

**Liberty Utilities (EnergyNorth Natural Gas) Corp.  
d/b/a Liberty Utilities  
Docket No. DG 18-xxx  
Attachment DBS/CAM-1  
April 16, 2018**

**Liberty Utilities (EnergyNorth Natural Gas) Corp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
Computation of Revenue Requirement  
April 16, 2018**

<b>Computation of Revenue Requirement</b>	<b>1</b>
<b>Vintage Year Book Depreciation Schedule</b>	<b>2</b>
<b>Municipal Taxes as a Percentage of Net Plant</b>	<b>3</b>
<b>Bill Impacts due to Cast Iron and Bare Steel Replacement Program</b>	<b>4</b>

Liberty Utilities (Energy/North Natural Gas) Corp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
Computation of Revenue Requirement

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	
	Actual FY09	July 1, 2009 through March 31, 2010 9 Months FY10	Actual FY11	Actual FY12	Actual FY13	Actual FY14	Actual FY15	Actual FY16	Actual FY17	Actual FY18	Estimate FY19
<b>Incremental Investment</b>											
CIBS Program Actual Spend-Mains	1,736,153	4,049,995	3,391,069	1,570,208	2,174,813	2,781,140	3,006,856	3,304,532	5,204,619	\$8,858,559	-
CIBS Program Actual Spend-Service	729,463	798,555	668,631	352,005	161,352	370,655	776,086	705,984	1,209,322	\$1,389,222	-
CIBS Program Estimated Spend-Mains											12,130,000
CIBS Program Estimated Spend-Service											3,000,000
Base Spending Amount	500,000	482,110	500,000	500,000	500,000	500,000	506,240	514,244	520,965	527,275	527,275
Incremental Amount	1,965,616	4,366,440	3,559,700	1,422,213	1,836,165	2,651,795	3,276,702	3,496,272	5,892,976	9,720,506	14,602,725
Cumulative CIBS Program Spend Since July 1, 2009		4,366,440	7,926,140	9,348,353	11,184,518	13,836,312	17,113,015	20,609,287	26,502,263	36,222,769	50,825,494
<b>Deferred Tax Calculation</b>											
Annual Tax Depreciation	1,031,948	4,366,440	3,559,700	1,422,213	1,836,165	2,651,795	3,276,702	3,496,272	5,892,976	9,720,506	14,602,725
Cumulative Tax Depreciation Since July 1, 2009		4,366,440	7,926,140	9,348,353	11,184,518	13,836,312	17,113,015	20,609,287	26,502,263	36,222,769	50,825,494
Annual Book Depreciation	49,836	98,794	179,335	212,059	249,951	307,352	384,247	464,177	600,433	814,476	1,155,761
Cumulative Book Depreciation Since July 1, 2009		98,794	278,129	490,188	740,138	1,047,490	1,431,737	1,895,914	2,496,347	3,310,822	4,466,583
Annual Book/Tax Timer	982,112	4,267,646	3,380,365	1,210,154	1,586,214	2,344,443	2,892,456	3,032,095	5,292,543	8,906,031	13,446,964
Cumulative Book/Tax Timer		4,267,646	7,648,011	8,858,166	10,444,379	12,788,822	15,681,278	18,713,373	24,005,916	32,911,946	46,358,910
Statutory Tax Rate	40.53%	40.53%	40.53%	40.53%	40.53%	39.61%	39.61%	39.61%	39.61%	27.24%	27.24%
Deferred Tax Reserve	398,001	1,729,677	3,099,739	3,590,214	4,233,107	5,161,741	6,211,354	7,412,367	9,508,743	11,934,746	12,628,167
<b>Rate Base Calculation</b>											
Plant In Service	1,965,616	4,366,440	7,926,140	9,348,353	11,184,518	13,836,312	17,113,015	20,609,287	26,502,263	36,222,769	50,825,494
Accumulated Depreciation	(49,836)	(98,794)	(278,129)	(490,188)	(740,138)	(1,047,490)	(1,431,737)	(1,895,914)	(2,496,347)	(3,310,822)	(4,466,583)
Net Plant in Service	1,915,780	4,267,646	7,648,011	8,858,166	10,444,379	12,788,822	15,681,278	18,713,373	24,005,916	32,911,946	46,358,910
Deferred Tax Reserve	(398,001)	(1,729,677)	(3,099,739)	(3,590,214)	(4,233,107)	(5,161,741)	(6,211,354)	(7,412,367)	(9,508,743)	(11,934,746)	(12,628,167)
Year End Rate Base	1,517,779	2,537,969	4,548,272	5,267,951	6,211,273	7,627,082	9,469,924	11,301,006	14,497,173	20,977,200	33,730,743
<b>Revenue Requirement Calculation</b>											
Year End Rate Base	1,517,779	2,537,969	4,548,272	5,267,951	6,211,273	7,627,082	9,469,924	11,301,006	14,497,173	20,977,200	33,730,743
Pre-Tax ROR	11.53%	11.53%	11.63%	11.63%	11.63%	11.50%	10.22%	9.87%	9.87%	8.58%	8.58%
Return and Taxes	175,003	292,628	528,964	612,663	722,371	877,114	967,826	1,115,409	1,430,871	1,799,844	2,894,098
Book Depreciation	49,836	98,794	179,335	212,059	249,951	307,352	384,247	464,177	600,433	814,476	1,155,761
Property Taxes	37,347	88,340	194,259	231,198	241,265	359,366	503,369	490,290	727,379	921,535	1,298,049
Annual Revenue Requirement	262,185	479,762	902,558	1,055,920	1,213,587	1,543,832	1,855,442	2,069,876	2,758,683	3,535,855	5,347,908
Prior Year Annual Revenue Requirement	-	-	479,762	902,558	1,055,920	1,213,587	1,543,832	1,855,442	2,069,876	2,758,683	3,535,855
Incremental Annual Rate Adjustment	262,185	479,762	422,796	153,362	157,667	330,245	311,610	214,434	688,807	777,172	1,812,054

Actual Capital Structure/ROR		
(current federal tax rate of 21% and state rate of 7.9%)		
Ratio	Rate	Pre-Tax
49.85%	4.42%	2.200%
0.95%	2.49%	0.02%
49.20%	9.40%	6.360%
100.00%		8.580%

Liberty Utilities (Energy/North Natural Gas) Comp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
Vintage Year Book Depreciation Schedule

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Actual FY09	July 1, 2009 thru March 31, 2010 9 Months FY10	Actual FY11	Actual FY12	Actual FY13	Actual FY14	Actual FY15	Actual FY16	Actual FY17	Actual FY18	Estimate FY19
<b>Book Depreciation Schedule-Mains</b>											
Actual CIBS spending	1,736,153	4,049,995	3,391,069	1,570,208	2,174,813	2,781,140	3,006,856	3,304,532	5,204,619	8,858,559	12,130,000
Base spending	(352,073)	(402,707)	(417,650)	(408,438)	(465,466)	(441,199)	(402,383)	(423,720)	(422,739)	(455,796)	(455,796)
Incremental CIBS spending	1,384,080	3,647,288	2,973,419	1,161,770	1,709,346	2,339,940	2,604,473	2,880,812	4,781,880	8,402,763	11,674,204
Book Depreciation Rate:											
Year 1	2.54%	0	0	0	0	0	0	0	0	0	0
Year 1 beginning in FY10	1.92%	70,028	57,090	22,306	32,819	44,927	50,006	55,312	91,812	161,333	224,145
Year 2	1.92%		70,028	57,090	22,306	32,819	44,927	50,006	55,312	91,812	161,333
Year 3	1.92%			70,028	57,090	22,306	32,819	44,927	50,006	55,312	91,812
Year 4	1.92%				70,028	57,090	22,306	32,819	44,927	50,006	55,312
Year 5	1.92%					70,028	57,090	22,306	32,819	44,927	50,006
Year 6	1.92%						70,028	57,090	22,306	32,819	44,927
Year 7	1.92%							70,028	57,090	22,306	32,819
Year 8	1.92%								70,028	57,090	22,306
Year 9	1.92%									70,028	57,090
Year 10	1.92%										70,028
Book Depreciation Expense-Mains	35,065	70,028	127,118	149,424	182,243	227,170	277,176	332,487	424,299	585,632	809,777
Accumulated Depreciation Mains-Beginning of Year	-	-	70,028	197,146	346,570	528,813	755,982	1,033,158	1,365,646	1,789,945	2,375,577
Accumulated Depreciation Mains-End of Year	35,065	70,028	197,146	346,570	528,813	755,982	1,033,158	1,365,646	1,789,945	2,375,577	3,185,355
<b>Book Depreciation Schedule-Services</b>											
Actual CIBS spending	729,463	798,555	668,631	352,005	161,352	370,655	776,086	705,984	1,209,322	1,389,222	3,000,000
Base spending	(147,927)	(79,403)	(82,350)	(91,562)	(34,534)	(58,801)	(103,857)	(90,524)	(98,226)	(71,479)	(71,479)
Incremental CIBS spending	581,536	719,152	586,281	260,443	126,818	311,854	672,229	615,460	1,111,096	1,317,743	2,928,521
Book Depreciation Rate:											
Year 1	2.54%	0	0	0	0	0	0	0	0	0	0
Year 1 beginning in FY10	4.00%	28,766	23,451	10,418	5,073	12,474	26,889	24,618	44,444	52,710	117,141
Year 2	4.00%		28,766	23,451	10,418	5,073	12,474	26,889	24,618	44,444	52,710
Year 3	4.00%			28,766	23,451	10,418	5,073	12,474	26,889	24,618	44,444
Year 4	4.00%				28,766	23,451	10,418	5,073	12,474	26,889	44,444
Year 5	4.00%					28,766	23,451	10,418	12,474	26,889	26,889
Year 6	4.00%						28,766	23,451	10,418	12,474	12,474
Year 7	4.00%							28,766	23,451	10,418	10,418
Year 8	4.00%								28,766	23,451	23,451
Year 9	4.00%									28,766	28,766
Year 10	4.00%										28,766
Book Depreciation Expense-Services	14,771	28,766	52,217	62,635	67,708	80,182	107,071	131,690	176,133	228,843	345,984
Accumulated Depreciation Services-Beginning of Year	-	-	28,766	80,983	143,618	211,326	291,508	398,579	530,268	706,402	935,245
Accumulated Depreciation Services-End of Year	14,771	28,766	80,983	143,618	211,326	291,508	398,579	530,268	706,402	935,245	1,281,229
Total Mains & Services Depreciation Expense	49,836	98,794	179,335	212,059	249,951	307,352	384,247	464,177	600,433	814,476	1,155,761
Total Mains & Services Accumulated Depreciation	49,836	98,794	278,129	490,188	740,138	1,047,490	1,431,737	1,895,914	2,496,347	3,310,822	4,466,583

2(o) & 26(o) FY 2019 estimate split 86.4% Mains / 13.6% Services based upon FY 2018 actual spend.  
6(a) & 30(a) FY 2009 filing used the composite depreciation rate for both mains and services.

Liberty Utilities (EnergyNorth Natural Gas) Corp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
Municipal Taxes as a Percentage of Net Plant

	(a) 12/31/2005	(b) 12/31/2006	(c) 12/31/2007	(d) 12/31/2008	(e) 12/31/2009	(f) 12/31/2010	(g) 12/31/2011	(h) 12/31/2012	(i) 12/31/2013	(j) 12/31/2014	(k) 12/31/2015	(l) 12/31/2016	(m) 12/31/2017
1 Plant in Service	258,573	272,678	289,379	305,221	319,737	332,049	344,966	356,165	381,214	419,215	451,950	494,511	539,666
2 Depreciation and Amortization Reserve	(82,363)	(88,564)	(94,562)	(102,587)	(108,270)	(114,294)	(119,973)	(121,047)	(129,209)	(137,656)	(149,943)	(163,209)	(171,469)
3 Net Plant	176,209	184,114	194,817	202,634	211,467	217,756	224,993	235,118	252,006	281,559	302,007	331,302	368,198
4													
5 Average Net Plant	265,625	281,028	297,300	297,300	312,479	325,893	338,508	350,565	368,690	400,214	435,582	456,863	495,808
6 Plant in Service	(85,463)	(91,563)	(98,575)	(98,575)	(105,429)	(111,282)	(117,133)	(120,510)	(125,128)	(133,432)	(143,799)	(150,432)	(160,706)
7 Depreciation Reserve	180,162	189,465	198,726	198,726	207,051	214,611	221,375	230,056	245,562	266,782	291,783	306,431	335,102
8 Net Plant													
9													
10 Municipal Taxes	3,534	3,641	3,771	3,771	4,294	5,459	5,776	5,321	6,835	8,560	7,644	9,596	9,386
11													
12 % Municipal Taxes to Net Plant	1.96%	1.92%	1.92%	1.90%	2.07%	2.54%	2.61%	2.31%	2.81%	3.21%	2.62%	3.13%	2.80%

Note: Source of above data is the December 31 PUC Annual Report to be consistent with data previously provided to the Commission.

Liberty Utilities (Energy/North Natural Gas) Corp.  
 Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
 Bill Impacts due to Cast Iron and Bare Steel Replacement Program

	(a) FY2009	(b) FY2010	(c) FY2011	(d) FY2012	(e) FY2013	(f) FY2014	(g) FY2015	(h) FY2016	(i) FY2017	(j) FY2018	(k) Estimate FY2019
1 Annual Increase due to Cast Iron Bare Steel program	262,185	479,762	521,590	(44,226)	157,667	330,245	311,610	214,434	688,807	777,172	1,812,054
2											
3 Annual Throughput (see Winter COG filing - schedule 10B)	154,702,063	150,828,182	154,648,622	163,588,592	158,062,349	160,018,819	166,523,068	172,103,158	186,909,214	182,370,287	182,370,287
4											
5 Increase Factor	\$0.0017	\$0.0032	\$0.0034	(\$0.0003)	\$0.0010	\$0.0021	\$0.0019	\$0.0012	\$0.0037	\$0.0043	\$0.0099
6											
7 Annual Calendar Year Gross Revenues (Annual Report - Page 11)	\$176,520,000	\$151,224,178	\$132,475,941	\$146,365,316	\$119,363,340	\$137,617,008	\$119,363,341	\$156,933,825	\$120,053,649	\$156,933,825	\$156,933,825
8											
9 Annual Percent Increase	0.15%	0.32%	0.39%	-0.03%	0.13%	0.24%	0.26%	0.14%	0.57%	0.50%	1.15%
10											
11 Miles of Cast Iron/Bare Steel Main Replaced Annually through CIBS	2.96	3.98	2.79	1.56	1.65	3.51	5.00	5.05	10.26	11.58	13.83
12 Cumulative Miles of Main Replaced through CIBS	2.96	6.94	9.73	11.29	12.94	16.45	26.50	26.50	36.76	48.34	62.17
13 Total Miles of Cast Iron/Bare Steel Main Remaining <sup>1</sup>	149.8	142.0	137.4	132.1	126.30	120.88	113.96	106.46	93.18	78.65	63.65
14											
15 Services Replaced Annually <sup>2</sup>	101	127	282	81	84	174	316	291	572	584	1042
16 Cumulative Number of Services Replaced	101	228	510	591	675	849	1,165	1,456	2,028	2,612	3,654
17											
18 <b>Typical Residential bill</b>	\$1,292	\$1,107	\$1,118	\$1,059	\$1,020	\$1,123	\$1,309	\$1,309	\$1,078	\$1,171	\$1,171
19											
20 Typical Usage	800	800	800	800	800	800	800	800	763	779	779
21											
22 Annual Increase for Residential Heating customer	\$1.36	\$2.54	\$2.70	(\$0.22)	\$0.80	\$1.65	\$1.50	\$1.00	\$2.81	\$3.32	\$7.74
23											
24 Percent Bill Increase	0.10%	0.23%	0.24%	-0.02%	0.08%	0.15%	0.11%	0.08%	0.26%	0.28%	0.66%
25											
26											
27 <b>Typical G-41</b>	\$3,375	\$2,939	\$2,842	\$2,696	\$2,654	\$2,926	\$3,499	\$3,499	\$2,651	\$3,031	\$3,031
28											
29 Typical Usage	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,029	2,180	2,180
30											
31 Annual Increase for G-41 customer	\$5.67	\$6.89	\$7.31	(\$0.59)	\$2.16	\$4.47	\$4.06	\$2.70	\$7.48	\$9.29	\$21.66
32											
33 Percent Bill Increase	0.11%	0.23%	0.26%	-0.02%	0.08%	0.15%	0.12%	0.08%	0.28%	0.31%	0.71%
34											
35											
36 <b>Typical G-42</b>	\$22,595	\$18,926	\$18,432	\$17,516	\$16,884	\$18,853	\$22,486	\$22,486	\$16,284	\$18,916	\$18,916
37											
38 Typical Usage	15,567	15,567	15,567	15,567	15,567	15,567	15,567	15,567	14,720	15,883	15,883
39											
40 Annual Increase for G-42 customer	\$26.38	\$49.52	\$52.50	(\$4.21)	\$15.53	\$32.13	\$29.13	\$19.40	\$54.25	\$67.69	\$157.82
41											
42 Percent Bill Increase	0.12%	0.26%	0.28%	-0.02%	0.09%	0.17%	0.13%	0.09%	0.33%	0.36%	0.83%
43											
44											
45 <b>Typical G-52</b>	\$21,973	\$16,707	\$16,605	\$16,025	\$14,629	\$16,555	\$18,667	\$18,667	\$14,087	\$15,714	\$15,714
46											
47 Typical Usage	15,687	15,687	15,687	15,687	15,687	15,687	15,687	15,687	14,566	15,645	15,645
48											
49 Annual Increase for G-52 customer	\$26.59	\$49.90	\$52.91	(\$4.24)	\$15.65	\$32.37	\$29.35	\$19.55	\$53.68	\$66.67	\$155.45
50											
51 Percent Bill Increase	0.12%	0.30%	0.32%	-0.03%	0.11%	0.20%	0.16%	0.10%	0.38%	0.42%	0.99%

Line / Column Notes:  
 1(b)-16(b) Amounts are cumulative from July 1, 2009

<sup>1</sup>These figures are as of the end of the CIBS fiscal year (i.e. FY 2018 data is as of 3/31/2018). Mileage includes Cast Iron/Bare Steel replaced through the CIBS Program as well as City/State Construction.  
<sup>2</sup>These figures include all service replacements and inserts, including bare steel, coated steel and plastic services

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**Liberty Utilities (EnergyNorth Natural Gas) Corp.  
d/b/a Liberty Utilities  
Docket No. DG 18-xxx  
Attachment DBS/CAM-2  
April 16, 2018**

**Liberty Utilities (EnergyNorth Natural Gas) Corp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
Computation of Revenue Requirement  
April 16, 2018**

<b>Computation of Revenue Requirement</b>	<b>1</b>
<b>Vintage Year Book Depreciation Schedule</b>	<b>2</b>
<b>Municipal Taxes as a Percentage of Net Plant</b>	<b>3</b>
<b>Bill Impacts due to Cast Iron and Bare Steel Replacement Program</b>	<b>4</b>

Liberty Utilities (Energy/North Natural Gas) Corp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program

Computation of Revenue Requirement

RESTATED AS IF RATE CASE WAS NOT FILED. FOR INFORMATIONAL PURPOSES ONLY.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Actual FY09	12 Months FY10	Actual FY11	Actual FY12	Actual FY13	Actual FY14	Actual FY15	Actual FY16	Actual FY17	Actual FY18	Estimate FY19
<b>Incremental Investment</b>											
CIBS Program Actual Spend-Mains	1,736,153	4,206,295	3,391,069	1,570,208	2,174,813	2,781,140	3,006,856	3,304,532	5,204,619	\$8,858,559	-
CIBS Program Actual Spend-Service	729,463	822,173	668,631	352,005	161,352	370,655	776,086	705,984	1,209,322	\$1,389,222	-
CIBS Program Estimated Spend-Mains											12,130,000
CIBS Program Estimated Spend-Service											3,000,000
Base Spending Amount	500,000	500,000	500,000	500,000	500,000	500,000	506,240	514,244	520,965	527,275	527,275
Incremental Amount	1,965,616	4,528,468	3,559,700	1,422,213	1,836,165	2,651,795	3,276,702	3,496,272	5,892,976	9,720,506	14,602,725
Cumulative CIBS Program Spend Since July 1, 2009		6,494,084	10,053,784	11,475,997	13,312,162	15,963,956	19,240,659	22,736,931	28,629,907	38,350,413	52,953,138
<b>Deferred Tax Calculation</b>											
Annual Tax Depreciation	1,031,948	5,462,136	3,559,700	1,422,213	1,836,165	2,651,795	3,276,702	3,496,272	5,892,976	9,720,506	14,602,725
Cumulative Tax Depreciation Since July 1, 2009		6,494,084	10,053,784	11,475,997	13,312,162	15,963,956	19,240,659	22,736,931	28,629,907	38,350,413	52,953,138
Annual Book Depreciation	49,836	152,184	232,725	265,448	303,340	360,741	437,636	517,566	653,822	867,865	1,209,150
Cumulative Book Depreciation Since July 1, 2009		202,019	434,744	700,192	1,003,532	1,364,273	1,801,909	2,319,475	2,973,297	3,841,162	5,050,312
Annual Book/Tax Timer	982,112	5,309,953	3,326,975	1,156,765	1,532,825	2,291,054	2,839,067	2,978,706	5,239,154	8,852,642	13,393,575
Cumulative Book/Tax Timer	982,112	6,292,065	9,619,040	10,775,805	12,308,630	14,599,684	17,438,751	20,417,457	25,656,611	34,509,253	47,902,828
Statutory Tax Rate	40.53%	40.53%	40.53%	40.53%	40.53%	39.61%	39.61%	39.61%	39.61%	27.24%	27.24%
Deferred Tax Reserve	398,001	2,550,174	3,898,597	4,367,434	4,988,688	5,896,174	6,907,489	8,087,355	10,162,584	12,574,043	13,048,730
<b>Rate Base Calculation</b>											
Plant In Service	1,965,616	6,494,084	10,053,784	11,475,997	13,312,162	15,963,956	19,240,659	22,736,931	28,629,907	38,350,413	52,953,138
Accumulated Depreciation	(49,836)	(202,019)	(434,744)	(700,192)	(1,003,532)	(1,364,273)	(1,801,909)	(2,319,475)	(2,973,297)	(3,841,162)	(5,050,312)
Net Plant in Service	1,915,780	6,292,065	9,619,040	10,775,805	12,308,630	14,599,683	17,438,750	20,417,456	25,656,610	34,509,251	47,902,826
Deferred Tax Reserve	(398,001)	(2,550,174)	(3,898,597)	(4,367,434)	(4,988,688)	(5,896,174)	(6,907,489)	(8,087,355)	(10,162,584)	(12,574,043)	(13,048,730)
Year End Rate Base	1,517,779	3,741,891	5,720,443	6,408,371	7,319,942	8,703,509	10,531,261	12,330,101	15,494,026	21,935,207	34,854,095
<b>Revenue Requirement Calculation</b>											
Year End Rate Base	1,517,779	3,741,891	5,720,443	6,408,371	7,319,942	8,703,509	10,531,261	12,330,101	15,494,026	21,935,207	34,854,095
Pre-Tax ROR	11.53%	11.53%	11.63%	11.63%	11.63%	11.50%	10.22%	9.87%	9.87%	8.58%	8.58%
Return and Taxes	175,003	431,440	665,288	745,294	851,309	1,000,904	1,076,295	1,216,981	1,529,260	1,882,041	2,990,481
Book Depreciation	49,836	152,184	232,725	265,448	303,340	360,741	437,636	517,566	653,822	867,865	1,209,150
Property Taxes	37,347	130,246	244,324	281,249	284,329	410,251	559,784	534,937	777,395	966,259	1,341,279
Annual Revenue Requirement	262,185	713,870	1,142,337	1,291,991	1,438,978	1,771,896	2,073,715	2,269,484	2,960,477	3,716,165	5,540,910
Prior Year Annual Revenue Requirement	-	262,185	713,870	1,142,337	1,291,991	1,438,978	1,771,896	2,073,715	2,269,484	2,960,477	3,716,165
Incremental Annual Rate Adjustment	262,185	451,684	428,467	149,654	146,987	332,918	301,819	195,769	690,993	755,688	1,824,746

**Actual Capital Structure/ROR**

	Ratio	Rate
Long Term Debt	49.85%	4.42%
Short Term Debt	0.95%	0.02%
Common Equity	49.20%	9.40%
	100.00%	8.580%

(current federal tax rate of 21% and state rate of 7.9%)



Liberty Utilities (Energy/North Natural Gas) Corp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
Vintage Year Book Depreciation Schedule

RESTATED AS IF RATE CASE WAS NOT FILED. FOR INFORMATIONAL PURPOSES ONLY.

	(a) Actual FY09	(b) 12 Months FY10	(c) Actual FY11	(d) Actual FY12	(e) Actual FY13	(f) Actual FY14	(g) Actual FY15	(h) Actual FY16	(i) Actual FY17	(j) Actual FY18	(k) Estimate FY19
<b>Book Depreciation Schedule-Mains</b>											
1	1,736,153	4,206,295	3,391,069	1,570,208	2,174,813	2,781,140	3,006,856	3,304,532	5,204,619	8,858,559	12,130,000
2	(352,073)	(418,248)	(417,650)	(408,438)	(465,466)	(441,199)	(402,383)	(423,720)	(422,739)	(455,796)	(455,796)
3	1,384,080	3,788,047	2,973,419	1,161,770	1,709,346	2,339,940	2,604,473	2,880,812	4,781,880	8,402,763	11,674,204
4											
5	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065
6	2.54%										
7	1.92%										
8	1.92%										
9	1.92%										
10	1.92%										
11	1.92%										
12	1.92%										
13	1.92%										
14	1.92%										
15	1.92%										
16	1.92%										
17	35,065	107,796	164,886	187,191	220,010	264,937	314,943	370,255	462,067	623,400	847,544
18											
19											
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40											
41	14,771	44,388	67,839	78,257	83,330	95,804	122,693	147,311	191,755	244,465	361,606
42											
43											
44											
45											
46											
47											
48											
49											
50											
<b>Book Depreciation Schedule-Services</b>											
24	729,463	822,173	668,631	352,005	161,352	370,655	776,086	705,984	1,209,322	1,389,222	3,000,000
25	(147,927)	(81,752)	(82,350)	(91,562)	(34,534)	(58,801)	(103,857)	(90,524)	(98,226)	(71,479)	(71,479)
26	581,536	740,421	586,281	260,443	126,818	311,854	672,229	615,460	1,111,096	1,317,743	2,928,521
27											
28											
29											
30	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771
31	4.00%										
32	4.00%										
33	4.00%										
34	4.00%										
35	4.00%										
36	4.00%										
37	4.00%										
38	4.00%										
39	4.00%										
40	4.00%										
41	14,771	44,388	67,839	78,257	83,330	95,804	122,693	147,311	191,755	244,465	361,606
42											
43											
44											
45											
46											
47											
48											
49											
50											
<b>Total Mains &amp; Services Depreciation Expense</b>											
48	49,836	152,184	232,725	265,448	303,340	360,741	437,636	517,566	653,822	867,865	1,209,150
49	49,836	202,020	434,745	700,193	1,003,533	1,364,274	1,801,910	2,319,476	2,973,298	3,841,160	5,050,310
50											

2(o) & 26(o) FY 2019 estimate split 86.4% Mains / 13.6% Services based upon FY 2018 actual spend.  
6(e) & 30(a) FY 2009 filing used the composite depreciation rate for both mains and services.

Liberty Utilities (Energy\North Natural Gas) Corp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
Municipal Taxes as a Percentage of Net Plant

RESTATED AS IF RATE CASE WAS NOT FILED. FOR INFORMATIONAL PURPOSES ONLY.

	(a) 12/31/2005	(b) 12/31/2006	(c) 12/31/2007	(d) 12/31/2008	(e) 12/31/2009	(f) 12/31/2010	(g) 12/31/2011	(h) 12/31/2012	(i) 12/31/2013	(j) 12/31/2014	(k) 12/31/2015	(l) 12/31/2016	(m) 12/31/2017
1 Plant in Service	258,573	272,678	289,379	305,221	319,737	332,049	344,966	356,165	381,214	419,215	451,950	494,511	539,666
2 Depreciation and Amortization Reserve	(82,363)	(88,564)	(94,562)	(102,587)	(108,270)	(114,294)	(119,973)	(121,047)	(129,209)	(137,656)	(149,943)	(163,209)	(171,469)
3 Net Plant	176,209	194,817	194,817	202,634	211,467	217,756	224,993	235,118	252,006	281,559	302,007	331,302	368,198
4													
5 Average Net Plant													
6 Plant in Service	281,028	281,028	281,028	297,300	312,479	325,893	338,508	350,565	368,690	400,214	435,582	456,863	495,808
7 Depreciation Reserve	(91,563)	(91,563)	(91,563)	(98,575)	(105,429)	(111,282)	(117,133)	(120,510)	(125,128)	(133,432)	(143,799)	(150,432)	(160,706)
8 Net Plant	189,465	189,465	189,465	198,726	207,051	214,611	221,375	230,056	243,562	266,782	291,783	306,431	335,102
9													
10 Municipal Taxes	3,641	3,641	3,641	3,771	4,294	5,459	5,776	5,321	6,835	8,560	7,644	9,596	9,386
11													
12 % Municipal Taxes to Net Plant	1.92%	1.87%	1.87%	1.90%	2.07%	2.54%	2.61%	2.31%	2.81%	3.21%	2.62%	3.13%	2.80%

Note: Source of above data is the December 31 PUC Annual Report to be consistent with data previously provided to the Commission.

Liberty Utilities (Energy/North Natural Gas) Corp.  
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program  
Bill Impacts due to Cast Iron and Bare Steel Replacement Program

RESTATED AS IF RATE CASE WAS NOT FILED. FOR INFORMATIONAL PURPOSES ONLY.

	(a) FY2009	(b) FY2010	(c) FY2011	(d) FY2012	(e) FY2013	(f) FY2014	(g) FY2015	(h) FY2016	(i) FY2017	(j) FY2018	(k) Estimate FY2019
1 Annual Increase due to Cast Iron Bare Steel Program	262,185	713,870	527,261	(92,035)	146,987	332,918	301,819	195,769	690,993	755,688	1,824,746
2											
3 Annual Throughput (see Winter COG filing - schedule 10B)	154,702,063	150,828,182	154,648,622	163,588,592	158,062,349	160,018,819	166,523,068	172,103,158	186,909,214	182,370,287	182,370,287
4											
5 Increase Factor	\$0.0017	\$0.0047	\$0.0034	(\$0.0006)	\$0.0009	\$0.0021	\$0.0018	\$0.0011	\$0.0037	\$0.0041	\$0.0100
6											
7 Annual Calendar Year Gross Revenues (Annual Report - Page 11)	\$176,520,000	\$151,224,178	\$132,475,941	\$146,365,316	\$119,363,340	\$137,617,008	\$119,563,341	\$156,933,825	\$120,653,649	\$156,933,825	\$156,933,825
8											
9 Annual Percent Increase	0.15%	0.47%	0.40%	-0.06%	0.12%	0.24%	0.25%	0.12%	0.58%	0.48%	1.16%
10											
11 Miles of Cast Iron/Bare Steel Main Replaced Annually through CIBS	2.96	3.98	2.79	1.56	1.65	3.51	5.00	5.05	10.26	11.58	13.83
12 Cumulative Miles of Main Replaced through CIBS	2.96	6.94	9.73	11.29	12.94	16.45	21.45	26.50	36.76	48.34	62.17
13 Total Miles of Cast Iron/Bare Steel Main Remaining <sup>1</sup>	149.8	142.0	137.4	132.1	126.30	120.88	113.96	106.46	93.18	78.65	63.65
14											
15 Services Replaced Annually <sup>2</sup>	101	127	282	81	84	174	316	291	572	584	1,042
16 Cumulative Number of Services Replaced	101	228	510	591	675	849	1,165	1,456	2,028	2,612	3,654
17											
18 <b>Typical Residential bill</b>	\$1,292	\$1,107	\$1,118	\$1,059	\$1,020	\$1,123	\$1,309	\$1,309	\$1,078	\$1,171	\$1,171
19											
20 Typical Usage	800	800	800	800	800	800	800	800	763	779	779
21											
22 Annual Increase for Residential Heating customer	\$1.36	\$3.79	\$2.73	(\$0.45)	\$0.74	\$1.66	\$1.45	\$0.91	\$2.82	\$3.23	\$7.79
23											
24 Percent Bill Increase	0.10%	0.34%	0.24%	-0.04%	0.07%	0.15%	0.11%	0.07%	0.26%	0.28%	0.67%
25											
26											
27 <b>Typical G-41</b>	\$3,375	\$2,939	\$2,842	\$2,696	\$2,654	\$2,926	\$3,499	\$3,499	\$2,651	\$3,031	\$3,031
28											
29 Typical Usage	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,029	2,180	2,180
30											
31 Annual Increase for G-41 customer	\$3.67	\$10.26	\$7.39	(\$1.22)	\$2.02	\$4.51	\$3.93	\$2.46	\$7.50	\$9.03	\$21.81
32											
33 Percent Bill Increase	0.11%	0.35%	0.26%	-0.05%	0.08%	0.15%	0.11%	0.07%	0.28%	0.30%	0.72%
34											
35											
36 <b>Typical G-42</b>	\$22,595	\$18,926	\$18,432	\$17,516	\$16,884	\$18,853	\$22,486	\$22,486	\$16,284	\$18,916	\$18,916
37											
38 Typical Usage	15,567	15,567	15,567	15,567	15,567	15,567	15,567	15,567	14,720	15,883	15,883
39											
40 Annual Increase for G-42 customer	\$26.38	\$73.68	\$53.07	(\$8.76)	\$14.48	\$32.39	\$28.21	\$17.71	\$54.42	\$65.81	\$158.92
41											
42 Percent Bill Increase	0.12%	0.39%	0.29%	-0.05%	0.09%	0.17%	0.13%	0.08%	0.33%	0.35%	0.84%
43											
44											
45 <b>Typical G-52</b>	\$21,973	\$16,707	\$16,605	\$16,025	\$14,629	\$16,555	\$18,667	\$18,667	\$14,087	\$15,714	\$15,714
46											
47 Typical Usage	15,687	15,687	15,687	15,687	15,687	15,687	15,687	15,687	14,566	15,645	15,645
48											
49 Annual Increase for G-52 customer	\$26.59	\$74.25	\$53.48	(\$8.83)	\$14.59	\$32.64	\$28.43	\$17.84	\$53.85	\$64.83	\$156.54
50											
51 Percent Bill Increase	0.12%	0.44%	0.32%	-0.06%	0.10%	0.20%	0.15%	0.10%	0.38%	0.41%	1.00%

Line Column Notes:  
10)-16(b) Amounts are cumulative from July 1, 2009

<sup>1</sup>These figures are as of the end of the CIBS fiscal year (i.e. FY 2018 data is as of 3/31/2018). Mileage includes Cast Iron/Bare Steel replaced through the CIBS Program as well as City/State Construction.

<sup>2</sup>These figures include all service replacements and inserts, including bare steel, coated steel and plastic services