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 #	**2013-08**	
1	Date:	25-Jul-13	
2	PWSID #	ME0094060	
3	System	**HAMPDEN WATER DISTRICT**	
4	Project Name	Main Replacement Project	
5	Location	Main Road North	
6	Engineering Consultant	AE Hodsdon	
7	Existing Main size, age, and type	4 and 6 inch cast iron unlined installed in 1930's	
8	Proposed New Water Main size and type	8" ductile iron cement lined	
9	New Main Pipe Length	5,500	
10	Estimated Project Cost	$ 676,056	

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	45,539,000
W-12	17	Total Revenue Water		gallons per year	35,170,000
W-12	19	Total Non-Revenue Water		gallons per year	10,369,000
W-12	19	Percent Non-Revenue Water			23%
W-12	22	Utility Usage - treatment		gallons per year	60,000
W-12	23	Utility Usage - hydrant flushing		gallons per year	771,000
W-12	14	Utility Usage - bleeders		gallons per year	
W-12	26	Utility Usage - all other (running customers & blow-offs)		gallons per year	
W-12	30	Fire Protection		gallons per year	12,000
W-12	31	Main Breaks		gallons per year	90,000
W-12	35	Flushing Mains		gallons per year	50,000
W-12	36	Total Accounted for Non-Revenue Water		gallons per year	983,000
W-12	37	Total Unaccounted Non-Revenue Water		gallons per year	9,386,000
		Estimated Water Loss From ALL Breaks, Leaks, & Bleeders		**gallons per year**	9,526,000
		(PUC Accounts total of lines 14, 26,31,35 and 37)			
		% of Water Loss of Total Production Water			21%
		(PUC Lines 14,26,31,35,37 divided by Line 15)			
W-9	9	Total Transmission Mains		feet	30,000
W-9	23	Total Distribution Mains		feet	39,899
		Total Mains in Service		feet	192,552
				miles	36
		Estimated Distribution System Losses:			
		Loss Water per mile of pipe		gallons per mile per year	261,214
		Loss Water per foot of pipe per year		gallons per foot per year	49
		Loss water per foot of pipe per day		gallons per foot per day	0.14
		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	*26,121*
		51 to 75 year old pipe	*30% of Total Loss*	gallons per mile per year	*78,364*
		over 75 year old pipe	*60% of Total Loss*	gallons per mile per year	*156,728*
				All Loses:	261,214
		Age of Main to be replaced		years	70
		Length of Main to be Replaced		mile	1.04
		CALCULATED WATER LOSS - FOR PROPOSED PROJECT		**gallons per year**	**81,629**
W-2	29c	**Total PRODUCTION COST of Water**		**$/year**	**$ 150,543**
W-12	15	Total Production Water		1,000 gallons per year	45,539
		Production Cost of Water		**per 1,000 gallons**	**$ 3.31**
		PROJECTED ANNUAL VALUE of WATER LOSS		**per year**	**$ 270**

Annual Savings	$	270
PV Factor (uniform series present worth factor (1%, 75 years):	$	52.587
Present Value of Savings over Economic life of pipeline:	**$**	**14,191**
Project Cost	**$**	**676,056**
PV Percent of Project Cost:		2%
ESTIMATED % Green		**2%**
$ Amount Green	**$**	**14,191**