DW-SRF 2013 Project
Green Project Reserve Calculation

Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

ESTIMATE OF VALUE OF WATER LOSS WORKSHEET

	SRF PROJECT ID #	**2013-01**
1	Date:	25-Jul-13
2	PWSID #	ME0090110
3	System	**Bangor Water District**
4	Project Name	Main Replacement Project
5	Location	Union Street - I-95 bridge crossing
6	Engineering Consultant	District Engineer
7	Existing Main size, age, and type	12" cast iron unlined , 1960 vintage
8	Proposed New Water Main size and type	12" ductile iron cement lined
9	New Main Pipe Length	640
10	Estimated Project Cost	$ 304,230

Note: Data from Utilities Annual Report to Maine Public Utilities Commission

Page	Line	Description		Units		2011 data
W-12	15	Total Production Water		gallons per year		1,614,222,000
W-12	17	Total Revenue Water		gallons per year		1,228,650,000
W-12	19	Total Non-Revenue Water		gallons per year		385,572,000
W-12	19	Percent Non-Revenue Water				24%
W-12	22	Utility Usage - treatment		gallons per year		3,154,000
W-12	23	Utility Usage - hydrant flushing		gallons per year		12,930,000
W-12	14	Utility Usage - bleeders		gallons per year		69,459,000
W-12	26	Utility Usage - all other (running customers & blow-offs)		gallons per year		34,644,000
W-12	30	Fire Protection		gallons per year		9,810,000
W-12	31	Main Breaks		gallons per year		6,727,000
W-12	35	Flushing Mains		gallons per year		867,000
W-12	36	Total Accounted for Non-Revenue Water		gallons per year		137,591,000
W-12	37	Total Unaccounted Non-Revenue Water		gallons per year		247,981,000
		Estimated Water Loss From ALL Breaks, Leaks, & Bleeders ***(PUC Accounts total of lines 14, 26,31,35 and 37)***		**gallons per year**		359,678,000
		% of Water Loss of Total Production Water ***(PUC Lines 14,26,31,35,37 divided by Line 15)***				22%
W-9	9	Total Transmission Mains		feet		78,870
W-9	23	Total Distribution Mains		feet		911,854
		Total Mains in Service		feet		990,724
				miles		188
		Estimated Distribution System Losses:				
		Loss Water per mile of pipe		gallons per mile per year		1,916,881
		Loss Water per foot of pipe per year		gallons per foot per year		363
		Loss water per foot of pipe per day		gallons per foot per day		0.99
		Water loss will vary with age of water main - assume Straight line projection as follows:				
		0 to 25 year old pipe	*0 % of Total Loss*	gallons per mile per year		-
		26 to 50 year old pipe	*10% of Total Loss*	gallons per mile per year		*191,688*
		51 to 75 year old pipe	*30% of Total Loss*	gallons per mile per year		*575,064*
		over 75 year old pipe	*60% of Total Loss*	gallons per mile per year		*1,150,128*
				All Loses:		1,916,881
		Age of Main to be replaced		years		70
		Length of Main to be Replaced		mile		0.12
		CALCULATED WATER LOSS - FOR PROPOSED PROJECT		**gallons per year**		**23,235**
W-2	29c	**Total PRODUCTION COST of Water**		**$/year**	**$**	**3,553,644**
W-12	15	Total Production Water		1,000 gallons per year		1,614,222
		Production Cost of Water		**per 1,000 gallons**	**$**	**2.20**
		PROJECTED ANNUAL VALUE of WATER LOSS		**per year**	**$**	**51**

Annual Savings	$	51
PV Factor (uniform series present worth factor (1%, 75 years):	$	52.587
Present Value of Savings over Economic life of pipeline:	**$**	**2,690**
Project Cost	**$**	**304,230**
PV Percent of Project Cost:		1%
ESTIMATED % Green		**1%**
$ Amount Green	**$**	**2,690**