

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 #	2011-01
1 Date:	10/23/2012
2 PWSID #	ME0091440
3 System	SEARSPORT WATER DISTRICT
4 Project Name	Main Replacement Project
5 Location	US Route 1 and Highland Avenue
6 Engineering Consultant	AE Hodsdon
7 Existing Main size, age, and type	10" cast iron unlined leaded joint pipe installed in 1910's
8 Proposed New Water Main size and type	550' of 8 inch and 11,420 of 12 inch Ductile Iron Cement Lined Pipe
9 New Main Pipe Length	11,970
10 Estimated Project Cost	\$ 2,518,597

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	143,387,000
W-12	17	Total Revenue Water	gallons per year	66,703,000
W-12	19	Total Non-Revenue Water	gallons per year	76,684,000
W-12	19	Percent Non-Revenue Water		53%
W-12	22	Utility Usage - treatment	gallons per year	281,000
W-12	23	Utility Usage - hydrant flushing	gallons per year	850,000
W-12	14	Utility Usage - bleeders	gallons per year	6,182,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	1,516,000
W-12	30	Fire Protection	gallons per year	150,000
W-12	31	Main Breaks	gallons per year	16,000,000
W-12	35	Flushing Mains	gallons per year	-
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	24,979,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	51,705,000
Estimated Water Loss From ALL Breaks, Leaks, & Bleeders			gallons per year	75,403,000
<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>				
% of Water Loss of Total Production Water				53%
<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>				
W-9	9	Total Transmission Mains	feet	7,692
W-9	23	Total Distribution Mains	feet	170,355
Total Mains in Service			feet	178,047
			miles	34
<u>Estimated Distribution System Losses:</u>				
Loss Water per mile of pipe			gallons per mile per year	2,236,083
Loss Water per foot of pipe per year			gallons per foot per year	424
Loss water per foot of pipe per day			gallons per foot per day	1.16
<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	223,608
51 to 75 year old pipe		30% of Total Loss	gallons per mile per year	670,825
over 75 year old pipe		60% of Total Loss	gallons per mile per year	1,341,650
All Loses:				2,236,083
Age of Main to be replaced			years	100
Length of Main to be Replaced			mile	2.27
CALCULATED WATER LOSS - FOR PROPOSED PROJECT			gallons per year	3,041,581
W-2	29c	Total PRODUCTION COST of Water	\$/year	\$ 431,485
W-12	15	Total Production Water	1,000 gallons per year	143,387
Production Cost of Water			per 1,000 gallons	\$ 3.01
PROJECTED ANNUAL VALUE of WATER LOSS			per year	\$ 9,153

Annual Savings	\$	9,153
PV Factor (uniform series present worth factor (1%, 75 years):	\$	52.587
Present Value of Savings over Economic life of pipeline:	\$	481,320
Project Cost	\$	2,518,597
PV Percent of Project Cost:		19%

ESTIMATED % Green	19%
\$ Amount Green	\$ 481,320