

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 #	2011-15
1 Date:	10/23/2012
2 PWSID #	ME0091530
3 System	STRONG WATER DISTRICT
4 Project Name	Main Replacement Project
5 Location	Lambert Hill Road
6 Engineering Consultant	A.E. Hodsdon
7 Existing Main size, age, and type	6" cast iron unlined
8 Proposed New Water Main size and type	8 inch ductile iron pipe
9 New Main Pipe Length	5,280
10 Estimated Project Cost	\$ 500,000

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	20,690,000
W-12	17	Total Revenue Water	gallons per year	9,456,000
W-12	19	Total Non-Revenue Water	gallons per year	11,234,000
W-12	19	Percent Non-Revenue Water		54%
W-12	22	Utility Usage - treatment	gallons per year	200,000
W-12	23	Utility Usage - hydrant flushing	gallons per year	1,500,000
W-12	14	Utility Usage - bleeders	gallons per year	190,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	250,000
W-12	30	Fire Protection	gallons per year	200,000
W-12	31	Main Breaks	gallons per year	2,000,000
W-12	35	Flushing Mains	gallons per year	-
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	4,340,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	6,894,000
Estimated Water Loss From ALL Breaks, Leaks, & Bleeders			gallons per year	9,334,000
<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>				
% of Water Loss of Total Production Water				45%
<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>				
W-9	9	Total Transmission Mains	feet	18,500
W-9	23	Total Distribution Mains	feet	37,000
Total Mains in Service			feet	55,500
			miles	11
<u>Estimated Distribution System Losses:</u>				
Loss Water per mile of pipe			gallons per mile per year	887,991
Loss Water per foot of pipe per year			gallons per foot per year	168
Loss water per foot of pipe per day			gallons per foot per day	0.46
<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	88,799
51 to 75 year old pipe			30% of Total Loss	266,397
over 75 year old pipe			60% of Total Loss	532,795
All Losses:				887,991
Age of Main to be replaced			years	100
Length of Main to be Replaced			mile	1.00
CALCULATED WATER LOSS - FOR PROPOSED PROJECT			gallons per year	532,795
W-2	29c	Total PRODUCTION COST of Water	\$/year	\$ 49,142
W-12	15	Total Production Water	1,000 gallons per year	20,690
Production Cost of Water			per 1,000 gallons	\$ 2.38
PROJECTED ANNUAL VALUE of WATER LOSS			per year	\$ 1,265

Annual Savings	\$	1,265
PV Factor (uniform series present worth factor (1%, 75 years):	\$	52.587
Present Value of Savings over Economic life of pipeline:	\$	66,547
Project Cost	\$	500,000
PV Percent of Project Cost:		13%
ESTIMATED % Green		13%
\$ Amount Green	\$	66,547