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 #	**2013-18**
1	Date:	7/25/2013
2	PWSID #	ME0090510
3	System	**PASSAMAQUODDY WATER DISTRICT**
4	Project Name	Main Replacement Project
5	Location	Dana, Middle, Third, Vanesse
6	Engineering Consultant	A.E.Hodsdon
7	Existing Main size, age, and type	4" Cast Iron leaded joint unlined installed in early 1900's
8	Proposed New Water Main size and type	8" Ductile Iron cement lined
9	New Main Pipe Length	3,020
10	Estimated Project Cost	$ 807,050

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		93,110,000
W-12	17	Total Revenue Water		gallons per year		40,404,000
W-12	19	Total Non-Revenue Water		gallons per year		52,706,000
W-12	19	Percent Non-Revenue Water				57%
W-12	22	Utility Usage - treatment		gallons per year		5,500,000
W-12	23	Utility Usage - hydrant flushing		gallons per year		4,000,000
W-12	14	Utility Usage - bleeders		gallons per year		4,100,000
W-12	26	Utility Usage - all other (running customers & blow-offs)		gallons per year		423,000
W-12	30	Fire Protection		gallons per year		1,400,000
W-12	31	Main Breaks		gallons per year		144,000
W-12	35	Flushing Mains		gallons per year		12,614,000
W-12	36	Total Accounted for Non-Revenue Water		gallons per year		28,181,000
W-12	37	Total Unaccounted Non-Revenue Water		gallons per year		24,525,000
		Estimated Water Loss From ALL Breaks, Leaks, & Bleeders		**gallons per year**		41,806,000
		(PUC Accounts total of lines 14, 26,31,35 and 37)				
		% of Water Loss of Total Production Water				45%
		(PUC Lines 14,26,31,35,37 divided by Line 15)				
W-9	9	Total Transmission Mains		feet		41,989
W-9	23	Total Distribution Mains		feet		83,899
		Total Mains in Service		feet		125,888
				miles		24
		Estimated Distribution System Losses:				
		Loss Water per mile of pipe		gallons per mile per year		1,753,429
		Loss Water per foot of pipe per year		gallons per foot per year		332
		Loss water per foot of pipe per day		gallons per foot per day		0.91
		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		*175,343*
		51 to 75 year old pipe	*30% of Total Loss*	gallons per mile per year		*526,029*
		over 75 year old pipe	*60% of Total Loss*	gallons per mile per year		*1,052,057*
				All Loses:		1,753,429
		Age of Main to be replaced		years		100
		Length of Main to be Replaced		mile		0.68
		CALCULATED WATER LOSS - FOR PROPOSED PROJECT		**gallons per year**		**717,312**
W-2	29c	**Total PRODUCTION COST of Water**		**$/year**	**$**	**506,801**
W-12	15	Total Production Water		1,000 gallons per year		93,110
		Production Cost of Water		**per 1,000 gallons**	**$**	**5.44**
		PROJECTED ANNUAL VALUE of WATER LOSS		**per year**	**$**	**3,904**

Annual Savings	$	3,904
PV Factor (uniform series present worth factor (1%, 75 years):	$	52.587
Present Value of Savings over Economic life of pipeline:	**$**	**205,318**
Project Cost	**$**	**807,050**
PV Percent of Project Cost:		25%
ESTIMATED % Green		**25%**
$ Amount Green	**$**	**205,318**