

ELECTRONICALLY FILED ON 12/19/16

Harry Lanphear
 Administrative Director
 Maine Public Utilities Commission
 State House 18
 Augusta, ME 04333-0018

RE: Auburn Water District – Sect. §6104 Rate Filing Requesting a 16.5% Revenue Increase

Dear Mr. Lanphear:

Transmitted herewith, please find an electronic copy of the Auburn Water District’s proposed 16.5% rate increase filing. The package includes financial documentation to support the proposed rate increase. Also attached are proposed Tariff Sheets reflecting the proposed rate increase, as well as a System Assessment Report.

Please note that there are no proposed changes to the rate design. We reviewed the PUC’s Chapter 69 Determination of Fire Protection Revenues for Water Utilities and performed the necessary calculations and then applied the Fire Protection Allocation Curve which resulted in 17% to be charged for fire protection.

The Water District anticipates holding a Public Hearing on January 18, 2017. Per the requirements of Title 35A Section §6104 we will publish a newspaper notice and also mail notice to each individual metered customer. This will occur at least 14 days prior to the Public Hearing and we plan to target this around January 4, 2017. We will forward you copies of both the newspaper notice and the customer notification letters.

If you have any questions relating to this Rate Filing, please do not hesitate to contact me at shazelton@awsd.org, or Tel: 207-784-6469.

Sincerely

Sid Hazelton, P.E.
 Superintendent
 Auburn Water District

cc: Robert Creamer, Office of the Public Advocate

AUBURN WATER DISTRICT
Proposed Schedule for 2017 Rate Increase

Finalize numbers with the Trustees	December 15, 2016
Submit preliminary rate case information to Maine Public Utilities Commission and Public Advocate, and have information available at the District's office	December 19, 2016 (must be at least 30 days before public hearing date)
Send out customer notices of proposed increase and publish legal notice in local newspaper	January 4, 2017 (must be at least 14 days before the public hearing date)
Hold Public Hearing	January 18, 2017
File final rate case documents with MPUC, including a summary of the public hearing*	January 30, 2017 (must be no sooner than 10 days, but no later than 30 days, after the public hearing date)
Proposed effective date of rate increase	March 1, 2017 (must be at least 30 days after the MPUC receives the final filing)

*If at least 15% of the customers sign a petition and submit it within 30 days after the hearing, then the MPUC will suspend the filing and investigate further.

AUBURN WATER DISTRICT
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AUBURN WATER DISTRICT
STATEMENTS OF INCOME

Exhibit A

	YEAR 2014 Last Allowed	YEAR 2015 ACTUAL	YEAR 2016 PROJECTED	YEAR 2017 * PRO FORMA
OPERATING REVENUES:				
Metered Residential	\$ 1,309,297	\$ 1,316,867	\$ 1,328,134	\$ 1,589,776
Flat Rate Residential	11,391	11,822	11,807	\$ 14,133
Metered Commercial	400,144	408,285	415,070	\$ 496,839
Metered Industrial	502,101	504,710	352,336	\$ 421,746
Government Agencies	111,043	123,636	132,962	\$ 159,156
Public Fire Protection	611,494	611,492	611,492	\$ 659,662
Private Fire Protection	302,066	303,479	305,561	\$ 365,757
Subtotal			3,157,362	3,707,068
Miscellaneous Water Revenues	115,231	125,661	173,000	173,000
Total Operating Revenues	3,362,767	3,405,952	3,330,362	3,880,068
OPERATING EXPENSES:				
Operation & Maintenance	2,159,913	2,002,840	2,068,010	2,062,190
Depreciation	185,941	602,225	619,975	619,975
Assessments	20,093	22,356	22,224	22,891
Amortization	4,045	2,761	2,761	-
Total Operating Expenses	2,369,992	2,630,182	2,712,970	2,705,056
Net Operating Revenue	992,775	775,770	617,392	1,175,012
OTHER INCOME:				
Jobbing Income (at Net)	44,149	32,260	21,500	21,289
Interest Income	12,505	25,431	6,934	7,142
Total Non-Operating Income	56,654	57,691	28,434	28,431
OTHER DEDUCTIONS:				
Interest on Bonds	207,435	221,466	177,573	167,707
Amortization of Debt expense	10,469	8,286	8,286	8,286
Total	217,904	229,752	185,859	175,993
Net Income Before Contractual Item	831,525	603,709	459,967	1,027,450
Appropriation of Bonded Debt Retired	831,525	773,401	782,184	786,806
NET INCOME OR (NET LOSS)	\$ -	\$ (169,692)	\$ (322,217)	\$ 240,644

AUBURN WATER DISTRICT
OPERATIONS AND MAINTENANCE EXPENSES

Exhibit B

O&M (Row 19) Detail	YEAR 2015 ACTUAL	YEAR 2016 PROJECTED	YEAR 2017 PRO FORMA
SALARIES AND WAGES:			
Pumping and Source of Supply	1,966	460	
Water Treatment	131,946	117,400	
Distribution Operation & Maintenance	438,367	445,025	
Customer Accounts	20,117	26,125	
Administrative	83,170	92,400	
	675,566	681,410	701,852
SALARIES AND FEES:			
Officers and Trustees	53,725	47,675	49,105
PENSION PLANS AND BENEFITS	331,674	369,110	372,801
PURCHASED POWER	115,903	134,250	138,278
CHEMICALS	72,287	83,000	85,490
MATERIALS AND SUPPLIES:			
Pumping and Source of Supply	613	575	
Water Treatment	22,481	20,500	
Distribution Operation & Maintenance	130,748	96,775	
Customer Accounts	0	300	
Administrative	3,951	6,800	
	157,793	124,950	128,699
CONTRACTUAL SERVICES:			
Accounting and Legal	40,781	52,725	
Pumping and Source of Supply	10,483	17,000	
Water Treatment	45,613	65,400	
Distribution Operation & Maintenance	50,405	43,000	
Customer Accounts	16,212	12,500	
Administrative	6,765	2,000	
	170,259	192,625	202,256
RENTALS:			
Distribution Maintenance	2,518	2,500	
	2,518	2,500	2,575
TRANSPORTATION:	72,445	66,800	68,804
INSURANCE COVERAGE:			
Vehicles	9,813	9,910	10,207
Liability	13,004	14,850	15,296

Workers' Compensation	18,266	30,500	31,415
Other	13,866	12,150	12,515
	54,949	67,410	69,432
BAD DEBTS:			
Customer Accounts	1	0	0
REGULATORY:	1,524	1,510	1,510
MISCELLANEOUS:			
All Other	59,977	65,050	
Watershed Protection	234,219	231,720	
	294,196	296,770	241,388
TOTALS	\$ 2,002,840	\$ 2,068,010	\$ 2,062,190

Utility Name: AUBURN WATER DISTRICT

Year of Report: December 15, 2016

BASIS FOR WATER DEPRECIATION CHARGES

Line Number	ACCT. NO. (a)	ACCOUNT NAME (b)	Total Investment (c)	Depreciation Base (d)	Depreciation Rate (e)	Annual Depreciation (f)
1	304	Structures and Improvements	4,058,875	98	.02 to 10%	78,015
2	305	Collecting and Impounding Reservoirs	7,488	100	1.330%	100
3	306	Lake, River and Other Intakes	523,657	100	1.250%	6,546
4	307	Wells and Springs	0			0
5	308	Infiltration Galleries and Tunnels	0			0
6	309	Supply Mains	6,020	100	1.500%	90
7	310	Power Generation Equipment	313,207	100	5.000%	15,660
8	311	Pumping Equipment	2,219,067	67	4.000%	59,674
9	320	Water Treatment Equipment	1,941,415	91	5.000%	88,124
10	330	Distribution Reservoirs and Standpipes	5,011,182	85	1.33. %	56,278
11	331	Transmission and Distribution Mains	16,197,440	72	1% to 1.25%	144,642
12	333	Services	1,258,133	20	3.000%	7,799
13	334	Meters and Meter Installations	1,507,430	77	4.000%	46,269
14	335	Hydrants	795,245	90	1.500%	10,833
15	339	Other Plant and Miscellaneous Equip.	266,591			15,897
16	340	Office Furniture and Equipment	125,403	87	5.000%	5,448
17	341	Transportation Equipment	436,046	60	15.000%	39,490
18	342	Stores Equipment	0			0
19	343	Tools, Shop and Garage Equipment	224,724	100	5% to 10%	17,373
20	344	Laboratory Equipment	32,781	40	10.000%	1,327
21	345	Power Operated Equipment	0			0
22	346	Communication Equipment	400,875	55	10.000%	21,882
23	347	Miscellaneous Equipment	58,023	78	10.000%	4,528
24	348	Other Tangible Plant	0			0
25		Total Depreciable Water				
26		Plant In Service	35,383,602			619,975
Pro Forma Depreciation on Additions						
Miscellaneous Equipment			0	10%		0
New Mains			0	1.25%		0
UV Plant Equipment			0	1.25%		0
Vehicles			0	15%		0
Chapter 68 Adjust			0	100%		0
TOTAL DEPRECIATION TO EXHIBIT A						\$ 619,975

Sub-total PPE	35,383,602
Organization	10,000
Franchise	1,000
Land	75,085
Gross Utility Plant - CURRENT	35,469,687
Capital Reserve Test #1 - Max at 1% =	354,697

AUBURN WATER DISTRICT
DEBT SERVICE REQUIREMENTS

Issue Date	Principal Payments	<u>Base Year</u>	<u>Projected</u>	<u>Pro Forma</u>
		<u>Yr. 2015</u>	<u>Yr. 2016</u>	<u>Yr. 2017</u>
5/23/2002	MMBB - General Improvements	95,097	99,971	105,094
5/23/2002	MMBB - General Improvements	124,425	124,425	124,425
12/1/2007	MMBB - 24" Transmission Main	32,213	32,726	33,248
6/18/2008	MMBB - Clean & Line Main	23,875	24,174	24,475
5/20/2009	MMBB - Phase 1&2 UV/Main	118,525	118,525	118,525
5/20/2009	MMBB - Phase 1&2 UV/Main	57,288	57,288	57,288
10/28/2010	MMBB - Refinance Debt	141,108	142,108	138,108
10/28/2010	MMBB - Chloramine Facility	17,722	17,899	18,078
10/28/2010	MMBB - Phase 2 UV / Meters	122,248	124,000	126,221
4/23/2014	MMBB - Main Replacements	40,901	41,068	41,344
	TOTALS	773,402	782,184	786,806

Issue Date	Interest Payments	<u>Yr. 2015</u>	<u>Yr. 2016</u>	<u>Yr. 2017</u>
5/23/2002	MMBB - General Improvements	34,434	29,223	23,676
5/23/2002	MMBB - General Improvements	13,002	13,000	12,997
12/1/2007	MMBB - 24" Transmission Main	9,320	8,807	8,286
6/18/2008	MMBB - Clean & Line Main	5,799	5,499	5,194
5/20/2009	MMBB - Phase 1&2 UV/Main	5,926	5,926	5,926
5/20/2009	MMBB - Phase 1&2 UV/Main	2,864	2,864	2,864
10/28/2010	MMBB - Refinance Debt	20,579	17,757	14,915
10/28/2010	MMBB - Chloramine Facility	4,098	3,920	3,741
10/28/2010	MMBB - Phase 2 UV / Meters	66,150	64,357	62,076
4/23/2014	MMBB - Main Replacements	28,475	28,307	28,032
	TOTAL INTEREST EXPENSE	190,647	179,660	167,707

Memo only:	Total debt service payments	964,049	961,844	954,513
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AUBURN WATER DISTRICT
ESTIMATED REVENUE - PRESENT AND PROPOSED

Exhibit E

	<u>At Present Rates</u>	<u>At Proposed Rates</u>	<u>Dollar Increase</u>	<u>Percentage Increase</u>
GENERAL SERVICE	2,228,502	2,667,517	439,015	19.70%
New Customers added <i>(Additional users)</i>	0	0	0	
Flat Rates	11,807	14,133	2,326	19.70%
Public Fire Protection Exhibit I	611,492	659,662	48,170	7.88%
Private Fire Protection	305,561	365,757	60,196	19.70%
Miscellaneous	173,000	173,000	0	
TOTALS	<u>3,330,362</u>	<u>3,880,068</u>	<u>549,706</u>	<u>16.51%</u>
% of Public Fire to Total Revenue	<u>18.4%</u>	<u>17.0%</u>		

AUBURN WATER DISTRICT

Exhibit F

Comparison of Present and Proposed Rates
Quarterly and Monthly Rates of Water
CHARGED TO METERED CUSTOMERS

<u>QUARTERLY RATES:</u>	Current Rates		Proposed Rates		
	<u>Volume used</u>	<u>Rate</u>	<u>Billing</u>	<u>Rate</u>	<u>Billing</u>
First 1,200 Cubic Ft.	Minimum	\$	35.46	\$	42.45
1,200 to 9,000 cu. Ft.	\$	2.24	per 100 cu. ft	\$	2.68 per 100 cu. ft
9,000 to 30,000 cu. Ft.	\$	1.90	per 100 cu. ft	\$	2.27 per 100 cu. ft
Over 30,000 Cubic Ft.	\$	1.69	per 100 cu. ft	\$	2.02 per 100 cu. ft

<u>MONTHLY RATES:</u>	Current Rates		Proposed Rates		
	<u>Volume used</u>	<u>Rate</u>	<u>Billing</u>	<u>Rate</u>	<u>Billing</u>
First 400 Cubic Ft.	Minimum	\$	11.82	\$	14.15
400 to 3,000 cu. Ft.	\$	2.24	per 100 cu. ft	\$	2.68 per 100 cu. ft
3,000 to 10,000 cu. Ft.	\$	1.90	per 100 cu. ft	\$	2.27 per 100 cu. ft
Over 10,000 Cubic Ft.	\$	1.69	per 100 cu. ft	\$	2.02 per 100 cu. ft

<u>MINIMUM CHARGES:</u>	Current Rates		Proposed Rates	
	<u>Minimum Charges</u>		<u>Minimum Charges</u>	
<u>Size of Meter</u>	<u>Quarterly</u>	<u>Monthly</u>	<u>Quarterly</u>	<u>Monthly</u>
5/8"	\$ 35.46	\$ 11.82	\$ 42.45	\$ 14.15
3/4"	\$ 55.60	\$ 18.53	\$ 66.55	\$ 22.18
1-Inch	\$ 89.18	\$ 29.73	\$ 106.75	\$ 35.58
1 and 1/2"	\$ 169.77	\$ 56.59	\$ 203.21	\$ 67.74
2"	\$ 278.50	\$ 92.83	\$ 333.36	\$ 111.12
3"	\$ 518.00	\$ 172.67	\$ 620.05	\$ 206.68
4"	\$ 811.86	\$ 270.62	\$ 971.80	\$ 323.93
6"	\$ 1,520.97	\$ 506.99	\$ 1,820.60	\$ 606.87
8"	\$ 2,382.02	\$ 794.01	\$ 2,851.28	\$ 950.43

AUBURN WATER DISTRICT
CONTINGENCY COMPUTATION

Exhibit J

	Reference	<u>AMOUNTS</u>
<u>CONTINGENCY ALLOWANCE CALCULATION:</u>		
Utility Operating Expenses	F-4, Line 13	\$ 2,062,190
Total Interest Expense	F-4, Line 39	175,993
Interest and Dividend Income	F-4, Line 22	(7,142)
Merchandise & Jobbing - Net	F-4, Line 19	(21,289)
Contractual appropriation - Bonded debt	F-5	<u>786,806</u>
Actual Revenue Required to Operate the Utility		2,996,558
Filed Percentage		0.00%
Annual Contingency Allowance		<u><u>\$ -</u></u>
Capital Reserve Test #2		10.00%
Capital Reserve Maximum		<u><u>\$ 299,656</u></u>

AUBURN WATER DISTRICT
HISTORICAL REVENUE at PRESENT RATES
YEAR: 2015

Exhibit G

	No. of Bills	Usage in 100 Cubic Ft.	Rate	Billing on Minimum	Billing on Usage
5/8" Quarterly	14,982	8,227,200	\$35.46	\$ 531,262	\$ -
5/8" Monthly	6,495	949,700	\$11.82	\$ 76,771	\$ -
Quarterly					
1,200 to 9,000 cu. Ft.	10,551	24,188,100	\$2.24	\$ -	\$ 541,813
9,000 to 30,000 cu. Ft.	130	1,758,100	\$1.90	\$ -	\$ 33,404
Over 30,000 cu. Ft.	11	500,985	\$1.69	\$ -	\$ 8,467
Monthly					
400 to 3,000 cu. Ft.	6,636	23,526,800	\$2.24	\$ -	\$ 527,000
3,000 to 10,000 cu. Ft.	1,756	8,268,600	\$1.90	\$ -	\$ 157,103
Over 10,000 cu. Ft.	95	1,921,685	\$1.69	\$ -	\$ 32,476

OTHER MINIMUMS:

3/4" Quarterly	1,532		\$55.60	\$ 85,179	\$ -
3/4" Monthly	1,018		\$18.53	\$ 18,864	\$ -
1" Quarterly	333		\$89.18	\$ 29,697	\$ -
1" Monthly	1,311		\$29.73	\$ 38,976	\$ -
1.5" Quarterly	40		\$169.77	\$ 6,791	\$ -
1.5" Monthly	995		\$56.59	\$ 56,307	\$ -
2" Quarterly	29		\$278.50	\$ 8,077	\$ -
2" Monthly	1,066		\$92.83	\$ 98,957	\$ -
3" Monthly	157		\$172.67	\$ 27,109	\$ -
4" Monthly	60		\$270.62	\$ 16,237	\$ -
6" Monthly	24		\$506.99	\$ 12,168	\$ -

TOTALS \$ 1,006,394 \$ 1,300,264

Estimated 2015 Revenue \$ **2,306,658**
Based on billing data

2015 Annual Revenue per General Ledger \$ **2,353,498**

VARIANCE = 2.03% \$ **46,840**

AUBURN WATER DISTRICT
ESTIMATED REVENUE at PROPOSED RATES

EXHIBIT H

YEAR: 2017

(estimating 2017 revenue impacts by applying actual 2015 billed use to projected rates)

	No. of Bills	Usage in 100 Cubic Ft.	Proposed Rates	Billing on Minimum	Billing on Excess
5/8" Quarterly	14,982	8,227,200	\$42.45	\$ 635,920	\$ -
5/8" Monthly	6,495	949,700	\$14.15	\$ 91,895	\$ -
Quarterly					
1,200 to 9,000 cu. Ft.	10,551	24,188,100	\$2.68	\$ -	\$ 648,551
9,000 to 30,000 cu. Ft.	130	1,758,100	\$2.27	\$ -	\$ 39,984
Over 30,000 cu. Ft.	11	500,985	\$2.02	\$ -	\$ 10,135
Monthly					
400 to 3,000 cu. Ft.	6,636	23,526,800	\$2.68	\$ -	\$ 630,819
3,000 to 10,000 cu. Ft.	1,756	8,268,600	\$2.27	\$ -	\$ 188,053
Over 10,000 cu. Ft.	95	1,921,685	\$2.02	\$ -	\$ 38,874
OTHER MINIMUMS:					
3/4" Quarterly	1,532		\$66.55	\$ 101,960	\$ -
3/4" Monthly	1,018		\$22.18	\$ 22,584	\$ -
1" Quarterly	333		\$106.75	\$ 35,547	\$ -
1" Monthly	1,311		\$35.58	\$ 46,649	\$ -
1.5" Quarterly	40		\$203.21	\$ 8,129	\$ -
1.5" Monthly	995		\$67.74	\$ 67,400	\$ -
2" Quarterly	29		\$333.36	\$ 9,668	\$ -
2" Monthly	1,066		\$111.12	\$ 118,456	\$ -
3" Monthly	157		\$206.68	\$ 32,449	\$ -
4" Monthly	60		\$323.93	\$ 19,436	\$ -
6" Monthly	24		\$606.87	\$ 14,565	\$ -
TOTALS				\$ 1,204,656	\$ 1,556,416

Projected 2015 Revenue **\$ 2,761,072**

Based on historical billing data

Variance in 2015 billed vs actual (theoretical vs General Ledger) **2.03%** **\$ 56,068**

Expected Revenue 2017 **\$ 2,817,140**

Projected Revenue Increase = \$ 463,642
Projected Percentage Increase = 19.7%

STATE OF MAINE
PUBLIC UTILITIES COMMISSION
SCHEDULE OF RATES
OF
AUBURN WATER DISTRICT

Proposed Effective Date: February 1, 2017
Docket:

Superintendent, Auburn Water District

Signed: _____

QUARTERLY AND MONTHLY RATES OF WATER
TO METERED CUSTOMERS

QUARTERLY RATES:

For the First	1,200 cubic feet per quarter	\$42.45
For the next 7,800	(1,200 to 9,000 cu. ft. quarter)	\$2.68 per 100 cubic feet
For the next 21,000	(9,000 to 30,000 cu. ft. per quarter)	\$2.27 per 100 cubic feet
For all in Excess of	30,000 cubic feet per quarter	\$2.02 per 100 cubic feet

MONTHLY RATES:

For the First	400 cubic feet per month	\$14.15
For the next 2,600	(400 to 3,000 cu. ft. per month)	\$2.68 per 100 cubic feet
For the next 7,000	(3,000 to 10,000 cu. ft. per month)	\$2.27 per 100 cubic feet
For all in Excess of	10,000 cubic feet per month	\$2.02 per 100 cubic feet

MINIMUM CHARGES:

Size of Meter	Minimum Charge		Cubic Feet Allowance	
	Quarterly	Monthly	Quarterly	Monthly
5/8"	\$42.45	\$14.15	1,200	400
3/4"	\$66.55	\$22.18	2,100	700
1-Inch	\$106.75	\$35.58	3,600	1,200
1 and 1/2"	\$203.21	\$67.74	7,200	2,400
2"	\$333.36	\$111.12	12,600	4,200
3"	\$620.05	\$206.68	25,200	8,400
4"	\$971.80	\$323.93	42,000	14,000
6"	\$1,820.60	\$606.87	84,000	28,000
8"	\$2,851.28	\$950.43	135,000	45,000

Proposed Effective Date: February 1, 2017
Docket:

Superintendent, Auburn Water District

Signed: _____

PRIVATE FIRE PROTECTION

AVAILABLE:

To Customers using the District's service for private fire protection.
The following rates apply to fire protection only and include no allowance for water for other than fire fighting purposes.

RATES:

A charge per year of \$185.63 per inch of service pipe diameter for fire service connections to Auburn Water District Mains. (l)

Private hydrants shall be at a charge of \$185.63 per year

TERMS OF PAYMENT:

Charges for private fire protection shall be billed and payable in advance, billed either monthly or quarterly, depending on customer's billing frequency

Proposed Effective Date: February 1, 2017
Docket:

Superintendent, Auburn Water District

Signed: _____

SUMMER SEASONAL FLAT RATES

These rates are applicable to seasonal unmetered residential water services.

For each family, apartment, dwelling, cottage, or trailer, there shall be paid, service charges as follows:

	Per Year
Basic Charge (1 outlet)	\$119.76 (I)
For each additional outlet	\$47.90 (I)

Charges will be made for up to a total of 3 (three) additional outlets. Water may be drawn through any faucet or outlet, other than those listed above, without further charge.

When more than one family uses the same fixture or fixtures in common, each family shall be charged at the applicable rate or rates set forth above.

Bills under this rate are net and will be due and payable upon presentation.

Proposed Effective Date: February 1, 2017
Docket:

Superintendent, Auburn Water District

Signed: _____

PUBLIC FIRE PROTECTION

Available:

To the City of Auburn and the Town of Poland for municipal fire protection.

Rate:

For the six hundred twelve (612) hydrants as installed October 1, 2016, a total amount of \$659,662 divided as follows:

Auburn (587)	\$632,732 (I)
Poland (25)	\$26,930 (I)

For additional hydrants the charge shall be governed by rules set forth in Chapter 690.

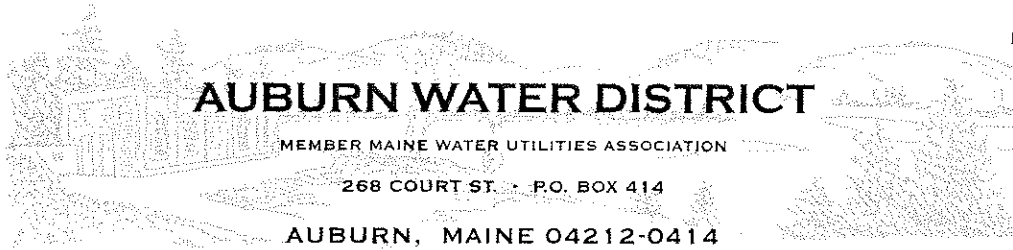
Terms of Payment:

Charges for public fire protection shall be billed and payable quarterly in advance.

Proposed Effective Date: February 1, 2017
Docket:

Superintendent, Auburn Water District

Signed: _____



ELECTRONICALLY FILED ON 12/19/2016

Maine Public Utilities Commission
Attn: Mr. Harry Lanphear
Administrative Director
State House Station #18
Augusta, ME 04330-0018

RE: System Assessment Report for Auburn Water District

Dear Mr. Lanphear:

Attached please find an Initial System Assessment Report for the Auburn Water District. This report is filed pursuant to Chapter 675 of the MPUC rules, Infrastructure Surcharge and Capital Reserve Accounts.

Please let me know if you need any additional information or have any questions.

Sincerely,

A handwritten signature in black ink, which appears to read 'Sid Hazelton'. The signature is fluid and cursive, written over a white background.

Sid Hazelton, P.E.
Auburn Water District Superintendent

Auburn Water District
System Infrastructure Assessment

DATE: 12/19/2016

Overview of the System

The Auburn Water District serves approximately 6,800 metered customers an average of 2.7 million gallons per day.

The history of the Auburn Water District goes back to 1869, when 3 local men (Frank Jordan, Edward Little, and Joel Vickery) installed some log piping on High Street to supply water to their homes from local springs. Additional neighborhood demand ultimately led to the creation of the Auburn Aqueduct Company.

As the water system grew, it went from a private company, to being run by the City in the form of a Water Commission, but in 1923 to relieve the City of its indebtedness related to investing in and developing the water system, a charter for what became the Auburn Water District was proposed and approved by the State legislature.

Also in 1923, in response to evidence of bacterial pollution in Lake Auburn, the Water District installed a chlorinator to disinfect the water.

Since 1923, the water system has remained with its District structure. We have a 7 member Board of Trustees, 6 of which are appointed to staggered 3-year terms by the City Council. The 7th member is an active Councilor, appointed directly by the Mayor.

Source of Supply

Lake Auburn, a 120 ft deep, 2,300 acre Great Pond located within the city limits of Auburn, is the only public drinking water supply for the Cities of Auburn and Lewiston. Lake Auburn is fed by a mostly forested watershed extending from Buckfield to Turner to Hebron and Minot to East Auburn. Due to the high quality of Lake Auburn's water the EPA has exempted the Auburn Water District and Lewiston Water Division from the requirement to filter the water prior to disinfection. This exemption reduces treatment costs while providing excellent, safe water to our consumers. To assure long-term protection of the water source, in 1993 the two Districts formed the Lake Auburn Watershed Protection Commission; empowered to protect the lake and surrounding watershed.

System Treatment Facilities

Water is withdrawn from Lake Auburn through a 48" diameter intake pipe, which extends 1000' into the Lake at a depth of 20'. Low lift pumps deliver the water to a centrifugal strainer, then through one of three Calgon UV reactors for disinfection. Post UV, the water is injected with carbon dioxide for pH adjustment and sodium hypochlorite for disinfection, prior to entering the clear well. Separate water mains leave the clear well for each system, gravity fed to Lewiston and pumped to Auburn, each line being treated with phosphate for corrosion control, and hydrofluosilicic acid for fluoridation prior to leaving the treatment plant. Post treatment plant, both lines are treated with ammonia and sodium hypochlorite to form chloramines to further aid in disinfection, before entering their respective distribution systems. The treatment plants are fully staffed during normal business hours, but generally unmanned during evenings, with operators on call 24 hours per day. All critical plant functions are monitored 24/7 by SCADA, and operators are available in the event of system problems and can direct remote operations and shutdowns if necessary.

System Storage Facilities

The Auburn Water District maintains 7.4 million gallons of water storage facilities at three sites:

- Goff Hill - Goff Hill Reservoir is a 4 million gallon above ground concrete tank
- Hardscrabble - Hardscrabble is the site of a 2 million gallon above ground concrete tank, and two 1/2 million gallon below ground concrete reservoirs
- Poland – The Poland tank is a 400,000 above ground tank that serves a portion of Rt. 122 and 26 in the town of Poland.

Transmission and Distribution Facilities

The Auburn Water District maintains approximately 130 miles of transmission and distribution mains, ranging in size from 30" to 1-1/2". The system includes various pipe materials, including Ductile Iron, Cement Lined Cast Iron, Unlined Cast Iron, C909 plastic, Galvanized Steel, and HDPE.

There are approximately 620 public hydrants for fire protection and system flushing, and 150 private hydrants as well.

Capital Improvement Plan & Projected Replacement Projects

Our current capital improvement plan is designed to fund the replacement of 1 mile of pipe per year. The Auburn Water District partners with the City of Auburn to coordinate road

reconstruction projects and take advantage of traffic control, and surface restoration.

We still have many miles of unlined cast iron pipe in our distribution system. Much of this pipe is over 120 years old. It is undersized, and its capacity is greatly reduced due to tuberculation. It is also brittle and susceptible to breakage.

We plan to focus our attention on increasing our capital in order to step up our efforts to replace 1-1/2 miles of pipe per year. We plan to accomplish this by a number of methods, including dig and replace, pipe bursting/jacking, and re-lining.

Following is our long-term capital improvement plan, which identifies the work to be done.

Auburn Water District Long-Range Water Main Replacement Plan					
11/22/2016					
	Street	Section	Work	Length (ft)	Cost
1	Washington North	Phil O Mar to Markalyn	Replace 8"	6000	\$ 600,000.00
2	Morrow Road		Loop to Minot Ave with 12"	3000	\$ 300,000.00
3	Poland Road	Hotel to Minot Ave.	Replace 8"	8000	\$ 800,000.00
5	Rochelle	X country loop to Washington	replace by pipe bursting	1200	\$ 120,000.00
6	Stevens Mill Rd.	Between Sunderland & Boulder	loop 6" water main	400	\$ 40,000.00
7	Stevens Mill Rd.	Between Cedarwood & Sprucewood	loop 6" water main	600	\$ 60,000.00
8	Stevens Mill Rd.	Between Sprucewood & Hotel	loop 6" water main	800	\$ 80,000.00
9	Minot Ave	Industry to Monroe	Replace 8"	12,000	\$ 1,200,000.00
10	Hotel Road	Minot to Crest Ave.	Replace 8"	7,500	\$ 750,000.00
11	Stevens Mill Rd.	Entire	Replace 6"	3,000	\$ 300,000.00
12	Farm Hill Rd.	Entire	Replace 12"	1,500	\$ 150,000.00
13	Ninth St.	Entire	Replace 8"	1,700	\$ 170,000.00
14	Sixth St.	Mill St. to Broad St.	Replace 8"	900	\$ 90,000.00
15	Seventh St.	Dead end to Broad	loop 8" water main	200	\$ 20,000.00
16	Fifth St.	Dead end to Cook St.	loop 6" water main	100	\$ 10,000.00
17	Fourth St.	South Main to Mary Carroll	Replace 6"	2000	\$ 200,000.00
18	Third St.	Mill St. to Dunn St.	Replace 6" (low pressure system)	1000	\$ 100,000.00
19	Third St.	Roak St. to Mary Carroll	Replace 6" (high pressure system)	1000	\$ 100,000.00
20	Second St.	Mill St. to Dunn St.	Replace 8"	600	\$ 60,000.00
21	Seventh St.	South Main to Mary Carroll	Replace 8"	1300	\$ 130,000.00
22	Loring Ave.	South Main to Mary Carroll	Replace 8"	800	\$ 80,000.00
23	Meadow Lane		Tie Meadow Lane to Edgewood with 8"	400	\$ 40,000.00
24	Conant Ave.	Granite St. to cement lined section	Replace 8"	600	\$ 60,000.00
25	Holly St.	Western View to Haskell	Replace 8"	500	\$ 50,000.00
26	Lake St.	Haskell to Davis	Replace 8"	2000	\$ 200,000.00
27	Lake St.	Gamage to Bourbon St.(private)	Replace 8"	600	\$ 60,000.00
28	Beacon St.	Entire	Cement Line 6"	700	\$ 70,000.00
29	Highland Ave.	Western Prom to Shepley St.	Replace 8"	1000	\$ 100,000.00
30	James St.	Entire	Replace 8"	1200	\$ 120,000.00
31	Charles St.	James to Goff	Replace 8"	200	\$ 20,000.00
32	Grant St.	Entire	Replace 8"	200	\$ 20,000.00
33	Willow St.	Goff to Webster St.	Replace 8"	600	\$ 60,000.00
34	Pine St.	Willow St. to Pearl St.	Replace 8"	500	\$ 50,000.00
35	Pearl St.	School St. to Hampshire St.	Replace 8"	500	\$ 50,000.00
36	School St.	Union St. to 6" CI/CL above Peral St.	Replace 8"	400	\$ 40,000.00
37	Bearce St.	Entire	Line w/2" plastic	300	\$ 30,000.00
38	Temple St.	Entire	Line w/2" plastic	300	\$ 30,000.00
39	Spring St.	Hampshire St. to Court St.	Replace 8"	500	\$ 50,000.00
40	School St.	Spring Towards Troy St.	Line w/2" plastic	200	\$ 20,000.00
41	Park Ave.	Lake St. to DE	Replace 8"	2300	\$ 230,000.00
42	Gamage Ave.	Lake St. to Williams	Replace 8"	2200	\$ 220,000.00
43	Grandview Ave.	Gamage towards DE	Replace 8"	900	\$ 90,000.00
44	Carroll St.	Entire	Replace 8"	400	\$ 40,000.00
45	Turner St.	Lake Auburn Ave. to Rowe	Replace 8"	500	\$ 50,000.00
46	Lake Auburn Ave.	Turner St. to Coburn St.	Replace 8"	1600	\$ 160,000.00
47	Manley Road	MinotAve to Morrow Rd.	Abandon 8", tie in services (25), cross streets		\$ 25,000.00
48	Nineteenth Street	entire	Abandon 1-1/2" and tie services into 8"		\$ 25,000.00
49	Court St.	Fafirview to Minot Ave	Abandon 10", tie in services (12+), tie in Allen& Dawes into 20"		\$ 35,000.00
50				total: 72200 ft	\$ 7,305,000.00

Project Descriptions – Replacement Strategy

Following are our areas of focus:

1. New Auburn – New Auburn is located in the southern portion of the City, bounded on the easterly side of the Little Androscoggin River, and the Westerly side of the Androscoggin River. This is a heavily populated residential area. The terrain is fairly hilly, and there is the presence of ledge in many areas. A transmission main was installed under the Little Androscoggin River in the early 2000's that maintains a good supply to that section of the City. South Main Street bisects New Auburn, and a new 12" distribution main extends to the end of our service area. Many of the residential streets that extend off South Main Street are currently served by water mains that are old cast iron, undersized, or dead-ended. Our strategy is to replace the cast iron, up-size where appropriate, and loop dead end water mains to maintain good flow and water quality.
2. Minot Avenue Corridor – Minot Avenue is a main artery road that extends from Court Street to the Minot/Auburn town line. This corridor is zoned for industrial and commercial activity, and there is abundant land available for future development. Future development will depend upon the availability of water. The majority of the existing water main in Minot Avenue consists of 8" cast iron, which is inadequate for any future expansions. In order to accomplish the goal of future development, this water main will need to be upsized to a 12" main. Given the heavy vehicular traffic and relative good condition of the road surface, this project may be a good candidate for pipe bursting as opposed to dig- and- replace.
3. Poland Road – Poland Road is a neighborhood collector road that runs from Minot Avenue to the Poland Town line. One 8000' section from Hotel Road to Minot Avenue is comprised of 8" cast iron main that has experienced multiple breaks over the years. Replacement and upgrade of this section of pipe from 8" to 12" will improve distribution system reliability, and improve water quality for several residential neighborhoods and commercial businesses.
4. Downtown Auburn – Several downtown residential streets on the Northerly side of Court Street are served by 8" unlined cast iron water mains. These mains are susceptible to pressure fluctuations, and we have experienced

numerous breaks over the years. The lines are heavily tuberculated, which reduces the availability of water for our customers. The size of these pipes is adequate, but they need to be replaced in order to improve reliability.

5. Washington Street North – Washington Street North runs from Minot Avenue to the New Gloucester Town Line. It is a one way, two-lane road that provides access from the Maine Turnpike to the downtown area. The street is lined with residences and businesses. There is a 6000’ stretch from Phil-O-Mar to Markalyn that is serviced by an 8” cast iron water main. The main is adequately sized for the demand, but is in need of replacement.

6. Lake Street/Gamage Avenue – Both of these streets are residential collector streets in what is known as the “Lake Street Neighborhood”. These two streets have a combined 4000’ of 8” cast iron water mains that date back to the late 1800’s. It is in poor shape, and replacement is needed in order to improve reliability.

7. City Reconstruction Projects – As referenced previously, the Auburn Water District partners with the City of Auburn to coordinate road reconstruction projects to coincide with water replacement projects wherever possible. If a road has deteriorated to the point of needing reconstruction, it is likely that the water main is in need of replacement as well. By working together, the District is able to take advantage of road closures to install new water mains, thereby avoiding the cost of repaving the road. The end result for the City is a new road with upgraded utilities, which lessens the chance that the road will need to be dug up in the near future. The footage of road reconstruction that the City does every year is subject to approval of the City Council every year. That amount varies based upon other budget consideration, but historically they fund approximately one mile per year. This necessitates that we replace one mile of pipe along with them.

8. Miscellaneous Distribution System Improvements – There are several streets throughout our water distribution system that have water lines that are in need of attention. As referenced on the Replacement Plan, we have areas that are served by dead-end mains. Ideally, all water distribution lines should be looped to ensure continuous water flow, which will improve water quality. In addition, we have some streets with two water mains where we need to transfer services and abandon the old main.

9. Galvanized Iron Water Main – Some remote sections of our distribution system are served by galvanized iron water mains. It is estimated that we still have approximately 1.5 miles of this pipe currently in service. Over a mile of it is in service as seasonal water around the east side of Taylor Pond. All galvanized water main must be systematically prioritized for replacement.

10. Cement Lined Cast Iron – The Auburn Water District made a concerted effort in the 1990's to rehabilitate unlined cast iron by cleaning and lining. Companies were hired to run cleaning mandrels and brushes through unlined cast iron water mains to remove accumulated tuberculation, and follow up with a cement coating. This was an effective strategy for extending the service life of the water main; however, it did not provide a long-term solution to the issue of aging infrastructure. Cement lining does not improve the structural integrity of the pipe, and at the end of the day we are left with a rehabilitated pipe that is over 100 years old. Cement lined cast iron pipe is still brittle, and subject to breakage due to improper bedding, frost heaving, and pressure fluctuations. We currently have over 50 miles of cement lined cast iron water main in service, which represents 40% of our distribution pipe. Our inventory of cement lined cast iron is not identified in the proceeding Long Range Water Main Replacement Plan; however, once the process of replacing our existing unlined cast iron has been completed, it will be time to undertake the systematic replacement of cement lined cast iron water mains as well.