COLLECTION SYSTEM OPERATING COST REDUCTION SPREADSHEET

ID	PAYBACK FACTORS	FORMULA - ENTER VALUES FOR ITEMS WITH ASTERISK	SAMPLE PROJECT COMPONENT 1	SAMPLE PROJECT COMPONENT 2	SAMPLE PROJECT COMPONENT 3	NEW PROJECT - ENTER VALUES FOR ITEMS WITH ASTERISK
	Component 1 - Reduce Inflow and Infiltration					
1	Flow – Dry Weather (Gallon per Minute)	*A	1,100	-	1,100	
2	Flow – Wet Weather (Gallon per Minute)	*B	1,600	-	1,600	
3	Difference Wet minus Dry (Gallon per Minute)= I/I	C=B-A	500	-	500	-
4	Months of Wet Weather Flow	*D	4	-	4	
5	Cost to Transport 1 Gallon of Sewage	*E	$ 0.002	$ -	$ 0.002	$ -
6	Cost to Treat 1 Gallon of Sewage	*F	$ 0.003	$ -	$ 0.003	$ -
7	Annual Loss to Transport & Treat I/I	G=CxDx60x24x30x(E+F)	$ 432,000	$ -	$ 432,000	$ -
8	SSO Costs During Wet Weather Caused by I/I	*H	$ 40,000	$ -	$ 40,000	$ -
9	SSO Costs After Project	*K	$ -	$ -	$ -	$ -
10	SSO Savings With Project	L=H-K	$ 40,000	$ -	$ 40,000	$ -
11	Total Annual Loss to Transport and Treat I/I Plus SSO and Maintenance Cost Saved	M=G+L	$ 472,000	$ -	$ 472,000	$ -
12	10 Year Loss (Without Project) to Transport and Treat I/I Plus SSO Cost Saved	N=Mx10	$ 4,720,000	$ -	$ 4,720,000	$ -
13	Cost of Downstream Relief Project (Required if Capacity is not Restored with Inflow Barriers and Pipe Lining Improvement Project)	*0	$ 800,000	$ -	$ 800,000	$ -
14	**10 Year Loss Without Project plus Cost of Downstream Relief Project**	**P=N+O**	**$ 5,520,000**	**$ -**	**$ 5,520,000**	**$ -**
	Component 2 - Reduce SSOs and Maintenance Cost					
15	SSO Cost Potential Each Year – From Grease/Roots/Debris/Dumping (Not from I/I)	*Q	$ 35,000	$ 35,000	$ 35,000	$ -
16	SSO Costs After Project	*R	$ -	$ -	$ -	$ -
17	SSO Savings With Project	S=Q-R	$ 35,000	$ 35,000	$ 35,000	$ -
18	Calculate Annual Maintenance Cost (Clean Lines Every 6-12 Months)	*T	$ 30,000	$ 35,000	$ 30,000	$ -
19	Calculate Annual Maintenance Costs After Project (Clean Lines Every 3 Years)	*U	$ 10,000	$ 10,000	$ 10,000	$ -
20	Annual Maintenance Cost Savings	V=T-U	$ 20,000	$ 25,000	$ 20,000	$ -
21	**10 Year Loss Without Component 2 Project (Reduced SSO and Maintenance Cost)**	**W=(S+V)10**	**$ 550,000**	**$ 600,000**	**$ 550,000**	**$ -**
22	10 Year Loss Without Component 1 (Reduced I/I Project) if included, Plus Component 2 (Reduced SSO and Maintenance Costs)	X=P+W	$ 6,070,000	$ 600,000	$ 6,070,000	$ -
	Component 3 - Repair Structural Damage					
23	Anticipated Number of Spot Repairs - 10 Year Period	*Y	-	-	8	
24	Loss From Each Spot Repair Construction	*Z	$ -	$ -	$ 25,000	$ -
25	Property Damage, Clean up and Restoration for Each Spot Repair	*AA	$ -	$ -	$ 40,000	$ -
26	Anticipated 10 Year Spot Repair Loss	BB=Y(Z+AA)	$ -	$ -	$ 520,000	$ -
27	Anticipated Number of Catastrophic Failures - 10 Year Period	*CC	-	-	1	
28	Catastrophic Failure Loss Per Occurance	*DD			$ 500,000	
29	Anticipated 10 Year Catastrophic Failure Loss	EE=CC(DD)	$ -	$ -	$ 500,000	$ -
30	**10 Year Loss Without Component 3 Project (Structural Damage Repair)**	**FF=BB+EE**	**$ -**	**$ -**	**$ 1,020,000**	**$ -**
31	**10 Year Loss Without Project Component 1(Reduced I/I); Component 2 (Reduced SSO and Maintence Cost); & Component 3 (Structural Damage Repair)**	**GG=X+FF**	**$ 6,070,000**	**$ 600,000**	**$ 7,090,000**	**$ -**
32	**Cost of Project**	***HH**	**$ 1,750,000**	**$ 300,000**	**$ 2,250,000**	**$ -**
33	**PAYBACK FACTOR = LOSS REDUCTION / PROJECT COST (10 Year Period)**	**KK=GG/HH**	**3.47**	**2.00**	**3.15**	**#DIV/0!**
34	**PAYBACK PERIOD (In Years) = PROJECT COST / ANNUAL LOSS**	**LL=(HH-O)/((M+S+V+(FF/10))**	**1.80**	**5.00**	**2.31**	**#DIV/0!**