DW-SRF 2013 Project

Green Project Reserve Calculation
Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

V-12 19 Total Revenue Water V-12 19 Percent Non-Revenue Water V-12 19 Percent Non-Revenue Water V-12 29 Utility Usage - Inytrant flushing gallons per year gallons per year V-12 22 Utility Usage - Inytrant flushing gallons per year 7.14 V-12 14 Utility Usage - Inytrant flushing gallons per year 7.14 V-12 14 Utility Usage - Bloeders 7.14 V-12 15 Utility Usage - Bloeders 7.14 V-12 18 Utility Usage - Bloeders 7.14 V-12 19 Flushing Mains 7.14 V-12 19 Flushing Mains 9.14 V-12 19 Flushing Mains 9.14 V-12 19 Flushing Mains 9.14 V-12 19 Total Accounted for Non-Revenue Water 9.10 V-12 19 Total Unaccounted Non-Revenue Water 9.10 V-13 Total Unaccounted Non-Revenue Water 9.10 V-14 19 Total Accounted In Inse 14, 26, 31, 35 and 37) V-15 Very 19 Total Transmission Mains 9.15 Estimated Water Loss From ALL Breaks, Leaks, & Bleeders (PUC Lines 14, 26, 31, 35, 37 divided by Line 15) W-9 19 Total Transmission Mains 19 W-9 23 Total Transmission Mains 19 Estimated Distribution System Losses: 19 Loss Water per foot of pipe per year 9.10 Loss Water per foot of pipe per year 9.10 Loss Water per foot of pipe per year 9.10 Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Loss Water per foot of pipe per year 9.10 Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe per year 9.10 Value Loss Water per foot of pipe 9.10 Value Loss 9.10		IL OF V	ALUE OF WATER LOSS WORKSHEET			
2 PWSID # 01 Town Water District 4 Project Name	S	SRF PR	OJECT ID #	2013-15		
3 System	1 🛭	Date:		25-Jul-13		
A Project Name	2 F	PWSID#		ME0091200		
4 Project Name	3 S	System		Old Town Water D	District	
5 Location 6 Engineering Consultant 7 Existing Main size, age, and type 10 Cast iron unlined pipe, 1930 8 Proposed New Water Main size and type 11 Ductile Iron cement lined pipe 9 New Main Pipe Length 10 Estimated Project Cost 1 \$ 1,473,048 8et Data From Utilities Annual Report to Maine Public Utilities Commission 10 Estimated Project Cost 1 Total Production Water 17 Total Revenue Water 17 Total Revenue Water 17 Total Revenue Water 18 Lines 19 Lines 19 Lines 19 Lines 10 Lines		•	ame	Main Replacement	Project	
Figure F		-		•	=	
7 Existing Main size, age, and type			CoItaat		•	
8 Proposed New Water Main size and type 9 New Main Pipe Length 10 Estimated Project Cost 10 Stafform Utilities Annual Report to Maine Public Utilities Commission 10 Estimated Project Cost 15 Total Production Water 15 Total Production Water 17 Total Revenue Water 17 Total Revenue Water 18 Percent Non-Revenue Water 19 Total Non-Revenue Water 19 Total Non-Revenue Water 19 Total Lillity Usago - Indonence was blow-offs) 19 Estimated Water 10 Utility Usago - Indonence was blow-offs) 11 Utility Usago - Indonence was blow-offs) 12 Stafform St		-	-			
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10 Estimated Project Cost \$ 1.473,048		•	* *	12" Ductile Iron cer	nent lined pipe	
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Page Line Line Description Units V-12 15 Total Production Water gallons per year 352,78 V-12 17 Total Revenue Water gallons per year 304,00 V-12 19 Percent Non-Revenue Water gallons per year 304,00 V-12 19 Percent Non-Revenue Water gallons per year 304,00 V-12 23 Utilify Usage - Inytrant flushing gallons per year 7,14 V-12 14 Utilify Usage - Inytrant flushing gallons per year 7,14 V-12 14 Utilify Usage - Inytrant flushing gallons per year 9,100 V-12 15 Utilify Usage - Inytrant flushing gallons per year 9,100 V-12 16 Utilify Usage - Inytrant flushing gallons per year 9,100 V-12 17 Main Breaks 1,000 V-12 18 Fire Protection gallons per year 9,100 V-12 19 Fire Protection Revenue Water 9,100 V-12 19 Fire Protection Gallons Per year 9,100 V-12 19 Fire Protection Gallons Per year 9,100 V-12 19 Fire Protection Gallons Per year 9,100 V-13 19 Fire Protection Gallons Per year 9,100 V-14 19 Fire Protection Gallons Per year 9,100 V-15 19 Fire Protection Gallons Per year 9,100 V-16 Of Caccourts total of lines 14, 26,31,35 and 37) V-17 V-18 V-18 V-18 V-18 V-18 V-18 V-18 V-18	10 E	Estimated	d Project Cost	\$ 1,473,048		
Page Line Line Description Units V-12 15 Total Production Water gallons per year 352,78 V-12 17 Total Revenue Water gallons per year 304,00 V-12 19 Percent Non-Revenue Water gallons per year 304,00 V-12 19 Percent Non-Revenue Water gallons per year 304,00 V-12 23 Utilify Usage - Inytrant flushing gallons per year 7,14 V-12 14 Utilify Usage - Inytrant flushing gallons per year 7,14 V-12 14 Utilify Usage - Inytrant flushing gallons per year 9,100 V-12 15 Utilify Usage - Inytrant flushing gallons per year 9,100 V-12 16 Utilify Usage - Inytrant flushing gallons per year 9,100 V-12 17 Main Breaks 1,000 V-12 18 Fire Protection gallons per year 9,100 V-12 19 Fire Protection Revenue Water 9,100 V-12 19 Fire Protection Gallons Per year 9,100 V-12 19 Fire Protection Gallons Per year 9,100 V-12 19 Fire Protection Gallons Per year 9,100 V-13 19 Fire Protection Gallons Per year 9,100 V-14 19 Fire Protection Gallons Per year 9,100 V-15 19 Fire Protection Gallons Per year 9,100 V-16 Of Caccourts total of lines 14, 26,31,35 and 37) V-17 V-18 V-18 V-18 V-18 V-18 V-18 V-18 V-18						2044 PUID 1 4
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Percent Non-Revenue Water 14,00	V-12	17	Total Revenue Water		gallons per year	304,004
V-12 19 Percent Non-Revenue Water V-12 23 Utility Usage - Independent V-12 24 Utility Usage - Independent V-12 25 Utility Usage - Independent V-12 26 Utility Usage - Independent V-12 27 Utility Usage - Independent V-12 28 Utility Usage - Independent V-12 29 Utility Usage - Independent V-12 29 Utility Usage - Independent V-12 20 Utility Usage - Independent V-12 Utility Usage - Indepe	V-12	19	Total Non-Revenue Water			48.782
14.00					gamene per year	10,102
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14 Utility Usage - bieeders 1.00 20 20 20 20 20 20 20			, ,			
V-12 26 Utility Usage - all other (running customers & blow-offs) gallons per year gallons per year 20 V-12 31 Main Breaks gallons per year 2,20 V-12 35 Flushing Mains gallons per year 2,28 V-12 36 Total Accounted for Non-Revenue Water gallons per year 2,28 V-12 37 Total Unaccounted Non-Revenue Water gallons per year 2,9,14 V-12 37 Total Unaccounted Non-Revenue Water gallons per year 19,64 Estimated Water Loss From ALL Breaks, Leaks, & Bleeders (PUC Accounts total of lines 14, 26,31,35 and 37) % of Water Loss of Total Production Water (PUC Lines 14,26,31,35,37 divided by Line 15) W-9 9 Total Transmission Mains feet 223 Total Distribution System Losses: Loss Water per mile of pipe gallons per mile per year 230 water per foot of pipe per day 240 gallons per foot per day 240 gallons per foot per day 250 to 25 year old pipe 250 to 25 year old pipe 30% of Total Loss 32 gallons per mile per year 36 to 75 year old pipe 30% of Total Loss 32 gallons per mile per year 36 to 75 year old pipe 30% of Total Loss 32 gallons per mile per year 36 to 75 year old pipe 30% of Total Loss 32 gallons per mile per year 36 to 75 year old pipe 30% of Total Loss 32 gallons per mile per year 36 to 75 year old pipe 30% of Total Loss 36 gallons per mile per year 36 to 75 year old pipe 30% of Total Loss 36 gallons per mile per year 36 to 75 year old pipe 30% of Total Loss 36 gallons per mile per year 36 to 75 year old pipe 30% of Total Loss 36 gallons per mile per year 37 year old pipe 30% of Total Loss 36 gallons per mile per year 37 year old pipe 30% of Total Loss 36 gallons per mile per year 36 year 37 year old pipe 30% of Total Loss 36 gallons per mile per year 37 year old pipe 30% of Total Loss 36 gallons per mile per year 37 year old pipe 30% of Total Loss 36 year 38 years 38 years 39 yea						,
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Main Breaks gallons per year 1,00	V-12		, , ,	•		200
V-12 35 Flushing Mains V-12 36 Total Accounted for Non-Revenue Water V-12 36 Total Caccounted Non-Revenue Water Silvent Caccounted Non-Revenue Water V-12 37 Total Unaccounted Non-Revenue Water Festimated Water Loss From ALL Breaks, Leaks, & Bleeders (PUC Accounts total of lines 14, 26, 31, 35 and 37) % of Water Loss of Total Production Water (PUC Lines 14, 26, 31, 35, 33 and 37) % of Water Loss of Total Production Water (PUC Lines 14, 26, 31, 35, 37 divided by Line 15) W-9 9 Total Transmission Mains Feet Total Mains in Service Feet Total Mains in Service Feet Iniles Estimated Distribution System Losses: Loss Water per mile of pipe Silvent Feet Of the per year Loss Water per foot of pipe per day Water loss will vary with age of water main - assume Straight line projection as follows: 0 to 25 year old pipe 0 % of Total Loss gallons per mile per year gallons per mile per year 26 to 50 year old pipe 30 % of Total Loss gallons per mile per year gallons per mile per year All Loses: 60 Age of Main to be replaced Length of Main to be Replaced CALCUL ATEO WATER LOSS - FOR PROPOSED PROJECT 35 Production Cost of Water Production Cost of Water Production Cost of Water Production Cost of Water Production Service Project Cost PV Factor (uniform series present worth factor (1%, 75 years): \$ 90 Project Cost PV Percent of Project Cost: ESTIMATED % Green						
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(PUC Accounts total of lines 14, 26,31,35 and 37) % of Water Loss of Total Production Water (PUC Lines 14,26,31,35,37 divided by Line 15) W-9 9 Total Transmission Mains feet W-9 23 Total Distribution Mains feet Total Mains in Service feet miles Estimated Distribution System Losses: Loss Water per mile of pipe Loss Water per mile of pipe gallons per mile per year gallons per foot per year gallons per foot per year gallons per foot per year gallons per mile per year day water loss will vary with age of water main - assume Straight line projection as follows: O to 25 year old pipe O % of Total Loss gallons per mile per year foot 75 year old pipe O % of Total Loss gallons per mile per year foot 75 year old pipe O % of Total Loss gallons per mile per year gallons per mile per year foot 75 year old pipe O % of Total Loss gallons per mile per year gallons per mile per year foot 75 year old pipe O % of Total Loss gallons per mile per year foot 75 year old pipe O % of Total Loss gallons per mile per year foot 75 year old pipe foot per foot 95 year	N-12	37	Total Unaccounted Non-Revenue Water		gallons per year	19,642
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51 to 75 year old pipe 30% of Total Loss gallons per mile per year All Loses: 60 Age of Main to be replaced Length of Main to be Replaced CALCULATED WATER LOSS - FOR PROPOSED PROJECT gallons per year mile gallons per year production Cost of Water 1,000 gallons per year 900 gallons 900 ga			0 to 25 year old pipe	0 % of Total Loss	gallons per mile per year	
Over 75 year old pipe 60% of Total Loss gallons per mile per year All Loses: Age of Main to be replaced Length of Main to be Replaced CALCULATED WATER LOSS - FOR PROPOSED PROJECT W-2 29c V-12 15 Total PRODUCTION COST of Water V-12 15 Total Production Water Production Cost of Water Production Cost of Water Production Cost of Water PROJECTED ANNUAL VALUE of WATER LOSS PROJECTED ANNUAL VALUE of WATER LOSS Per year Annual Savings PV Factor (uniform series present worth factor (1%, 75 years): \$ 5 Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost PV Percent of Project Cost: ESTIMATED % Green			26 to 50 year old pipe	10% of Total Loss	gallons per mile per year	60
Over 75 year old pipe 60% of Total Loss gallons per mile per year All Loses: Age of Main to be replaced Length of Main to be Replaced CALCULATED WATER LOSS - FOR PROPOSED PROJECT W-2 29c V-12 15 Total PRODUCTION COST of Water V-12 15 Total Production Water Production Cost of Water Production Cost of Water Production Cost of Water PROJECTED ANNUAL VALUE of WATER LOSS PROJECTED ANNUAL VALUE of WATER LOSS Per year Annual Savings PV Factor (uniform series present worth factor (1%, 75 years): \$ 5 Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost PV Percent of Project Cost: ESTIMATED % Green			51 to 75 year old pipe	30% of Total Loss	gallons per mile per year	182
Age of Main to be replaced Length of Main to be Replaced CALCULATED WATER LOSS - FOR PROPOSED PROJECT W-2 29c V-12 15 Total PRODUCTION COST of Water Total Production Water Production Cost of Water Production Cost of Water Production Cost of Water Project Cost PV Factor (uniform series present worth factor (1%, 75 years): \$ Present Value of Savings over Economic life of pipeline: \$ PV Percent of Project Cost: ESTIMATED % Green				60% of Total Loss		364
Length of Main to be Replaced CALCULATED WATER LOSS - FOR PROPOSED PROJECT W-2 29c V-12 15 Total Production Water Production Cost of Water Production Cost of Water Production Cost of Water PROJECTED ANNUAL VALUE of WATER LOSS PROJECTED ANNUAL VALUE of WATER LOSS Present Value of Savings over Economic life of pipeline: Project Cost PV Percent of Project Cost: ESTIMATED % Green					· · · · ·	608
Length of Main to be Replaced CALCULATED WATER LOSS - FOR PROPOSED PROJECT W-2 29c V-12 15 Total Production Water Production Cost of Water Production Cost of Water Production Cost of Water PROJECTED ANNUAL VALUE of WATER LOSS PROJECTED ANNUAL VALUE of WATER LOSS Present Value of Savings over Economic life of pipeline: Project Cost PV Percent of Project Cost: ESTIMATED % Green			Age of Main to be replaced		vears	
CALCULATED WATER LOSS - FOR PROPOSED PROJECT gallons per year 17 W-2 29c Total PRODUCTION COST of Water \$/year \$ 90 V-12 15 Total Production Water 1,000 gallons per year 35 Production Cost of Water per 1,000 gallons \$ PROJECTED ANNUAL VALUE of WATER LOSS per year \$ Annual Savings \$ PV Factor (uniform series present worth factor (1%, 75 years): \$ Project Cost \$ Project Cost \$ 1,47 PV Percent of Project Cost: ESTIMATED % Green			0 1		-	
V-12 15 Total Production Water Production Cost of Water Production Cost of Water Production Cost of Water Production Cost of Water Project Cost Project Cost: Annual Savings Section Project Cost			•	D PROJECT		179
V-12 15 Total Production Water Production Cost of Water Production Cost of Water Production Cost of Water Production Cost of Water Project Cost Project Cost: Annual Savings Section Project Cost	N-2	29c	Total PRODUCTION COST of Water		\$/vear	\$ 907
PROJECTED ANNUAL VALUE of WATER LOSS Per year Annual Savings PV Factor (uniform series present worth factor (1%, 75 years): \$ 5 Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost PV Percent of Project Cost: ESTIMATED % Green					. •	
PROJECTED ANNUAL VALUE of WATER LOSS per year Annual Savings \$ PV Factor (uniform series present worth factor (1%, 75 years): \$ 5 Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost \$ 1,47 PV Percent of Project Cost: ESTIMATED % Green	v - 1 Z	10				
Annual Savings \$ PV Factor (uniform series present worth factor (1%, 75 years): \$ 5 Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost \$ 1,47 PV Percent of Project Cost: ESTIMATED % Green			Production Cost of water		per 1,000 gallons	Þ
PV Factor (uniform series present worth factor (1%, 75 years): \$ 5 Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost \$ 1,47 PV Percent of Project Cost: ESTIMATED % Green			PROJECTED ANNUAL VALUE of WATER LOSS	3	per year	\$
PV Factor (uniform series present worth factor (1%, 75 years): \$ 5 Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost \$ 1,47 PV Percent of Project Cost: ESTIMATED % Green						
PV Factor (uniform series present worth factor (1%, 75 years): \$ 5 Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost \$ 1,47 PV Percent of Project Cost: ESTIMATED % Green					Annual Savings	\$
Present Value of Savings over Economic life of pipeline: \$ 2 Project Cost \$ 1,47 PV Percent of Project Cost: ESTIMATED % Green			DVE:	::	•	
Project Cost \$ 1,47 PV Percent of Project Cost: ESTIMATED % Green						
PV Percent of Project Cost: ESTIMATED % Green			Present Va	lue of Savings over	Economic life of pipeline:	\$ 24
PV Percent of Project Cost: ESTIMATED % Green					Builting Co.	<u> </u>
ESTIMATED % Green					-	\$ 1,473
					,	
						\$ 24