

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

SRF PROJECT ID #	2011-07
1 Date:	10/23/2012
2 PWSID #	ME0090920
3 System	MADAWASKA WATER DISTRICT
4 Project Name	Main Replacement Project
5 Location	
6 Engineering Consultant	Woodard & Curran
7 Existing Main size, age, and type	6" cast iron unlined (50 to 80 years old)
8 Proposed New Water Main size and type	8 inch ductile iron pipe
9 New Main Pipe Length	3,900
10 Estimated Project Cost	\$ 520,625

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	135,057,830
W-12	17	Total Revenue Water	gallons per year	94,334,768
W-12	19	Total Non-Revenue Water	gallons per year	40,723,062
W-12	19	Percent Non-Revenue Water		30%
W-12	22	Utility Usage - treatment	gallons per year	5,200,000
W-12	23	Utility Usage - hydrant flushing	gallons per year	2,000,000
W-12	24	Utility Usage - bleeders	gallons per year	2,833,797
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	
W-12	30	Fire Protection	gallons per year	550,000
W-12	31	Main Breaks	gallons per year	6,530,000
W-12	35	Flushing Mains	gallons per year	250,000
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	17,363,797
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	23,359,265
		Estimated Water Loss From ALL Breaks, Leaks, & Bleeders	gallons per year	32,973,062
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		% of Water Loss of Total Production Water		24%
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
W-9	9	Total Transmission Mains	feet	9,950
W-9	23	Total Distribution Mains	feet	104,925
		Total Mains in Service	feet	114,875
			miles	22
		<u>Estimated Distribution System Losses:</u>		
		Loss Water per mile of pipe	gallons per mile per year	1,515,541
		Loss Water per foot of pipe per year	gallons per foot per year	287
		Loss water per foot of pipe per day	gallons per foot per day	0.79
		<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 151,554
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 454,662
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 909,325
		All Loses:		1,515,541
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	0.74
		CALCULATED WATER LOSS - FOR PROPOSED PROJECT	gallons per year	335,830
W-2	29c	Total PRODUCTION COST of Water	\$/year	\$ 545,640
W-12	15	Total Production Water	1,000 gallons per year	135,058
		Production Cost of Water	per 1,000 gallons	\$ 4.04
		PROJECTED ANNUAL VALUE of WATER LOSS	per year	\$ 1,357

Annual Savings	\$	1,357
PV Factor (uniform series present worth factor (1%, 75 years):	\$	52.587
Present Value of Savings over Economic life of pipeline:	\$	71,348
Project Cost	\$	520,625
PV Percent of Project Cost:		14%

ESTIMATED % Green	14%
\$ Amount Green	\$ 71,348