

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Docket No. DG 18-064
Revised Attachment DBS/CAM-1
May 31, 2018**

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program
Computation of Revenue Requirement
May 31, 2018**

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Liberty Utilities (EnergyNorth 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)	(j)	(k)	
	Actual	July 1, 2009 through March 31, 2010 9 Months FY10	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimate	
	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	
Incremental Investment												
1	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	-
2	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	-
3	CIBS Program Estimated Spend-Mains	-	-	-	-	-	-	-	-	-	-	12,130,000
4	CIBS Program Estimated Spend-Service	-	-	-	-	-	-	-	-	-	-	3,000,000
5	Base Spending Amount	500,000	482,110	500,000	500,000	500,000	500,000	506,240	514,244	520,965	527,275	-
6	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
7	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
8												
9	Deferred Tax Calculation											
10	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
11	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
12												
13	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
14	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
15												
16	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
17	Cumulative Book/Tax Timer	982,112	4,267,646	7,648,011	8,858,165	10,444,379	12,788,822	15,681,278	18,713,373	24,005,916	32,911,947	46,358,911
18	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%
19												
20	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
21												
22	Rate Base Calculation											
23	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
24	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)
25	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
26	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)
27	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
28												
29	Revenue Requirement Calculation											
30	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
31	Pre-Tax ROR	11.53%	11.53%	11.63%	11.63%	11.63%	11.50%	10.22%	9.87%	9.87%	8.51%	8.51%
32	Return and Taxes	175,003	292,628	528,964	612,663	722,371	877,114	967,826	1,115,409	1,430,871	1,785,160	2,870,486
33	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
34	Property Taxes 2.80%	37,347	88,340	194,259	231,198	241,265	359,366	503,369	490,290	727,379	921,535	1,298,049
35	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	3,521,171	5,324,296
36												
37	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	3,521,171
38												
39	Incremental Annual Rate Adjustment	262,185	479,762	422,796	153,362	157,667	330,245	311,610	214,434	688,807	762,488	1,803,126
40												
41												
42												
43												
44												
45												
46												
47												
48	Actual Capital Structure/ROR											
49												
50												
51												
52												
53												
54	Long Term Debt	49.85%	4.42%	2.200%								
55	Short Term Debt	0.95%	2.49%	0.02%								
56	Common Equity	49.20%	9.30%	6.290%								
57												
58		100.00%		8.510%								

Liberty Utilities (EnergyNorth Natural Gas) Corp.
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	July 1, 2009 thru March 31, 2010	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimate
Book Depreciation Schedule-Mains	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19
1 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
2 Base spending	(352,073)	(402,707)	(417,650)	(408,438)	(465,466)	(441,199)	(402,383)	(423,720)	(422,739)	(455,796)	(455,796)
3 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
4											
5 Book Depreciation Rate:											
6 Year 1	2.54%	35,065	0	0	0	0	0	0	0	0	0
7 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
8 Year 2	1.92%			70,028	57,090	22,306	32,819	44,927	50,006	55,312	91,812
9 Year 3	1.92%				70,028	57,090	22,306	32,819	44,927	50,006	55,312
10 Year 4	1.92%					70,028	57,090	22,306	32,819	44,927	50,006
11 Year 5	1.92%						70,028	57,090	22,306	32,819	44,927
12 Year 6	1.92%							70,028	57,090	22,306	32,819
13 Year 7	1.92%								70,028	57,090	22,306
14 Year 8	1.92%									70,028	57,090
15 Year 9	1.92%										70,028
16 Year 10	1.92%										
17 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
18											
19 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
20 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
21											
22											
23 Book Depreciation Schedule-Services											
24											
25 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
26 Base spending	(147,927)	(79,403)	(82,350)	(91,562)	(34,534)	(58,801)	(103,857)	(90,524)	(98,226)	(71,479)	(71,479)
27 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
28											
29 Book Depreciation Rate:											
30 Year 1	2.54%	14,771	0	0	0	0	0	0	0	0	0
31 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
32 Year 2	4.00%			28,766	23,451	10,418	5,073	12,474	26,889	24,618	44,444
33 Year 3	4.00%				28,766	23,451	10,418	5,073	12,474	26,889	44,444
34 Year 4	4.00%					28,766	23,451	10,418	5,073	12,474	26,889
35 Year 5	4.00%						28,766	23,451	10,418	5,073	12,474
36 Year 6	4.00%							28,766	23,451	10,418	12,474
37 Year 7	4.00%								28,766	23,451	10,418
38 Year 8	4.00%									28,766	10,418
39 Year 9	4.00%										28,766
40 Year 10	4.00%										
41 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
42											
43 Accumulated Depreciation Services-Beginning of Year	-	-	28,766	80,983	143,618	211,326	291,508	398,579	530,268	706,402	935,245
44 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
45											
46											
47											
48 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
49											
50 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)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	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													
6 Plant in Service		265,625	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		(85,463)	(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		180,162	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		3,534	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		1.96%	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 (EnergyNorth Natural Gas) Corp.
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program
Bill Impacts due to Cast Iron and Bare Steel Replacement Program

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	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	762,488	1,803,126
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	\$0.0042	\$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%	0.49%	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	21.45	26.50	36.76	48.34	62.17
13 Total Miles of Cast Iron/Bare Steel Main Remaining ¹	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 ²	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 Typical Residential bill	\$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	\$3.26	\$7.70
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 Typical G-41	\$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	\$6.89	\$7.31	(\$0.59)	\$2.16	\$4.47	\$4.06	\$2.70	\$7.48	\$9.11	\$21.55
32											
33 Percent Bill Increase	0.11%	0.23%	0.26%	-0.02%	0.08%	0.15%	0.12%	0.08%	0.28%	0.30%	0.71%
34											
35											
36 Typical G-42	\$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	\$66.41	\$157.04
41											
42 Percent Bill Increase	0.12%	0.26%	0.28%	-0.02%	0.09%	0.17%	0.13%	0.09%	0.33%	0.35%	0.83%
43											
44											
45 Typical G-52	\$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	\$65.41	\$154.68
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%	0.98%

Log / Column Notes:

16(b) Amounts are cumulative from July 1, 2009

¹These 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.

²These figures include all serv 9.30%

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**Liberty Utilities (EnergyNorth Natural Gas) Corp.
d/b/a Liberty Utilities
Docket No. DG 18-064
Revised Attachment DBS/CAM-2
May 31, 2018**

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Fiscal Year 2018 Cast Iron/Bare Steel Replacement Program
Computation of Revenue Requirement
May 31, 2018**

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

Liberty Utilities (EnergyNorth 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	
Incremental Investment												
1	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	-
2	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	-
3	CIBS Program Estimated Spend-Mains					-	-	-	-	-	-	12,130,000
4	CIBS Program Estimated Spend-Service					-	-	-	-	-	-	3,000,000
5	Degradation Fees [1]					-	-	-	-	-	-	1,198,059
6	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
7	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	10,918,565	14,602,725
8	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	39,548,472	54,151,197
9												
Deferred Tax Calculation												
11	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	10,918,565	14,602,725
12	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	39,548,472	54,151,197
13												
14	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
15	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
16												
17	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	10,050,701	13,393,575
18	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	35,707,312	49,100,887
19	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%
20												
21	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	12,900,395	13,375,082
22												
Rate Base Calculation												
24	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	39,548,472	54,151,197
25	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)
26	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	35,707,310	49,100,885
27	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)	(12,900,395)	(13,375,082)
28	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	22,806,915	35,725,803
29												
Revenue Requirement Calculation												
31	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	22,806,915	35,725,803
32	Pre-Tax ROR	11.53%	11.53%	11.63%	11.63%	11.63%	11.50%	10.22%	9.87%	9.87%	8.51%	8.51%
33	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	1,940,868	3,040,266
34	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
35	Property Taxes 2.80%	37,347	130,246	244,324	281,249	284,329	410,251	559,784	534,937	777,395	999,805	1,374,825
36	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	3,808,538	5,624,241
37												
38	Prior Year Annual Revenue Requirem	-	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	3,808,538
39												
40	Incremental Annual Rate Adjustment	262,185	451,684	428,467	149,654	146,987	332,918	301,819	195,769	690,993	848,061	1,815,704

[1] FY 2014 through FY 2017 previously excluded Manchester degradation fees in the amounts of \$246,449, \$236,710, \$202,250, and \$512,650, respectively

Actual Capital Structure/ROR

	Ratio	Rate	Pre-Tax
			(current federal tax rate of 21% and state rate of 7.9%)
Long Term Debt	49.85%	4.42%	2.200%
Short Term Debt	0.95%	2.49%	0.02%
Common Equity	49.20%	9.30%	6.290%
	100.00%		8.510%

Liberty Utilities (EnergyNorth 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)	(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
Book Depreciation Schedule-Mains												
1	Actual CIBS spending	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	Base spending	(352,073)	(418,248)	(417,650)	(408,438)	(465,466)	(441,199)	(402,383)	(423,720)	(422,739)	(455,796)	(455,796)
3	Incremental CIBS spending	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	Book Depreciation Rate:											
6	Year 1	2.54%	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065	35,065
7	Year 1 beginning in FY10	1.92%		72,731	57,090	22,306	32,819	44,927	50,006	55,312	91,812	161,333
8	Year 2	1.92%			72,731	57,090	22,306	32,819	44,927	50,006	55,312	91,812
9	Year 3	1.92%				72,731	57,090	22,306	32,819	44,927	50,006	55,312
10	Year 4	1.92%					72,731	57,090	22,306	32,819	44,927	50,006
11	Year 5	1.92%						72,731	57,090	22,306	32,819	44,927
12	Year 6	1.92%							72,731	57,090	22,306	32,819
13	Year 7	1.92%								72,731	57,090	22,306
14	Year 8	1.92%									72,731	57,090
15	Year 9	1.92%										72,731
16	Year 10	1.92%										
17	Book Depreciation Expense-Mains	35,065	107,796	164,886	187,191	220,010	264,937	314,943	370,255	462,067	623,400	847,544
18												0
19	Accumulated Depreciation Mains-Beginning of Year	-	35,065	142,860	307,746	494,937	714,947	979,884	1,294,827	1,665,081	2,127,148	2,750,548
20	Accumulated Depreciation Mains-End of Year	35,065	142,860	307,746	494,937	714,947	979,884	1,294,827	1,665,081	2,127,148	2,750,548	3,598,092
21												
22												
Book Depreciation Schedule-Services												
25	Actual CIBS spending	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
26	Base spending	(147,927)	(81,752)	(82,350)	(91,562)	(34,534)	(58,801)	(103,857)	(90,524)	(98,226)	(71,479)	(71,479)
27	Incremental CIBS spending	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
28												
29	Book Depreciation Rate:											
30	Year 1	2.54%	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771	14,771
31	Year 1 beginning in FY10	4.00%		29,617	23,451	10,418	5,073	12,474	26,889	24,618	44,444	52,710
32	Year 2	4.00%			29,617	23,451	10,418	5,073	12,474	26,889	24,618	44,444
33	Year 3	4.00%				23,451	10,418	5,073	12,474	26,889	24,618	44,444
34	Year 4	4.00%					23,451	10,418	5,073	12,474	26,889	24,618
35	Year 5	4.00%						23,451	10,418	5,073	12,474	26,889
36	Year 6	4.00%							23,451	10,418	5,073	12,474
37	Year 7	4.00%								23,451	10,418	5,073
38	Year 8	4.00%									23,451	10,418
39	Year 9	4.00%										23,451
40	Year 10	4.00%										
41	Book Depreciation Expense-Services	14,771	44,388	67,839	78,257	83,330	95,804	122,693	147,311	191,755	244,465	361,606
42												
43	Accumulated Depreciation Services-Beginning of Year	-	14,771	59,159	126,998	205,255	288,584	384,388	507,081	654,392	846,147	1,090,612
44	Accumulated Depreciation Services-End of Year	14,771	59,159	126,998	205,255	288,584	384,388	507,081	654,392	846,147	1,090,612	1,452,218
45												
46												
47												
48	Total Mains & Services Depreciation Expense	49,836	152,184	232,725	265,448	303,340	360,741	437,636	517,566	653,822	867,865	1,209,150
49												
50	Total Mains & Services Accumulated Depreciation	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

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

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

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	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	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)	(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	194,817	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	3,771	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%	1.90%	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 (EnergyNorth 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)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	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	848,061	1,815,704
2 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
3 Increase Factor	\$0.0017	\$0.0047	\$0.0034	(\$0.0006)	\$0.0009	\$0.0021	\$0.0018	\$0.0011	\$0.0037	\$0.0047	\$0.0100
4 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
5 Annual Percent Increase	0.15%	0.47%	0.40%	-0.06%	0.12%	0.24%	0.25%	0.12%	0.58%	0.54%	1.16%
6 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
7 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
8 Total Miles of Cast Iron/Bare Steel Main Remaining ¹	149.8	142.0	137.4	132.1	126.30	120.88	113.96	106.46	93.18	78.65	63.65
9 Services Replaced Annually ²	101	127	282	81	84	174	316	291	572	584	1,042
10 Cumulative Number of Services Replaced	101	228	510	591	675	849	1,165	1,456	2,028	2,612	3,654
11 Typical Residential bill	\$1,292	\$1,107	\$1,118	\$1,059	\$1,020	\$1,123	\$1,309	\$1,309	\$1,078	\$1,171	\$1,171
12 Typical Usage	800	800	800	800	800	800	800	800	763	779	779
13 Annual Increase for Residential Heating customer	\$1.36	\$3.79	\$2.73	(\$0.45)	\$0.74	\$1.66	\$1.45	\$0.91	\$2.82	\$3.62	\$7.76
14 Percent Bill Increase	0.10%	0.34%	0.24%	-0.04%	0.07%	0.15%	0.11%	0.07%	0.26%	0.31%	0.66%
15 Typical G-41	\$3,375	\$2,939	\$2,842	\$2,696	\$2,654	\$2,926	\$3,499	\$3,499	\$2,651	\$3,031	\$3,031
16 Typical Usage	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,167	2,029	2,180	2,180
17 Annual Increase for G-41 customer	\$3.67	\$10.26	\$7.39	(\$1.22)	\$2.02	\$4.51	\$3.93	\$2.46	\$7.50	\$10.14	\$21.70
18 Percent Bill Increase	0.11%	0.35%	0.26%	-0.05%	0.08%	0.15%	0.11%	0.07%	0.28%	0.33%	0.72%
19 Typical G-42	\$22,595	\$18,926	\$18,432	\$17,516	\$16,884	\$18,853	\$22,486	\$22,486	\$16,284	\$18,916	\$18,916
20 Typical Usage	15,567	15,567	15,567	15,567	15,567	15,567	15,567	15,567	14,720	15,883	15,883
21 Annual Increase for G-42 customer	\$26.38	\$73.68	\$53.07	(\$8.76)	\$14.48	\$32.39	\$28.21	\$17.71	\$54.42	\$73.86	\$158.13
22 Percent Bill Increase	0.12%	0.39%	0.29%	-0.05%	0.09%	0.17%	0.13%	0.08%	0.33%	0.39%	0.84%
23 Typical G-52	\$21,973	\$16,707	\$16,605	\$16,025	\$14,629	\$16,555	\$18,667	\$18,667	\$14,087	\$15,714	\$15,714
24 Typical Usage	15,687	15,687	15,687	15,687	15,687	15,687	15,687	15,687	14,566	15,645	15,645
25 Annual Increase for G-52 customer	\$26.59	\$74.25	\$53.48	(\$8.83)	\$14.59	\$32.64	\$28.43	\$17.84	\$53.85	\$72.75	\$155.76
26 Percent Bill Increase	0.12%	0.44%	0.32%	-0.06%	0.10%	0.20%	0.15%	0.10%	0.38%	0.46%	0.99%

Line / Column Notes:

1(b)-16(b) Amounts are cumulative from July 1, 2009

¹These 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.

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