

<b>ORIGINAL</b>	
N.H.P.U.C. Case No.	<u>DG 15-104</u>
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Witness	<u>Panel #1</u>
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**Fiscal Year 2015 Cast Iron/Bare Steel Replacement Program  
Results Filing  
DG 15-104**

**Revised May 20, 2015 ~~April 15, 2015~~**

**Submitted to:  
New Hampshire  
Public Utilities Commission**

**Submitted by:  
  
Liberty Utilities (EnergyNorth Natural Gas) Corp.  
d/b/a Liberty Utilities**

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## INTRODUCTION

Pursuant to the settlement agreement approved by the New Hampshire Public Utilities Commission (the “Commission”) as part of the National Grid plc/KeySpan Corporation merger proceeding in Docket No. DG 06-107 and the settlement agreement in Docket No. DG 11-040 (the “Settlement Agreement”) approved by Order 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 2015 (April 1, 2014-March 31, 2015). As required by the Settlement Agreement, the Company submits the following information in connection with this report and the prefiled Joint Testimony of Gwyn M. Cassetty, and Ian Crabtree, and Testimony of David Simek: (1) A report detailing the actual amount of capital investments made in accordance with implementing the CIBS program during fiscal year 2015 (Attachment GMC/ITC-2 to Joint Cassetty- Crabtree Testimony); (2) A calculation of the incremental revenue requirement associated with placing the capital investments into rate base above a base spending level of \$506,240 (Attachment DBS-1 to Simek 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 ~~\$311,610~~ [\\$253,694](#) effective for usage on and after July 1, 2015. In addition, this report and Mr. Simek’s Testimony will provide an update on the status of pending road degradation fee litigation between Liberty and the cities of Concord and Manchester; a discussion of Liberty’s treatment of the Concord and Manchester road degradation fees in this filing; and a description of the repairs tax deduction for which CIBS projects are eligible.

## SECTION 1: ACTUAL CAPITAL EXPENDITURES

Actual capital expenditures incurred during implementation of the CIBS program for fiscal year 2015 are detailed in Attachment GMC/ITC-2 to the Cassetty- Crabtree Testimony. Through a series of technical sessions that began in 2008, the Commission Staff and the Company have agreed that the capital investments amounts to be included for recovery under CIBS may include all prudently incurred direct and indirect<sup>1</sup> costs associated with: (i) replacement or abandonment<sup>2</sup> of cast iron and bare steel mains, including replacement of existing pipe with replacement pipe of the same size<sup>3</sup>, with recovery for the costs of “upsizing” the pipe allowed only when specifically justified,<sup>4</sup> (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 or abandonment of plastic or coated steel services connected to 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

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<sup>1</sup> Indirect costs mean overheads such as pension, OPEB's 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.

<sup>2</sup> 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.

<sup>3</sup> 3-inch pipes, which are no longer standard size, will be routinely replaced with 4-inch pipes.

<sup>4</sup> See Settlement Agreement in DG 11-040, Attachment J, section (20) n.

main with a pipe that is larger than the existing main, unless specifically justified, (v) relocation of customer meters from inside to out and (vi) random cast iron or bare steel service replacements not connected to a cast iron or bare steel main replacement project.

On January 15, 2014, the Company made its proposed FY 2015 CIBS program filing with the Commission. On February 21, 2014, the filing was reviewed with Staff for project selection and scope. In addition, the Company responded to four sets of discovery requests from Staff in relation to the FY 2015 CIBS program filing along with the report on the FY 2014 CIBS program that was docketed as DG 14-041.

Line 41 column V of Attachment GMC/ITC-2 shows the actual recoverable expenditures of the FY 2015 projects, totaling \$3,~~621,554~~[782,942](#). After removing the CIBS base amount of \$506,240 in accordance with the terms of the Settlement Agreement from the actual expenditures, the total incremental expenditures to be included in rate base amounts to \$3,~~115,314~~[276,702](#). Appendix A to this report is the Condition Bare Steel Main Replacement Program – Sample Analysis Report for FY 2015. This report contains photographs and descriptions of various pipe segments removed and catalogued as part of the FY 2015 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 \$3,~~115,314~~[276,702](#) of CIBS recoverable capital investments. As set forth in Attachment DBS-1, page 1 to Mr. Simek's Testimony, the

revenue requirement associated with the CIBS cumulative capital expenditures is \$1,~~797,526~~~~855,442~~ (line 35(g)) with a corresponding revenue deficiency of ~~\$311,610~~~~253,694~~ (line 39 (g)). 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-1, page 4 to Mr. Simek's Testimony also indicates the annual bill impacts for an average residential customer and commercial customers in rate classes G-41, G-42 and G-52. Attachment DBS-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 ESTIMAED EXPENDITURES

The Company's FY 2015 CIBS Plan provided for the replacement of 5.92 miles of cast iron and bare steel pipe at an estimated cost of \$6,310,209, (excluding the City of Manchester degradation fees). As shown on Attachment GMC/ITC-2, the Company eliminated 5.0 miles of cast iron and bare steel at a cost of \$4,921,902 (line 31, column AP), excluding the City of Manchester degradation fees. A reconciliation of the total costs to the total recoverable costs is shown in the table below:

		<u>Attachment GMC/ITC-2</u> <u>Reference</u>
Actual Loaded Costs (excl. Manchester degradation fees)	\$4,921,902	line 31, column AP
FY 2014 carry-over costs	275,181	line 40, column AP
Less: Expected FY 2015 carry-over costs	-912,607	line 31, column W
Non-recoverable main costs	-142,977	line 31, column Q
Non-recoverable service costs	<u>-519,945</u> <del>358,557</del>	line 31, column R

Total Recoverable Costs \$3,621,554,782,942 line 41, column V

Details of the variances between estimated and actual costs by project are shown in Attachment GMC/ITC-2 column AQ, direct cost variances are shown in column AM.

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

On June 15, 2010, National Grid filed an action in Hillsborough County Superior Court against the City of Manchester seeking an injunction against enforcement of regulations concerning street opening permit fees (“degradation fees”), as well as a request for a declaratory judgment invalidating such fees. The matter was docketed as NO 216-2010-EQ 001722. Similarly, on June 29, 2010, National Grid filed an action in Merrimack County Superior Court against the City of Concord seeking an injunction against enforcement of its degradation fee regulations, as well as a request for a declaratory judgment invalidating such fees. The matter was docketed as NO 217-2010-CV-00402. On April 6, 2011 the Company filed a motion for summary judgment in the Concord matter, and filed a motion for summary judgment in the Manchester matter on May 6, 2011.

On August 25, 2011, the Merrimack County Superior Court granted summary judgment to National Grid on the basis that the degradation fees at issue are pre-empted by state law. The City of Concord subsequently appealed that decision to the New Hampshire Supreme Court, which held that the City ordinance is not preempted by State law. The Supreme Court concluded that there was a factual dispute between EnergyNorth and the City regarding whether patching an excavated paved road with new pavement diminishes or

restores the road's original life expectancy. The case has been remanded to Superior Court, and the trial is underway and scheduled to be completed in May 2015.

## **SECTION 5: TREATMENT OF CONCORD AND MANCHESTER DEGRADATION FEES**

Liberty agreed to pay degradation fees to the City of Concord under protest while the litigation and appeal are pending. The City of Manchester agreed to allow Liberty to refrain from paying the fees, subject to the issuance of bonds in sufficient amount to pay any outstanding fees. Though Liberty has not been paying the Manchester degradation fees, it has been accruing the costs in its books and records. The FY2015 CIBS program recoverable costs are exclusive of the Manchester degradation fees. For the FY2016 program, Manchester degradation fees will also be excluded from the recoverable estimated and actual costs.

A summary of degradation fees included for recovery as part of the CIBS program costs is as follows:

<u>Period</u>	<u>City of Concord</u>	<u>City of Manchester</u>	<u>Total</u>
Fiscal 2011	\$19,856	\$275,035	\$294,891
Fiscal 2012	\$37,960	\$39,885	\$77,845
Fiscal 2013	\$9,747	\$382,335	\$392,082
Fiscal 2014	\$48,350	-0- (1)	\$48,350
Fiscal 2015	\$75,541	-0- (1)	\$75,541
Total	<u>\$191,454</u>	<u>\$697,255</u>	<u>\$888,709</u>

(1) Excludes FY 2014 and FY 2015 accrued Manchester degradation fees in the amounts of \$246,449 and \$236,710, respectively from the calculation of the revenue requirement.



Upon a successful outcome of the litigation, the Company will refund the revenue previously collected in revenue requirement calculations. Attachment DBS-3 to Mr. Simek's Testimony shows an estimated calculation of this amount. Currently, the Company would need to return approximately \$93,4360,995 to customers as shown on Page 1, Line 32(b). This is based on the assumption that the litigation will be conclusively resolved before the filing of the FY 2016 revenue requirement. It is estimated that the Concord and Manchester degradation fees to be incurred during the FY 2016 construction season will be \$145,075 and \$387,195, respectively.

## **SECTION 6: 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 Mr. Simek's 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 7: CAST IRON/BARE STEEL REPLACED UNDER MUNICIPAL PROJECTS AND THE CAST IRON ENCROACHMENT POLICY**

In FY 2015, the Company replaced approximately 169 feet of cast iron through the Cast Iron Encroachment Policy and approximately 10,587 feet of cast iron and bare steel through municipal projects, totaling to approximately 2.04 miles of replacement. This amounts to approximately 7.04 miles of cast iron and bare steel replacement in FY 2015. A yearly summary of cast iron and bare steel replacement through municipal projects and encroachments can be seen below:

	<b>Footage of Cast Iron/Bare Steel Replaced</b>	
<b>Year</b>	<b>Municipal Projects</b>	<b>Encroachments</b>
2008	10,980	171
2009	19,920	28
2010	11,649	62
2011	17,791	40
2012	12,524	53
2013	19,118	55
2014	10,587	169
<b>Total Footage</b>	<b>102,569</b>	<b>578</b>
<b>Total Mileage</b>	<b>19.43</b>	<b>0.11</b>

## **APPENDIX A: FY 2015 CONDITION BARE STEEL MAIN REPLACEMENT PROGRAM – SAMPLE ANALYSIS**

Over the course of the 2014 construction season, bare steel pipe and soil samples were collected from the CIBS main replacement program. These samples were taken with the intention of using the analysis and conclusions as a tool to assist in the selection of candidates for future CIBS replacement programs. 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. Each sample was collected in the field and a GPS point was captured. 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, most of which was tested on the same day as the sample was collected. The table below shows the threshold of bacteria levels based on the results of bacterial colonies per milliliter.

<b>Number of Positive Bottles</b>	<b>Bacteria Colonies/ML</b>	<b>Reporting Value Colonies/ML</b>	<b>Bacteria Level</b>
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

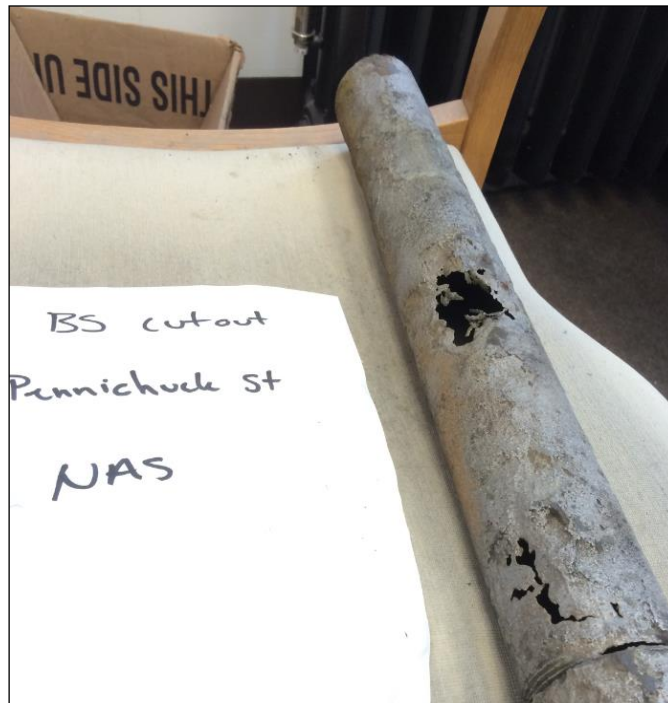
Positive APB and SRB vials with corresponding reporting values.

Samples were taken at the following locations:

- (1) **Pennichuck St & Caron Av, Nashua – WO# 8840-0001000433** – 2 inch bare steel (1956/1960), low pressure (LP) – 0.143” wall thickness.
  - A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 8/19/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 400 mg/l or in the low-medium range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of 100 bacteria colonies per ML or a medium level of bacteria. The soil was observed to be a light brown color, sandy and odorless.
  - The pipe sample was observed to be in very poor condition. Multiple locations of

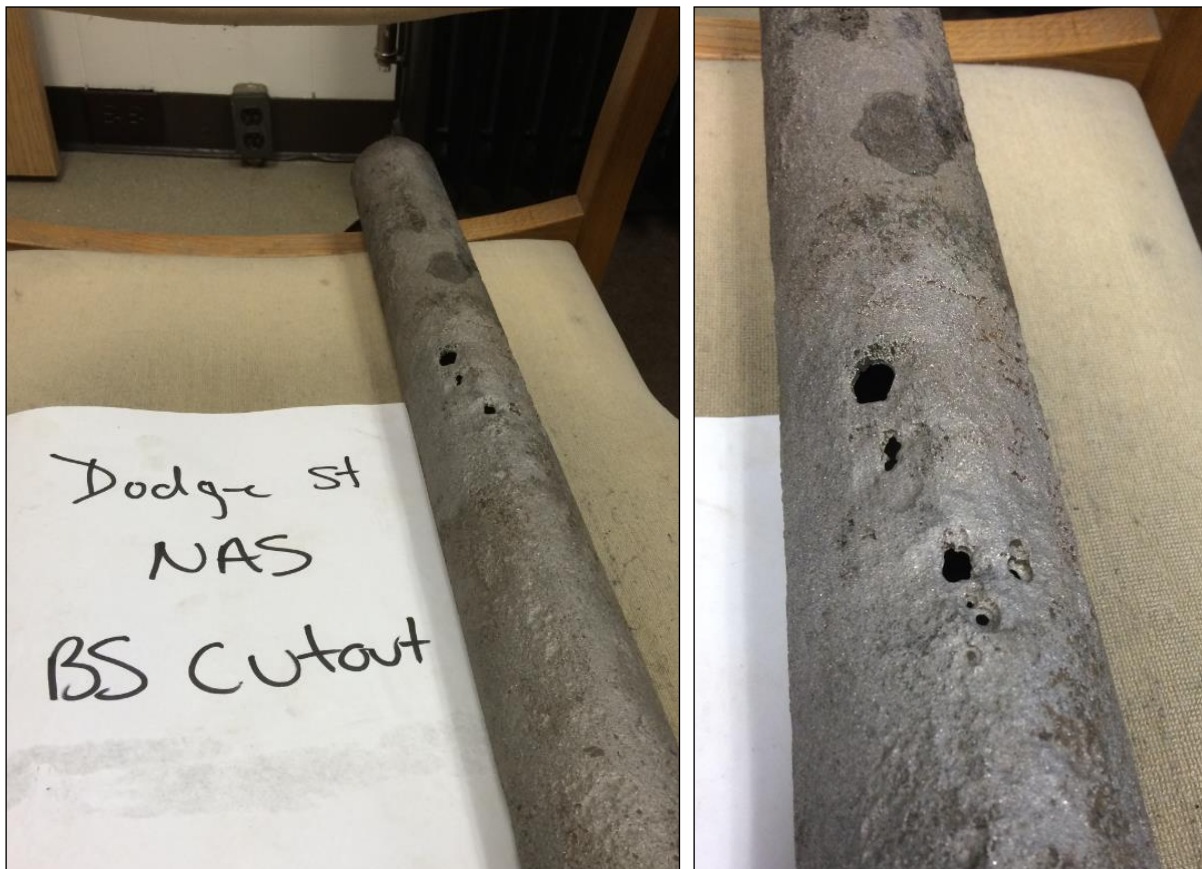
large holes with 100% wall loss on the exposed steel.

- The following pictures were taken:



(2) **90 Dodge St, Nashua – WO# 8840-0001001269** – 2 inch bare steel (1959), low pressure (LP) – 0.160" wall thickness.

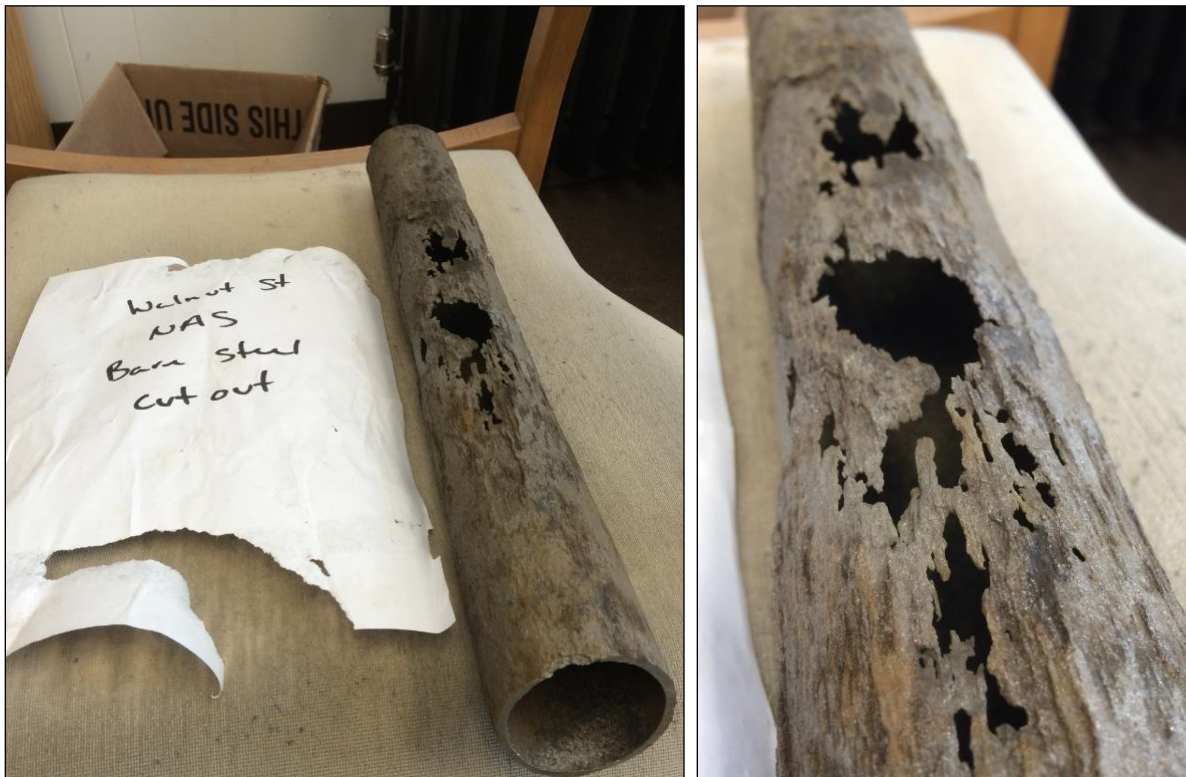
- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 9/02/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 400 mg/l or in the low-medium range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of 100 bacteria colonies per ML or a medium level of bacteria. The soil was observed to be a brown color, sandy with some stones and had a slight odor.
- The pipe sample was observed to be in very poor condition. Multiple locations of small holes with 100% wall loss on the exposed steel.
- The following pictures were taken:





(3) **93 Walnut St, Nashua – WO# 8840-791853** – 2 inch bare steel (1913), low pressure (LP) – 0.160” wall thickness.

- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 9/24/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 200 mg/l or in the low range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of 100 bacteria colonies per ML or a medium level of bacteria. The soil was observed to be a dark brown color, sandy and odorless.
- The pipe sample was observed to be in very poor condition. Multiple locations of large, flakey holes with 100% wall loss on the exposed steel.
- The following pictures were taken:



(4) **57 Spalding St, Nashua – WO# 8840-0001000431** – 2 inch bare steel (1956), low

pressure (LP) – 0.139” wall thickness.

- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 10/09/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 400 mg/l or in the low-medium range. The APB testing produced a reading of 1,000 bacteria colonies per ML or a medium level of bacteria. The testing for SRB produced a reading of <10 bacteria colonies per ML or a low level of bacteria. The soil was observed to be a brown color, sandy with some stones and had a slight odor.
- The pipe sample was observed to be in very poor condition. Multiple locations of large and small holes with 100% wall loss on the exposed steel.
- The following pictures were taken:

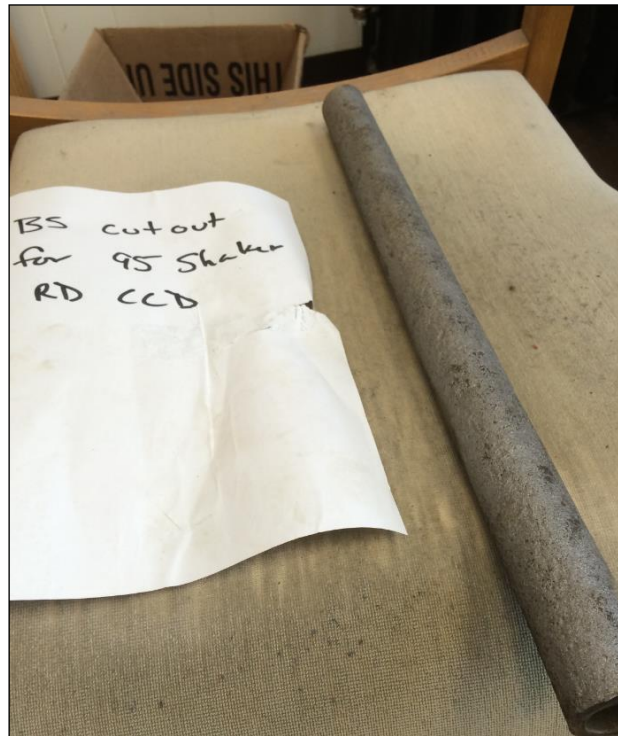




(5) **95 Shaker Rd, Concord (Shaker Rd School) – WO# 8840-0001001106** – 1 inch bare steel (YOI Unknown), 60 psig pressure – 0.133” wall thickness.

- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 11/18/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 400 mg/l or in the low-medium range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of 1,000 bacteria colonies per ML or a medium level of bacteria. The soil was observed to be a brown color, moist sand and odorless.
- The pipe sample was observed to be in fair condition with minor pitting. The deepest pit was measured 0.036” or 27% wall loss.
- The following pictures were taken:





(6) 249 Medford St, Manchester – WO# 8840-0001000434 – 2 inch bare steel

(1956/1960), 60 psig pressure – 0.160” wall thickness.

- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 12/22/2014. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 200 mg/l or in the low range. The APB testing produced a reading of 1,000 bacteria colonies per ML or a medium level of bacteria. The testing for SRB produced a reading of 10,000 bacteria colonies per ML or a high level of bacteria. The soil was observed to be a dark brown color, sandy and odorless.
- The pipe sample was observed to be in very poor condition. Multiple locations of small holes with 100% wall loss on the exposed steel.
- The following pictures were taken:



- (7) **348 Lincoln St (Alley) – WO# 8840-0001000443** – 3 inch bare steel (1954), 60 psig pressure – 0.234” wall thickness.

- A soil sample was taken and analyzed. Chemical and microbiological testing was performed on 1/02/2015. The pH was measured to be 6.0 or neutral. Testing for chlorides was negative. Presence of sulfide tested negative (<5 mg/l) and sulfate levels measured 200 mg/l or in the low range. The APB testing produced a reading of 100,000 bacteria colonies per ML or a high level of bacteria. The testing for SRB produced a reading of <10 bacteria colonies per ML or a low level of bacteria. The soil was observed to be a brown color, sandy with small stones and odorless.
- The pipe sample was observed to be in fair condition with minor pitting. The deepest pit was measured 0.029" or 12% wall loss.
- The following pictures were taken:





**Conclusions/Recommendations:**

- (1) Samples should continue to be taken as close to the area of leak activity as possible. The designs will call out these locations and field sketches showing dimensions to the leak repairs will be provided.
- (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 as opposed to testing samples once all samples are collected. 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 exposed main reports that 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 the pH is highly acidic or highly alkaline.

- (5) Special attention should be paid to locations where 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 will be paid to locations where high levels sulfide and/or sulfate are recorded.
- (7) GPS points will be taken at locations of where samples were collected. Soil condition and chemical/microbiological testing results should be added as attributes to each point once determined.

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
	Priority	Work Order #	Division	Town Code	Street	From	To	Status	Actual Completion Date	Comments	Actual Install Footage	Service Relays/Inserts	Service Reconnects	Actual Main Cost (Loaded/Excl. Degradation Fees)	Actual Service Cost (Loaded)	Actual Main & Service Costs (Loaded/Excl. MNC Degradation Fees)	Main Cost to be Removed (Non-Recoverable)	Service Cost to be Removed (Non-Recoverable)	Recoverable Main Cost	Recoverable Service Cost	Degradation Fees	Total Recoverable Cost (Excl. MNC Degradation Fees)	Estimated Carry Over Cost	
1		8840-0001000431	South	NAS	45-69 SPALDING ST, NAS	BENSON AV	INGALLS ST	FCOMP	10/9/2014		563	4 RELAYS		\$93,418	\$8,435	\$101,853	\$0	\$8,435	\$93,418	\$0		\$93,418		
2	1	8840-0001000431	South	NAS	45-69 SPALDING ST, NAS	BENSON AV	INGALLS ST	FCOMP	10/9/2014		563	4 RELAYS		\$93,418	\$8,435	\$101,853	\$0	\$8,435	\$93,418	\$0		\$93,418		
3	2	8840-0001000435	North	CCD	5-55 JOFFRE ST, CDD, HAIG, DONOVAN & NIVELLE	S MAIN ST	BOW ST	COMP	8/4/2014		2,370	30 RELAYS, 7 INSERTS, 3 NEW		\$229,560	\$95,776	\$325,336	\$0	\$58,337	\$229,560	\$37,440	\$16,812	\$266,999		
4	3	8840-919869	Central	MNC	293-329 AMHERST ST, MNC, CONCORD & ASH	BEECH ST	MAPLE ST	CASBUILT	9/19/2014		1,411	15 RELAYS	4 TRANSFERS	\$222,736	\$64,496	\$287,232	\$17,103	\$23,060	\$205,633	\$41,436	\$38,025	\$247,068		
5	4	8840-0001000434	Central	MNC	205-287 MEDFORD ST, MNC	ALLIED ST	KOOL ST	CASBUILT	12/17/2014		948	5 RELAYS, 11 INSERTS	2 TRANSFERS	\$105,403	\$41,720	\$147,124	\$5,322	\$23,858	\$100,081	\$17,862	\$30,525	\$117,943	\$78,046	
6	5	8840-0001000433	South	NAS	1-61 PENNICHUCK ST, NAS	CONCORD ST	EOM	COMP	8/18/2014		1,534	30 RELAYS, 4 INSERTS		\$183,381	\$62,920	\$246,301	\$5,359	\$48,634	\$178,022	\$14,286		\$192,309		
7	6	8840-0001000448	Central	MNC	147-360 CILLEY RD, MNC, LINCOLN ST	MAPLE ST	WILSON ST	CASBUILT	10/15/2014		1,500	16 RELAYS, 3 INSERTS, 4 NEW	6 TRANSFERS	\$91,943	\$87,819	\$179,762	\$2,114	\$53,107	\$89,829	\$34,713	\$53,075	\$124,541	\$51,088	
8	7	8840-919954	Central	MNC	6-100 ISLAND POND RD, MNC, & S MAMMOTH RD	S MAMMOTH RD	EOM	CASBUILT	12/5/2014		1,350	7 RELAYS, 2 NEW	7 TRANSFERS	\$136,377	\$60,071	\$196,448	\$12,520	\$28,585	\$123,858	\$31,486	\$27,500	\$155,343	\$21,981	
9	8	8840-710944	North	LAC	17-103 NORTH ST, LAC, & 124-155 SCHOOL ST	SHERIDAN ST	EOM	COMP	12/16/2014		1,650	1 RELAY, 10 INSERTS, 1 NEW		\$113,455	\$32,421	\$145,876	\$22,792	\$24,429	\$90,663	\$7,992		\$98,655	\$146,381	
10	9	8840-761259	South	NAS	109-115 E HOLLIS ST, NAS, DENTON ST	ARLINGTON ST	CROWN ST	COMP	11/14/2014		158	8 RELAYS, 1 INSERT	1 TRANSFER	\$29,313	\$34,606	\$63,918	\$0	\$15,554	\$29,313	\$19,051		\$48,364	\$20,541	
11	10	8840-0001000437	South	NAS	14-66 SAWYER ST, NAS	GILMAN ST	LAKE ST	COMP	12/29/2014		1,066	10 RELAYS, 2 INSERTS, 1 NEW	8 TRANSFERS	\$88,844	\$56,938	\$145,782	\$12,034	\$25,174	\$76,811	\$31,764		\$108,575	\$106,117	
12	11	8840-923056	Central	MNC	184-218 NORTH ST, MNC, HEMLOCK ST	OAK ST	LINDEN ST	CASBUILT	12/23/2014	1 Main cost Invoice not posted to GL, apply 35% loading to cost	765	1 RELAY, 9 INSERTS		\$85,772	\$21,475	\$107,247	\$0	\$18,029	\$85,772	\$3,446	\$27,665	\$89,219	\$108,002	
13	12	8840-0001000453	Central	MNC	37-81 CASS ST, MNC	CENTRAL ST	MERRIMACK ST	CASBUILT	11/13/2014		546	6 RELAYS	2 TRANSFERS	\$124,440	\$23,746	\$148,187	\$4,541	\$13,146	\$119,899	\$10,600	\$12,320	\$130,499		
14	13	8840-0001000438	North	CCD	34-74 FRANKLIN ST, CCD	LYNDON ST	CHARLES ST	COMP	10/3/2014		1,290	12 RELAYS,, 1 INSERT	3 TRANSFERS	\$263,339	\$45,951	\$309,290	\$23,014	\$12,794	\$240,325	\$33,157	\$18,148	\$273,481		
15	14	8840-0001000442	North	CCD	3-15 LIBERTY ST, CCD, WARREN ST	PINE ST	PLEASANT ST	COMP	10/28/2014		1,158	17 RELAYS	5 TRANSFERS	\$256,313	\$78,625	\$334,938	\$2,339	\$28,349	\$253,974	\$50,276	\$18,108	\$304,250		
16	15	8840-705076	Central	MNC	137-351 VINTON ST, MNC, S WILSON ST	S WILSON ST	S HALL ST	CASBUILT	10/15/2014		1,350	12 RELAYS, 1 NEW	8 TRANSFERS	\$145,876	\$68,611	\$214,487	\$0	\$22,758	\$145,876	\$45,854	\$45,600	\$191,730		
17	16	8840-0001000441	Central	MNC	44-175 PRECOURT ST, MNC	VARNEY ST	EOM	COMP	8/7/2014		1,040	6 RELAYS, 3 INSERTS		\$65,618	\$21,851	\$87,469	\$9,128	\$5,545	\$56,490	\$16,306	\$2,000	\$72,796		
18	17	8840-0001000439	North	CCD	1-36 MERRIMACK ST, CCD	PLEASANT ST	SCHOOL ST	COMP	12/24/2014		1,244	13 RELAYS	6 TRANSFERS	\$175,103	\$74,410	\$249,513	\$2,632	\$24,785	\$172,472	\$49,625	\$17,130	\$222,096	\$111,405	
19	18	8840-0001000975	North	CCD	2-33 UNION ST, CCD, MAPLE ST	CENTRE ST	WASHINGTON ST	COMP	12/24/2014		1,360	24 RELAYS, 9 INSERTS, 1 NEW		\$102,100	\$120,987	\$223,087	\$0	\$43,191	\$102,100	\$77,796	\$5,343	\$179,896	\$129,323	
20	Incremental Projects																							
21	19	8840-0001001269	South	NAS	5-103 DODGE ST, NAS, & MAY ST	CONCORD ST	EOM	FCOMP	9/2/2014		1,650	17 RELAYS, 6 INSERTS, 1 ABANDON, 1 NEW		\$171,046	\$45,934	\$216,981	\$13,925	\$26,127	\$157,121	\$19,807		\$176,928		
22	20	8840-0001001270	South	NAS	2-15 BADGER ST, NAS	W HOLLIS ST	KINSLEY ST	APPR	#N/A	Permit restrictions, moved to FY 2016 CIBS program												\$0		
23	21	8840-0001001106	North	CCD	95 SHAKER RD, CCD - SHAKER RD SCHOOL	SHAKER RD	EOM	COMP	10/27/2014		230	2 RELAYS		\$54,936		\$54,936	\$0		\$54,936	\$0		\$54,936		
24	22	8840-0001001271	South	NAS	2-30 AUBURN ST, NAS & LOCUST ST	CHARLES ST	AMHERST ST	APPR	#N/A	Permit restrictions, moved to FY 2016 CIBS program												\$0		
25	23	8840-791853	South	NAS	87-98 WALNUT ST, NAS	W HOLLIS ST	MULBERRY ST	COMP	9/24/2014		471	8 RELAYS, 1 NEW		\$40,077	\$16,799	\$56,875	\$0	\$3,800	\$40,077	\$12,999		\$53,076	\$38,102	
26	24	8840-0001000444	North	CCD	20-50 ALLISON ST, CCD, DUNKLEE	SPRUCE ST	PILLSBURY ST	APPR	#N/A	Permit restrictions, moved to FY 2016 CIBS program												\$0		
27	25	8840-761258	South	NAS	2-15 COLUMBIA AV, NAS, WEBSTER ST & BARTLETT AV	CONCORD ST	WELLINGTON ST	APPR	#N/A	Permit restrictions, moved to FY 2016 CIBS program												\$0		
28	26	8840-0001000443	Central	MNC	348-350 LINCOLN ST, MNC	MAPLE ST	EOM	CASBUILT	12/18/2014		390	2 RELAYS, 1 NEW	2 TRANSFERS	\$31,526	\$7,636	\$39,162	\$0	\$4,581	\$31,526	\$3,055		\$34,581	\$36,193	
29	27	8840-0001001272	North	CCD	12-29 ROCKLAND RD, CCD	AUBURN ST	#17	APPR	#N/A	Permit restrictions, moved to FY 2016 CIBS program												\$0		
30	28	8840-586533	North	MNC	5-99 ROSEMONT AV, MNC	CALEF RD	S ELM ST	CASBUILT	12/23/2014		920	4 RELAYS, 1 NEW	5 TRANSFERS	\$96,154	\$31,335	\$127,489	\$10,153	\$7,666	\$86,001	\$23,669		\$109,670	\$65,428	
31	Total Footage											24,964	250 RELAYS, 66 INSERTS, 1 ABANDONMENT, 17 NEW	59 TRANSFERS	\$2,906,731	\$1,102,564	\$4,009,295	\$142,977	\$519,945	\$2,763,754	\$582,619	\$312,251	\$3,346,373	\$912,607
32	FY 2014 Carry Over Costs									Total Install Mileage		4.73	Total LPP Mileage Eliminated	5.00										
33		8840-864581	South	NAS	5-21 RIDGE ST, NAS	TOLLES ST	WHITNEY ST							\$33,113	\$3,730	\$36,843			\$33,113	\$3,730		\$36,843		
34		8840-864709	South	NAS	8-18 MAPLE ST, NAS	MULBERRY SY	W HOLLIS ST							\$26,941	\$1,256	\$28,197			\$26,941	\$1,256		\$28,197		
35		8840-864739	South	NAS	20-36 SUMMER ST, NAS	NORTON ST	KENDRICK ST							\$35,537	\$12,112	\$47,649			\$35,537	\$12,112		\$47,649		
36		8840-864759	North	BMT	17-28 SUNSET DR, BMT	WINNISQUAM WY	COURTESY AV							\$11,275	\$1,658	\$12,933			\$11,275	\$1,658		\$12,933		
37		8840-915357	Central	MNC	65-138 MIDDLE ST, MNC & FRANKLIN ST	CANAL ST	MARKET ST							\$43,473	\$4,983	\$48,456			\$43,473	\$4,983		\$48,456		
38		8840-915689	North	CCD	57-87 AUBURN ST, CCD	COLUMBUS AV	#93							\$72,599	\$6,682	\$79,281			\$72,599	\$6,682		\$79,281		
39		8840-931053	South	NAS	JEWELL LN & BERKSHIRE ST	AMHERST ST	EOM							\$20,164	\$1,658	\$21,822			\$20,164	\$1,658		\$21,822		
40															\$243,102	\$32,079	\$275,181			\$243,102	\$32,079		\$275,181	
41	Grand Totals														\$3,149,833	\$1,134,643	\$4,284,476			\$3,006,856	\$614,698		\$3,621,554	

	A	B	C	D	E	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS																		
	Priority	Work Order #	Division	Town Code	Street	Material	System Pressure (PSIG)	Exst Diameter (Inches)	YOI	Bare Steel Services	Copper Services	Coated Steel Services	Plastic Services	Total Services	Estimated Relay Footage	Estimated New Main Footage	Estimated Aband Footage	Estimated Total Footage	Estimated Direct Cost (Excl. MNC Degradation Fees)	Actual Direct Cost (Excl. MNC Degradation Fees)	Direct Cost Variance	Direct Variance %	Estimated Loaded Cost (Excl. MNC Degradation Fees)	Actual Loaded Cost (Excl. MNC Degradation Fees)	Loaded Cost Variance	Loaded Cost Variance %	Variance Comments																		
1																																													
2	1	8840-0001000431	South	NAS	45-69 SPALDING ST, NAS	BS	LP	2 & 4	1956/1963			4		4	515			515	\$109,767	\$102,845	-\$6,922	-6%	\$144,859	\$101,853	-\$43,005	-30%	Estimated contractor loading 35%, actual 10%.																		
3	2	8840-0001000435	North	CCD	5-55 JOFFRE ST, CDD, HAIG, DONOVAN & NIVELLE	CI	LP to 60	4	1959	11		5	20	36	2,200		1,050	3,250	\$333,781	\$275,805	-\$57,976	-17%	\$432,117	\$325,336	-\$106,782	-25%	Estimated contractor loading 35%, actual 31%. Estimated degradation fees \$28k, actual approx. \$16k. Construction costs were under budget (17%) due to main mostly installed off pavement.																		
4	3	8840-919869	Central	MNC	293-329 AMHERST ST, MNC, CONCORD & ASH	CI	LP	3 & 4	1921/1927	12		3	5	20	1,305			1,305	\$224,392	\$278,609	\$54,217	24%	\$289,887	\$287,232	-\$2,655	-1%	Estimated contractor loading 35%, actual 15%, underestimated \$17k for hand excavation and \$31k in shoring due to exist infrastructure and main depth. Extra 100 feet was installed than estimated.																		
5	4	8840-0001000434	Central	MNC	205-287 MEDFORD ST, MNC	BS	60	2	1962		5	2	11	18	865			865	\$119,932	\$221,347	\$101,414	85%	\$156,892	\$225,170	\$68,278	44%	Estimated contractor loading 35%, actual 13%. Underestimated \$47k for ledge removal. Final paving to be completed in 2015, \$23k more than estimate.																		
6	5	8840-0001000433	South	NAS	1-61 PENNICHUCK ST, NAS	BS	LP to 60	2 & 4	1956/1960	10		14	9	33	1,520		40	1,560	\$259,076	\$250,040	-\$9,036	-3%	\$341,191	\$246,301	-\$94,890	-28%	Estimated contractor loading 35%, actual 9%																		
7	6	8840-0001000448	Central	MNC	147-360 CILLEY RD, MNC, LINCOLN ST	CI	LP	4 & 6	1916/1925/1938	11		8	11	30	1,450		285	1,735	\$270,830	\$224,203	-\$46,627	-17%	\$348,794	\$230,850	-\$117,945	-34%	Estimated contractor loading 35%, actual 13%. City decided to pave road, saved in restoration costs.																		
8	7	8840-919954	Central	MNC	6-100 ISLAND POND RD, MNC, & S MAMMOTH RD	CI	LP	4 & 6	1931/1934	6		1	6	13	1,350		-	1,350	\$148,963	\$217,232	\$68,269	46%	\$191,385	\$218,429	\$27,044	14%	Project is over budget for contractor costs, \$30k in additional shoring for main and associated services due to installing main under several ducts and main was deep. Actual loading at 10%.																		
9	8	8840-710944	North	LAC	17-103 NORTH ST, LAC, & 124-155 SCHOOL ST	WI/CI	LP to 60	3	1900	4		8	2	14	1,275		275	1,550	\$91,448	\$255,886	\$164,438	180%	\$119,830	\$292,257	\$172,427	144%	Contractor costs are approx. 38% over budget, due to in Pave vs No Pave. City wanted to move main install from off pavement where originally agreed to in the sidewalk. Estimated paving costs were \$100k more than estimated. Installed an extra 375 feet because of an existing BS service on someone else's property. Needed to run main up the street in front of the property to run new service. The traffic control charges were also higher than estimated. Loadings at 33%.																		
10	9	8840-761259	South	NAS	109-115 E HOLLIS ST, NAS, DENTON ST	CI	LP to 60	4 & 6	1908/1915	5		4	1	10	150		510	660	\$79,062	\$84,258	\$5,197	7%	\$103,935	\$84,459	-\$19,475	-19%	Estimated contractor loading 35%, actual 9% - Offset somewhat by flagger/police charges.																		
11	10	8840-0001000437	South	NAS	14-66 SAWYER ST, NAS	CI	LP	4	1912	9		5	8	22	1,050		-	1,050	\$260,565	\$239,114	-\$21,451	-8%	\$343,280	\$251,899	-\$91,380	-27%	Estimated contractor loading 35%, actual 20%. Overestimated shoring. Project was pilot for 1 foot cutback instead of 3 foot cutback.																		
12	11	8840-923056	Central	MNC	184-218 NORTH ST, MNC, HEMLOCK ST	CI	LP to 60	4 & 6	1939	1		1	9	11	725		605	1,330	\$162,199	\$182,071	\$19,872	12%	\$213,765	\$215,249	\$1,485	1%	Taking in account the estimated carry over costs, project should come in on budget.																		
13	12	8840-0001000453	Central	MNC	37-81 CASS ST, MNC	CI	LP	4	1909	3		1	5	9	500		-	500	\$94,792	\$154,441	\$59,648	63%	\$124,017	\$148,187	\$24,170	19%	Estimated contractor loading 35%, actual 6%, offset by additional excavation costs from hand excavations and extra width excavation. \$9k extra in ledge removal and \$12k extra in police details.																		
14	13	8840-0001000438	North	CCD	34-74 FRANKLIN ST, CCD	CI	LP	4	1892/1899/1900	10		1	4	15	1,275		65	1,340	\$237,476	\$302,754	\$65,277	27%	\$304,639	\$309,290	\$4,651	2%	Estimated contractor loading 35%, actual 13%, offset by additional 10k for ledge removal, \$7 in hand excavation and \$19k in traffic control. Also cost for welders to do service transfers to parallel steel main and weld inspections not in estimate.																		
15	14	8840-0001000442	North	CCD	3-15 LIBERTY ST, CCD, WARREN ST	CI	LP	4 & 6	1892/1934/1935	18		1	6	25	1,210			1,210	\$218,133	\$323,319	\$105,185	48%	\$280,795	\$334,938	\$54,143	19%	Estimated contractor loading 35%, actual 15%, significantly offset by higher costs for additional \$28k for shoring, \$9k for traffic control, \$20k for hand excavation and \$33k in service costs than estimated. Exst pavement was thicker than estimated.																		
16	15	8840-705076	Central	MNC	137-351 VINTON ST, MNC, S WILSON ST	CI	LP	4	1938/1939	9		1	9	19	1,300			1,300	\$183,414	\$195,960	\$12,546	7%	\$239,420	\$214,487	-\$24,933	-10%	Estimated contractor loading 35%, actual 20%, offset by higher excavation costs for shoring and asphalt restoration.																		
17	16	8840-0001000441	Central	MNC	44-175 PRECOURT ST, MNC	CI	LP to 60	4	1930	6			2	8	1,010			1,010	\$66,779	\$81,492	\$14,713	22%	\$86,538	\$87,469	\$932	1%	Estimated contractor loading 35%, actual 19%, offset by higher shoring and service costs.																		
18	17	8840-0001000439	North	CCD	1-36 MERRIMACK ST, CCD	CI	LP	4	1892	13			8	21	1,250			1,250	\$222,280	\$324,852	\$102,572	46%	\$285,865	\$360,918	\$75,053	26%	Estimated contractor loading 35%, actual 29%, significantly offset by higher excavation costs, projected restoration, and traffic control. Additional \$10k for hand excavations, \$17k in shoring costs and \$14k in service costs. Estimated carry over cost for final restoration may be high.																		
19	18	8840-0001000975	North	CCD	2-33 UNION ST, CCD, MAPLE ST	CI	LP to 60	4	1888/1898	20		1	10	31	1,360		75	1,435	\$252,273	\$311,948	\$59,675	24%	\$325,576	\$352,410	\$26,834	8%	Estimated contractor loading 35%, actual 36%, offset slightly by higher traffic control costs for the 34 services. Estimated carry over cost for final restoration may be high.																		
20	Incremental Projects																																												
21	19	8840-0001001269	South	NAS	5-103 DODGE ST, NAS, & MAY ST	BS & CI	LP to 60	2 & 4	1930/1959/1978	7		9	8	24	1,645			1,645	\$245,329	\$208,736	-\$36,593	-15%	\$324,289	\$216,981	-\$107,309	-33%	Estimated contractor loading 35%, actual 15%, lower restoration costs due to main install on edge of pavement, reduced size of cutback.																		
22	20	8840-0001001270	South	NAS	2-15 BADGER ST, NAS	BS	LP	2	1909	3		4	7	14	535			535																											
23	21	8840-0001001106	North	CCD	95 SHAKER RD, CCD - SHAKER RD SCHOOL	BS	60	1	Unknown			1	1	2	250			250	\$15,596	\$50,460	\$34,864	224%	\$23,780	\$54,936	\$31,155	131%	Outside contractor was used due to volume of work, project was invoiced as time & material. Estimated using contract bid units.																		
24	22	8840-0001001271	South	NAS	2-30 AUBURN ST, NAS & LOCUST ST	CI	LP	4	1924	8		2	9	19	1,750			1,750																											
25	23	8840-791853	South	NAS	87-98 WALNUT ST, NAS	BS	LP	2	1913	6			2	8	340			340	\$94,596	\$83,401	-\$11,195	-12%	\$125,199	\$94,977	-\$30,221	-24%	Estimated contractor loading 35%, actual 38%. Construction costs under budget.																		
26	24	8840-0001000444	North	CCD	20-50 ALLISON ST, CCD, DUNKLEE	CI	LP	4	1907	9		1	7	17	1,175			1,175																											
27	25	8840-761258	South	NAS	2-15 COLUMBIA AV, NAS, WEBSTER ST & BARTLETT AV	BS	LP to 60	2 & 4	1915	8		3	6	17	1,325		690	2,015																											
28	26	8840-0001000443	Central	MNC	348-350 LINCOLN ST, MNC	BS	60	3	1954				3	3	435			435	\$38,434	\$71,022	\$32,588	85%	\$51,084	\$75,355	\$24,271	48%	Estimated contractor loading 35%, actual 23%. Expect higher restoration costs, plus job was over budget due to higher police costs, and S&L for welding. Estimated carry over cost for final restoration may be high.																		
29	27	8840-0001001272	North	CCD	12-29 ROCKLAND RD, CCD	BS	LP	2	1963?	5			2	7	425			425																											
30	28	8840-586533	North	MNC	5-99 ROSEMONT AV, MNC	CI	LP	4	1927	4			4	8	690			690	\$113,366	\$181,378	\$68,012	60%	\$147,436	\$192,917	\$45,481	31%	Estimated contractor loading 35%, actual 21% Construction costs over budget for ledge removal, traffic, and 230' of additional footage. Estimated carry over cost for final restoration may be high.																		
31										198	5	80	175	458	28,880	0	3,595	32,475	\$3,842,484	\$4,621,172	\$778,688	20%	\$5,004,572	\$4,921,902	-\$82,670	-2%																			
32	FY 2014 Carry Over Costs														Total Mileage				5.47	0.00	0.68	6.15	\$162	\$185		Cost per foot install	\$211	\$197																	
33		8840-864581	South	NAS	5-21 RIDGE ST, NAS	BS	LP	2	Unknown						350			350						\$46,260	\$36,843	-\$9,417	-20%	Final restoration cost came in under than estimated.																	
34		8840-864709	South	NAS	8-18 MAPLE ST, NAS	BS	LP	2	1957						330			330						\$36,071	\$28,197	-\$7,874	-22%	Final restoration cost came in under than estimated.																	
35		8840-864739	South	NAS	20-36 SUMMER ST, NAS	CI/BS	LP	4	1929						506			506						\$58,805	\$47,649	-\$11,156	-19%	Final restoration cost came in under than estimated.																	
36		8840-864759	North	BMT	17-28 SUNSET DR, BMT	BS	60	2	Unknown						460			460						\$21,694	\$12,933	-\$8,761	-40%	Final restoration cost came in under than estimated.																	
37		8840-915357	Central	MNC	65-138 MIDDLE ST, MNC & FRANKLIN ST	CI	LP	4	1926						460			460						\$35,515	\$48,456	\$12,941	36%	Final restoration cost came in over than estimated.																	
38		8840-915689	North	CCD	57-87 AUBURN ST, CCD	CI	LP	6	1963						1,350			1,350						\$118,309	\$79,281	-\$39,028	-33%	Final restoration cost came in under than estimated.																	
39		8840-931053	South	NAS	JEWELL LN & BERKSHIRE ST	BS	LP	2 & 4	1947						305			305						\$35,590	\$21,822	-\$13,768	-39%	Final restoration cost came in under than estimated.																	
40																																													
41																																													