Utilities, Inc.

ADD-CHANGE FORM

New Project or Budget Change?	New Project	**Assigned Project #:**	2013093
Requested by:	Bryan K. Gongre *Project Manager / Area Manager*	**Date:**	8/25/2013

Project Name:	Sanlando I&I Investigation	
Company:	255	Sanlando Utilities Corp
Business Unit:	255101	Sanlando Utilities Corp S
Project Owner:	Bryan K. Gongre	
Project Manager:	Bryan K. Gongre	
Start Date:	9/2/2013	Q3 2013
Estimated End Date:	11/29/2013	Q4 2013
BU Type:	Sewer	
Budget Owne	Rick Durham	02
Region:	Southeast	07
State:	FL	
Project Type:	Cost Reduction	
Will project replace/retire any assets:	No	

Previous Budget:	$74,850
Change Request:	
Total Project Budget:	**$74,850**

Object Account(s) to which project will be closed:	1290	Struct/Imprv Coll Plt
		select from dropdown list
		select from dropdown list
		select from dropdown list
		select from dropdown list

Go to Reference List

Description:

Clean and televise approximately 49,900 LF of portions of the sanitary gravity collection system within the Sanlando service area.

Utilities, Inc.

JUSTIFICATION / ALTERNATIVES

Justification and Benefits:

The Wekiva WWTF typically treats an average of 2.0 MGD of sanitary flow. As a result of recent 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 likley 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. There is approximatley 49,900 LF of VCP sanitary gravity main that need to be examined under a first pass approach. The investigation will allow us to identify sources of I & I and develop a cost for the repair effort to make corrections.

Alternatives Considered:

This approach is the most cost effective means of beginning the procees in making repairs. One alernative would be to scale back the LF of the investigation to spread out the cost but doing so would translate into less of an opportunity to decrease O & M expense in a shorter time frame once repairs have been made.

QUOTATION

AMERICAN IN-LINE INSPECTION, Inc.

415 Timaquan Trail
Edgewater, FL 32132

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

Proposal Submitted To:	Utilities Inc. of Florida	Phone: 800-272-1919 Ext. 1360	Date: 08-19-13
Street	200 Weathersfield Ave.	Job Name:	Sanlando I & I, Vac & CCTV
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 & video crew to clean/desilt, CCTV & Smoke Test existing/active 8" VCP 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 LF Rate of 2000 + LF of Various Existing Sanitary Sewer Pipe @ $0.75 per LF

CCTV/Video LF Rate of 2000 + LF of Various Existing Sanitary Sewer Pipe @ $0.75 per LF

Smoke Testing LF Rate of 6000 + LF of Various Existing Sanitary Sewer Pipe @ $0.25 per LF

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 environmental disposal charges will apply.

** Please note that any downtime out of our control will be billed at an hourly rate of $175.00 per hour. Example – Waiting on MOT to be moved, etc.
** Please note that Heavy Cleaning will be billed at $175.00 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: 08-19-13

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: _____

SANLANDO I & I DEFICIENCY CORRECTIONS PHASE 1

Street	Location	Length	Laterals	Corrective Action	Priority Rank	Comments
Chelsea Road	615 to 635	102.2	0	Remove roots and apply product	High	Large Fox tail at 102.0'
Chelsea Road	635 to 675	280.3	1	Line run	Low	Multiple cracks/No infiltration signs
Chelsea Road	615 to 635	101.7	2	Remove roots and apply product	High	Minimal Cracks
Preston Road	675 to 595	328.3	1	Line run	Medium	Cracks throughout/No staining or infil/Belly in line at 50.0' to 60.0'
Trnity Ct.	705 to 595	281.8	3	Line run/Remove roots and apply product	Medium	Multiple cracks/No infiltration signs/Fine roots
Preston Road	595 to 565	309.6	1	Line run/Remove roots and apply product	Low	Minor staining/Cracks are minimal
Tudor Ct.	690 to 565	202.6	2	Line run	Low	No staining/Minimal cracks/ (2) Fractures
Preston Road	565 to 555	138.9	0	Line run	Low	Multiple longitudinal cracks/No infil or staining
Preston Road	555 to 550	291.6	2	Line run	High	Infil/Cracks/(1) fracture
Preston Road	Harbor Isle Pond to 485	149.3	0	Remove roots and apply product	High	Roots at 149.3' and in Harbor Isle Pond MH
Preston Road	480 to 525	354.3	3	Line run	High	Multiple cracks and infil/Leak at MH 525 bench
Preston Road				Repair MH 525 Bench	High	
Preston Road	525 to 550	194.2	2	Line run/	High	Multiple infil locations
Preston Road				Dig and repair bellys	High	Belly >3" 177.0' to 186.0'
Cornwall Ct.	480 to 520	310.6	4	Line run	High	Multiple infil locations and cracks with staining/(1) fracture
Cornwall Ct.	520 to 505	243	3	Line run	High	Multiple infil locations/Belly >3" 22.0' to 43.0'
Devonshire Blvd.	565 to 550	215.2	2	Remove roots and apply product	High	Multiple cracks/No infil or staining
Devonshire Blvd.	550 to 525	145.4	1	Line run	High	Multiple infil locations and cracks with staining
Devonshire Blvd.	525 to 505	325.2	3	Line run	High	Multiple infil locations and cracks with staining
Devonshire Blvd.	505 to LS	91.5	0	2/8 Liner	Medium	Infil at 77.1' where change from VCP to DIP occurs
Shellie Ct.	104 to 101	164.8	1	Repair MH 104 invert	High	Leak at downstream invert in MH 104/Sand and infil
Forest Park Cir.	320 to 101	251.5	2	4/8 Liner or dig & repair	High	Leak at 154.1' at lateral/Possibly dig and repair
Forest Park Cir.	405 to 304	212.6	2	Repair MH 405 & MH 304 Inverts	High	Leak at downstream invert in MH 405 and upstream invert in MH 304
Forest Park Cir.	304 to 409	88.5	1	Lateral investigation	High	Possible abandoned lateral at 67.5'/Sand in lateral
Forest Park Cir.				Repair invert in MH 409	High	
Cumberland Cir. W.	228 to 126	387.3	2	2/8 Liner	High	Hole in top of pipe at 8.2' with roots
Cumberland Cir. E.	126 to 120	221.8	2	Line run/Remove roots and apply product	Low	Mutiple Cracks/Roots/No staining
Berkshire Circle W.	224 to 218	197.5	1	10/8 Liner	High	Leak at 46.9' and 54.6'
Berkshire Circle E.	110 to 114	167	1	(2) 2/8 liner/Remove roots and apply product	High	Leak at 18.0' and 62.9' and 105.6
Berkshire Circle E.	124 to 120	200.6	2	Line run	High	Leak at 96.9' and 116.3' and 146.0' and 184.1'
Cumberland Cir. W.	216 to 212	130.1	0	Line run	Medium	Infiltration stains at 4 locations
Cumberland Cir. W.	212 to 204	207.3	1	Line run	Medium	Infiltration stains at 3 locations/1 leak at 80.7'
Cumberland Cir. E.	129 to 124	236.1	2	Line run	High	Multiple cracks/1 infiltration stain and 1 leak
Cottesmore Cir. E.	118 to 124	121.7	0	Line run	High	Multiple cracks /1 fracture/ Staining
Cottesmore Cir. E.	114 to 118	209	1	Line run	High	Multiple cracks/Staining
Cottesmore Cir. E.				Dig and repair belly	High	Belly at 88.0' to 102.0' >3"
Cottesmore Cir. E.	110 to 114	94.2	0	Line run	High	Multiple cracks / Staining

Cottesmore Cir. E.	100 to 110	312.6	4	Line run	High	Multiple cracks / Staining
Cottesmore Cir. W.	208 to Median 3	312.9	2	MH 208 repair ring & cover	High	
Cumberland Cir. E.	Median 5 to 106	374.8	4	Dig and Repair belly	High	Belly beginning at 270.0' to 330.0' >3"
Cumberland Cir. E.	106 to 110	115.2	0	Line run	Medium	Multiple cracks/Some minor staining/Leak at 104.9'
Cumberland Cir. E.	110 t0 116	222.3	1	Line run	Medium	Multiple cracks/minor staining
Cottesmore Cir. W.	212 to 208	208.6	1	Line run	Medium	Infiltration stains at 3 joints
Cove Lake Drive	111 to 107	239.3	3	Line run	Low	Multiple minor cracks/No infil or staining
Cove Lake Drive	107 to 103	389.2	5	Line run	Low	Multiple minor cracks/No infil or staining
Cove Lake Drive	103 to 200	189.3	1	Line run	Medium	Multiple cracks/(3) fractures/No infil or staining
Sweetwater Cove Blvd.	200 to 204	276.8	3	Line run	High	Multiple cracks/staining/infil
Sweetwater Cove Blvd.	204 to 210	332.8	3	Line run	Low	Multiple cracks/No staining or infil.
Cove Lake Drive	201 to 300	269.9	2	Line run	Low	Multiple cracks/No staining or infil.
Sweetwater Cove Blvd.	300 to 302	222.9	1	Line run	High	Infil throughout run at joints
Sweetwater Cove Blvd.	301 to 302	233.2	2	Line run	High	Multiple cracks/(4) fractures/Staining
Cove Lake Ct.	100 to 200	229.2	1	Line run/Remove roots and apply product	Low/High (roots)	May not line but does need roots removed and treated
Cove Lake Ct.	200 to 203	254.8	3	Investigate lateral at 15.4'	Medium	Check to see if lateral is abandoned/dirt in lateral
Wisteria Dr.	100 to 132	399.4	2	4/8 Liner	High	Leak at joint 59.6'
Wisteria Dr.	127 to LS	190.2	2	2/8 liner	High	Leak at joint 158.4'
Wisteria Dr.	160 to 154	379.8	6	MH 154 Upstream Bench leak	High	Repair MH 154 bench
Wisteria Dr.	154 to 149	242.8	1	6/8 liner	High	Install liner form 24.2' to 30.0'
Wisteria Dr.	149 to 141	369.9	7	Line run	High	Multiple cracks/Infil throughout
Sweet Bay Lane	105 t0 100	323.8	3	(2) 2/8 liners	High	Cracked and leaking at 9.6' and 322.7'
Wisteria Dr.	140 to 100	236.7	1	Repair invert at MH 140	High	Invert leaking at downsteam invert in MH
Wild Plum Ln.	107 to 102	188.5	2	2/8 liner	High	Leak at joint at 44.1'
Wisteria Dr.	120 to 124	349.3	4	Line run	High	Multiple cracks/Infil/Staining/roots/(1) fracture
Wisteria Dr.	100 to 132	399.4	2	2/8 liner	High	Leak at joint 59.6'
Crestwood Dr.	113 to 119	135.6	2	Apply root kill product	High	(4) areas with minor root intrusion
Oak Ct.	500 to 400 Backyard	297.5	4	Line run	High	Multiple cracks/Stains/Infil/ (1) fracture
Lonesome Pine Dr.	309 to 306	162.6	4	Line run/Apply root kill product	Low/High (roots)	Multiple cracks/Stains/Infil/ (1) fracture
Lonesome Pine Dr.	413 to 409	104.1	0	Dig and Repair collapse	High	Potentially collapsed pipe at 104' from MH 409 toward upstream MH 413
Country Hill Dr.	111 to 200	153.3	1	Line run	High	Multiple cracks.Infil/Staining
Sweetwater Hills Dr.	703 to 112	118.7	2	Remove roots and apply product	High	Roots at 5 locations from fine to medium
Sweetwater Hills Dr.	112 to 105	323.7	3	Line run	Low	Multiple cracks throughout run/No stain or infil
Sweetwater Hills Dr.	105 to 102	335.5	2	Line run	Low	Multiple cracks throughout run/No stain or infil
Fox Valley Dr.	205 to 303	302.3	0	Line run	Low	Multiple cracks throughout run/No stain or infil
Fox Valley Dr.	303 to 309	292.9	3	(2) 2/8 Liners	High	Leak/staining at 151.0' and 288.1'
Fox Valley Dr.	309 to 100	211	1	Line run	High	Multiple cracks/Staining/Infil/(1) fracture
Fox Valley Dr.	411 to 406	10	0	Dig and Repair collapse	High	Collapse at 10.0' from MH 406
Fox Valley Dr.	406 to 402	288.1	1	(2) 2/8 liners	High	Leak at 1.0' inside if downstream invert MH 406 and leak at 197.5'
Palm Lake Ct.	400 to 305	252.8	3	Remove roots and apply product	High	Roots at 5.0' and 15.0' from MH 305
Sweetwater Blvd.	305 to 301	269	1	Line run	Medium	Multiple cracks/(1) fracture/roots at 3 joints
Sweetwater Blvd.	301 to 203	233.2	1	Line run	High	Multiple cracks/Staining/(4) fractures
Timbercove Pl.	300 to 401	189	1	Line run	High	Multiple cracks/Staining/(2) fractures

Timbercove Cir.	411 to 401	375.8	3	Line run	High	Multiple cracks/Staining/(4) fractures
Timbercove Cir.	401 to 401A	83	0	Line run	High	Multiple cracks/Staining/Infil
Timbercove Cir.	401A to 111	166.1	1	Line run	High	Multiple cracks/Staining/Infil
Timbercove S.	108 to 112	72.6	0	Line run/Remove Roots	High	Multiple cracks/Staining/Large root ball/(3) fractures
Timbercove S.	102 to 112	157.7	1	Line run	High	Multiple cracks/Staining/(1) fractures
Timbercove Cir.	112 to 206	350.3	3	Line run	High	Multiple cracks/Staining/(4) fractures
Timbercove S.	108 to 112	66.7	0	Line run/Remove roots	High	Multiple cracks/(1) fracture
Timbercove Cir.	206 to 211	245.3	2	2/8 liner	High	Fracture at 135.4'
Timbercove N.	300 to 211	156.7	1	(2) 2/8 liners	High	Staining at crack 29.6' and Fracture at 98.3'
Timbercove Cir.	216 to 300	176	1	Line run	Medium	Multiple cracks throughout run/No stain or infil
Timbercove Cir.	300 to 304	232.9	2	Line run	High	Multiple cracks/(5) fractures
Timbercove Cir.	304 to 111	352.1	2	Line run	High	Multiple cracks/(4) fractures
Magnolia Oak Dr.	402 to 304	134.3	3	Remove roots and apply product	High	Large root mass at end of run at capped end
Knollcrest Dr.	102 to 108	276.6	3	Repair fracture at Hammer Tap	Medium	Multiple fractures around hammer tap 7.5' from MH108/no infil/Cracks throughout run
Lonesome Pine Dr.	400 Backyard to 306	175.2	2	80/8 liner	High	Infil/cracks/void
Lonesome Pine Dr.	306 to 303	177.9	1	2/8 liner	High	Infil at 2.0' at MH306 downstream
Lonesome Pine Dr.				Dig and repair	High	Heavy sand at 102.0', large separation at 104.0'/belly at 150.0' to 157.0' >3" and 164.0' to 175.0' >3"
Lonesome Pine Dr.	303 to 210	146.1	2	Line run	High	Infil at (3) locations/stains/Cracks
Lonesome Pine Dr.	210 t0 204	283.8	3	Line run	High	Infil at (3) locations/stains/Cracks
Country Hill Dr.	403 to 105	220.6	1	(3) 2/8 liners	High	(3) fractures at 91.2', 172.9', 204.8'
Country Hill Dr.	105 to 111	392.3	4	40/8 liner	High	Staining/Cracks/Infil/ approx. 40.0' from MH 111
Country Hill Dr.				Repair MH 111 interior	High	
Sweetwater Blvd.	100 to 104	304.2	3	Line run	Low	Multiple cracks and fractures/No infil or staining
Sweetwater Blvd.	104 to 110	304.9	2	Line run	High	Multiple cracks throughout and (4) fractures/staining
Sweetwater Blvd.	110 to 111	219.3	0	Line run	High	Multiple cracks throughout and (3) fractures/staining
Sweetwater Blvd.	111 to 203	241.6	1	Line run	Medium	Multiple cracks throughout/staining/Infil at 119.7'
Hickory Drive	203 to 102	259.5	2	Line run	High	Multiple cracks throughout and (4) fractures/staining
Hickory Drive	105 to 201	155.8	0	2/8 liner	High	Leak at invert pipe within 1.6' of pipe at MH201
Hickory Drive				Repair MH 105	High	Infil staining on MH wall
Lonesome Pine Dr.	200 to 104	197.5	1	Line run	High	Multiple cracks throughout/staining/Infil
Fox Valley Dr.	617 to 700	142.8	0	4/8 liner	High	Leak wihtin 3.0' of invert at MH700
Fox Valley Dr.	810 to 805	176.7	0	(3) 4/8 liners	High	Fractures at 85.4', 95.4', 170.7'
Fox Valley Dr.	711 to 706	209.2	1	2/8 liner	High	Large crack at 208.0'. 1.0' from invert at MH 706
Hickory Drive	700 to 309	132.1	0	2/8 liner	High	Leak at invert in MH 700
Hickory Drive	303 to 221	163.5	1	Line run	High	Multiple cracks/Staining
Hickory Drive	221 to 215	201.7	1	(2) 2/8 liners	High	Leaks at within inverts at MHs 215 & 221
Hickory Drive	215 to 208	354	4	4/8 liner	High	Crack with staining at 350.9' approx. 3.0' from invert at MH208
Hickory Drive	208 to 205	249	2	(1) 2/8 liner & (1) 4/8 liner	High	Crack with staining at 1.0' from MH 208 & approx. 3.0' from invert at MH205
Fox Valley Dr.	100 to 401	142.1	2	Line run	High	Staining/Infil./Cracks
Fox Valley Dr.				Repair MH 100 interior	High	
Fox Valley Dr.	401 to 403	77.2	0	(1) 2/8 liner	High	Liner at 54.5'
Fox Valley Dr.				MH 401 repairs	High	Repair infil leaks at MH 401 and at invert at MH 401

Root Removal
MH to MH Liner

Short Liner
Dig & Repair
MH/LS Repair

Priority	MH to MH Runs	Partial Runs	Lateral Reinstate	Root removal & Product	Manhole Repairs
	LF	LF	Quantity	LF	Qauntity
76	9148.5	220	77	2478.3	12
10	2087.7	2	8		
11	3118.7	0	24		

Street	**Location**	**Length**	**Laterals**	**Corrective Action**	**Priority Rank**	**Comments**
Preston Road	525 to 550	194.2	2	Dig and repair belly	High	Belly >3" 177.0' to 186.0'/ Depth estimated at 11.0'
Forest Park Cir.	304 to 409	88.5	1	Lateral investigation	High	Possible abandoned lateral at 67.5'/Sand in lateral/Depth estimated at 7'
Cumberland Cir. E.	Median 5 to 106	374.8	4	Dig and Repair belly	High	Belly beginning at 270.0' to 330.0' >3"/Depth estimated at 9'
Cottesmore Cir. E.	114 to 118	209	1	Dig and repair belly	High	Belly at 88.0' to 102.0' >3"/Depth estimated at 5.5'
Cove Lake Ct.	200 to 203	254.8	3	Investigate lateral at 15.4'	Medium	Check to see if lateral is abandoned/dirt in lateral/Depth estimated at 5'
Fox Valley Dr.	411 to 406	10	0	Dig and Repair collapse	High	Collapse at 10.0' from MH 406/Depth estimated at 9'
Lonesome Pine Dr.	306 to 303	177.9	1	Dig and repair	High	Heavy sand at 102.0', large separation at 104.0'/belly at 150.0' to 157.0' >3" and 164.0' to 175.0' >3"/Depth estimated at 11'to 13'
Knollcrest Dr.	102 to 108	276.6	3	Repair fracture at Hammer Tap	Medium	Multiple fractures around hammer tap 7.5' from MH108/no infil/Cracks throughout run

SECTION 02760

REHABILITATION OF UNDERGROUND PIPE

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work included in this Section includes all labor, equipment, machinery, material and appliances required to perform gravity sewer rehabilitation / renovation which includes a minimum of but is not limited to the following: pre-cleaning, inspections via remote video camera, renovating utilizing trenchless technology, reinstating and grouting lateral connections and post-inspecting via remote video camera. Additionally included is the rehabilitation of laterals by grout sealing from the main gravity line and all testing to ensure adequate sealing.

1.02 REFERENCE STANDARDS

A. ASTM D 3350, Standard Specification for Polyethylene Plastic Pipe and Fittings Materials

B. ASTM F 1533, Standard Specification for Deformed Polyethylene (PE) Liner

C. ASTM D 1784, Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds

D. ASTM F 1216, Standard Practice for Renovation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube

E. ASTM D 2837, Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials

F. ASTM D 1693, Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics.

G. ASTM D 638, Standard Test Method for Tensile Properties of Plastics

H. ASTM D 790, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

I. ASTM D 2290, Standard Test Method for Apparent Tensile Strength of Ring or Tubular Plastics and Reinforced Plastics by Split Disk Method

1.03 SYSTEM PERFORMANCE

A. Design Performance

Liner thickness shall be based upon design calculations as submitted to Engineer in accordance with Section 01340: Shop Drawings and Submittals. Material design criteria shall be AASHTO HS-20 traffic loading, water table 1-foot below ground surface, minimum expected lifetime of 50 years, and no structural strength retained from the existing host pipe.

B. Performance Requirements

1. Prior to start of the Work, Contractor shall conduct a demonstration of the equipment and procedures for air testing and grouting.

a. A test section, simulating a reach of sewer pipe shall be prepared by Contractor for the demonstration. The test section shall consist of at least 20 feet of pipe. The pipe diameter shall equal the minimum diameter sewer pipe to be lined or grouted.

b. Contractor shall demonstrate the inspection and identification of service connections joint or lateral and how the packer will grout the service connection joint or the lateral.

1.04 SUBMITTALS

A. Product Data: The Contractor shall submit to the Engineer Product data in accordance with Section 01340: Shop Drawings and Submittals. At minimum, the product data shall include details on the following:

1. Test certificates or certified test reports on liner systems.

2. Grout

3. Resins

4. Other solutions or material which may be in contact with sewage or utilized during installation.

B. Acceptance of Material: The Owner reserves the right to sample and test any pipe, grout, resin, cleaning solution or other material after delivery and the right to reject any material or solution represented by any sample which fails to comply with the specified requirement.

C. Video Tapes and Logs: Contractor shall submit to the Engineer video tapes of pre-lining inspection and logs for approval before undertaking lining work, and post-inspection videos before final contract close-out.

1.05. QUALITY ASSURANCE

A. Qualifications: Contractor shall be experienced in gravity sewer renovation within the State of Florida and completed at least 100,000 feet of like renovation within the State of Florida.

B. Manufacturers: Technology for renovation of sewer pipe shall be Cured-in-place. Acceptable manufacturer of this technology is:

1. Cured-in-place

a. Instituform of North America, Inc. as installed by Instituform Southeast, Inc.

b. or Approved Equal.

1.06 SITE CONDITIONS

A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, the Contractor at his expense will repair, to a condition equal or better to that before the damage was done, or he shall make good the damage in other manner acceptable to the Engineer.

1.07 WARRANTY

A. All materials and labor supplied shall be warranted for a period of 1 year by the contractor. Warranty period shall commence as defined in the General Conditions.

B. All materials shall be warranted to be free from defects in workmanship, design and materials. If the materials should fail during the warranty period, it shall be replaced at no expense to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Cured-in-place Pipe Lining

1. The Cured-in-place system shall be polyester fiber felt tubing saturated with a thermosetting vinylester or polyester resin prior to insertion. Resin type and qualities shall be as specified by manufacturer to obtain a cured liner system with the following minimum properties:

Tensile strength	ASTM D 638	3,000 psi
Flexural strength	ASTM D 790	4,500 psi
Flexural Modulus of Elasticity	ASTM D 790	300,000 psi
Long Term Modulus of Elasticity - (50 years)	ASTM D 2290	150,000 psi

Liner shall meet strength as described in ASTM F 1216.

2. Liners shall be made of single or multiple layer construction but any layer shall be a minimum 3 mm thick. The polyester fiber felt shall be a minimum 6 denier with a burst strength of 1,000 psi in transverse directions (hoop stress) and shall be free from tears, holes, cuts, foreign materials and other surface defects.

3. The liner shall be coated with a minimum 10 mils of polyurethane or polyethylene on the wearing face and shall be bonded to the felt during its manufacture.

4. Cured-in-place materials shall meet manufacturer's specifications of Insituform of North America, Inc. 3315 Democrat Road, Memphis, Tennessee 38118.

B. Concrete Grout

1. Provide grout with minimum 28 day compressive strength of 1000 psi, minimum slump of 5 inches, maximum slump of 9 inches. The grout mixture per cubic yard shall be:

a. Cement – 500 pounds.
b. Fly Ash – 500 pounds.
c. Water – 350 pounds (42 gallons).
d. Sand – 2248 pounds.

e. Air entrainment admixture (Darex or equal) – 3 ounces
f. Bentonite – 6 pounds (to be mixed with sufficient water to form colloidal mixture, added at the job site).

2. Equipment:

a. All grout shall be mixed with a high shear, high energy colloidal type mixer to achieve the best uniform density.
b. The grout shall be pumped with a non-pulsating centrifugal or tri-plex pump.
c. The mixer shall be capable of continuous mixing. Batch mixing shall not be permitted.

C. Video Recording

1. Video shall be recorded in color, DVD format.

PART 3 EXECUTION

3.01 ACCEPTABLE INSTALLERS

A. Contractors shall be licensed by the State of Florida and certified by the liner system manufacturer for installation of the liner system in the State of Florida.

3.02 PREPARATION

A. Cleaning

1. The contractor shall clean and prepare the interior of the existing gravity sewer to produce a clean surface free of all coatings, sand, rock, roots, sludge, or other deleterious materials prior to liner installation. Cleaning methods may include water jetting, rodding, cleaning ball and/or hinged-disc cleaner, or bucketing.

2. Where bucketing is warranted, bucket machines shall be used to remove the major portion of debris. Bucket operations shall proceed in the upstream direction in one sewer reach at a time. Upon completion of bucketing, the line shall be further cleaned using methods described in 3.02.A.1.

3. Contractor shall provide a means of catching and removing the dislodged debris conveyed downstream with the sewer flow. The means utilized shall not allow the transport of debris to downstream sewer reaches.

4. All debris cleaned from the sewer shall be removed from the work site daily and disposed of at Contractor's expense.

B. Internal Inspection

1. Prior to installation of liner system, Contractor shall visually inspect by means of closed-circuit color television all sections of gravity sewer included under this contract.

   a. Maximum rate of travel shall be 30-feet per minute when recording. At all points within the sewer showing defects, laterals, and sewer appurtenances, the Contractor shall stop the camera for a minimum of thirty (30) seconds to ensure adequate video coverage. Inspection at service laterals shall include panning and tilting of camera lens to facilitate viewing into the lateral.

   b. Inspection logs shall be legible form for each gravity sewer reach inspected. Logs shall consist of explanation of defects contained in the reach or lateral and the location of identified defects in the reach or laterals. Manhole numbering shall be as designated on the drawings.

   c. In the event the camera cannot pass the entire sewer reach from its starting direction, the reach shall be inspected as much as possible from both directions. Inspection logs shall note nature of blockage, its location, and reasons why pre-inspection cleaning was ineffective in removing the obstruction.

   d. Video tapes shall be complete with audio narrative of each feature and defect encountered within sewer. Text information shall be displayed on the television monitor using a video titling device and positioned away from the feature being inspected. Text shall include date of inspection, manhole identification, line size, and the distance from camera position to centerline of insertion manhole.

C. Sewer Bypass and Dewatering

1. Contractor shall provide temporary sewer bypassing and dewatering as required to successfully complete the work.

2. Contractor shall provide sewer bypassing by pumping or diverting upstream flow around the working area.

   a. Contractor shall furnish pumps, conduits, plugs, and other equipment to successfully bypass the sewer flow. Engines shall be equipped with mufflers and/or enclosures to keep the noise level within local ordinance requirements.

b. All bypass flow shall be discharged to the nearest downstream manhole.

3. Contractor shall dewater all sagged submerged portions of the sewer during television inspection and whenever necessary to successfully complete lining or grouting work.

a. Sewer flow shall be reduced so that no portion of the television camera's lens is submerged during inspection. The flow may be temporarily forced away from the area under inspection by water jetting or plugging. Where these methods cannot adequately reduce the flow, the Contractor shall pump the flow form the sewer.

b. All dewatered flow shall be discharged to the nearest downstream manhole.

3.03 INSTALLATION

A. Cured-in-place Lining

1. The installation procedure employed by the Contractor shall be approved by the manufacturer. The Contractor shall submit evidence to this approval in accordance with Section 01340: Shop Drawings and Submittals.

2. Cured-in-place pipe lining shall be in accordance with ASTM F1216 with the following exceptions or additional requirements.

a. Resin Impregnation - The quantity of resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowances for polymerization shrinkage and the loss of resin through cracks and irregularities in the host pipe wall.

b. CIPP liner may be pulled into position and expanded by averting a calibration hose.

3. Liner Sealing at Manholes

a. Top half of liner sections through manholes shall be removed after curing. Additional portions may be removed to allow existing side connections to flow into the lined pipe. Contractor shall apply a sealant compatible with the resin mixture used in the liner and completely seal any cut surface of the liner to the manhole. Liner sections terminating at manholes shall be cut to leave a smooth clean straight plastic edge flush with the inside face of the finished manhole.

b. If because of broken or misaligned sewer pipe at the manhole, the installed liner fails to make a tight seal with the existing sewer, the Contractor shall apply a sealant compatible with the resin mixture used in the liner and completely seal any annular space present.

3.04 REINSTATING SERVICE LATERALS

A. Cutting: After the liner has been cured or reformed, the Contractor shall reinstate all connecting sewers and service laterals. Reconnection shall be conducted from within the lined sewer pipe by remote mechanical cutter. Each lateral shall be restored to 100% of its original diameter. Reconnection by excavation shall not be undertaken unless approved by Engineer and if approved, will be at no additional cost to the Owner.

B. Sealing: Contractor shall grout seal all annular space which may exist between liner and reinstated laterals by means of lateral sealing inversion tube.

3.05 GROUTING/SEALING SERVICE LATERALS

A. Contractor shall grout/seal all joints, cracks, etc. within service laterals. The sealing shall be accomplished by lateral sealing inversion tube equipment which will allow complete grouting and sealing a minimum distance to ensure all joints at the fittings and at the first full length of lateral pipe. The inversion tube shall be a minimum 36 inches total length.

3.06 FIELD QUALITY CONTROL

A. CIPP Lining Leak Test

1. Contractor shall use hydrostatic pressure to test the CIPP liner. The CIPP shall be tested using an exfiltration test method where the CIPP is plugged at both ends and filled with water. This test shall take place after the CIPP has cooled to ambient temperature. During exfiltration testing, the maximum internal pipe pressure at the lowest end shall not exceed 4.3 psi and the water inside of the inversion stand pipe shall be 2 feet higher than

the top of the pipe or 2 feet higher than the groundwater level, whichever is greater.

2. The leakage quantity shall be gauged by the water level in a temporary standpipe placed in the upstream plug. The test shall be conducted for a minimum of one hour. The allowable water exfiltration for any length of pipe between termination points shall not exceed 50 gallons per inch of internal pipe diameter per mile per day.

B. Material Testing

1. Sample coupons shall be machined from the wall of each lot of material. Testing for cell classification values will be completed by the Owner.

C. Lateral Sealing Test

1. Contractor shall use remote air bladder testing to ensure proper sealing of laterals and reconnection annulus spaces. Contractor shall position the remote, air bladder packer over the lateral opening and inflating the inversion tube to isolate the lateral. The bladder shall be pressurized to 4 psi plus 0.5 psi for each foot the groundwater table is above the sewer invert elevation. The maximum test pressure shall be 9 psi. Once the air pressure has stabilized the air supply shall be disconnected and the time required for the void pressure to drop 0.5 psi shall be recorded. If the pressure drops more than 0.5 psi in 10 seconds, the area has failed the test and shall be regrouted and retested until passing.

2. Laterals to be verified utilizing air test and documented utilizing form as provided in Table 02760A.

3.07 INSTALLATION ACCEPTANCE

A. A pre-video and substantial completion video of the pipeline shall be submitted to the Engineer for review. These videos shall be recorded in identical manner and direction to allow direct comparison between the original line and the renovated pipe.

B. Starting the eleventh month after substantial completion of the work, Contractor shall air test at least 15% of the lateral joints. Location of joints to be air tested shall be as directed by the Engineer.

1. The Contractor shall clean the sewers containing the portion to be tested in accordance with the requirements stated in 3.02.A, Cleaning, before air testing.

2. No further testing will be required if 90% or more of tested lateral joints pass the initial air test.

3. Contractor shall be responsible for regrouting and retesting all grouting work failing the air test at no cost to the Owner.

4. Where the performance requirement is not satisfied as described above, testing and regrouting as required shall be completed by the Contractor, at his expense, for the remaining 85% of lateral joints not tested initially. Requirements governing the retesting shall be identical to the initial testing.

C. Upon satisfying the performance test or completing testing and regrouting, final application shall be submitted.

Utilities, Inc.

ADD-CHANGE FORM

New Project or Budget Change?	New Project	**Assigned Project #:**	2014053
Requested by:	Bryan K. Gongre *Project Manager / Area Manager*	**Date:**	4/1/2014

Project Name:	Correct I&I Def. Sanlando PH 1	
Company:	255	Sanlando Utilities Corp
Business Unit:	255101	Sanlando Utilities Corp S
Project Owner:	Bryan K. Gongre	
Project Manager:	Bryan K. Gongre	
Start Date:	4/14/2014	Q2 2014
Estimated End Date:	9/30/2014	Q3 2014
BU Type:	Sewer	
Budget Owner	Rick Durham	02
Region:	Southeast	07
State:	FL	
Project Type:	Cost Reduction	
Will project replace/retire any assets:	Yes	

Previously Requested:	
This Request:	**$915,696**
Still to be Requested:	
Total Project Budget:	**$915,696**

Object Account(s) to which project will be closed:	1350	Sewer Gravity Main/Manholes
		select from dropdown list
		select from dropdown list
		select from dropdown list
		select from dropdown list

Go to Reference List

Description:

During the third quarter of 2013, under CP# 2013093, Sanlando Utilities Corporation contracted with American In Line to clean and video approximately 49, 900LF of 8" gravity sewer main within the Sanlando collection system. The videos and reports were reviewed resulting in the identification of 14,580LF of 8" VCP pipe with mutliple cracks, fractures at joints, joint separation, infiltration, infiltration staining, root intrusion, bellies holding greater than 3" of water up to and including complete pipe collapse. Approximately 12 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 14,360LF of 8" VCP, installation of 220LF of short liners, reinstatement and grouting of 109 6" laterals, rehabilitation of 12 manholes using cementious materials, open excavation and replacement of approximately 205LF of 8" VCP at 6 locations between manhole segments to include ROW permitting, MOT, dewatering, bypass operations and restoration of curb, pavement and driveways.

Utilities, Inc.

JUSTIFICATION / ALTERNATIVES

Justification and Benefits:

The Sanlando Utilities Corp. 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. Until just last year the WW flows were treated at the Des Pinar and Wekiva WWTFs. As a result of nitrogen discharge limitations in the operating permit, the Des Pinar WWTF average daily flows of approximately 0.250MGD were diverted to the Wekiva facility in 2013. The Wekiva WWTF is rated at 2.9MGD and prior to the diversion of the Des Pinar flow typically experienced an average daily flow of 1.8MGD. Therefore with the additional Des Pinar flows the utility expected the Wekiva flows to rise to between 2.0 to 2.1MGD. However 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 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. 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. In order to 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.

Alternatives Considered:

This is a pro forma project to the Sanlando rate case to be filed in June 2014. 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. Four vendors bid the lining/rehab portion and three vendors bid the excavation/replacement work. This was necessary as most lining/rehab companies do not perfom 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 (14,580 LF out of 49,900LF). The project cost could be reduced by removing 3,119LF of low priority work or approximately $85,000.00. Also, although not yet evaluated is the possibility of a cost reduction by lining an entire segment as oppposed 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.

Sanlando I & I Deficiency Corrections Phase 1

CIPP Lining/Manhole Rehab & Root Removal

Bidder	Bid
Insituform	498,421.00
Layne Inliner	806,590.00
Vac Vision	528,700.00
American In Line	828,709.00

Excavation/Replacement

Bidder	Bid
Boykin	444,456.00
CFT	478,259.00
Traverse	417,275.00

Total **915,696.00**