE BROUGHT TO THE ATTENTION OF ITLLC IN WRITING WITHIN ONE YEAR FOLLOWING COMPLETION OF ITLLC'S WORK, PROVIDED CUSTOMER AFFORDS ITLLC SUITABLE ACCESS AND WORKING CONDITIONS TO ACCOMPLISH SUCH CORRECTION.
11. Except for the express warranty forming a part of this Proposal, ITLLC DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY. ITLLC'S LIABILITY TO CUSTOMER, WHETHER IN CONTRACT, WARRANTY, TORT OR OTHERWISE, IS LIMITED TO THAT PERMITTED UNDER THIS PROPOSAL, ITLLC Shall NOT BE LIABLE TO CUSTOMER FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION DAMAGES FOR LOSS OF USE, LOST TIME, DELAY, DISRUPTION, INTERFERENCE, LOSS OF PRODUCTIVITY, INCONVENIENCE, LOST INCOME, OR LOST PROFITS.
12. This agreement may be terminated by either party upon seven (7) days written notice should the other party fail substantially to perform in accordance herewith through no fault of the party initiating the termination.
13. The terms and conditions of this Proposal form the entire agreement between the parties. All other terms, proposals, negotiations, representations, recommendations, statements or agreements, whether made or issued contemporaneously or previously, are excluded from and are not a part of this Proposal, and have no binding or enforceable effect. This Proposal, if accepted, shall be binding on the parties and their respective successors and assigns.

The information contained in this letter is proprietary to Insituform Technologies, LLC. and shall be retained by the recipient in confidence and shall not be published or otherwise disclosed to third parties without the express written consent of Insituform Technologies, LLC. The foregoing shall not preclude the use of any data which (i) was in its possession without restriction as to use prior to receipt as proprietary of the same or similar data from Insituform Technologies, LLC., (ii) is or becomes available from a public source on or after such receipt from Insituform Technologies, LLC. or (iii) is obtained by the recipient from a third party not under obligation of confidentiality or other restriction with respect to use.

Please do not hesitate to contact me with any further questions.

Very truly yours,

Insituform Technologies, LLC.



Andrew Costa
Business Development Manager

Accepted By: _____
(signed)

(print name)

Date: _____

Title: _____



201 East North Street, Suite 214
Greenville, SC 29601

10200 US Highway 92 East
Tampa, FL 33610

www.vac-vision.com

To: Utilities Inc	Contact: Bryon Gongre
Address: 200 Weathersfield Ave Altamonte Springs, FL 32714 USA	Phone: 800.272.1919
Project Name: Sanlando Utilities II Deficiency Corrections Ph 2	Bid Number: 16-229
Project Location: Sanlando Utility Basin, Orlando, FL	Bid Date: 6/10/2016
Addendum #: 0	

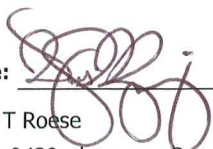
Item #	Item Description	Estimated Quantity	Unit	Unit Price	Total Price
1	Mobilization	1.00	LS	\$7,000.00	\$7,000.00
2	Root Removal - 8"-10"	5,214.00	LF	\$6.00	\$31,284.00
4	CIPP - 08"	18,168.00	LF	\$31.00	\$563,208.00
5	CIPP - 10"	5,629.00	LF	\$39.00	\$219,531.00
6	Lateral Reinstatement / Grouting	167.00	EACH	\$800.00	\$133,600.00
7	Rehab Manhole	10.00	EACH	\$1,250.00	\$12,500.00
8	8" Sectionals	18.00	EACH	\$1,500.00	\$27,000.00

Total Bid Price: \$994,123.00

Notes:

- Liner installations - 4-5 hrs Each
Job Completion - 150-180 Days
Certified MTC (Insituform) Materials Installer
Certified SewperCoat Applicator

We will only use 1 subcontractor on the job(GROUTING) All other work to be performed by our own forces

<p>ACCEPTED: The above prices, specifications and conditions are satisfactory and are hereby accepted.</p> <p>Buyer: _____</p> <p>Signature: _____</p> <p>Date of Acceptance: _____</p>	<p>CONFIRMED: VacVision Environmental LLC</p> <p>Authorized Signature:  _____</p> <p>Estimator: Benjamin T Roese (813) 918-0439 benroese@vac-vision.com</p>
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Job Name **Sanlando Ph.2**

BOYKIN CONSTRUCTION

Attention:



16 W. Center Street * PO Box 38
 linneola, Florida 34755
 352) 394-5993 phone (352) 394-8456 fax

Job #:

Date: 6/10/2016

		Description	Quantity	UM	Unit Price	Total Cost
REPAIR #	BID TOTAL	Street	Location			
1	\$79,950.25	Aspen Place	30 to 29A			
2	\$72,010.50	Sweetbriar Branch	27 to 26			
3	\$52,642.75	Sweetbriar Branch	16 to 17			
4	\$52,354.89	Sweetbriar Branch	17 to 17A			
5	\$55,895.50	Stag Ridge Drive	98 to 94			
6	\$39,790.62	Eastern Fork	97 to 96			
7	\$49,250.35	Willow Tree Lane	80 to 79			
8	\$25,950	Meadow Creek Cove	145 to 144			
9	\$46,222.90	Ardsdale Court	163 to 164			
10	\$48,382.56	Dellwood Drive	165 to 164			
11	\$71,225.45	Sheridan Avenue	196 to 194			
12	\$49,682.65	Riverbend Boulevard	283 to 282			
13	\$39,850.50	Riverbend Boulevard	294 to 293			
14	\$44,321.40	Riverbend Boulevard	242 to 241			
15	\$57,650	Squirrel Trail	395 to 397			
16	\$39,959.90	Valley Drive	403 to 402			
17	\$95,750.60	Sweetwater Boulevard	387 to 386			
TOTAL BID	\$920,890.82					



Bid Notes:

Permits and Bonds not included.
 Brick Wall & Gates around Lift Station Site not included.

This proposal is subject to acceptance within _____ days and is void thereafter at the option of the undersigned:

Signature: _____

Acceptance of Proposal

The above prices and conditions are hereby accepted. You are authorized to do the work as specified.

Signature: _____

Print Name: _____

Date: _____



P.O. Box 521279
Longwood, FL 32752-1279
Phone: 407-834-8271
Fax: 407-834-3859

CU C055705
CB C045652
CONT. V 13942900011997

June 10, 2016

Bryan Gongre
Utilities, Inc.
200 Weathersfield Ave.
Altamonte Springs, Fl. 32714-4027

Re: Sanlando Ph. 2 R&R Bid Request 051616

Dear Mr. Gongre,

We propose to furnish material, labor and equipment to make the repairs as called out in the attached spread sheet for the **Lump Sum of \$892,000.00**. Please call if you have any questions.

Sincerely,

Rick Bullington

TRAVERSE GROUP, INC.

PO BOX 121754
CLERMONT, FL 34712

Estimate

Date	Estimate #
6/30/2016	2016UI31

Name / Address
UTILITIES, INC. OF FLORIDA 200 WEATHERSFIELD AVENUE ALTAMONTE SPRINGS, FL 32714

Project
SANLANDO SEWER REPAIRS...

Description	Qty	Units	Rate	Total
MH 79-80 112 WILLOW TREE LANE \$ 39,375.00				
MH 98-94 135 STONEY RIDGE CT \$ 52,675.00				
MH 97-96 102 EASTERN FORK \$ 42,850.00				
MH 26-27 117 EASTERN FORK \$ 67,450.00				
MH 30-29A 104 ASPEN PL \$ 71,250.00				
MH 395-397 100 SQUIRREL TR \$ 53,000.00				
MH 403-402 305 VALLEY DR \$ 38,363.00				
MH 387-386 302 SWEETWATER BLVD \$ 86,200.00				
MH 242-241 307 RIVERBEND BLVD \$ 43,250.00				
MH 283-282 730 RIVERBEND BLVD \$ 48,700.00				
MH 17-17A 72 SWEETBRIAR BRANCH \$ 54,450.00				
MH 16-17 66 SWEETBRIAR BRANCH \$ 51,450.00				
MH 145-144 107 MEADOWCREEK COVE \$ 33,750.13				
MH 163-164 106 DELLWOOD DR \$ 38,050.00				
MH 165-164 106 DELLWOOD DR \$ 42,050.00				
MH 196-194 SHEHDAH AVE \$ 66,800.00				
MH 294-293 854 RIVERBEND BLVD \$ 25,250.00				
Total				\$854,913.13