

# 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>2011-09</b>
1 Date:	23-Oct-12
2 PWSID #	ME0091200
3 System	<b>Old Town Water District</b>
4 Project Name	Main Replacement Project
5 Location	Bradley Road
6 Engineering Consultant	A.E. Hodsdon
7 Existing Main size, age, and type	8" cast iron unlined pipe
8 Proposed New Water Main size and type	12" Ductile Iron cement lined pipe
9 New Main Pipe Length	1,580
10 Estimated Project Cost	\$ 340,068

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

Page	Line	Description	Units	2011 PUC data
W-12	15	Total Production Water	gallons per year	352,786,000
W-12	17	Total Revenue Water	gallons per year	304,004,000
W-12	19	Total Non-Revenue Water	gallons per year	48,782,000
W-12	19	Percent Non-Revenue Water		14%
W-12	22	Utility Usage - treatment	gallons per year	14,000,000
W-12	23	Utility Usage - hydrant flushing	gallons per year	7,140,000
W-12	14	Utility Usage - bleeders	gallons per year	1,000,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	3,000,000
W-12	30	Fire Protection	gallons per year	200,000
W-12	31	Main Breaks	gallons per year	1,000,000
W-12	35	Flushing Mains	gallons per year	2,800,000
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	29,140,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	19,642,000
		<b>Estimated Water Loss From ALL Breaks, Leaks, &amp; Bleeders</b>	<b>gallons per year</b>	<b>27,442,000</b>
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		<b>% of Water Loss of Total Production Water</b>		<b>8%</b>
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
W-9	9	Total Transmission Mains	feet	8,458
W-9	23	Total Distribution Mains	feet	229,844
		Total Mains in Service	feet	238,302
			miles	45
		<u>Estimated Distribution System Losses:</u>		
		Loss Water per mile of pipe	gallons per mile per year	608,026
		Loss Water per foot of pipe per year	gallons per foot per year	115
		Loss water per foot of pipe per day	gallons per foot per day	0.32
		<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 60,803
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 182,408
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 364,815
			All Loses:	608,026
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	0.30
		<b>CALCULATED WATER LOSS - FOR PROPOSED PROJECT</b>	<b>gallons per year</b>	<b>109,168</b>
W-2	29c	<b>Total PRODUCTION COST of Water</b>	<b>\$/year</b>	<b>\$ 907,059</b>
W-12	15	Total Production Water	1,000 gallons per year	352,786
		<b>Production Cost of Water</b>	<b>per 1,000 gallons</b>	<b>\$ 2.57</b>
		<b>PROJECTED ANNUAL VALUE of WATER LOSS</b>	<b>per year</b>	<b>\$ 281</b>

Annual Savings	\$	281
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>14,760</b>
<b>Project Cost</b>	<b>\$</b>	<b>340,068</b>
PV Percent of Project Cost:		4%

<b>ESTIMATED % Green</b>	<b>4%</b>
<b>\$ Amount Green</b>	<b>\$ 14,760</b>