

DW-SRF 2010 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

1 Date: 19-Jul-10
 2 PWSID # ME0091310
 3 System **PRESQUE ISLE WATER DEPARTMENT**
 4 Project Name Main Replacement Project
 5 Location Parsons Street
 6 Engineering Consultant Woodard & Curran
 7 Existing Main size, age, and type 6" cast iron unlined pipe
 8 Proposed New Water Main size and type 12" Ductile Iron cement lined pipe
 9 New Main Pipe Length 1,300
 10 Estimated Project Cost \$ 450,000

Note: Data from Utilities Annual Report (2008) to Maine Public Utilities Commission

Page	Line	Description	Units	2008
W-12	15	Total Production Water	gallons per year	369,829,000
W-12	17	Total Revenue Water	gallons per year	227,059,000
W-12	19	Total Non-Revenue Water	gallons per year	142,770,000
W-12	19	Percent Non-Revenue Water		39%
W-12	22	Utility Usage - treatment	gallons per year	-
W-12	23	Utility Usage - hydrant flushing	gallons per year	390,000
W-12	14	Utility Usage - bleeders	gallons per year	1,350,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	6,243,000
W-12	30	Fire Protection	gallons per year	3,698,000
W-12	31	Main Breaks	gallons per year	14,264,000
W-12	35	Flushing Mains	gallons per year	500,000
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	26,445,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	116,325,000
		Estimated Water Loss From ALL Breaks, Leaks, & Bleeders	gallons per year	138,682,000
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		% of Water Loss of Total Production Water		37%
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
W-9	9	Total Transmission Mains	feet	19,127
W-9	23	Total Distribution Mains	feet	255,824
		Total Mains in Service	feet	274,951
			miles	52
		<u>Estimated Distribution System Losses:</u>		
		Loss Water per mile of pipe	gallons per mile per year	2,663,169
		Loss Water per foot of pipe per year	gallons per foot per year	504
		Loss water per foot of pipe per day	gallons per foot per day	1.38
		<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 266,317
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 798,951
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 1,597,901
			All Losses:	2,663,169
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	0.25
		CALCULATED WATER LOSS - FOR PROPOSED PROJECT	gallons per year	393,423
W-2	29c	Total PRODUCTION COST of Water	\$/year	\$ 831,546
W-12	15	Total Production Water	1,000 gallons per year	369,829
		Production Cost of Water	per 1,000 gallons	\$ 2.25
		PROJECTED ANNUAL VALUE of WATER LOSS	per year	\$ 885

Annual Savings	\$	885
PV Factor (uniform series present worth factor (1%, 75 years):	\$	52.587
Present Value of Savings over Economic life of pipeline:	\$	46,518
Project Cost	\$	450,000
PV Percent of Project Cost:		10.3%
ESTIMATED % Green		10.3%
\$ Amount Green	\$	46,518