

# DW-SRF 2011 Project

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

## ESTIMATE OF VALUE OF WATER LOSS WORKSHEET

<b>SRF PROJECT ID #</b>	<b>2011-10</b>
1 Date:	10/23/2012
2 PWSID #	ME0090510
3 System	<b>PASSAMAQUODDY WATER DISTRICT</b>
4 Project Name	Main Replacement Project
5 Location	Broadway, Third and Boyton Streets
6 Engineering Consultant	A.E.Hodsdon
7 Existing Main size, age, and type	6" Cast Iron leaded joint unlined installed in early 1890's
8 Proposed New Water Main size and type	8" Ductile Iron cement lined
9 New Main Pipe Length	2,510
10 Estimated Project Cost	\$ 743,750

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

<u>Page</u>	<u>Line</u>	<u>Description</u>	<u>Units</u>	<u>2011 data</u>
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
		<b>Estimated Water Loss From ALL Breaks, Leaks, &amp; Bleeders</b>	<b>gallons per year</b>	<b>41,806,000</b>
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		<b>% of Water Loss of Total Production Water</b>		<b>45%</b>
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
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
		<u>Estimated Distribution System Losses:</u>		
		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
		<u>Water loss will vary with age of water main - assume Straight line projection as follows:</u>		
		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 Losses:	1,753,429
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	0.48
		<b>CALCULATED WATER LOSS - FOR PROPOSED PROJECT</b>	<b>gallons per year</b>	<b>500,126</b>
W-2	29c	<b>Total PRODUCTION COST of Water</b>	<b>\$/year</b>	<b>\$ 506,801</b>
W-12	15	Total Production Water	1,000 gallons per year	93,110
		<b>Production Cost of Water</b>	<b>per 1,000 gallons</b>	<b>\$ 5.44</b>
		<b>PROJECTED ANNUAL VALUE of WATER LOSS</b>	<b>per year</b>	<b>\$ 2,722</b>

Annual Savings	\$	2,722
PV Factor ( uniform series present worth factor (1%, 75 years):	\$	52.587
<b>Present Value of Savings over Economic life of pipeline:</b>	<b>\$</b>	<b>143,152</b>
<b>Project Cost</b>	<b>\$</b>	<b>743,750</b>
PV Percent of Project Cost:		19%
<b>ESTIMATED % Green</b>		<b>19%</b>
<b>\$ Amount Green</b>	<b>\$</b>	<b>143,152</b>