

## FY12 BUDGET BUSINESS CASE

DEPARTMENT: Operations

DIVISION: Technical Services (06031)

ISSUE: Force Main Evaluation Program

BUDGET CODES AFFECTED: See attached budget proposal

<b>PROBLEM STATEMENT:</b>	Force Main assets are not regularly inspected and tested to determine remaining life cycle. Limited ability to predict failures and replacement cycles for these assets. Consent Decree requirements for program to be implemented.
<b>SOLUTION STATEMENT:</b>	Implement asset management best practices, specifically, a Force Main Evaluation Program as per anticipated Consent Decree requirements.

<b>FINANCIAL FORECAST:</b>	
<b>ONE TIME START-UP COSTS:</b>	Refer to attached sheet. First 6 years of program include program initiation dollars
<b>CONTINUOUS ANNUAL COSTS:</b>	Annual Cost (current value): see attached sheet for expected expenses

<b>PREPARED BY:</b>	Christopher Pfeuffer
<b>DATE:</b>	November 30, 2010

# Forcemain Evaluation Program

Priority Rating	LF of Forcemain	Inspection Frequency	Footage of Visually	Testing Frequency	Footage of Nondestructive	
High	5	92,830	92,830	1	92,830	
Medium	4	44,869		2	104,992	
	3	165,114	209,983			6
Low	2	50,067		5	20,027	
	1	50,066	100,133			
Total		402,946			65,941	
			76.3 miles	40.7 miles		

Engr Services	
\$ 7.50	per LF (High)
\$ 3.75	per LF (Medium)
Nondestructive Testing	
\$ 10.00	per LF (High)
\$ 5.00	per LF (Medium)
3% Inflation Rate	

Visual Inspection	
Labor Cost	\$ 50.00 per hour
Production Rate	0.125 mile/hour
Annual Wage increase	3%
Setup Considerations	
Inspection Point Expense	\$ 6,500 per
Inspection Point Frequency	3500 LF

Setup Cost Breakdown	
Manhole & Structure	\$ 1,250.00
Installation	\$ 3,750.00
Pipe Tap	\$ 1,000.00
Pipe/Valve/Fitting	\$ 475.00
Locator Ball	\$ 25.00
Total	\$ 6,500.00

Table adjusts for inflation and wage increases

Year	Visual Insp Labor	Engr Service Cost		Nondestructive Testing Cost		Setup Cost		Annual Expense (including labor)	Annual Expense (excluding labor)
		High	Medium	High	Medium	High	Medium		
1	\$ 16,266	\$ 232,075	\$ 131,239	\$ 309,433	\$ 174,986	\$ 57,466	\$ 64,995	\$ 986,461	\$ 970,194
2	\$ 16,754	\$ 239,037	\$ 135,177	\$ 318,716	\$ 180,235	\$ 59,190	\$ 66,945	\$ 1,016,055	\$ 999,300
3	\$ 17,257	\$ 246,208	\$ 139,232	\$ 328,278	\$ 185,642	\$ 60,966	\$ 68,953	\$ 1,046,536	\$ 1,029,279
4	\$ 17,775	\$ -	\$ 143,409	\$ 338,126	\$ 191,212	\$ -	\$ 71,022	\$ 761,543	\$ 743,768
5	\$ 18,308	\$ -	\$ 147,711	\$ 348,270	\$ 196,948	\$ -	\$ 73,152	\$ 784,389	\$ 766,081
6	\$ 18,857	\$ -	\$ 152,142	\$ 358,718	\$ 202,857	\$ -	\$ 75,347	\$ 807,921	\$ 789,064
7	\$ 19,423	\$ -	\$ -	\$ 357,038	\$ 208,235	\$ -	\$ -	\$ 584,695	\$ 565,272
8	\$ 20,006	\$ -	\$ -	\$ 367,749	\$ 214,482	\$ -	\$ -	\$ 602,236	\$ 582,230
9	\$ 20,606	\$ -	\$ -	\$ 378,781	\$ 220,916	\$ -	\$ -	\$ 620,303	\$ 599,697
10	\$ 21,224	\$ -	\$ -	\$ 390,145	\$ 227,544	\$ -	\$ -	\$ 638,912	\$ 617,688
11	\$ 21,861	\$ -	\$ -	\$ 401,849	\$ 234,370	\$ -	\$ -	\$ 658,080	\$ 636,219
12	\$ 22,517	\$ -	\$ -	\$ 413,904	\$ 241,401	\$ -	\$ -	\$ 677,822	\$ 655,306
13	\$ 23,192	\$ -	\$ -	\$ 426,322	\$ 248,643	\$ -	\$ -	\$ 698,157	\$ 674,965
14	\$ 23,888	\$ -	\$ -	\$ 439,111	\$ 256,102	\$ -	\$ -	\$ 719,101	\$ 695,214
15	\$ 24,604	\$ -	\$ -	\$ 452,284	\$ 263,786	\$ -	\$ -	\$ 740,674	\$ 716,070
16	\$ 25,343	\$ -	\$ -	\$ 465,853	\$ 271,699	\$ -	\$ -	\$ 762,895	\$ 737,552
17	\$ 26,103	\$ -	\$ -	\$ 479,829	\$ 279,850	\$ -	\$ -	\$ 785,782	\$ 759,679
18	\$ 26,886	\$ -	\$ -	\$ 494,223	\$ 288,246	\$ -	\$ -	\$ 809,355	\$ 782,469
19	\$ 27,692	\$ -	\$ -	\$ 509,050	\$ 296,893	\$ -	\$ -	\$ 833,636	\$ 805,943
20	\$ 28,523	\$ -	\$ -	\$ 524,322	\$ 305,800	\$ -	\$ -	\$ 858,645	\$ 830,121

FTE Impact	
hours of effort for visual	325.33 inspections
2080 hours per year	15%
1768 Productive Time per year	18% FTE
Pump Station Staff will absorb this effort with present positions	

## Proposed Budget

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	Total
Weeks per month	4	5	4	4	5	4	5	4	4	4	5	4	52
52050 CONSTRUCTION & BLDG SUPPLIES	\$ 7,246.21	\$ 9,057.76	\$ 7,246.21										\$ 23,550.18
52090 ELECTRICAL SUPPLIES	\$ 144.92	\$ 181.16	\$ 144.92										\$ 471.00
52150 PLUMBING SUPPLIES	\$ 2,753.56	\$ 3,441.95	\$ 2,753.56										\$ 8,949.07
54520 PROFESSIONAL SERVICES									\$ 85,486	\$ 85,486	\$ 106,857	\$ 85,486	\$ 363,314.38
54590 SEWER REP & STRUCTURE CLEANING	\$ 21,738.63	\$ 27,173.28	\$ 21,738.63										\$ 70,650.54
54620 PLUMBING SERVICES	\$ 5,796.97	\$ 7,246.21	\$ 5,796.97										\$ 18,840.14
54680 LABORATORY TESTING SERVICES				\$ 161,473	\$ 161,473	\$ 161,473							\$ 484,419.17
	\$ 37,680.29	\$ 47,100.36	\$ 37,680.29	\$ 161,473.06	\$ 161,473.06	\$ 161,473.06	\$ -	\$ -	\$ 85,485.74	\$ 85,485.74	\$ 106,857.17	\$ 85,485.74	\$ 970,194.47

Utilize engineering services March thru June to perform desktop evaluation, GPS locating of assets and inspection plan. Inspection plan to include technologies utilized and inspection points required. July through September perform setup work for inspection program. This includes installation of inspection ports and structures to access pipe. October through February perform Nondestructive testing services as identified in Engineering Services. Front load inspection process to minimize impact of weather.