

LEE'S SUMMIT WATER TRANSMISSION, LARGE DIAMETER SEWERS, AND FORCE MAIN CONDITION ASSESSMENT AND MANAGEMENT PROGRAM – PHASE 1 SUPPORT
Scope and Fee 10-31-18

	Pat Young	Ryan Eisele	Aaron Bresette	Michelle Carter	Bagwell/Duckworth/Maschmann/Corey	Graham Bell/Ellison	Jeff Giddings/Luis Leon		Peter Maynard-Moody	Pat Keyhill	Johnny Yake	Green/Meyer	Berne/Campbell	Davies	Hopson					
	QC	Sr. Project Manager	Sr. Project Engineer	Sr. Project Engineer	Project Engineer	Sr. Tech Specialist	Condition Assessment Specialist	Asst. Project Eng./GIS	Sr. GIS	Sr. Technician/CAD	Survey Manager	Survey Crew	Admin Personnel	Sr. Support Staff	Structural Eng.	Pure Technology	Ace Pipe & Blue Water Solutions	HDR Expenses	Total	
Allowable Billing Rates per Client Contract	250.00	210.00	225.00	165.00	145.00	290.00	225.00	125.00	165.00	135.00	160.00	185.00	90.00	120.00	150.00					
TASKS																				
Task 1 - System Evaluation and Pipeline Prioritization																				
1	Compile and review City provided pipeline data. Develop inventory and mapping of pipelines included in project.		2		16			8	16											\$6,380
2	Conduct Project Kickoff Meeting.	2	2	2	2															\$1,540
3	Develop preliminary pipeline criticality (COF and LOF) and risk prioritization criteria		2	2	4												1000			\$2,330
4	Prepare for and conduct Pipeline Prioritization Workshops with City	2	8		8		2	16												\$5,890
5	Document key workshop findings.		2		4															\$1,000
6	Review City standard details and specifications for new pipeline construction and corrosion protection for new and existing pipelines. Document comments and recommendations.		2			4	24			4										\$7,520
7	Prepare for and conduct Corrosion Management Workshops with City.	2	12		16	40		12												\$19,940
8	Update project mapping with enhancements to document known issues, identify system corrosion hot spots, key appurtenances		2		8			16	4											\$4,240
9	Finalize pipeline COF and LOF factors and risk-based prioritization.		2		4		2	8									1000			\$3,450
10	Develop Draft System Evaluation and Pipeline Prioritization Technical Memorandum (TM).	2	8		32	2		20					4							\$10,260
11	Conduct review meeting with City to gather comments and input on Draft TM.		2		2															\$710
12	Submit Final System Evaluation and Pipeline Prioritization TM.		2		16			8												\$3,740
	Subtotal Hours	8	46	0	4	112	46	28	88	20	4	0	0	4	0	0	0	0	\$0	
	Subtotal Dollars	2000	9660	0	660	16240	13340	6300	11000	3300	540	0	0	360	0	0	2000	1600	\$67,000	
	Total Task 1																			\$67,000
Task 2 - Condition Assessment and Management Program Planning																				
1	Provide recommendations to City on pipelines to assess for inclusion in Phase 1 and Phase 2 of the program. Up to 12 pipelines are assumed to be evaluated.		2	2																\$750
2	Complete detailed evaluation of each Phase 1 and Phase 2 pipeline candidates		12	40	160	120	4	2	40		8	8				25000	10000	\$300		\$99,990
3	Facilitate up to three (3) meetings or site visits with City operations and/or engineering staff to discuss pipeline specific details.	4	2	8	8															\$5,700
4	Prepare for and Facilitate Condition Assessment Plan Development workshops to review findings and recommendations with City.	2	8	4	12		2	2	16											\$8,090
5	Based on evaluation results and City input, develop condition assessment program plan and preliminary project budgets for Phase 1, 2, and 3 pipelines.	2	4	4	16	16		8												\$8,200
6	Determine pipeline management and protection recommendations to be included in initial program plan.		4	4			8	20					4							\$8,920
7	Develop Draft Pipeline Condition Assessment and Management Program Plan TM.		8		40	2	2	40											\$100	\$16,250
8	Conduct review meeting with City to gather comments and input on Draft Plan.	2	2	2																\$1,250
9	Submit Final Pipeline Condition Assessment and Management Program Plan Prioritization TM.		2		8	16		8												\$5,060
	Subtotal Hours	10	44	60	224	200	16	26	112	0	0	8	8	4	0	0	0	0	\$0	
	Subtotal Dollars	2500	9240	13500	36960	29000	4640	5850	14000	0	0	1280	1480	360	0	0	25000	10000	400	\$154,210
	Total Task 2																			\$154,210
Task 3 - Phase 1 Pipelines Condition Assessment Work Plan Development																				
1	Develop four (4) Draft Condition Assessment Work Plans.	4	16		40	80	2	8	40							18000	5000			\$52,940
2	Facilitate Work Plan review meetings with the City.		4		8											2000	1000	\$100		\$5,260
3	Complete and submit Final Condition Assessment Work Plans.	2	2		4								4			5000	500			\$7,440
	Subtotal Hours	6	22	0	52	80	2	8	40	0	0	0	4	0	0	0	0	\$0		
	Subtotal Dollars	1500	4620	0	8580	11600	580	1800	5000	0	0	0	0	360	0	0	25000	6500	100	\$65,640
	Total Task 3																			\$65,640
Task 4 - Condition Assessment of Transmission Main from Independence																				
1	Provide design and construction support services for Phase 1 pipeline inspections.		2	13	40			40		40	6	12			14				\$180	\$25,005
2	Conduct site planning and coordination meetings with City staff and inspection Contractor.		2		4															\$1,080
3	Conduct pre-condition assessment meeting with City to finalize action plan for inspection. Support the city in any pre-assessment walkthrough activities needed. Finalize inspection day plans and schedules.		2		8															\$1,740
4	Contractor Mobilization and Demobilization															75000				\$75,000
5	Perform internal Pipe Diver inspection				16											420000		\$200		\$422,840
6	Contractor condition assessment findings and reporting															15000				\$15,000
7	Review and analyze inspection data, complete structural evaluation, and develop recommendations		4		16	100		24												\$23,380
8	Perform in-pipe CCTV or leak detection follow up inspections				8												60000			\$61,320
9	Facilitate a workshop to present assessment results	2	4		8	20		8												\$7,360
10	Develop recommendations based on workshop and assessment data.		2	4	8	8		2												\$4,250

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Allowable Billing Rates per Client Contract	250.00	210.00	225.00	165.00	145.00	290.00	225.00	125.00	165.00	135.00	160.00	185.00	90.00	120.00	150.00				
TASKS																			
11 Prepare Draft Condition Assessment Report	2	8		16	32		4	16					4						\$12,720
12 Facilitate a review meeting with City to discuss draft report.		2		2			2												\$1,200
13 Finalize the Condition Assessment Report.		4		8	16		2												\$4,930
Subtotal Hours	4	30	17	94	216	0	42	56	0	40	6	12	4	0	14	0	0	\$0	
Subtotal Dollars	1000	6300	3825	15510	31320	0	9450	7000	0	5400	960	2220	360	0	2100	510000	60000	380	\$655,825
Total Task 4																			\$655,825
Task 5 - Condition Assessment of Tudor Road Force mains and Scruggs Road Force main																			
1 Provide design and construction support services for Phase 1 pipeline inspections.		2	13		40			40		40	6	12			14			\$180	\$25,005
2 Conduct site planning and coordination meetings with City staff and inspection Contractor for internal Smart Ball assessment.		2		4															\$1,080
3 Conduct pre-condition assessment meeting with City to finalize action plan for inspection. Support the city in any pre-assessment walkthrough activities needed.		2		2															\$750
4 Contractor Mobilization and Demobilization																20000			\$20,000
5 Perform internal assessment of the force main using Smart to identify leaks and gas pockets.				16												95000		\$100	\$97,740
6 Contractor condition assessment findings and reporting of gas pocket and leak detection survey.																20000			\$20,000
7 Review and analyze inspection data, internal conditions versus operating conditions, and develop recommendations		2		8	16	2	2												\$5,090
8 Facilitate a workshop to present assessment results		2		2															\$750
9 Coordinate with City and identify recommended locations for External Direct Corrosion Assessments prior to mobilization of assessment staff.		2		4			8												\$2,880
10 Perform External Direct Corrosion Assessment (EDCA) field activities		4		8	40		60	80									45000	\$3,000	\$79,460
11 Analyze the results of EDCA analysis		4		12	40		20												\$13,120
12 Prepare Draft Condition Assessment Report		4		16	32		8	16											\$11,920
13 Facilitate a review meeting with City to discuss draft report.		2		2			2												\$1,200
14 Finalize the Condition Assessment Report.		2		4	8			8											\$3,240
Subtotal Hours	0	28	13	78	176	2	100	144	0	40	6	12	0	0	14	135000	45000		
Subtotal Dollars	0	5880	2925	12870	25520	580	22500	18000	0	5400	960	2220	0	0	2100	135000	45000	3100	\$282,055
Total Task 5																			\$282,235
Task 6 - Condition Assessment of Lakewood Sewers																			
1 Conduct task kickoff meeting prior to initiating condition assessment work.		2		2			2												\$1,200
2 Perform MSI platform inspection of Lakewood Sewers.																	150000		\$150,000
3 Compile Contractor HDCCCTV findings and evaluate inspection findings. Process Laser profiling inspection and sonar inspection where warranted		4		8			2	16											\$4,610
4 Review and analyze Sonar and Laser Profiling data provided by Contractor.		2		4			4												\$1,980
5 Complete structural evaluation of identified structural defects in comparison to operating conditions of pipe. Develop initial assessment findings and recommendations.		2		16	16		4												\$6,280
6 Facilitate a workshop to present assessment results, discuss risk tolerance and the City's threshold for initiating rehabilitation or repairs, and other topics to be determined based on the assessment findings.		2		4			4											\$200	\$2,180
7 Prepare Draft Condition Assessment Report summarizing inspection and analysis methods and results, and recommendations to extend the service life of the pipeline.		4		8	16		4	16					4						\$7,740
8 Facilitate a review meeting with City to discuss draft report.		2		2															\$750
9 Incorporate City comments and finalize the Condition Assessment Report		2		4	8														\$2,240
Subtotal Hours	0	20	0	48	40	0	20	32	0	0	0	0	4	0	0	0	0	0	
Subtotal Dollars	0	4200	0	7920	5800	0	4500	4000	0	0	0	0	360	0	0	0	150000	200	\$176,980
Total Task 6																			\$176,980
Task 7 - Phase 1 Final Report and Phase 2 Program Planning																			
1 Develop GIS mapping of condition assessment findings from Phase 1 inspections.				4				40	16										\$8,300
2 Develop pipeline renewal recommendations and identify any emergency or immediate repair needs.		4	8	20	20		8												\$10,640
3 Prepare for and Facilitate Phase 1 Condition Assessment Findings and Renewal Alternative Development Workshop.		4	4	8														\$100	\$3,160
4 Provide support for the City to complete any emergency repairs.			4	16	40			16			8	16							\$15,580
5 Complete renewal alternatives evaluation for capital improvement projects on pressure pipelines	2		8	24	20			16		16	4								\$13,960

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TASKS																			
6 Develop planning level cost estimates for evaluated alternatives and recommended projects.			4	8	16														\$4,540
7 Identify any recommended operational improvements and pipeline protection recommendations.	2	4		16	8														\$5,140
8 Develop programmatic recommendations for proactive corrosion protection of new pipelines, and management of corrosion issues for existing pipelines.	2	4			24	12	8												\$10,100
9 Develop implementation plan schedule and budgets for recommended capital improvement projects.		2		8															\$1,740
10 Develop rehabilitation alternatives for gravity sewer lines under Lakewood Lake.		4		24			16												\$8,400
11 Prepare for and Conduct Phase 1 Recommendations Workshop.		4	4	8															\$3,060
12 Finalize recommendations and implementation plan.		2		4															\$1,080
13 Update recommended Phase 2 and Phase 3 inspection plan based on Phase 1 findings.		4		4		2	2										2000		\$4,530
14 Develop Draft Phase 1 Pipeline Condition Assessment and Management Program Final Report.	2	8		24	40			20					4						\$14,800
15 Update Pipeline Condition Assessment and Management Program Plan.		4		8				8											\$3,160
16 Conduct review meeting with City to review updated Phase 2 and Phase 3 plan, and review City comments on Phase 1 Final Report.		2		4															\$1,080
17 Finalize updated Program Plan based on City comments.		2		4	8														\$2,240
18 Finalize Final Report based on City comments.		2		4	16			8											\$4,400
Subtotal Hours	8	50	32	188	192	14	34	108	16	16	12	16	4	0	0	0	0	0	
Subtotal Dollars	2000	10500	7200	31020	27840	4060	7650	13500	2640	2160	1920	2960	360	0	0	0	2000	100	\$115,910
Total Task 7																			\$115,910
Task 8 - Project Management																			
1 Project Management and Administration	2	4											8						\$2,060
2 Budget and Invoice Management		12												16					\$4,440
3 Quality Control and Project Approach and Resource Review		2				6													\$2,160
Subtotal Hours	2	18	0	0	0	6	0	0	0	0	0	0	8	16	0	0	0	0	
Subtotal Dollars	500	3780	0	0	0	1740	0	0	0	0	0	0	720	1920	0	0	0	100	\$8,760
Total Task 8																			\$8,660
Total Hours	38	258	122	688	1,016	86	258	580	36	100	32	48	32	16	28	135,000	45,000		183,338
Total Billing Amount	\$9,500	\$54,180	\$27,450	\$113,520	\$147,320	\$24,940	\$58,050	\$72,500	\$5,940	\$13,500	\$5,120	\$8,880	\$2,880	\$1,920	\$4,200	\$695,000	\$275,500	\$5,980	\$1,526,380

Project Estimate \$1,526,380