Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities

Cast Iron/Bare Steel Replacement Program Results
Fiscal Year 2019

April 15, 2019

Submitted by:

Liberty Utilities

TABLE OF CONTENTS

Introduction **1**

Section 1: Actual Capital Expenditures **1**

Section 2: Calculations of Incremental revenue Requirement **4**

Section 3: Differences Between Initial Estimated Expenditures and Fiscal Year-End Estimated Expenditures **4**

Section 4: Status of the Litigation Between Liberty and the Cities of Concord and Manchester **5**

Section 5: Tax Deduction For Repair Expenses **6**

Section 6: Cast Iron/Bare Steel Replaced Under Municipal Projects and the Cast Iron Encroachment Policy **6**

Appendix A: FY 2018 Condition Bare Steel Main Replacement Program – Sample Analysis **1**

INTRODUCTION

Pursuant to the settlement agreement approved by the New Hampshire Public Utilities Commission (the "Commission") as part of the National Grid/KeySpan merger in Docket No. DG 06-107 and the settlement agreement as part of the Liberty acquisition of EnergyNorth in Docket No. DG 11-040 (the "Settlement Agreement") approved by Order No. 25,370, Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities ("Liberty" or the "Company") submits the results of the Cast Iron Bare Steel ("CIBS") Replacement Program for fiscal year 2019 (April 1, 2018, to March 31, 2019). As required by the Settlement Agreement, the Company submits the following information in connection with this report, the pre-filed Joint Testimony of Shawn D. Furey and Brian R. Frost, and the Testimony of David Simek and Catherine A. McNamara: (1) A report detailing the actual amount of capital investments made in accordance with implementing the CIBS program during fiscal year 2019 (Attachment SDF/BRF-2 to Joint Furey-Frost Testimony); (2) a calculation of the incremental revenue requirement associated with placing the capital investments into rate base above a base spending level of $533,119 (Attachment DBS-CAM-1 to Simek/McNamara Testimony); (3) a description of variances between actual results and the original plan; and (4) a request for a permanent increase in base distribution delivery rates in the amount of $1,321,114 effective for usage on and after July 1, 2019.

SECTION 1: ACTUAL CAPITAL EXPENDITURES

Actual capital expenditures incurred during implementation of the CIBS program for fiscal year 2019 are detailed in Attachment SDF/BRF-2 to the Furey/Frost Testimony. Through a series of technical sessions that began in 2008, the Commission Staff and the Company have

agreed that the capital investment amounts to be included for recovery under CIBS may include all prudently incurred direct and indirect[1] costs associated with: (i) replacement or abandonment[2] of cast iron and bare steel mains, including replacement of existing pipe with replacement pipe of the same size,[3] with recovery for the costs of "upsizing" the pipe allowed only when specifically justified;[4] (ii) replacement or abandonment of cast iron or bare steel service lines directly connected to bare steel or cast iron main replacement projects; and (iii) tie over of connected service lines not replaced or abandoned as part of a cast iron bare steel main replacement project.

Categories of costs that may not be included for recovery under CIBS include: (i) replacement or abandonment of plastic main; (ii) replacement or abandonment of coated steel main, regardless of vintage, unless approved by the Safety Division of the Commission; (iii) replacement, abandonment, or reconnecting of plastic or coated steel services that were connected to existing cast iron or bare steel main replacement projects; (iv) the differential in cost to replace existing cast iron or bare steel mains with pipe of a diameter that is greater than the existing main and the cost to replace that main with a pipe that is larger than the existing main, unless specifically justified; (v) relocation of customer meters from inside to outside; (vi) random cast iron or bare steel service replacements not connected to a cast iron or bare steel main replacement project; (vii) carryover costs in aggregate exceeding 5% of the approved

[1] Indirect costs mean overheads such as pension, OPEBs and other fringe benefits, payroll taxes, material handling costs and other general & administrative expenses that are loaded on all labor and material transactions. Categories of costs that may not be included for recovery under the plan include costs related to CIBS planning (other than normal engineering and project planning), reporting and filing.
[2] For purposes of ii and iii, abandonments such as mains that are not servicing a customer via a service will not be allowed. Other abandonments will be considered by Staff on a case by case basis.
[3] 3-inch pipes, which are no longer standard size, will be routinely replaced with 4-inch pipes.
[4] *See* Settlement Agreement in DG 11-040, Attachment J, section (20) n.

estimated total expenditures under the CIBS program for the construction year, unless approved by the Safety Division; and (viii) replacements made under the Cast Iron Encroachment Policy are not eligible for accelerated rate recovery in the Cast Iron/Bare Steel Program unless a special circumstance is approved by the Safety Division.

On January 4, 2018, the Company made its proposed FY 2019 CIBS program filing with the Commission. On August 27, 2018, the filing was reviewed with Staff for project selection and scope.

The FY 2018 carryover costs that were captured within the FY 2019 program that are potentially recoverable under CIBS rates totaled $3,593,321. Under the Settlement Agreement, the Company cannot recover through the CIBS program "carryover costs in aggregate exceeding 5% of the approved estimated total expenditures under the CIBS program for the construction year, unless approved by the Safety Division." The estimated total cost associated with completed FY 2019 projects is $15,574,776, resulting in a 5% cap of $778,739 of allowable carryover cost. The Company is seeking the revenue requirement associated with FY 2018 carryover costs above the allowable carryover cost cap as part of this filing.

Line 73 column BE of Attachment SDF/BRF-2 shows the actual recoverable expenditures of the FY 2019 projects, totaling $12,827,024 (including carryover costs above the 5% cap). After removing from the actual expenditures the CIBS base amount of $533,119 in accordance with the terms of the Settlement Agreement, the total incremental expenditures to be included in rate base is $12,293,905. Appendix A to this report is the Condition Bare Steel Main Replacement Program – Sample Analysis Report for FY 2019. This report contains

photographs and descriptions of various pipe segments removed and catalogued as part of the FY 2019 CIBS program.

SECTION 2: CALCULATIONS OF INCREMENTAL REVENUE REQUIREMENT

In this filing, Liberty is seeking recovery in rates of the incremental revenue requirement associated with an additional $12,293,905 of CIBS recoverable capital investments. As set forth in Attachment DBS/CAM-1, page 1 to the Simek/McNamara Testimony, the revenue requirement associated with the CIBS cumulative capital expenditures is $4,849,574 (line 35(k)) with a corresponding revenue deficiency of $1,321,114 (line 41 (k)). Consistent with prior delivery rate increases for the CIBS program, the Company proposes to apply the increase pro rata across all customer classes. Attachment DBS/CAM-1, page 4 to the Simek/McNamara Testimony also provides the annual bill impacts for an average residential customer and commercial customers in rate classes G-41, G-42, and G-52. Attachment DBS/CAM-2 is a computation of the cumulative revenue requirement associated with the CIBS program since its inception in FY 2009.

SECTION 3: DIFFERENCES BETWEEN INITIAL ESTIMATED EXPENDITURES AND FISCAL YEAR-END ESTIMATED EXPENDITURES

The Company's FY 2019 CIBS Plan provided for the replacement or abandonment of 12.09 miles of cast iron and bare steel pipe at an estimated cost of $17,567,439. As shown on Attachment SDF/BRF-2 (line 40 column AJ), the Company eliminated 9.91 miles of cast iron and bare steel at a cost of $16,702,994 (line 39, column BL). A reconciliation of the total costs to the total recoverable costs is shown in the table on the following page:

		Attachment SDF/BRF-2 Reference
Actual Loaded Costs	$16,702,994	line 39, column BL
FY 2018 carry-over costs	$3,593,321	line 70, column BE
Less: Expected FY 2019 carry-over costs	-$5,089,745	line 39, column BG
Non-recoverable main costs	-$656,830	line 39, column BA
Non-recoverable service costs	-$1,722,716	line 39, column BB
Total Recoverable Costs	$12,827,024	line 73, column BE

Details of the variances between estimated and actual costs by project are shown in Attachment SDF/BRF-2 columns BK through BN. Overall, the actual costs of the CIBS projects completed in FY 2019 were 7% higher than budget.[5]

SECTION 4: STATUS OF THE LITIGATION BETWEEN LIBERTY AND THE CITIES OF CONCORD AND MANCHESTER

In 2010, National Grid filed actions in Hillsborough and Merrimack County Superior Courts against the Cities of Manchester and Concord seeking injunctions against enforcement of regulations concerning street opening permit fees ("degradation fees"), as well as requests for declaratory judgments invalidating such fees. The matters were later consolidated in the Merrimack County Superior Court.

After an appeal of pretrial motions that was resolved in 2012, a trial in 2015, and another appeal, the Supreme Court issued an order in 2017 that upheld both the ordinances and their penalty provisions, effectively making the Company responsible for all past and future degradation fees charged.

[5] Note that the budget-to-actual variance of all costs related to cast iron and bare steel, including the costs within this program, costs excluded from the program, and carryover costs, was 1%. ($20,083,073 versus $20,296,315). Attachment SDF-BRF-2, columns BK, BL, and BM, row 73.

For FY 2018 and onward, the Company has included degradation fees in its proposed CIBS rates. Accrued Manchester degradation fees from prior year CIBS filings were included in the most recent distribution rate case, Docket No. DG 17-048. The Company paid the Concord degradation fees while the case was pending, so no adjustment was necessary.

SECTION 5: TAX DEDUCTION FOR REPAIR EXPENSES

In 2009, the Internal Revenue Service issued guidance, under Internal Revenue Code Section 162, regarding the eligibility of certain repair and maintenance expenses for an immediate deduction for income tax purposes, but capitalized by the Company for book purposes. This tax deduction has the effect of increasing deferred taxes and lowering the revenue requirement that customers will pay under the CIBS program. Repairs resulting in the replacement of less than 20 percent of an original unit of property qualify for a repairs tax deduction. A gas company's gas subsystem is considered a "unit of property" for the purposes of the repairs tax deduction. As explained in the Simek/McNamara Testimony, projects included in the CIBS program are expected to qualify as repairs; thus, when computing the revenue requirement, the Company reflects a tax deductibility of 100 percent for all CIBS jobs.

SECTION 6: CAST IRON/BARE STEEL REPLACED UNDER MUNICIPAL PROJECTS AND THE CAST IRON ENCROACHMENT POLICY

In FY 2019, the Company replaced approximately 458 feet of cast iron through the Cast Iron Encroachment Policy and approximately 14,793 feet of cast iron and bare steel through municipal projects, totaling to approximately 2.89 miles of replacement. Combined with the 9.91 miles replaced through the CIBS program as discussed above, this amounts to a total of approximately 12.8 miles of cast iron and bare steel replacement in FY 2019. A yearly

summary of cast iron and bare steel replacement through municipal projects and encroachments can be seen below:

	Footage of Cast Iron/Bare Steel Replaced	
Fiscal Year	**Municipal Projects**	**Encroachments**
2008-2009	10,980	171
2009-2010	19,920	28
2010-2011	11,649	62
2011-2012	17,791	40
2012-2013	12,524	53
2013-2014	19,118	55
2014-2015	10,587	169
2015-2016	12,206	248
2016-2017	15,663	30
2017-2018	15,570	30
2018-2019	14,793	458
Total Footage	**160,801**	**1,344**
Total Mileage	**30.45**	**0.25**

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A: FY 2019 CONDITION BARE STEEL MAIN REPLACEMENT PROGRAM – SAMPLE ANALYSIS

Over the course of the FY 2019 construction season, bare steel pipe and soil samples were collected from the CIBS main replacement program. Each sample was sand blasted to expose the pipe down to the bare metal and will be provided for visual representation. Soil samples were taken as close to the pipe samples as possible in an effort to retrieve native soil. Chemical testing was conducted to determine the existing pH, chloride, sulfide, and sulfate levels. Microbiological testing for Acid Producing Bacteria (APB) and Sulfate Reducing Bacteria (SRB) were performed as well. Both chemical and microbiological tests were conducted as soon as possible. The table below shows the threshold of bacteria levels based on the results of bacterial colonies per milliliter.

Number of Positive Bottles	Bacteria Colonies/ml	Reporting Value Colonies/ml	Bacteria Level
0	< 1 - 10	< 10	Low
1	10	10	Low
2	10 - 100	100	Medium
3	100 - 1000	1,000	Medium
4	1,000 - 10,000	10,000	High
5	> 10,000 - 100,000	100,000	High

Positive APB and SRB vials with corresponding reporting values.

Details and testing results for the four pipe and soil samples collected are summarized on the following pages:

Sample 1

Work Order & Project:	401811-37618 - 1-132 Allds St, Crown St, and Proctor St	
Sample Location:	In Front of 8 Mulvanity St	
Pipe Sample Details:	2” Bare Steel, Standard Wall (0.154”), Low Pressure, Installed in 1940	
Soil Sample Details:	Medium Brown Wet Sandy Soil	
Test Date:	11/6/2018	
Soil Testing Results		
	Quantitative Value	**Qualitative Value**
pH:	6	-
Chloride (mg/l)**:**	0	None
Sulfide (mg/l)**:**	< 5	Not Appreciably Present
Sulfate (mg/l)**:**	<200	Low
APB Level (Colonies/ml)**:**	100,000	High
SRB Level (Colonies/ml)**:**	10	Low
Sample Condition: Heavy corrosion pitting over entire pipe, 100% wall loss in areas.		

Sample 2

Work Order & Project:	401711-37640 - 1-21 Fowell Ave, Lawndale Ave, and Park Ave	
Sample Location:	In Front of 21 Fowell Ave	
Pipe Sample Details:	2” Bare Steel, Standard Wall (0.154”), Low Pressure, Installed in 1924	
Soil Sample Details:	Light Brown Sandy Soil	
Test Date:	8/24/2018	
Soil Testing Results		
	Quantitative Value	**Qualitative Value**
pH:	7	-
Chloride (mg/l)**:**	0	None
Sulfide (mg/l)**:**	< 5	Not Appreciably Present
Sulfate (mg/l)**:**	200	Low
APB Level (Colonies/ml)**:**	10	Low
SRB Level (Colonies/ml)**:**	<10	Low
Sample Condition: Generalized corrosion with approximately 30-50% wall loss, open long seam in pipe.		

Sample 3

Work Order & Project:	401811-37619 - 171-185 Concord St, Bell St, and Damon Ave	
Sample Location:	In Front of 37 Bell St	
Pipe Sample Details:	2” Bare Steel, Standard Wall (0.154”), Low Pressure, Installed in 1954	
Soil Sample Details:	Light Brown Sandy Soil	
Test Date:	2/19/2019	
Soil Testing Results		
	Quantitative Value	**Qualitative Value**
pH:	7	-
Chloride (mg/l)**:**	0	None
Sulfide (mg/l)**:**	< 5	Not Appreciably Present
Sulfate (mg/l)**:**	<200	Low
APB Level (Colonies/ml)**:**	1,000	Medium
SRB Level (Colonies/ml)**:**	10,000	High
Sample Condition: Heavy corrosion pitting over entire pipe, 100% wall loss in pits.		

Sample 4

Work Order & Project:	401811-37623 - 126-226 Pine St, Lovewell St, and Palm St	
Sample Location:	Between 22 and 24 Lovewell St	
Pipe Sample Details:	2” Bare Steel, Standard Wall (0.154”), Low Pressure, Installed in 1957	
Soil Sample Details:	Very Light Brown Sandy Soil	
Test Date:	2/19/2019	
Soil Testing Results		
	Quantitative Value	**Qualitative Value**
pH:	6	-
Chloride (mg/l)**:**	0	None
Sulfide (mg/l)**:**	50	Low
Sulfate (mg/l)**:**	<200	Low
APB Level (Colonies/ml)**:**	100	Medium
SRB Level (Colonies/ml)**:**	<10	Low
Sample Condition: Heavy corrosion pitting over entire pipe, 100% wall loss in pits.		

Conclusions/Recommendations:

(1) Bare steel cutouts locations should continue to be identified on designs and reference dimensions to leak repair locations. This is to ensure a piece of poor condition bare steel pipe is collected.

(2) A representative should be on site to verify that the pipe sample is acceptable and that the soil taken is valid for analysis. The soil sample should be tested as soon as possible. Testing the soil when it is "fresh" will provide more accurate results as it relates to the existing chemical and microbiological conditions at each location.

(3) The criteria used for the segment selection process should continue to include references to deep pitting and/or poor condition. This data has proven to be useful and indicative of pipe that is in need of replacement.

(4) Special attention should be paid to locations where bare steel segments are to remain in service and the pH is highly acidic or highly alkaline.

(5) Special attention should be paid to locations where bare steel segments are to remain in service and high levels of bacteria are recorded.

(6) MSES Consultants, Inc. – Corrosion Products Division recommended incorporating results from sulfide and sulfate levels as it relates to the aggressiveness of potential corrosion. Special attention should be paid to locations where bare steel segments are to remain in service and high levels sulfide and/or sulfate are recorded.

FY 2019 Cast Iron/Bare Steel Replacement Program

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1	Priority	Work Order #	Town Code	Street	From	To	Material	System Pressure (PSIG)	Exst Diameter (Inches)	YOI	Relay Diameter	Bare Steel Services	Coated Steel Services	Plastic Services	Total Services	Relay Footage (Inc. PL & CS)	New Main Footage	Abandon Only Leak Prone Footage	Excluded PL & CS Relay Footage	Total Footage	Cost Estimate (Direct)	Cost Estimate (Loaded)	Estimated Degradation Fee	Total Cost Estimate (Direct)	Total Cost Estimate (Loaded)	Loading %	Cost/Ft (Loaded)	Estimated Recoverable Cost (Loaded)	Comments
2	**NORTHERN DIVISION**																												
3	119.15	401711-37601	CCD	66-89 S State St	Laurel St	Downing St	CI	LP	10"	1892	8" LP for entire scope.	0	0	15	15	545			0	545	$149,748	$194,416	$6,840	$156,588	**$201,256**	29%	$369.28	**$150,942**	Uncompleted 2017 project.
4	17.76	401711-37605	CCD	8-42 Centre St, N State St & Park St	N Main St	Pleasant St	CI	LP, LP to 60	4", 6", 8", 10"	1892, 1893, 1894, 1938	6" 60# on N State St. 8" LP on Pleasant St and S State St. Abandon Centre St.	8	9	7	24	2,460		570	15	3,045	$502,368	$659,200	$28,680	$531,048	**$687,880**	30%	$279.63	**$570,087**	Uncompleted 2017 project.
5	10.33	401711-37607	CCD	59-105 Pleasant St & Pine St	Liberty St	Spring St	CI	LP to 60	3", 4", 6", 8"	1892, 1893, 1934	6" 60# main on Pleasant St. 2" 60# main on Pine St.	24	3	23	50	3,325	125	375	10	3,835	$467,239	$617,254	$40,840	$508,079	**$658,094**	30%	$190.75	**$549,452**	Uncompleted 2017 project.
6	7.10	401811-37628	CCD	13-42 Rockingham St	Broadway	Fellows St	CI	LP	4" & 6"	1931, 1956	6" LP for entire scope.	10	0	3	13	850			25	850	$147,731	$194,801	$10,300	$158,031	**$205,101**	30%	$241.30	**$188,744**	Partially uncompleted 2017 project.
7	5.64	401811-37602	CCD	127-161 School St, Pleasant St, N Fruit St, Minot St, Kensington Rd, and Rum Hill Rd	Westbourne Rd	Rum Hill Rd	CI	LP	4", 1.25"	1911, 1926, 1927, 1928, 1935, 1938, 1948	8" LP on Kensington St, 6" LP on School St, abandon Pleasant St, 4" LP for remainder.	18	1	28	47	5,205		2,150	40	7,355	$668,900	$872,679	$37,500	$706,400	**$910,179**	29%	$174.87	**$732,483**	City water project and paving this area.
8	3.77	401811-37601	CCD	15-30 Westbourne Rd, Park Ridge Rd, and Ridge Rd	School St	End	CI	LP	4"	1896,1906, 1925, 1926	4" LP for entire scope.	4	1	6	11	1,180			0	1,180	$155,174	$204,857	$14,140	$169,314	**$218,997**	29%	$185.59	**$184,156**	City water project on Westbourne Rd.
9	**Northern Division Totals**											**64**	**14**	**82**	**160**	**13,565**	**125**	**3,095**	**90**	**16,810**	**$2,091,160**	**$2,743,206**	**$138,300**	**$2,229,460**	**$2,881,506**	**29%**	**$210.48**	**$2,375,865**	
10															**Total Miles**	**2.57**	**0.02**	**0.59**	**0.02**	**3.18**									
11	**CENTRAL DIVISION**																												
12	25.07	401811-37614	MNC	262-302 Main St, and Schuyler St	Schuyler St	Sullivan St	CI	LP	6", 4"	1911, 1921	6" LP on Main St, 4" LP on Schuyler St.	3	2	6	11	390			0	390	$108,853	$144,778	$15,200	$124,053	**$159,978**	29%	$410.20	**$118,454**	Paving Main St.
13	18.67	401811-37615	MNC	237-356 Amory St, Reed St, and Montgomery St	Reed St	Hevey St	CI	LP	6", 4"	1907	6" 60# on Amory St, 4" 60# on Kelley St, 6" LP remainder.	13	2	12	27	1,450			35	1,450	$316,472	$420,928	$56,450	$372,922	**$477,378**	28%	$329.23	**$356,043**	Paving Amory St.
14	18.51	401711-37617	MNC	69-152 Harrison St, Beech St, and Hazel St	Pine St	Ash St	CI	LP	4" & 8"	1906/1921/1922/1924	8" LP on Harrison St. 4" LP on Beech St and Hazel St.	10	3	10	23	1,540			0	1,540	$260,249	$346,835	$57,400	$317,649	**$404,235**	27%	$262.49	**$297,825**	City paving section of Harrison St in 2018. Joint leaks and broken main.
15	17.79	401811-37609	MNC	503-573 Maple St	Lowell St	Pearl St	CI	LP	6"	1894	4" 60# on Maple St, abandon Lowell St intersection.	5	3	6	14	1,181		80	10	1,261	$180,583	$240,761	$37,885	$218,468	**$278,646**	28%	$235.94	**$200,539**	Paving Maple St.
16	13.49	401811-37611	MNC	550-615 Pine St, Harrison St, and Brook St	Prospect St	Blodget St	CI	LP	12", 10", 8", 4"	1912, 1925, 1927	12" LP on Harrison St, 8" PL on Pine St, 8"/6"/4" LP on Brook St	17	2	12	31	2,060			0	2,060	$429,531	$558,884	$78,400	$507,931	**$637,284**	25%	$309.36	**$491,134**	Paving Pine St.
17	12.85	401811-37605	MNC	139-229 Young St, Taylor St, Norris St, and Ainsworth Ave	Taylor St	Hamblet St	CI	LP	4"	1894, 1899, 1919, 1926	4" LP on Norris St, 6" LP remainder.	14	1	19	34	1,965			0	1,965	$337,145	$448,071	$74,165	$411,310	**$522,236**	27%	$265.77	**$370,729**	Paving Young St. Active grade 3 on Taylor St.
18	12.68	401811-37607	MNC	686-1091 Valley St, Cypress St, and Taylor St	Belmont St	Massbesic St	CI	LP	6", 4", 3"	1895, 1901, 1905, 1906, 1945	Abandon Taylor St, 6" LP, 4"/2" 60# on Valley St, 8" LP Cypress St.	19	6	35	60	3,700		380	250	4,080	$554,439	$736,881	$134,900	$689,339	**$871,781**	26%	$235.62	**$564,706**	Paving Valley St. Active grade 3 on Cypress St.
19	11.58	401811-37613	MNC	677-759 Pine St, N Adams St, and Bay St	Salmon St	Webster St	CI	LP	10", 8", 4"	1900, 1928, 1930	12" LP on Pine St, 8" LP on N Adams St, 4" LP on Bay St	11	3	19	33	1,685			0	1,685	$410,789	$535,310	$65,100	$475,889	**$600,410**	26%	$356.33	**$446,092**	Paving Pine St.
20	10.28	401811-37608	MNC	266-507 Concord St, Lincoln St, Malvern St, and Belmont St	Maple St	Beacon St	CI	LP	6", 4"	1892, 1896, 1912, 1925, 1933, 1934	6" LP on Concord St, 4" LP remainder.	25	7	31	63	3,715			60	3,715	$634,212	$843,564	$141,600	$775,812	**$985,164**	27%	$265.19	**$696,492**	Paving Concord St.
21	8.91	401811-37606	MNC	1001-1202 Hayward St, Prout Ave, Riley Ave, Sunnyside St, and Knowlton St	Jewett St	Mammouth Rd	CI	LP to 60	6", 4"	1900, 1909, 1911, 1913, 1923, 1928	Abandon Hayward Ave, 2" 60# remainder.	31	13	27	71	2,800		1,755	120	4,555	$437,076	$583,966	$77,400	$514,476	**$661,366**	29%	$236.20	**$482,947**	Numerous leaks on Hayward St.
22	7.07	401811-37610	MNC	593-703 Maple St, Myrtle St, Prospect St, and Brook St	Orange St	Blodget St	CI	LP	6", 4"	1894, 1899, 1928	6" LP on Maple St, 4" LP remainder, abandon as shown.	9	12	5	26	1,380	85	1,150	0	2,615	$300,418	$398,897	$60,350	$360,768	**$459,247**	27%	$313.48	**$313,465**	Paving Maple St.
23	**Central Division Totals**											**157**	**54**	**182**	**393**	**21,866**	**85**	**3,365**	**475**	**25,316**	**$3,969,765**	**$5,258,875**	**$798,850**	**$4,768,615**	**$6,057,725**	**27%**	**$275.97**	**$4,338,425**	
24															**Total Miles**	**4.14**	**0.02**	**0.64**	**0.09**	**4.79**									
25	**SOUTHERN DIVISION**																												
26	53.89	401711-37631	NAS	69-85 Lock St, Lucier St, Lessard St, and Aetna Ct	Tolles St	Chandler St	CI, BS	LP	6", 4", 2"	1911, 1915, 1919, 1925	8" PL LP on Lock St. 4" PL LP on Lessard St and Lucier St.	14	4	7	25	1,430			50	1,430	$460,946	$620,439		$460,946	**$620,439**	35%	$433.87	**$535,921**	3 broken main and 8 joint leaks.
27	17.06	401811-37618	NAS	1-132 Allds St, Crown St, and Proctor St	E Hollis St	Fifield St	CI, BS	LP	6", 4", 2"	1900, 1912, 1916, 1919, 1924, 1940	8" LP on Allds St, 6" LP on Crown St, 4" LP on Proctor St, 4" LP on Merrill St.	31	14	31	76	5,705			260	5,705	$1,726,196	$2,294,621		$1,726,196	**$2,294,621**	33%	$402.21	**$1,866,125**	Paving Allds St.
28	15.68	401811-37622	NAS	1-68 Lock St, and Kendrick St	Granite St	Tolles St	CI	LP	6", 4"	1904, 1905, 1906, 1914	6" LP on Lock St, 4" LP on Kendrick St.	21	2	5	28	1,760			70	1,760	$611,665	$811,519		$611,665	**$811,519**	33%	$461.09	**$699,392**	Paving Lock St, Granite St, and Orange St.
29	11.57	401811-37627	NAS	106-128 Vine St, Chestnut St, and W Otterson St	Lake St	W Otterson St	CI, BS	LP	4", 2"	1901, 1907, 1912, 1919, 1920, 1923, 1926	6" LP on Chestnut St, 4" LP remainder.	7	3	8	18	1,495			10	1,495	$384,153	$511,126		$384,153	**$511,126**	33%	$341.89	**$430,473**	Paving Chestnut St.
30	10.18	401711-37640	NAS	1-21 Fowell Ave, Lawndale Ave, and Park Ave	Main St	End	CI, BS	LP	4", 2"	1923, 1924, 1927, 1930	4" LP entire scope.	15	3	12	30	1,845			50	1,845	$460,272	$614,726		$460,272	**$614,726**	34%	$333.18	**$518,641**	Brought forward from FY2018. Paving Fowell Ave.
31	9.41	401811-37619	NAS	171-185 Concord St, Bell St, and Damon Ave	Rancourt St	Damon Ave	CI, BS	LP	6", 4", 2"	1930, 1954	6" LP on Concord St, 4" LP remainder.	13	6	8	27	2,410		50		2,460	$395,073	$524,314		$395,073	**$524,314**	33%	$217.56	**$449,747**	Paving Damon Ave.
32	8.20	401811-37623	NAS	126-226 Pine St, Lovewell St, and Palm St	Acton St	Gilman St	CI, BS	LP	4", 2"	1905, 1911, 1912, 1914, 1918, 1920, 1952	4" LP north of Lake St, 6" LP south of Lake St.	24	4	31	59	3,190			105	3,190	$949,469	$1,268,548		$949,469	**$1,268,548**	34%	$397.66	**$1,049,100**	Paving Pine St and Palm St.
33	7.14	401711-37645	NAS	1-17 Warren St	Bridge St	End	CI	LP	16"	1909	12" CS LP for entire scope.	6	0	0	6	315				315	$164,727	$213,695		$164,727	**$213,695**	30%	$678.40	**$205,845**	2 joint leaks. City is relaying sewer.
34	7.14	401811-37620	NAS	1-40 Courtland St, Webster St, and Ayer St	Manchester St	Concord St	CI, BS	LP	4", 2"	1903, 1909, 1919, 1920,1939	2" PL 60# on Courtland St and Ayer to west. Abandon remainder.	17	2	14	33	1,210		1,080	15	2,290	$368,059	$493,264		$368,059	**$493,264**	34%	$407.66	**$428,889**	Paving Ayer St.
35	8.14	401811-37629	NAS	65-125 Concord St	Hills Ferry Rd	Hall Ave	CI	LP	6"	1930	8" LP on Concord St. Abandon Hills Ferry Rd at Concord St regulator pit.	6	9	19	34	4,195			115	4,195	$961,654	$1,275,956		$961,654	**$1,275,956**	33%	$304.16	**$987,026**	Paving Concord St.
36	**Southern Division Totals**											**154**	**47**	**135**	**336**	**22,125**	**0**	**1,130**	**675**	**24,685**	**$6,482,214**	**$8,628,208**		**$6,482,214**	**$8,628,208**	**33%**	**$397.77**	**$7,171,157**	
37															**Total Miles**	**4.19**	**0**	**0.21**	**0.13**	**4.68**									
38																													
39	**FY2019 CIBS Program Totals**											**375**	**115**	**399**	**889**	**57,556**	**210**	**7,590**	**1,240**	**66,811**	**$12,543,140**	**$16,630,289**	**$937,150**	**$13,480,290**	**$17,567,439**	**30%**	**$294.74**	**$13,885,447**	
40															**Total Miles**	**10.90**	**0.04**	**1.44**	**0.23**	**12.65**									
41	**Estimated FY2018 Carry Over Costs**																												
42		Work Order #	Town Code	Street	From	To	Material	System Pressure (PSIG)	Exst Diameter (Inches)	YOI									Project Completion Date	Total Footage	Cost Estimate (Direct)	Cost Estimate (Loaded)	Estimated Degradation Fee	Total Cost Estimate (Direct)	Total Cost Estimate (Loaded)			Estimated Recoverable Cost (Loaded)	Comments
43		401711-37602	CCD	25-50 Ridge Rd, CCD & Franklin St	Auburn St	EOM	CI	LP	4"	1928, 1939									12/21/2017	1,400	$67,234	$87,404		$67,234	**$87,404**			**$87,404**	
44		401711-37603	CCD	1-10 Langdon Ave, CCD, S Main St	S Main St	EOM	CI	LP	4", 6"	1954									7/19/2017	695	$21,719	$28,235		$21,719	**$28,235**			**$28,235**	
45		401711-37604	CCD	53-79 Downing St, CCD, Wheaton Ave	South St	Redwood Ave	CI, BS	LP, LP to 60	1.25", 4"	1923									6/27/2017	400	$37,103	$48,234		$37,103	**$48,234**			**$48,234**	
46		401711-37606	CCD	76-113 School St, CCD, Centre St, Liberty St & Merrimack St	Liberty St	Merrimack St	CI	LP	4", 6", 8"	1892, 1894, 1933, 1937, 1968									12/30/2017	2,780	$140,881	$183,145		$140,881	**$183,145**			**$183,145**	
47		401711-37609	CCD	5-22 Chapel St, CCD	Rollins St	N State St	CI, BS	LP to 60	1.25", 4"	1907, 1930									5/17/2017	495	$23,541	$30,603		$23,541	**$30,603**			**$30,603**	
48		401711-37610	CCD	Gladstone St, CCD	Franklin St	EOM	CI	LP	4"	1927									12/6/2017	765	$18,634	$24,224	$9,110	$27,744	**$33,334**			**$33,334**	
49		401711-37611	CCD	65-112 Warren St, CCD	Pine St	Rumford St	CI	LP	4", 6", 8"	1892, 1904									11/29/2017	1,045	$54,483	$70,828		$54,483	**$70,828**			**$70,828**	
50		401711-37613	CCD	13-42 Rockingham St, CCD, Donovan St & Wiggin St	Broadway	Fellows St	CI	LP	4", 6"	1931, 1956									12/11/2017	1,960	$18,692	$24,300		$18,692	**$24,300**			**$24,300**	
51		401711-37614	TIL	4-22 Peabody St, TIL, Cedar St & High St	W Main St	Winter St	BS	60	4"	1931									7/11/2017	1,185	$67,469	$90,420		$67,469	**$90,420**			**$90,420**	
52		401711-37616	MNC	167-323 Hanover St, MNC & Beech St	Pine St	Maple St	CI	LP	3", 4", 6"	1921, 1922, 1927, 1934									10/27/2017	1,970			$59,700	$59,700	**$59,700**			**$59,700**	
53		401711-37619	MNC	11-59 Plummer St, MNC, Union St & Pine St	Silver St	Somerville St	CI	LP	4", 6"	1915, 1916, 1949									12/15/2017	1,305	$86,407	$112,329	$53,100	$139,507	**$165,429**			**$165,429**	
54		401711-37620	MNC	7-89 Dionne Dr, MNC	McGregor St	Moncalm St	CI	LP to 60	6"	1926									6/19/2017	620			$24,870	$24,870	**$24,870**			**$24,870**	
55		401711-37621	MNC	160-411 Calef Rd, MNC	Queen City Ave	Mitchell St	CI	LP	4", 6"	1904, 1924, 1927, 1929									12/28/2017	3,195	$202,985	$263,881	$116,990	$319,975	**$380,871**			**$380,871**	
56		401711-37622	MNC	135-189 Wilson St, MNC, Silver St & Harvard St	Sommerville St	Harvard St	CI	LP, LP to 60	4", 6"	1902, 1912, 1913, 1956									12/27/2017	1,945	$134,534	$174,894	$83,070	$217,604	**$257,964**			**$257,964**	
57		401711-37623	MNC	1-146 Orange St, MNC & Union St	Elm St	Union St	CI	LP, LP to 60	3", 6"	1894									7/21/2017	2,285	$128,304	$166,795	$87,870	$216,174	**$254,665**			**$254,665**	
58		401711-37624	MNC	750-855 Maple St, MNC, North St & Oak St	Sagamore St	Webster St	CI	LP to 60	4", 6"	1926, 1929, 1940, 1944, 1947									10/24/2017	2,970	$159,894	$207,862	$102,720	$262,614	**$310,582**			**$310,582**	
59		401711-37625	MNC	607-655 Chestnut St, MNC & Blodget St	Brook St	Penacook St	CI	LP	3", 4"	1894, 1922, 1927									11/28/2017	1,190	$71,868	$93,428	$46,830	$118,698	**$140,258**			**$140,258**	
60		401711-37626	MNC	8-74 Carpenter St, MNC, Chestnut St & Ray St	Elm St	Union St	CI	LP, LP to 60	4", 8"	1895, 1911, 1914, 1925, 1927									12/22/2017	4,365	$297,691	$386,999	$168,150	$465,841	**$555,149**			**$555,149**	
61		401711-37627	MNC	401-500 Laurel St, MNC	Beacon St	Cass St	CI	LP to 60	4"	1898, 1913, 1960									11/8/2017	1,300	$86,119	$111,955	$52,110	$138,229	**$164,065**			**$164,065**	
62		401711-37628	MNC	20-154 S Maple St, MNC & Oakdale Ave	S Willow St	Cilley Rd	CI	LP	4", 6"	1925, 1926									In Progress	1,210	$75,860	$98,618	$45,100	$120,960	**$143,718**			**$143,718**	
63		401711-37646	MNC	560-604 Beech St, MNC	Bridge St	Lowell St	CI	LP to 60	3", 4"	1915									8/31/2017	600	$32,101	$41,731	$21,250	$53,351	**$62,981**			**$62,981**	
64		401711-37647	MNC	400-429 Wilson St, MNC, & Cedar St	Spruce St	Auburn St	CI	LP	4", 6"	1898									9/16/2017	1,030	$60,856	$79,113	$40,650	$101,506	**$119,763**			**$119,763**	
65		401711-37632	NAS	5-67 Williams St, NAS, Newbury St	Allds St	Arlington St	CI, BS	LP	2", 4"	1900, 1940									10/5/2017	1,675	$199,448	$259,282		$199,448	**$259,282**			**$259,282**	
66		401711-37635	NAS	14-38 Brook St, NAS, Ash St & Lovell St	Hamilton St	Lake St	CI, BS	LP	2", 4"	1910, 1914, 1924, 1925, 1927, 1952									12/4/2017	1,790	$209,522	$272,378		$209,522	**$272,378**			**$272,378**	
67		401711-37638	NAS	4-26 Nutt St, NAS, Buchanan St & Faxon St	Lincoln Ave	Faxon St	CI, BS	LP	2", 4"	1900, 1908, 1911, 1912, 1924									12/29/2017	1,310	$137,678	$178,982		$137,678	**$178,982**			**$178,982**	
68		401711-37639	NAS	75-235 Lake St, NAS	Pine St	Lewis St	CI	LP	4", 6"	1906, 1925									In Progress	2,555	$251,160	$326,508		$251,160	**$326,508**			**$326,508**	
69		401711-37641	NAS	3-75 Blossom St, NAS, Hanover & Wilder	Pine St	Sawyer St	CI, BS	LP	2", 4"	1897, 1899, 1900, 1906, 1907, 1915									12/27/2017	1,850	$180,484	$234,629		$180,484	**$234,629**			**$234,629**	
70	**FY2018 Carry Over Totals**																				**$2,764,667**	**$3,596,777**	**$911,520**	**$3,676,187**	**$4,508,297**			**$4,508,297**	
71																													
72																													
73	**Grand Total**																								**$22,075,736**			**$18,393,744**	

FY 2019 Cast Iron/Bare Steel Replacement Program

	A	B	C	D	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN
1	Priority	Work Order #	Town Code	Street	Actual Start Date	Actual Completion Date	Status	Actual Footage Installed	CS & PL Relay & New Main Footage	Upsized Footage	Actual CIBS Eliminated (AG+R-AH)	Actual Service Relays BS	Actual Service Inserts BS	Actual Service Relays CS & PL	Actual Service Inserts CS & PL	Actual Service Transfer	Actual Service Aband BS	Actual Service New	Actual Service Total	Degradation Fees	Actual Main Cost - Direct (DEGRADATION INCL)	Actual Service Cost - Direct	Actual Total Cost Direct (AT + AU)	Actual Main Cost Loaded (DEGRADATION INCL)	Actual Service Cost - Loaded	Actual Total Cost Loaded (AW + AX)	Loading %	Main Costs to be Removed (Non-recoverable)	Service Cost to be Removed (Non-Recoverable)	Recoverable Main Cost (AW - BA)	Recoverable Service Cost (AX - BB)	Total Recoverable Cost (BC + BD)	Estimated Carryover Costs - Direct	Estimated Carryover Costs - Loaded	Estimated Direct Cost	Actual Cost Direct (INCL CARRYOVER)	Direct Variance %	Estimated Loaded Cost	Actual Loaded Cost (INCL CARRYOVER)	Loaded Cost Variance %	Variance Comments
2	**NORTHERN DIVISION**																																								
3	119.15	401711-37601	CCD	66-89 S State St	10/29/2018	12/27/2018	CASBUILT	520	0	0	520	0	0	1	0	11	0	0	12	$21,263	$193,403	$53,320	$246,722	$210,303	$61,632	$271,936	10%	$0	$61,632	$210,303	$0	$210,303	$17,761	$23,536	$156,588	$264,483	69%	$201,256	$295,472	47%	Additional test holes required, daily permit time restrictions, and actual degradation fee greater than estimate. 2019 Restoration.
4	17.76	401711-37605	CCD	8-42 Centre St, N State St & Park St						0	0																														Project deferred to 2019 due to MA crew support.
5	10.33	401711-37607	CCD	59-105 Pleasant St & Pine St	7/23/2018	12/17/2018	CASBUILT	4,051	300	305	4,126	16	4	8	13	7	0	0	48	$11,737	$482,845	$163,732	$646,577	$586,218	$163,732	$749,950	16%	$46,036	$90,109	$540,182	$73,624	$613,806	$75,484	$101,903	$508,079	$722,061	42%	$658,094	$851,853	29%	Actual installation footage greater than estimate, daily permit time restrictions, and ledge located within scope of project. 2019 Restoration.
6	7.10	401811-37628	CCD	13-42 Rockingham St	5/24/2018	6/20/2018	CASBUILT	892	40	0	852	8	0	1	0	4	0	0	13	$15,505	$114,215	$32,049	$146,263	$125,599	$35,556	$161,155	10%	$5,632	$12,299	$119,967	$23,258	$143,225	$24,592	$33,200	$158,031	$170,855	8%	$205,101	$194,355	-5%	On budget. 2019 Restoration.
7	5.64	401811-37602	CCD	127-161 School St, Pleasant St, N Fruit St, Minot St, Kensington Rd, and Rum Hill Rd	2/24/2018	12/18/2018	CASBUILT	3,259	40	3,205	5,369	18	0	11	0	18	0	0	47	$0	$582,320	$174,669	$756,989	$782,855	$211,445	$994,300	31%	$37,172	$130,269	$745,684	$81,176	$826,860	$103,229	$139,359	$706,400	$860,218	22%	$910,179	$1,133,659	25%	Daily permit time restrictions, extra depth excavation at tie-in locations, and ledge located within scope of project. 2019 Restoration.
8	3.77	401811-37601	CCD	15-30 Westbourne Rd, Park Ridge Rd, and Ridge Rd	6/18/2018	8/6/2018	CASBUILT	1,136	100	0	1,036	3	0	5	0	6	0	0	14	$5,702	$151,533	$49,956	$201,489	$184,454	$69,004	$253,458	26%	$16,237	$50,768	$168,217	$18,237	$186,453	$30,372	$41,002	$169,314	$231,861	37%	$218,997	$294,460	34%	Additional test holes required, extra depth excavation at tie-in locations, ledge located within scope of project, and actual service installations greater than estimate. 2019 Restoration.
9	**Northern Division Totals**							**9,858**	**480**	**3,510**	**11,903**	**45**	**4**	**26**	**13**	**46**	**0**	**0**	**134**	**$54,207**	**$1,524,315**	**$473,726**	**$1,998,040**	**$1,889,429**	**$541,370**	**$2,430,799**	**22%**	**$105,077**	**$345,076**	**$1,784,353**	**$196,294**	**$1,980,647**	**$251,438**	**$339,000**	**$1,698,412**	**$2,249,478**	**32%**	**$2,193,627**	**$2,769,799**	**26%**	
10							**Mileage**	**1.87**	**0.09**	**0.66**	**2.25**																								**Average Loaded Cost/Foot North**			**$195**	**$281**		
11	**CENTRAL DIVISION**																																								
12	25.07	401811-37614	MNC	262-302 Main St, and Schuyler St	7/12/2018	8/16/2018	CASBUILT	515	120	0	395	5	0	3	0	5	0	0	13	$29,980	$204,671	$39,138	$243,809	$226,801	$45,195	$271,996	12%	$52,847	$25,739	$173,954	$19,456	$193,410	$0	$0	$124,053	$243,809	97%	$159,978	$271,996	70%	
13	18.67	401811-37615	MNC	237-356 Amory St, Reed St, and Montgomery St	6/21/2018	8/28/2018	CASBUILT	1,480	35	270	1,445	11	1	4	3	7	0	0	26	$73,745	$466,015	$91,312	$557,327	$502,573	$101,599	$604,172	8%	$14,207	$56,716	$488,366	$44,883	$533,248	$0	$0	$372,922	$557,327	49%	$477,378	$604,172	27%	Actual installation footage, existing asphalt thickness, and degradation fee greater than estimate. Also, silt bags required by City to be installed within project scope. Restoration 100% complete.
14	18.51	401711-37617	MNC	69-152 Harrison St, Beech St, and Hazel St	8/1/2018	12/19/2018	CASBUILT	1,719	0	0	1,719	13	0	3	0	13	0	0	29	$0	$210,679	$92,431	$303,110	$229,909	$124,129	$354,038	17%	$0	$73,192	$229,909	$50,936	$280,846	$154,749	$188,822	$317,649	$457,859	44%	$404,235	$542,860	34%	Actual installation footage greater than estimate, silt bags for catch basins, existing asphalt within project scope thicker than estimate, and additional binder required to match existing thickness. 2019 Restoration.
15	17.79	401811-37609	MNC	503-573 Maple St	6/26/2018	9/4/2018	CASBUILT	1,181	10	0	1,251	6	0	3	5	0	0	0	14	$0	$44,983	$40,390	$85,374	$43,016	$47,707	$90,723	6%	$364	$29,033	$42,651	$18,674	$61,325	$116,044	$143,399	$218,468	$201,418	-8%	$278,646	$234,122	-16%	On budget. 2019 Restoration.
16	13.49	401811-37611	MNC	550-615 Pine St, Harrison St, and Brook St	5/25/2018	12/19/2018	CASBUILT	2,358	0	465	2,358	9	0	5	0	10	0	0	24	$0	$328,162	$73,103	$401,265	$329,657	$82,967	$412,625	3%	$3,999	$48,974	$325,658	$33,993	$359,652	$186,721	$224,634	$507,931	$587,986	16%	$637,284	$637,259	0%	On budget. Brook St restoration complete. Balance restoration remaining for 2019.
17	12.85	401811-37605	MNC	139-229 Young St, Taylor St, Norris St, and Ainsworth Ave	6/1/2018	7/27/2018	CASBUILT	1,810	20	1,145	1,790	14	0	1	0	20	0	0	35	$0	$297,090	$87,959	$385,048	$321,847	$103,583	$425,431	10%	$13,403	$55,629	$308,444	$47,955	$356,399	$112,252	$125,583	$411,310	$497,300	21%	$522,236	$551,014	6%	Actual thickness of asphalt greater than estimate and silt bags required by City. Small amount of restoration remaining for 2019.
18	12.68	401811-37607	MNC	686-1091 Valley St, Cypress St, and Taylor St	8/13/2018	12/27/2018	CASBUILT	3,259	250	895	3,389	14	1	16	11	17	1	0	60	$0	$407,288	$168,315	$575,603	$490,070	$168,794	$659,864	14%	$45,291	$120,668	$444,779	$48,126	$492,905	$360,648	$439,660	$689,339	$936,251	36%	$871,781	$1,098,524	26%	Actual installation footage greater than estimate, daily permit time restrictions, ledge located within scope of project, and multiple Saturdays worked to complete project within calendar year. 2019 Restoration.
19	11.58	401811-37613	MNC	677-759 Pine St, N Adams St, and Bay St	4/27/2018	9/18/2018	CASBUILT	562	0	0	562	1	0	0	1	7	0	0	9	$0	$146,002	$20,234	$166,237	$168,741	$26,032	$194,774	17%	$0	$21,735	$168,741	$4,297	$173,039	$76,718	$94,456	$475,889	$242,955	-49%	$600,410	$289,230	-52%	12 inch installation on Pine St deferred to 2019 due to MA crew support. 2019 Restoration.
20	10.28	401811-37608	MNC	266-507 Concord St, Lincoln St, Malvern St, and Belmont St	6/25/2018	10/25/2018	CASBUILT	4,064	60	965	4,004	25	0	16	0	24	0	0	65	$0	$407,800	$165,297	$573,098	$458,272	$185,299	$643,571	12%	$15,065	$106,840	$441,207	$78,459	$521,666	$379,379	$462,601	$775,812	$952,477	23%	$985,164	$1,106,172	12%	Actual installation footage greater than estimate, ledge located within scope of project, and additional test holes required. 2019 Restoration.
21	8.91	401811-37606	MNC	1001-1202 Hayward St, Prout Ave, Riley Ave, Sunnyside St, and Knowlton St	9/24/2018	12/19/2018	CASBUILT	2,902	120	0	4,537	18	6	9	11	20	0	0	64	$0	$293,406	$171,191	$464,597	$321,043	$190,059	$511,102	10%	$13,275	$120,463	$307,767	$69,596	$377,364	$249,175	$309,296	$514,476	$713,772	39%	$661,366	$820,398	24%	Actual installation footage greater than estimate, ledge located within scope of project, actual bid unit main length intervals on sections of project greater than estimate (mobilization to separate streets not continuous segments). 2019 Restoration.
22	7.07	401811-37610	MNC	593-703 Maple St, Myrtle St, Prospect St, and Brook St	6/20/2018	8/31/2018	CASBUILT	1,843	85	180	2,908	10	0	8	1	7	0	0	26	$0	$193,317	$79,317	$272,634	$193,025	$94,045	$287,070	5%	$10,450	$49,517	$182,575	$44,528	$227,103	$174,620	$214,615	$360,768	$447,254	24%	$459,247	$501,685	9%	Actual installation footage greater than estimate. 2019 Restoration.
23	**Central Division Totals**							**21,693**	**700**	**3,920**	**24,358**	**126**	**8**	**68**	**32**	**130**	**1**	**0**	**365**	**$103,725**	**$2,999,414**	**$1,028,689**	**$4,028,103**	**$3,284,955**	**$1,169,409**	**$4,454,364**	**11%**	**$168,902**	**$708,506**	**$3,116,054**	**$460,903**	**$3,576,956**	**$1,810,306**	**$2,203,066**	**$4,768,615**	**$5,838,409**	**22%**	**$6,057,725**	**$6,657,430**	**10%**	
24							**Mileage**	**4.11**	**0.13**	**0.74**	**4.61**																								**Average Loaded Cost/Foot Central**			**$276**	**$307**		
25	**SOUTHERN DIVISION**																																								
26	53.89	401711-37631	NAS	69-85 Lock St, Lucier St, Lessard St, and Aetna Ct	8/27/2018	12/31/2018	CASBUILT	1,635	65	1,040	1,570	18	0	10	0	4	0	1	33	$0	$255,620	$137,889	$393,509	$285,818	$147,902	$433,719	10%	$20,307	$60,610	$265,511	$87,291	$352,802	$297,069	$401,043	$460,946	$690,578	50%	$620,439	$834,762	35%	Actual installation footage greater than estimate, asbestos found within scope of project, extra excavation at tie ins, and additional test holes required. 2019 Restoration.
27	17.06	401811-37618	NAS	1-132 Allds St, Crown St, and Proctor St	6/1/2018	1/7/2019	CASBUILT	3,720	200	3,720	3,520	19	1	16	0	21	0	0	57	$0	$535,600	$254,323	$789,924	$638,650	$289,931	$928,582	18%	$66,328	$194,948	$572,322	$94,984	$667,306	$574,793	$775,970	$1,726,196	$1,364,717	-21%	$2,294,621	$1,704,552	-26%	Allds St from Williams to E Hollis St complete in 2019. Remaining scope deferred to 2019 due to MA crew support. 2019 Restoration.
28	15.68	401811-37622	NAS	1-68 Lock St, and Kendrick St																																					Project deferred to 2019 due to MA crew support.
29	11.57	401811-37627	NAS	106-128 Vine St, Chestnut St, and W Otterson St	9/10/2018	12/18/2018	CASBUILT	1,951	100	675	1,851	9	0	3	0	8	0	2	22	$0	$182,906	$74,725	$257,631	$197,853	$109,592	$307,444	19%	$15,946	$63,405	$181,907	$46,187	$228,093	$245,681	$331,669	$384,153	$503,312	31%	$551,126	$639,113	25%	Actual installation footage greater than estimate. 2019 Restoration.
30	10.18	401711-37640	NAS	1-21 Fowell Ave, Lawndale Ave, and Park Ave	7/23/2018	8/16/2018	CASBUILT	1,947	50	660	1,897	14	0	2	0	14	0	0	30	$0	$258,286	$96,697	$354,983	$302,470	$113,127	$415,598	17%	$13,444	$50,651	$289,027	$62,477	$351,503	$270,171	$364,730	$460,272	$625,154	36%	$614,726	$780,328	27%	Asbestos found within scope of project, extra excavation at tie-ins, and additional test holes required. 2019 Restoration.
31	9.41	401811-37619	NAS	171-185 Concord St, Bell St, and Damon Ave	10/24/2018	1/23/2019	CASBUILT	1,615	620	0	1,045	6	0	6	1	11	0	0	24	$0	$122,269	$74,701	$196,970	$132,606	$85,364	$217,970	11%	$50,907	$65,438	$81,698	$19,926	$101,625	$189,988	$256,483	$395,073	$386,958	-2%	$524,314	$474,453	-10%	Bell St main and services completed in 2018. City paved Damon and permit delays on Concord St. 2019 Restoration.
32	8.20	401811-37623	NAS	126-226 Pine St, Lovewell St, and Palm St	9/24/2018	12/7/2018	CASBUILT	2,460	75	785	2,385	11	0	6	0	21	0	3	41	$0	$296,851	$127,563	$424,415	$326,758	$144,237	$470,995	11%	$16,713	$101,821	$310,045	$42,417	$352,462	$290,842	$392,637	$949,469	$715,257	-25%	$1,268,548	$863,632	-32%	Pine St @ Ross St south deferred due to MA crew support. Ross St coated steel found to be bare steel during tie in. Added Ross to project scope. 2019 Restoration.
33	7.14	401711-37645	NAS	1-17 Warren St	6/18/2018	8/30/2018	CASBUILT	340	340	0	0	6	0	0	0	0	0	0	6	$0	$115,711	$11,938	$127,649	$131,983	$14,003	$145,986	14%	$131,983	$0	$0	$14,003	$14,003	$0	$0	$164,727	$127,649	-23%	$213,695	$145,986	-32%	A inch main installation and service lines on Warren St completed in 2018. 12 inch installation and 16 inch abandonment deferred to 2019 due to MA crew support. 2019 Restoration.
34	7.14	401811-37620	NAS	1-40 Courtland St, Webster St, and Ayer St																																					Project deferred to 2019 due to MA crew support.
35	8.14	401811-37629	NAS	65-125 Concord St	3/26/2018	7/30/2018	CASBUILT	3,896	80	3,896	3,816	6	0	9	0	15	0	0	30	$0	$1,506,379	$137,590	$1,643,969	$1,642,091	$165,701	$1,807,792	10%	$67,224	$132,262	$1,574,867	$33,439	$1,608,305	$18,627	$25,147	$961,654	$1,662,596	73%	$1,275,956	$1,832,939	44%	Approx. 50% of project scope concrete found under existing asphalt. City required asphalt restoration where concrete existed. 3 ft. cut back area outside trench line did not require dig out just cut back to top of concrete. Minor restoration remaining for 2019.
36	**Southern Division Totals**							**17,564**	**1,530**	**10,776**	**16,084**	**89**	**1**	**52**	**1**	**94**	**0**	**6**	**243**	**$0**	**$3,273,623**	**$915,427**	**$4,189,050**	**$3,658,228**	**$1,069,858**	**$4,728,086**	**13%**	**$382,852**	**$669,134**	**$3,275,376**	**$400,724**	**$3,676,100**	**$1,887,171**	**$2,547,679**	**$5,502,490**	**$6,076,221**	**10%**	**$7,323,425**	**$7,275,765**	**-1%**	
37							**Mileage**	**3.33**	**0.29**	**2.04**	**3.05**																								**Average Loaded Cost/Foot South**			**$382**	**$414**		
38																																									
39	**FY2019 CIBS Program Totals**							**49,115**	**2,710**	**18,206**	**52,345**	**260**	**13**	**146**	**46**	**270**	**1**	**6**	**742**	**$157,932**	**$7,797,351**	**$2,417,842**	**$10,215,193**	**$8,832,613**	**$2,780,637**	**$11,613,249**	**14%**	**$656,830**	**$1,722,716**	**$8,175,782**	**$1,057,920**	**$9,233,703**	**$3,948,915**	**$5,089,745**	**$11,969,517**	**$14,164,108**	**18%**	**$15,574,776**	**$16,702,994**	**7%**	
40							**Mileage**	**9.30**	**0.51**	**3.45**	**9.91**																								**Average Loaded Cost/Foot Total**			**$298**	**$340**		
41	**Estimated FY2018 Carry Over Costs**																																								
42		**Work Order #**	**Town Code**	**Street**																**Degradation Fees**			**Actual Total Direct Cost**			**Actual Total Loaded Cost**						**Total Recoverable Cost**	**Estimated Degradation Fee**	**Degradation Fee**	**Estimated Direct Cost**	**Actual Total Direct Cost**	**Direct Variance %**	**Estimated Loaded Cost**	**Actual Loaded Cost**	**Loaded Variance %**	**Variance Comments**
43		401711-37602	CCD	25-50 Ridge Rd, CCD & Franklin St																$0			$40,611			$59,635						$59,635	$0	$0	$67,234	$40,611	-40%	$87,404	$59,635	-32%	Restoration 100% complete. Restoration actuals less than estimate.
44		401711-37603	CCD	1-10 Langdon Ave, CCD, S Main St																$0			$11,568			$10,411						$10,411	$0	$0	$21,719	$11,568	-47%	$28,235	$10,411	-63%	Restoration 100% complete. Restoration actuals less than estimate.
45		401711-37604	CCD	53-79 Downing St, CCD, Wheaton Ave																$0			$31,173			$28,056						$28,056	$0	$0	$37,103	$31,173	-16%	$48,234	$28,056	-42%	Restoration 100% complete. Restoration actuals less than estimate.
46		401711-37606	CCD	76-113 School St, CCD, Centre St, Liberty St & Merrimack St																$0			$136,768			$210,702						$210,702	$0	$0	$140,881	$136,768	-3%	$183,145	$210,702	15%	3 Road crossings remaining for 2019. Slightly over budget.
47		401711-37609	CCD	5-22 Chapel St, CCD																$0			$0			$0						$0	$0	$0	$23,541	$0	-100%	$30,603	$0	-100%	Restoration 100% complete. Paved by City.
48		401711-37610	CCD	Gladstone St, CCD																$0			-$5,348			-$17,536						-$17,536	$9,110	$0	$27,744	-$5,348	-119%	$33,334	-$17,536	-153%	Restoration 100% complete. Adjusted 2018 CIBS over accrual in 2019 CIBS filing.
49		401711-37611	CCD	65-112 Warren St, CCD																$0			$34,057			$46,610						$46,610	$0	$0	$54,483	$34,057	-37%	$70,828	$46,610	-34%	Restoration 100% complete. Restoration actuals less than estimate.
50		401711-37613	CCD	13-42 Rockingham St, CCD, Donovan St & Wiggin St																$0			$17,143			$10,691						$10,691	$0	$0	$18,692	$17,143	-8%	$24,300	$10,691	-56%	Donovan and Wiggen restoration complete. Rockingham main and service 2018 project complete. Restoration came in less than estimate.
51		401711-37614	TIL	4-22 Peabody St, TIL, Cedar St & High St																$0			$0			$0						$0	$0	$0	$67,469	$0	-100%	$90,420	$0	-100%	Restoration 100% complete. Final restoration not required.
52		401711-37616	MNC	167-323 Hanover St, MNC & Beech St																$0			$35,211			$30,519						$30,519	$59,700	$0	$59,700	$35,211	-41%	$59,700	$30,519	-49%	Restoration 100% complete. Not billed for degradation fee yet.
53		401711-37619	MNC	11-59 Plummer St, MNC, Union St & Pine St																$51,590			$124,647			$108,743						$108,743	$53,100	$51,590	$139,507	$124,647	-11%	$165,429	$108,743	-34%	Restoration 100% complete. Restoration came in less than estimate.
54		401711-37620	MNC	7-89 Dionne Dr, MNC																$35,375			$37,756			$33,967						$33,967	$24,870	$35,375	$24,870	$37,756	52%	$24,870	$33,967	37%	Restoration 100% complete. Degradation fee greater than estimate.
55		401711-37621	MNC	160-411 Calef Rd, MNC																$0			$434,036			$453,407						$453,407	$116,990	$0	$319,975	$434,036	36%	$380,871	$453,407	19%	Restoration 100% complete. Grind and inlay curb to curb required at moratorium tie in locations.
56		401711-37622	MNC	135-189 Wilson St, MNC, Silver St & Harvard St																$59,800			$182,753			$217,127						$217,127	$83,070	$59,800	$217,604	$182,753	-16%	$257,964	$217,127	-16%	Restoration 100% complete. Restoration and degredation fee actuals were less than estimate.
57		401711-37623	MNC	1-146 Orange St, MNC & Union St																$0			$164,788			$148,269						$148,269	$87,870	$0	$216,174	$164,788	-24%	$254,665	$148,269	-42%	Restoration 100% complete. Not billed for degradation fee yet.
58		401711-37624	MNC	750-855 Maple St, MNC, North St & Oak St																$0			$215,978			$194,884						$194,884	$102,720	$0	$262,614	$215,978	-18%	$310,582	$194,884	-37%	Restoration 100% complete. Not billed for degradation fee yet.
59		401711-37625	MNC	607-655 Chestnut St, MNC & Blodgett St																$0			$17,764			$13,812						$13,812	$46,830	$0	$118,698	$17,764	-85%	$140,258	$13,812	-90%	Restoration 100% complete. Not billed for degradation fee yet.
60		401711-37626	MNC	8-74 Carpenter St, MNC, Chestnut St & Ray St																$145,400			$492,367			$584,680						$584,680	$168,150	$145,400	$465,841	$492,367	6%	$555,149	$584,680	5%	Restoration 100% complete. Within budget.
61		401711-37627	MNC	401-500 Laurel St, MNC																$0			$81,360			$73,091						$73,091	$52,110	$0	$138,229	$81,360	-41%	$164,065	$73,091	-55%	Restoration 100% complete. Not billed for degradation fee yet.
62		401711-37628	MNC	20-154 S Maple St, MNC & Oakdale Ave																$10,015			$186,251			$203,346						$203,346	$45,100	$10,015	$120,960	$186,251	54%	$143,718	$203,346	41%	Restoration 100% complete. Final restoration greater than estimate.
63		401711-37646	MNC	560-604 Beech St, MNC																$0			$61,721			$55,549						$55,549	$21,250	$0	$53,351	$61,721	16%	$62,981	$55,549	-12%	Restoration 100% complete. Slightly over budget. Not billed for degradation fee yet.
64		401711-37647	MNC	400-429 Wilson St, MNC, & Cedar St																$21,295			$38,880			$34,982						$34,982	$40,650	$23,295	$101,506	$38,880	-62%	$119,763	$34,982	-71%	Partially completed restoration in 2018. Restoration remaining for 2019.
65		401711-37632	NAS	5-67 Williams St, NAS, Newbury St																$0			$287,022			$260,539						$260,539	$0	$0	$199,448	$287,022	44%	$259,282	$260,539	0%	Restoration 100% complete. Final Restoration came in over estimate. Bid unit used for final restoration greater than estimate.
66		401711-37635	NAS	14-38 Brook St, NAS, Ash St & Lovell St																$0			$39,956			$32,953						$32,953	$0	$0	$209,522	$39,956	-81%	$272,378	$32,953	-88%	Partially completed restoration in 2018. Restoration remaining for 2019.
67		401711-37638	NAS	4-26 Nutt St, NAS, Buchanan St & Faxon St																$0			$221,439			$196,035						$196,035	$0	$0	$137,678	$221,439	61%	$178,982	$196,035	10%	Restoration 100% complete. Final Restoration came in over estimate. Bid unit used for final restoration greater than estimate.
68		401711-37639	NAS	75-235 Lake St, NAS																$0			$449,422			$458,792						$458,792	$0	$0	$251,160	$449,422	79%	$326,508	$458,792	41%	Restoration 100% complete. Final Restoration came in over estimate. Bid unit used for final restoration greater than estimate.
69		401711-37641	NAS	3-75 Blossom St, NAS, Hanover & Wilder																$0			$151,984			$144,056						$144,056	$0	$0	$180,484	$151,984	-16%	$234,629	$144,056	-39%	Partially completed restoration in 2018. Restoration remaining for 2019.
70	**FY2018 Carry Over Totals**																			**$325,475**			**$3,489,308**			**$3,593,321**						**$3,593,321**	**$911,520**	**$325,475**	**$3,676,187**	**$3,489,308**	**-5%**	**$4,508,297**	**$3,593,321**	**-20%**	
71																												**%5 of Estimated Costs for the FY2018-19. Deferred Projects Removed**					**$778,739**									
72																													**Total Recoverable Costs (5% Cap Only)**				**$10,012,442**									
73	**Grand Total**							**49,115**	**2,710**	**18,206**	**$2,345**	**260**	**13**	**146**	**46**	**270**	**1**	**6**	**742**	**$483,407**	**$7,797,351**	**$2,417,842**	**$13,704,502**			**$15,206,570**		**$656,830**	**$1,722,716**	**Total Recoverable Costs**		**$12,827,024**			**$15,645,704**	**$17,653,417**	**13%**	**$20,083,073**	**$20,296,315**	**1%**	
74																																									
75																												Total Estimated FY2019 Costs Including Degradation	$15,574,776											
76																												FY2019 Total Recoverable + All FY2018 Carryover - Handy Whitman Adjusted Base	$12,293,905											
77																												Planned CIBS Replacement in Miles	12.10											
78																												Total Recoverable Costs Disregarding 5% Carryover Cap	$12,827,024											
79																												Total Unrecoverable Costs in Program	$2,379,546											
80																												Carryover Costs in Excess of 5% Cap	$2,814,582											

Michael J. Sheehan, Esq.
Senior Counsel
Phone: 603-724-2135
Email: Michael.Sheehan@libertyutilities.com

December 21, 2018

Via First-Class and Electronic Mail

Randall S. Knepper, Director, Safety Division
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, New Hampshire 03301-2429

Re: 2018 Marketing Report

Dear Mr. Knepper:

I write to provide the marketing report required by the last CIBS order, "that Liberty provide Staff with a report by the end of 2018 documenting the results of its market research and marketing efforts conducted during the 2019 CIBS year and its plan for marketing to new customers going forward." Order No. 26,154 at 7 (June 29, 2018). Following is the responsive information. Let me know if you have any questions.

For the 2018 CIBS campaign, Liberty sent letters to every one of the 1,642 households along the CIBS routes. The letters were sent to both current customers and to potential customers. Of the 1,642 households who received the letters, 1,490 were already natural gas customers, so only 152 households along the 2017 CIBS routes were not customers. Thus, these routes already had a saturation rate of 91%.

Out of the 152 letters that were sent to non-customers, we received 19 responses. Of those 19 potential customers who responded, 15 signed contracts for gas service with Liberty Utilities. Nine of those meters have been turned on. The other six contracted customers should have meters installed by the end of calendar year 2019.

Liberty also conducted the following marketing efforts in 2018:

1) Sent approximately 500 letters to potential customers adjacent to gas main and service extension projects that were constructed in 2017 and/or early 2018;

2) Sent approximately 450 letters to on-main potential customers whose neighbors recently converted to natural gas;

3) Sent approximately 2,500 letters to homeowners in neighborhoods where the Company is trying to extend its natural gas distribution system;

www.libertyutilities.com | F: 603-421-1769 | 116 North Main Street | Concord | New Hampshire | USA | 03301

4) Hung approximately 500 door hangers in neighborhoods where the Company is trying to extend its natural gas distribution system; and

5) Conducted numerous in person neighborhood meetings in areas where the Company is trying to extend its natural gas distribution system.

The overall sales and marketing efforts yielded impressive results. Liberty added about 1,200 customers in 2014, 1,817 new customers in 2015, 1,637 new customers in 2016, 1,621 new customers in 2017, and 1,272 new customers in 2018. By comparison, the predecessor company averaged about 600 new customers each year. The calendar year 2018 growth required about 17 miles of new main and 818 new services.

The Company intends to engage in a similar marketing campaign during the 2019 calendar year.

Please let me know if you need any other information.

Sincerely,

Michael J. Sheehan

Cc: Lynn Fabrizio, Esq.
Brian Buckley, Esq.

Liberty Utilities

Este é um aviso importante. Queira mandá-lo traduzir.
Este es un aviso importante. Sírvase mandarlo traducir.
Avis important. Veuillez traduire immediatement.

Questa è un' informazione importante, si prega di tradurla.

ĐÂY LÀ MỘT BẢN THÔNG CÁO QUAN TRỌNG
XIN VUI LÒNG CHO DỊCH LẠI THÔNG CÁO ẤY

Это очень важное сообщение.
Пожалуйста, попросите чтобы
вам его перевели.

«Date»

«Customer_First_Name_» «Customer_Last_Name_»
Or Current Resident
«House__» «Street_Name_» «Suffix_» «Unit_Type» «Unit_»
«Town_», «State» 0«Zip_»

Dear «Customer_First_Name_»,

This is an important notice to inform you that Liberty Utilities will be working in your neighborhood to maintain the integrity and reliability of our natural gas distribution system. This work is scheduled to begin this spring/summer and will generally take place from 7:00 a.m. – 4:00 p.m., Monday-Saturday. We apologize in advance for any inconvenience, but this project is part of our commitment to provide continuous improvements and keep the natural gas delivery system safe and reliable.

- Liberty Utilities and/or a qualified contractor will perform the work. A police detail will be provided, if necessary. The road will be open to the public and parking may be limited. A construction foreman, with appropriate identification, will be on site to address your parking needs throughout the duration of the construction.

- There may be a lag between temporary and permanent restoration of the street and sidewalk, depending on weather and ground conditions.

If you have any questions about the project, please call Construction Supervisor «Construction_Employee_Name_» at «Construction_Employee_Phone_Number_». For general inquiries, customer service can be reached between the hours of 9:00 a.m. and 5:00 p.m. Monday through Friday at 1-800-833-4200.

NOT A LIBERTY UTILITIES GAS CUSTOMER?

If you do not currently have natural gas, now is the best time to make the switch. Please note that if your street is repaved after the work has completed, we will not be able to run a gas service to your home for a MINIMUM of 5 years. For further information about converting to natural gas, call **1-800-833-4200** and press **option 5**.

Sincerely,

Liberty Utilities

Date

Current Resident
«House__» N «Street_Name_» «Suffix_» «Unit_Type» «Unit_»
«Town_», «State» «Zip_»

Dear Resident,

This is the second notice to inform you that Liberty Utilities will be working on your street this summer to maintain the integrity and reliability of our natural gas distribution system. **Our records indicate you are not currently using natural gas**.

Please note that due to a recent change in state ruling, all homes not utilizing natural gas along work routes are now qualified to have a $4,200 service line installed at their property **100% FREE OF CHARGE** for **any** gas appliance connected. This means **you will not be required to convert your heating system**. Installing a gas fireplace, water heater, dryer or stove is a cost effective way to qualify for this offer.

Upon receipt of this letter, it is imperative you contact us right away so you do not miss out of this opportunity. For additional questions or to relay your interest, w*e* can be reached by phone at **1-800-833-4200 option 5.** We can also be reached by email at NHsalesmarketing@libertyutilities.com. Our Account Managers welcome the opportunity to discuss your needs, and help you determine if natural gas is the right choice for you.

Sincerely,

Liberty Utilities