

RSK Attachment 1  
 Liberty Utilities CIBS FY 2018  
 (April 1, 2017-March 31, 2018)  
 DG 18-064  
 June 18, 2018

| Knepper Applicable PHMSA Training Completed |  |            |            |
|---|--|------------|------------|
| Online Computer Based Training              |  | Status     | Date       |
| 1   | PHMSA-PL1DIMP Introduction of Distribution Integrity Management Program WBT                | Successful | 5/3/2011   |
| 2   | PHMSA-PL1GLAW Introduction to Gas Laws WBT   | Successful | 8/11/2014  |
| 3   | PHMSA-PL1HCA High Consequence Areas WBT  | Successful | 7/4/2005   |
| 4   | PHMSA-PL1ICDA Internal Corrosion Direct Assessment WBT                                     | Successful | 4/1/2011   |
| 5   | PHMSA-PL1IPROC Integrity Management Processes WBT  | Successful | 7/6/2005   |
| 6   | PHMSA-PL1ODOR Natural Gas Odorization WBT  | Successful | 4/4/2011   |
| 7   | PHMSA-PL1PRESS Fundamentals of Gas Pressure Regulators WBT                                 | Successful | 2/26/2007  |
| 8   | PHMSA-PL1RA Introduction to Risk Assessment Methods WBT                                    | Successful | 4/25/2015  |
| 9   | PHMSA-PL2FLMEC - Fundamentals of Fluid Mechanics WBT                                       | Successful | 4/24/2015  |
| 10  | PHMSA-PL2P195 Introduction to Part 195 WBT   | Successful | 4/14/2015  |
| 11  | PHMSA-PL3CP Fundamentals of Pipeline Corrosion and Cathodic Protection WBT                 | Successful | 8/14/2007  |
| 12  | PHMSA-PL3ECDA External Corrosion Direct Assessment WBT                                     | Successful | 4/1/2011   |
| 13  | PHMSA-PL3ELEC Fundamentals of Basic DC Electricity WBT                                     | Successful | 8/18/2007  |
| 14  | PHMSA-PL3OQ Operator Qualification WBT Course  | Successful | 1/31/2006  |
| 15  | PHMSA-PL3PIG Fundamentals of Launching and Receiving Maintenance Pigs WBT                  | Successful | 6/8/2010   |
| 16  | PHMSA-PL3PP Fundamentals of Plastic Pipe WBT   | Successful | 4/12/2007  |
| 17  | PHMSA-PL3REG Regulatory Overview WBT   | Successful | 4/8/2015   |
| 18  | PHMSA-PL3SCADA Fundamentals of SCADA Systems WBT   | Successful | 3/14/2011  |
| 19  | PHMSA-PL3SCCDA Stress Corrosion Cracking Direct Assessment WBT                             | Successful | 8/23/2006  |
| 20  | PHMSA-PL3WELD Introduction to Pipeline Welding WBT   | Successful | 6/1/2007   |
| 21  | PHMSA-PL4LNG Fundamentals of Liquefied Natural Gas (LNG) WBT                               | Successful | 6/15/2005  |
| 21  | PHMSA-PL3IC - Investigating and Managing Internal Corrosion of Pipelines WBT               | Successful | 10/6/2016  |
| 22  | PHMSA-PL3DA Drug and Alcohol Testing for the Pipeline Industry WBT                         | Successful | 10/8/2016  |
| COURSES                                     |  | Status     | Date       |
| 1   | PHMSA-PL1297 Gas Integrity Management (IM) Protocol Course                                 | Successful | 5/5/2005   |
| 2   | PHMSA-PL4253 Liquefied Natural Gas (LNG) Safety Technology and Inspection Course           | Successful | 7/29/2005  |
| 3   | PHMSA-PL1250 Safety Evaluation of Gas Pipeline Systems Course                              | Successful | 12/15/2005 |
| 4   | PHMSA-PL2284 (HAZWOPER) Refresher for Pipeline Safety Representatives                      | Successful | 1/9/2007   |
| 5   | PHMSA-PL3322 Evaluation of Operator Qualification (OQ) Programs Course                     | Successful | 1/21/2016  |
| 6   | PHMSA-PL3256 Pipeline Failure Investigation Techniques Course                              | Successful | 2/9/2007   |
| 7   | PHMSA-PL1255 Gas Pressure Regulation and Overpressure Protection Course                    | Successful | 4/12/2007  |
| 8   | PHMSA-PL1310 Plastic and Composite Materials Course  | Successful | 6/15/2007  |
| 9   | PHMSA-PL3242 Welding and Welding Inspection of Pipeline Materials Course                   | Successful | 6/15/2007  |
| 10  | PHMSA-PL3254 Joining of Pipeline Materials Course  | Successful | 6/15/2007  |
| 11  | PHMSA-PL3257 Pipeline Safety Regulation Application and Compliance Procedures Course       | Successful | 8/17/2007  |
| 12  | PHMSA-PL3600 Root Cause/Incident Investigation Course                                      | Successful | 8/21/2009  |
| 13  | PHMSA-PL3292 Safety Evaluation of Inline Inspection (ILI)/Pigging Programs Course          | Successful | 6/11/2010  |
| 14  | PHMSA-PL3293 Corrosion Control of Pipeline Systems Course                                  | Successful | 6/25/2010  |
| 15  | PHMSA-PL3291 Fundamentals of (SCADA) System Technology and Operation Course                | Successful | 4/1/2011   |
| 16  | PHMSA-PL3355 Safety Evaluation of Control Room Management Programs                         | Successful | 8/29/2014  |
| 17  | PHMSA-PL1245 Safety Evaluation of Distribution Integrity Management Programs (DIMP) Course | Successful | 4/23/2015  |
| 18  | PHMSA-PL2258 Safety Evaluation of Hazardous Liquid Pipeline Systems Course                 | Successful | 5/15/2015  |
| 19  | PHMSA-PL3267 Fundamentals of Integrity Management Course                                   | Successful | 7/31/2015  |
| 20  | PHMSA-PL3306 External Corrosion Direct Assessment (ECDA) Field Course                      | Successful | 8/14/2015  |
| 21  | PHMSA-PL2294 Safety Evaluation of Hazardous Liquid Pipeline (IM) Programs Course           | Successful | 4/28/2017  |

**(20) Cast Iron Bare Steel Replacement Program:**

A cast iron/bare steel replacement program (“CIBS Program”) shall be implemented that will be based on a construction year (April through December). By no later than January 15 of each year, EnergyNorth shall provide a copy of its CIBS Plan, defined below, to Staff for review and comment. EnergyNorth shall meet with Staff in technical sessions to discuss the plan to be implemented for the subsequent construction year. After review by Staff, EnergyNorth will take all reasonable steps to carry out and implement the plan, taking into account Staff comments.

The CIBS plan, which will cover cast iron and bare steel pipe replacements, will describe each replacement project, itemizing the proposed projects by general category, along with the targeted amount of investment to be made during the following construction year, which budget shall not be less than the CIBS base amount for capital expenditures described in paragraph e below (“CIBS Plan”). The CIBS Plan will prioritize cast iron and bare steel pipe replacements based on factors including leakage, material condition, age and other components affecting pipe integrity. The CIBS Plan will not address replacement of cast iron and bare steel pipes required in public works projects and/or carried out pursuant to the Cast Iron Encroachment Policy referenced in Condition 12 above.

EnergyNorth agrees to engage in an annual evaluation and selection process to identify and target investments to be proposed in the CIBS Plan, as follows:

- a. It will undertake an annual review of the performance of its distribution system as it relates to the integrity of its cast iron and bare steel pipelines. This review will provide: (1) a detailed analysis of leak activity over the preceding ten years on the bare steel and cast iron gas mains, and (2) an evaluation of which main segments represent the highest priority segments for replacement. Consideration will be given to the age of the main, the date the leak(s) occurred, leak classification, type of leak, number of clamps used in leak repair, condition of main when repaired, specific leak location, building types in the area of the main segment and quantity of bare steel services attached to the potential segment to be replaced.
- b. Adjustments in the priority of main segment replacement could be made due to planned paving projects, public relations, or identification of new main segments by operating personnel in the field that were not captured through EnergyNorth’s data systems.
- c. Using the process identified in (a) and (b) above, EnergyNorth shall rank and prioritize those mains to be replaced in the associated construction year and provide its plans to the Commission.
- d. Categories of spending will include the following:

- 1.1 unprotected bare steel main replacement, as determined by the evaluation and selection process;
- 1.2. cast iron main replacement as determined by the evaluation and selection process;
- 1.3. cast iron or bare steel main replacement candidates requested by field operating personnel; and
- 1.4. bare steel services replaced as a result of a segment of bare steel main or cast iron main that is selected.

Categories of spending that are not included in the CIBS:

- 2.1. costs of moving inside meters to outside;
- 2.2. costs of reconnecting existing plastic services or existing coated steel services from cast iron mains or bare steel mains to the newly installed replacement main;
- 2.3. costs of any mains replaced made of polyethelene or steel that have a protective coating;
- 2.4. costs of any mains that are abandoned;
- 2.5. costs of coated steel mains that “act as bare steel mains” such as poorly coated steel mains or disbonded steel mains, unless approved by the Safety Division;
- 2.6. incremental costs of upsizing with the exception of (n) below; and
- 2.7 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. Such carryover costs include items such as restoration costs not incurred during the construction year.
- 2.8 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.

e) EnergyNorth shall bear the initial \$500,000 of capital expenditures under the CIBS program (“the CIBS Base Amount”) (in accordance with the Handy Whitman index). The CIBS Base Amount excludes replacement projects required by public works projects and/or carried out pursuant to the Cast Iron Encroachment Policy referenced in Condition 12. Provided that investments were made in accordance with the approved CIBS plan, EnergyNorth will be allowed a permanent increase in its base distribution delivery rates to recover the annual revenue requirement for those investments that are found to be reasonable and prudent made in the preceding construction year and in excess of the CIBS Base Amount. The permanent capital investment recovery allowance will not take effect until the actual costs of the

previous construction year are approved by the Commission. Petitions for cost recovery will be submitted annually thereafter not later than May 1, for an effective date of July 1.

f) After Staff completes the review of the CIBS Plan for a given construction year, EnergyNorth shall track all capital investments made in accordance with the approved CIBS Plan. EnergyNorth will reconcile actual capital expenditures with the CIBS Plan targets at the conclusion of the CIBS Plan period.

g) EnergyNorth agrees that it will file a report with the Commission on May 15 of each year detailing the actual amount of capital investments made in accordance with implementing the CIBS Plan during the prior construction year (“CIBS Report”). The report will include a calculation of the incremental revenue requirement associated with the capital investments in rate base that exceeds the CIBS Base Amount, using the Commission-approved imputed or actual capital structure and cost of capital determined using the Commission-approved return on equity and cost of debt. If the Commission has not made a final determination in the first rate case by the time the first adjustment is to be calculated, a reasonable proxy will be used for the rate calculation and an adjustment will be made to the revenue requirement to reconcile to the approved cost of capital rates when the rates from the first rate case go into effect.

h) EnergyNorth agrees to file its annual CIBS Report on the prior construction year’s activities at the time it makes its rate adjustment filing on May 15. The Settling Parties and Staff understand that, in implementing the CIBS Plan, the circumstances encountered during the year may require reasonable deviations from the original plan. In such cases, EnergyNorth shall include an explanation of any deviations in the report. For cost recovery purposes, EnergyNorth shall have the burden to show that any deviations were due to circumstances out of its reasonable control or, if within its control, were reasonable and prudent. The CIBS Report shall include a breakdown of footage replaced by municipal projects that involve Cast Iron /Bare Steel as well the footage replaced under the Cast Iron Encroachment Policy. Samples of reporting that Staff has reviewed previously are included in Attachment A.

i) The CIBS Program will remain in place through and beyond EnergyNorth’s future rate cases until terminated by the Commission or by mutual agreement at the end of a given construction year, with a final capital allowance pertaining to the final year.

j) EnergyNorth can elect to not finalize its CIBS Plan until after the winter frost patrol ends in early April. By May 1, EnergyNorth shall finalize actual projects and provide a copy of the final CIBS Plan to Staff. In addition, the priority rankings of main segments for replacement will be subject to change over the course of the year due to new information. In such case, if EnergyNorth believes it is prudent to change

the rankings from the approved CIBS Plan, it will notify Staff, stating the reasons for the change prior to construction. If Staff does not believe that particular components of the revised plans are reasonable and the matter is not resolved between EnergyNorth and Staff, Staff may object and the matter may be referred to the Commission for resolution.

k) EnergyNorth acknowledges that Staff review will not relieve EnergyNorth of its obligation to operate its business and maintain safe, reliable service through expenditures and other capital investments in the ordinary course of business that are not set forth in the CIBS Plan, nor will it bind Staff to a particular position regarding the adequacy and/or effectiveness of the plan.

l) However, EnergyNorth will be authorized to include in its CIBS Plan the replacement of cast iron and bare steel pipe located in the vicinity of public works projects, where replacement is not required as a part of the project, but permitted for convenience or other reasons, as determined by the Safety Division.

m) EnergyNorth shall provide GIS Mapping or other electronic means that shows the project scope with each submittal of the CIBS Plan.

n) No upsizing of pipe diameter shall be allowed for cost recovery within the CIBS Program on 60 psig systems. For low pressure systems (12 inches water column and below) no upsizing shall be allowed for cost recovery within the CIBS Program except for 3" nominal diameter low pressure pipe replaced with 4" nominal diameter pipe and other special circumstances as approved by the Safety Division.

o) EnergyNorth shall provide the Commission Staff with actual cutouts of the worst section within any bare steel main segment replaced prior to reconciling any cost adjustments for associated construction season. Cutouts shall be approximately 12 inches to 24 inches in length.

p) EnergyNorth shall provide a written report accompanying the actual cutouts in section 20(o) above that includes: photographs the replaced bare steel segment; a general description of the condition of the pipe; the street address from which it was taken; age of material; original wall thickness; measured depth of deepest pit of the cutout; operating pressure of replaced pipe; pH of soil condition of cutout surrounds; results of testing for microbiological acid producing bacteria (APB) and sulfate reducing bacteria (colonies per ML); and identification of the threshold of high bacteria counts.

## **II. Additional Granite State Electrical Safety Conditions (Electrical Underground Facility Protection)**

### **Underground Damage Prevention Program Enhancement**

1. Granite State Electric Company (Granite State) will institute a new Locating/Mark-Out Policy within the existing Underground Damage Prevention Program. The Locating/Mark-Out Policy will provide enhanced public safety by increasing the commitments and responsibilities associated with locating and marking private underground residential facilities within Granite State's franchise territory. Notwithstanding the exemption contained in RSA 374:53 concerning facilities not owned by the operator, Granite State accepts the additional responsibility of locating privately owned, residential underground electrical facilities pursuant to excavation notifications, and agrees to establish the Locating/Mark-Out Policy ("Policy") described below.

### **Policy Implementation and Potential Discontinuation**

2. Locating/Mark-Out Policy will be implemented within 120 days of the Closing Date.
3. Granite State reserves the right to discontinue the Policy with Staff review and consent but without the necessity of obtaining formal Commission approval if the incremental costs of implementing the Policy, not including advertising and marketing costs or other non-field costs, exceed \$10,000 annually. In the event Granite State disagrees with Staff's decision not to consent, it may file a request for review with the Commission. Granite State will file written notification of any discontinuation of the Policy with the Commission.

### **Policy Requirements**

4. Within Granite State's franchise territory, Granite State will mark privately owned, residential underground facilities up to the meter and including the service entrance upon receipt of notifications received via the One Call Notification System.
5. The electrical service includes primary service voltage levels as well as secondary voltage levels.
6. The electrical service also includes service from aerial distribution systems as well as underground systems.
7. Notifications received for underground excavation involving commercial properties are not included in the waiver or this Policy.
8. The location and marking of excavations involving underground electrical facilities beyond the meter, such as from a house to a barn, lamp post, pool, shed and other structures, are not included in this Policy.

9. Granite State's responsibility under the Policy shall not extend beyond marking out the facility, and does not include repairs to such facilities.
10. Field Markouts made under the Policy shall clearly indicate private electrical facilities that are not owned or operated by GSE.
11. During each year the Policy is in effect, Granite State shall maintain a level of accuracy for markouts made under the Policy that is commensurate with the level achieved for its own facilities. An audit or equivalent method may be used to determine the accuracy percentage of Policy markouts.
12. Granite State will not be required to mark such services defined in this Policy where the customer refuses Granite State access or denies such markout service.

### **Program Reporting**

13. By January 31, 2013, Granite State shall submit an initial report to the Safety Division of the average accuracy level for markouts made of underground facilities pursuant to the One Call Notification System, and the derivation with sufficient detail supporting the determination of the average used to measure the accuracy level for the Policy. The initial report shall indicate the levels of markout accuracy obtained for Granite State facilities as well as privately owned, residential facilities. The report shall also contain the elements listed in item 14 below. Staff shall review and comment on the submittal, and Granite State shall incorporate Staff's comments into subsequent reports in following years.
14. Granite State shall keep track of costs expended and associated data, including but not limited to: number of notifications received, number of markouts made, address locations of markouts, quantity and locations of customer refusals, and dates of services performed. A summary report with subtotals by month shall be submitted to Staff annually, no later than January 31st for the previous calendar year's Policy.
15. The new Policy does not require Granite State to file a monthly E-26 report for markouts made under the Policy.





| FY     | Age    |      |
|--------|--------|------|
| 2009-1 | 55     |      |
| 2009-2 | 79     |      |
| 2009-3 | 80     |      |
| 2009-4 | 54     |      |
| 2009-5 | 100    |      |
| 2009-6 | 96     |      |
| 2009-7 | 84     |      |
| 2009-8 | 100    |      |
| 2010-1 | 54     |      |
| 2010-2 | 109    |      |
| 2010-3 | 78     |      |
| 2010-4 | 101    |      |
| 2010-5 | 62     |      |
| 2010-6 | 108    |      |
| 2010-7 | 83     |      |
| 2010-8 | 111    |      |
| 2010-9 | 78     |      |
| 2011-1 | 63     |      |
| 2011-2 | 98     |      |
| 2011-3 | 97     |      |
| 2011-4 | 55     |      |
| 2011-5 | 63     |      |
| 2012-1 | 83     |      |
| 2012-2 | 51     |      |
| 2013-1 | 110    |      |
| 2013-2 | 102    |      |
| 2014-1 | 111    |      |
| 2014-2 | 111    |      |
| 2014-3 |        |      |
| 2014-4 | 56     |      |
| 2014-5 | 119    |      |
| 2014-6 |        |      |
| 2014-7 | 66     |      |
| 2015-1 | 58     |      |
| 2015-2 | 55     |      |
| 2015-3 | 101    |      |
| 2015-4 | 58     |      |
| 2015-5 |        |      |
| 2015-6 | 58     |      |
| 2015-7 | 60     |      |
| 2016-1 | 99 est |      |
| 2016-2 | 91     |      |
| 2017-1 | 112    |      |
| 2017-2 | 104    |      |
| 2017-3 | 101    |      |
| 2017-4 | 93     |      |
| 2017-5 | 55     |      |
| 2017-6 | 112    |      |
| 2018-1 | 77     |      |
| 2018-2 | 93     |      |
| 2018-3 | 93     |      |
| 2018-4 | 102    |      |
| 2018-5 | 58     |      |
| 2018-6 | 117    |      |
| 2018-7 | 86     | 89.4 |
| Sum    | 55     | 84.6 |

# LIBERTY UTILITIES BARE STEEL REPLACEMENT PROGRAM

2009-2018

Prepared by the New Hampshire Public Utilities Commission  
Safety Division



# 2018 Bare Steel Replacement Reports



# FY 2018

|                |                       |
|----------------|-----------------------|
| Address        | 5-67 Williams St      |
| Town           | Nashua                |
| Pipe Size      | 2"                    |
| Install Date   | 1940                  |
| Wall Thickness | 0.154"                |
| Age            | 77                    |
| Pressure       | 12 in water column    |
| Ground PH      | 7.5                   |
| Pipe Condition | 30% wall loss in pits |



# FY 2018

|                |                          |
|----------------|--------------------------|
| Address        | 14-38 Brook St           |
| Town           | Nashua                   |
| Pipe Size      | 2"                       |
| Install Date   | 1924                     |
| Wall Thickness | 0.154"                   |
| Age            | 93                       |
| Pressure       | 12 in water column       |
| Ground PH      | 7                        |
| Pipe Condition | 25-50% wall loss in pits |



# FY 2018

|                |   |
|----------------|---|
| Address        | 4-26 Nutt St                              |
| Town           | Nashua                                    |
| Pipe Size      | 2"  |
| Install Date   | 1924                                      |
| Wall Thickness | 0.154"                                    |
| Age            | 93  |
| Pressure       | 12 in water column                        |
| Ground PH      | 6   |
| Pipe Condition | 100% wall loss in pits<br>Heavy Corrosion |



041

# FY 2018

|                |   |
|----------------|---|
| Address        | 3-75 Blossom St                               |
| Town           | Nashua  |
| Pipe Size      | 2"  |
| Install Date   | 1915  |
| Wall Thickness | 0.154"  |
| Age            | 102   |
| Pressure       | 12 in water column                            |
| Ground PH      | 6   |
| Pipe Condition | 100% wall loss in pits<br>Very Poor Condition |



# FY 2018

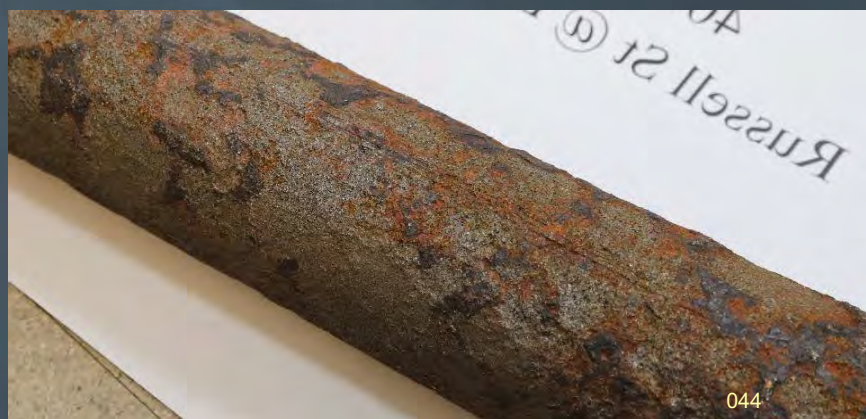
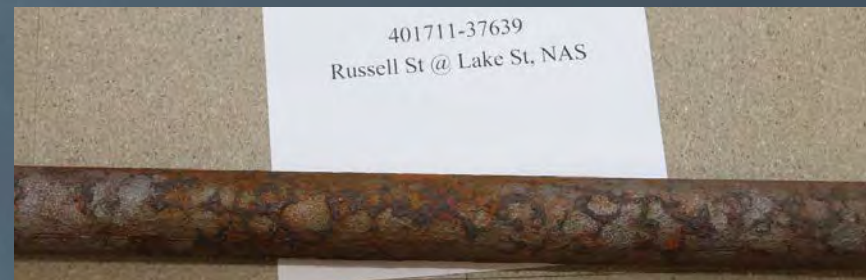
|                |  |
|----------------|--|
| Address        | 28-36 Fifield St &<br>Winnwood St                  |
| Town           | Nashua   |
| Pipe Size      | 2"   |
| Install Date   | 1959   |
| Wall Thickness | 0.154"   |
| Age            | 58   |
| Pressure       | 12 in water column                                 |
| Ground PH      | 7  |
| Pipe Condition | 30% wall loss in pits<br>General Corrosion/Pitting |





# FY 2018

|                |  |
|----------------|--|
| Address        | 75-235 Lake St                                   |
| Town           | Nashua   |
| Pipe Size      | 2"   |
| Install Date   | 1900   |
| Wall Thickness | 0.154"   |
| Age            | 117  |
| Pressure       | 12 in water column                               |
| Ground PH      | 7  |
| Pipe Condition | 30% wall loss in pits<br>General Scaling/Pitting |



# FY 2018

|                |  |
|----------------|--|
| Address        | <b>4-22 Peabody St</b>                                   |
| Town           | <b>Tilton</b>  |
| Pipe Size      | <b>4"</b>  |
| Install Date   | <b>1900</b>  |
| Wall Thickness | <b>0.237"</b>  |
| Age            | <b>86</b>  |
| Pressure       | <b>60 psig</b>   |
| Ground PH      | <b>7</b>   |
| Pipe Condition | <b>20% wall loss in pits<br/>Light Corrosion/Pitting</b> |

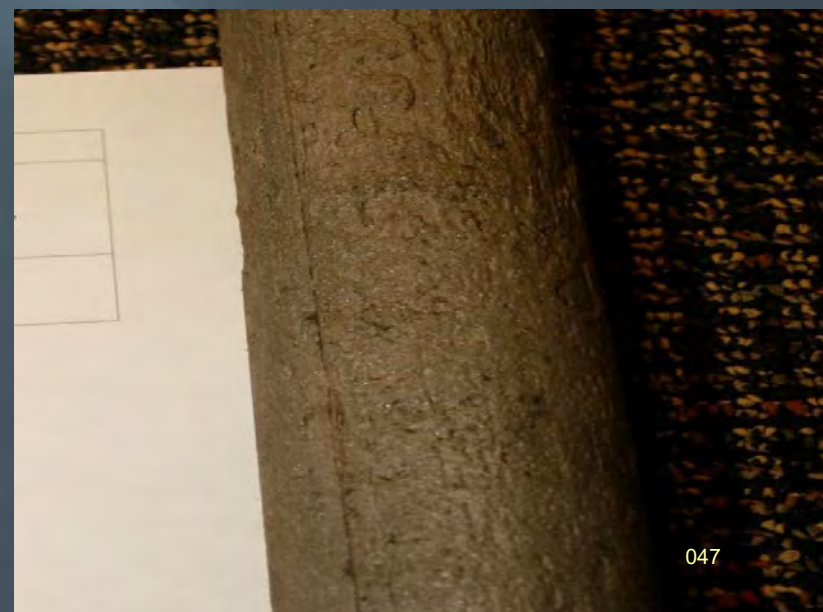
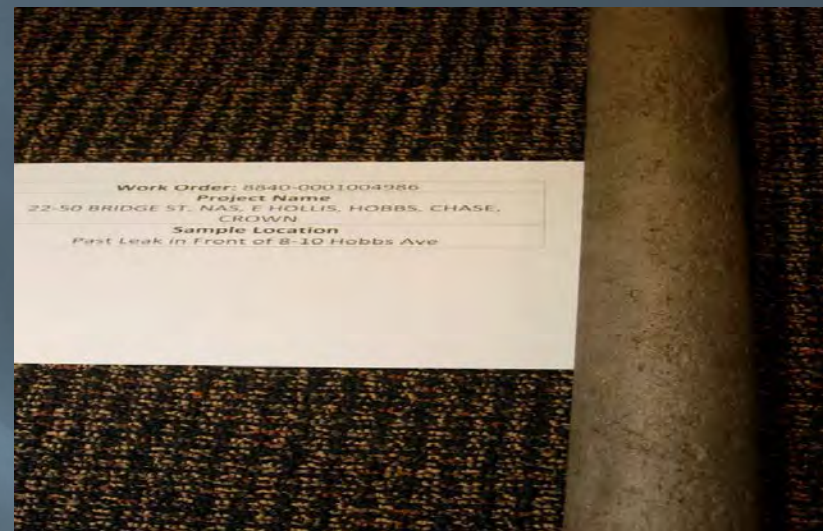


# 2017 Bare Steel Replacement Reports



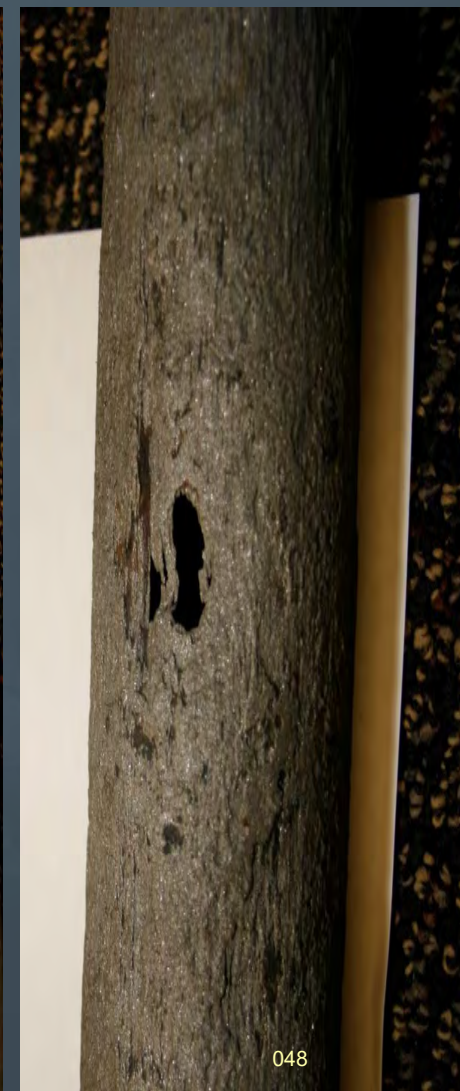
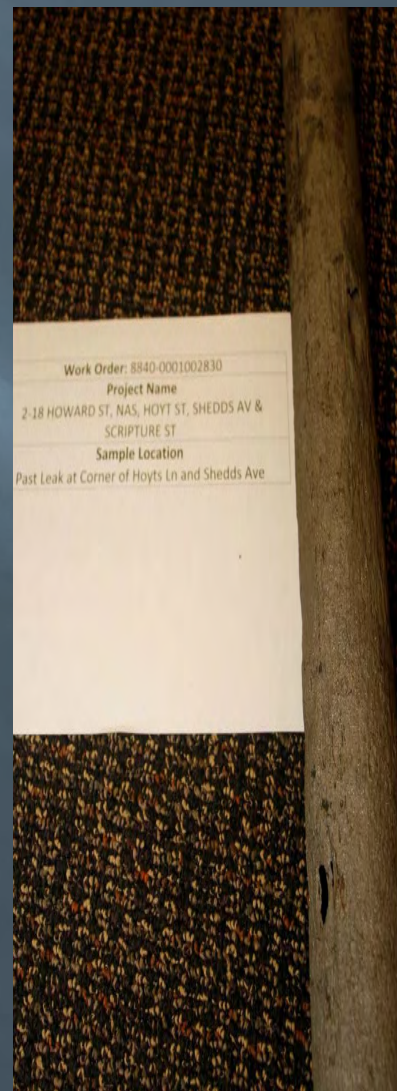
# FY 2017

|                |                               |
|----------------|-------------------------------|
| Address        | 22-50 Bridge St               |
| Town           | Nashua                        |
| Pipe Size      | 2"                            |
| Install Date   | 1904                          |
| Wall Thickness | 0.188 in                      |
| Age            | 112                           |
| Pressure       | 12 in water column            |
| Ground PH      | 6                             |
| Pipe Condition | 50% Wall Loss/ Poor Condition |



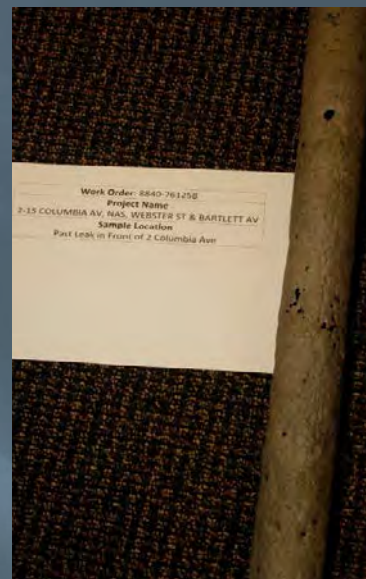
# FY 2017

|                |                                     |
|----------------|-------------------------------------|
| Address        | 18 Howard St                        |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1912                                |
| Wall Thickness | 0.188 in                            |
| Age            | 104                                 |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



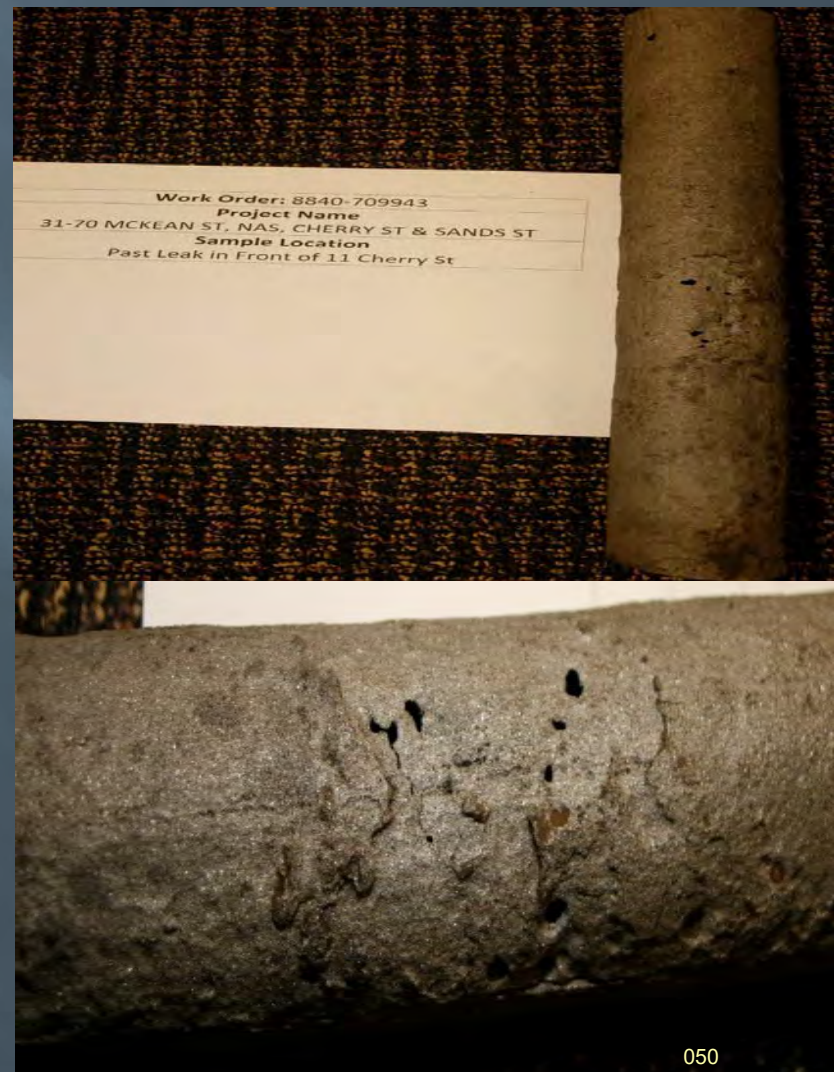
# FY 2017

|                |                                     |
|----------------|-------------------------------------|
| Address        | 2-15 Columbia Ave                   |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1915                                |
| Wall Thickness | 0.188 in                            |
| Age            | 101                                 |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



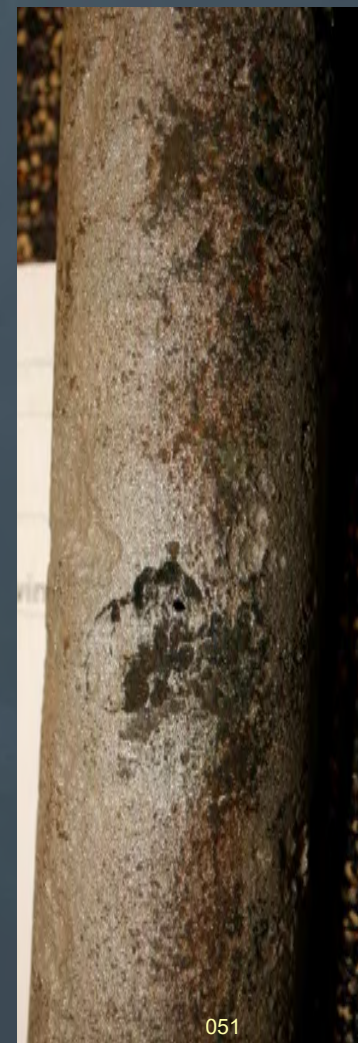
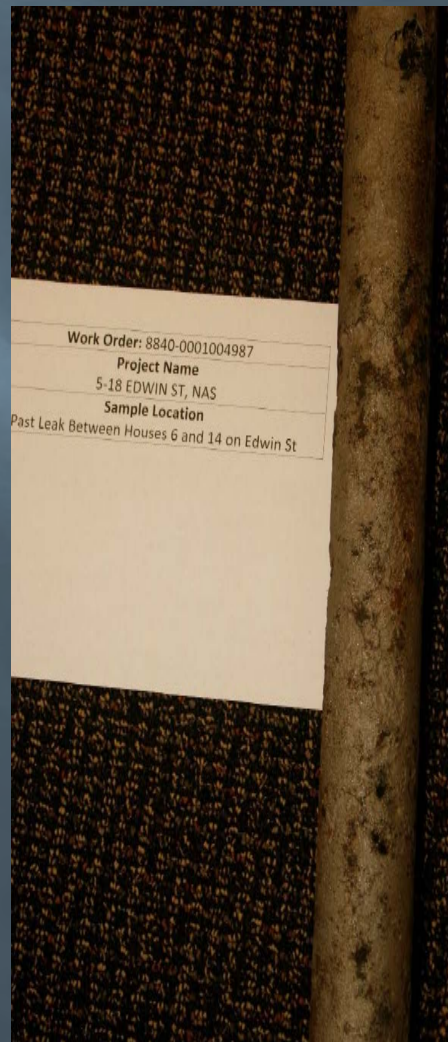
# FY 2017

|                |                                     |
|----------------|-------------------------------------|
| Address        | 31-70 McKean St                     |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1923                                |
| Wall Thickness | 0.188 in                            |
| Age            | 93                                  |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2017

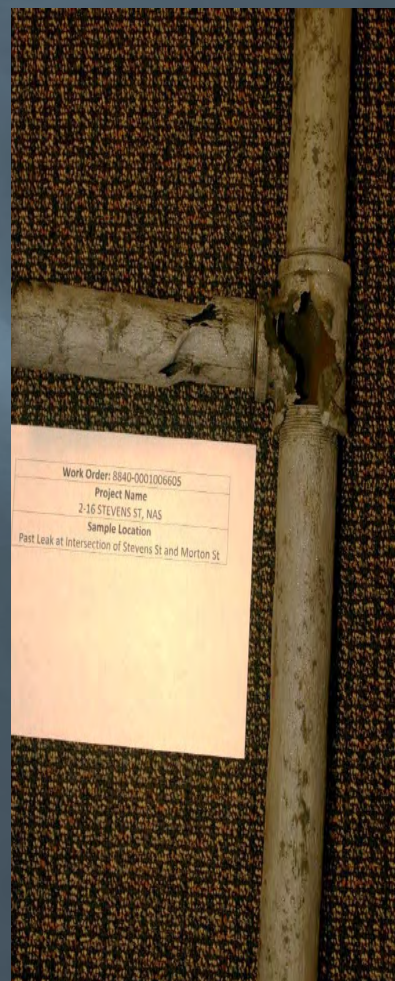
|                |                                     |
|----------------|-------------------------------------|
| Address        | 5-18 Edwin St                       |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1961                                |
| Wall Thickness | 0.188 in                            |
| Age            | 55                                  |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |





# FY 2017

|                |                                     |
|----------------|-------------------------------------|
| Address        | 2-16 Stevens St                     |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1904                                |
| Wall Thickness | 0.188 in                            |
| Age            | 112                                 |
| Pressure       | 12 in water column                  |
| Ground PH      | 7                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# 2016 Bare Steel Replacement Reports



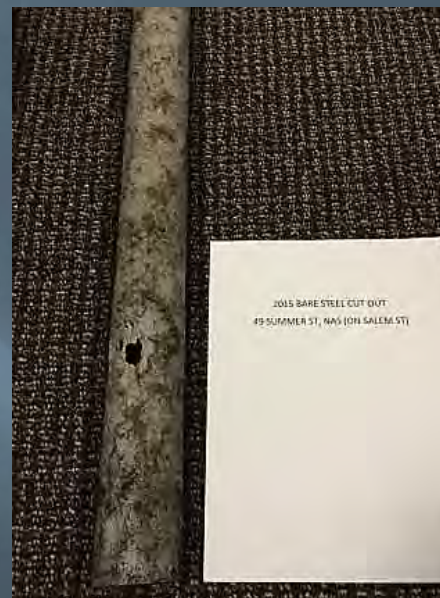
# FY 2016

|                |                                     |
|----------------|-------------------------------------|
| Address        | 48 Newbury St NAS (On Underhill St) |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | Unknown                             |
| Wall Thickness | 0.188 in                            |
| Age            | Unknown                             |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2016

|                |                                     |
|----------------|-------------------------------------|
| Address        | 49 Summer St (On Salem St)          |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1924                                |
| Wall Thickness | 0.218 in                            |
| Age            | 91                                  |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |

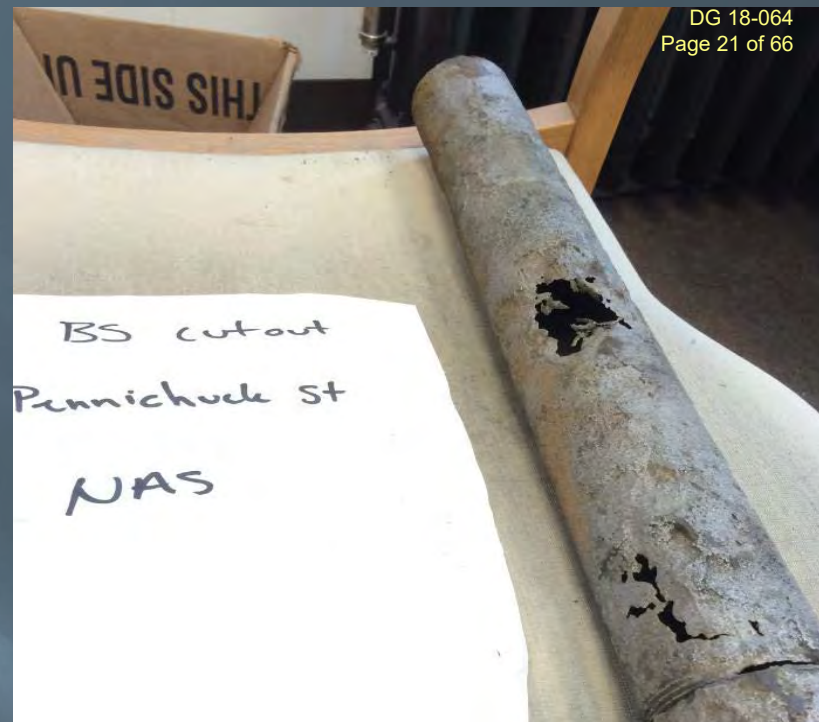


# 2015 Bare Steel Replacement Reports



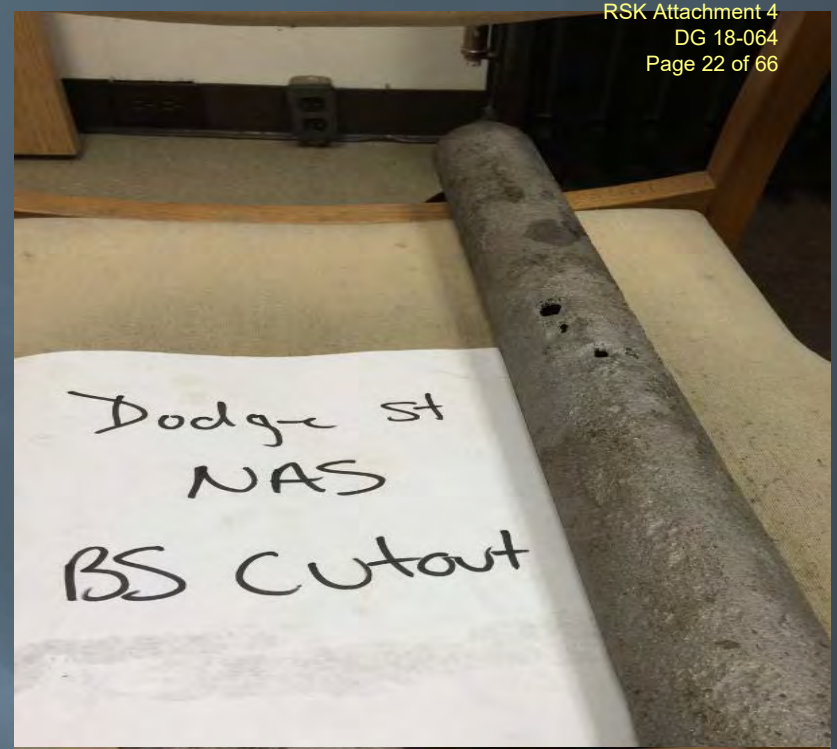
# FY 2015

|                |                                     |
|----------------|-------------------------------------|
| Address        | Pennichuck St & Caron Ave           |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1956/1960                           |
| Wall Thickness | 0.143 in                            |
| Age            | 58                                  |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2015

|                |                                     |
|----------------|-------------------------------------|
| Address        | 90 Dodge St                         |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1959                                |
| Wall Thickness | 0.160 in                            |
| Age            | 55                                  |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2015

|                |                                     |
|----------------|-------------------------------------|
| Address        | 93 Walnut St                        |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1913                                |
| Wall Thickness | 0.160 in                            |
| Age            | 101                                 |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |





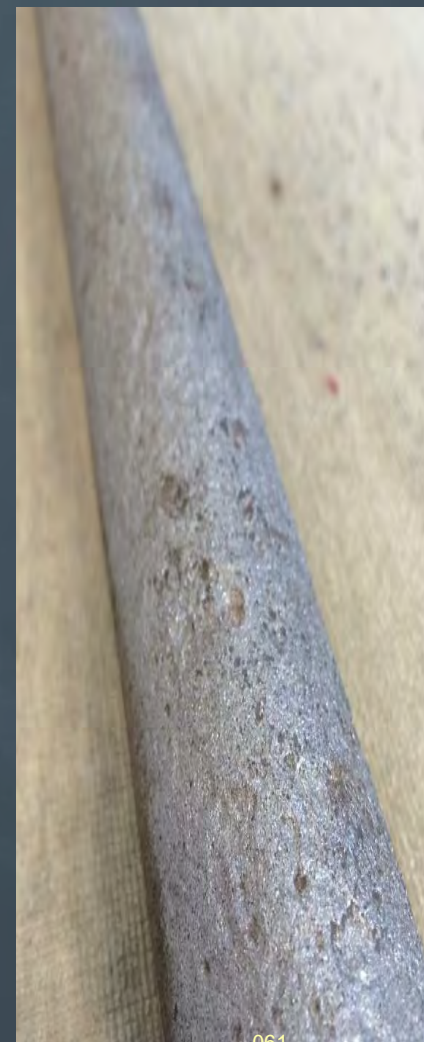
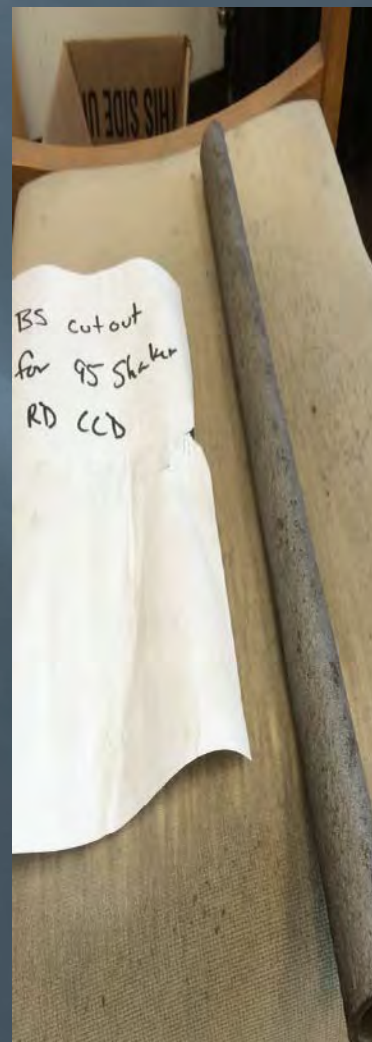
# FY 2015

|                |                                     |
|----------------|-------------------------------------|
| Address        | 57 Spaulding St                     |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1956                                |
| Wall Thickness | 0.139 in                            |
| Age            | 58                                  |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2015

|                |                                   |
|----------------|-----------------------------------|
| Address        | 95 Shaker Road (Shaker Rd School) |
| Town           | Concord                           |
| Pipe Size      | 1"                                |
| Install Date   | Unknown                           |
| Wall Thickness | 0.133 in                          |
| Age            | Unknown                           |
| Pressure       | 60 psig                           |
| Ground PH      | 6                                 |
| Pipe Condition | 27% Wall Loss/ Fair Condition     |



# FY 2015

|                |                                     |
|----------------|-------------------------------------|
| Address        | 249 Medford St                      |
| Town           | Manchester                          |
| Pipe Size      | 2"                                  |
| Install Date   | 1956/1960                           |
| Wall Thickness | 0.160 in                            |
| Age            | 58                                  |
| Pressure       | 60 psig                             |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2015

|                |                                      |
|----------------|--------------------------------------|
| Address        | <b>348 Lincoln St</b>                |
| Town           | <b>Manchester</b>                    |
| Pipe Size      | <b>3"</b>                            |
| Install Date   | <b>1954</b>                          |
| Wall Thickness | <b>0.234 in</b>                      |
| Age            | <b>60</b>                            |
| Pressure       | <b>60 psig</b>                       |
| Ground PH      | <b>6</b>                             |
| Pipe Condition | <b>12% Wall Loss/ Fair Condition</b> |



# 2014 Bare Steel Replacement Reports



# FY 2014

|                |                               |
|----------------|-------------------------------|
| Address        | 1-34 Dickerman St             |
| Town           | Nashua                        |
| Pipe Size      | 2"                            |
| Install Date   | 1902/1925                     |
| Wall Thickness | 0.154 in                      |
| Age            | 111                           |
| Pressure       | 12 in water column            |
| Ground PH      | 7.5                           |
| Pipe Condition | 90% Wall Loss/ Poor Condition |



# FY 2014

|                |                                   |
|----------------|-----------------------------------|
| Address        | 1-44 Revere St & Fernwood St      |
| Town           | Nashua                            |
| Pipe Size      | 2"                                |
| Install Date   | 1902/1925                         |
| Wall Thickness | 0.188 in                          |
| Age            | 111                               |
| Pressure       | 12 in water column                |
| Ground PH      | 7                                 |
| Pipe Condition | 37% Wall Loss/ Moderate Condition |



# FY 2014

|                |   |
|----------------|---|
| Address        | <b>17-28 Sunset Dr</b>                    |
| Town           | <b>Belmont</b>                            |
| Pipe Size      | <b>2"</b>                                 |
| Install Date   | <b>Unknown</b>                            |
| Wall Thickness | <b>0.188 in</b>                           |
| Age            | <b>Unknown</b>                            |
| Pressure       | <b>60 psig</b>                            |
| Ground PH      | <b>6</b>                                  |
| Pipe Condition | <b>100% Wall Loss/Very Poor Condition</b> |





# FY 2014

|                |                                  |
|----------------|----------------------------------|
| Address        | 8-18 Maple St                    |
| Town           | Nashua                           |
| Pipe Size      | 2"                               |
| Install Date   | 1957                             |
| Wall Thickness | 0.154 in                         |
| Age            | 56                               |
| Pressure       | 12 in water column               |
| Ground PH      | 6.5                              |
| Pipe Condition | 39% Wall Loss/Moderate Condition |



# FY 2014

|                |                                     |
|----------------|-------------------------------------|
| Address        | 3-25 Pratt St & Zellwood St         |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1894/1914                           |
| Wall Thickness | 0.188 in                            |
| Age            | 119                                 |
| Pressure       | 60 psig                             |
| Ground PH      | 7                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2014

|                |                                   |
|----------------|-----------------------------------|
| Address        | 5-21 Ridge St                     |
| Town           | Nashua                            |
| Pipe Size      | 2"                                |
| Install Date   | Unknown                           |
| Wall Thickness | 0.154 in                          |
| Age            | 119                               |
| Pressure       | 12 in water column                |
| Ground PH      | 6.5                               |
| Pipe Condition | 39% Wall Loss/ Moderate Condition |



# FY 2014

|                |                                   |
|----------------|-----------------------------------|
| Address        | 1-6 Jewell Lane                   |
| Town           | Nashua                            |
| Pipe Size      | 2"                                |
| Install Date   | 1947                              |
| Wall Thickness | 0.154 in                          |
| Age            | 66                                |
| Pressure       | 12 in water column                |
| Ground PH      | 7                                 |
| Pipe Condition | 32% Wall Loss/ Moderate Condition |



# 2013 Bare Steel Replacement Reports



# FY 2013

|                |                                     |
|----------------|-------------------------------------|
| Address        | 5-19 Lemon St                       |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1902/1925                           |
| Wall Thickness | Unknown                             |
| Age            | 110                                 |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2013

|                |                              |
|----------------|------------------------------|
| Address        | 2-13 Grove St                |
| Town           | Nashua                       |
| Pipe Size      | 2"                           |
| Install Date   | 1910                         |
| Wall Thickness | Unknown                      |
| Age            | 102                          |
| Pressure       | 12 in water column           |
| Ground PH      | 7                            |
| Pipe Condition | Deep Pitting/ Poor Condition |



# 2012 Bare Steel Replacement Reports





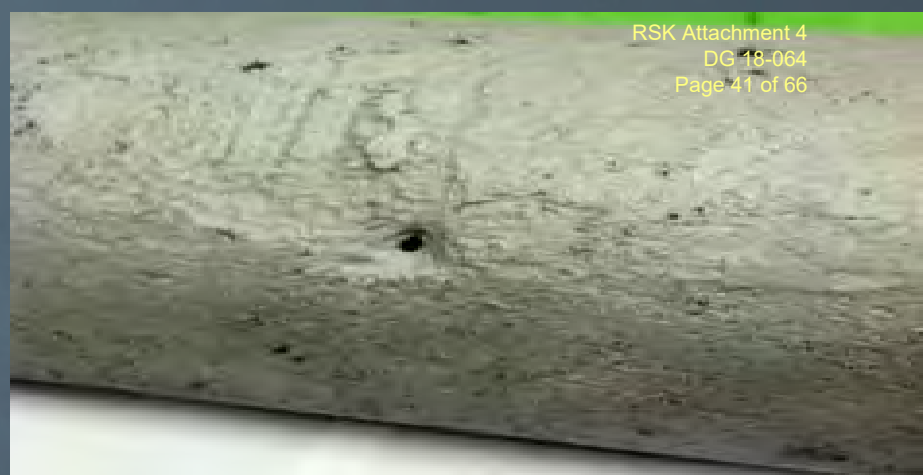
# FY 2012

|                |                                     |
|----------------|-------------------------------------|
| Address        | 18-56 Ash St                        |
| Town           | Nashua                              |
| Pipe Size      | 2"                                  |
| Install Date   | 1928                                |
| Wall Thickness | Unknown                             |
| Age            | 83                                  |
| Pressure       | 12 in water column                  |
| Ground PH      | 6.5                                 |
| Pipe Condition | 100% Wall Loss/ Very Poor Condition |



# FY 2012

|                |                                     |
|----------------|-------------------------------------|
| Address        | <b>55-100 W North St</b>            |
| Town           | <b>Manchester</b>                   |
| Pipe Size      | <b>8"</b>                           |
| Install Date   | <b>1960</b>                         |
| Wall Thickness | <b>Unknown</b>                      |
| Age            | <b>51</b>                           |
| Pressure       | <b>12 in water column</b>           |
| Ground PH      | <b>6</b>                            |
| Pipe Condition | <b>Deep Pitting/ Poor Condition</b> |



# 2011 Bare Steel Replacement Reports



# FY 2011

|                |   |
|----------------|---|
| Address        | <b>20-34 School St</b>                      |
| Town           | <b>Hudson</b>                               |
| Pipe Size      | <b>2"</b>                                   |
| Install Date   | <b>1947</b>                                 |
| Wall Thickness | <b>Unknown</b>                              |
| Age            | <b>63</b>                                   |
| Pressure       | <b>12 in water column</b>                   |
| Ground PH      | <b>7.5</b>                                  |
| Pipe Condition | <b>Deep Pitting/ Fair to Poor Condition</b> |



# FY 2011

|                |   |
|----------------|---|
| Address        | 2-18 Faxon St & 1-7 Faxon Ave             |
| Town           | Nashua                                    |
| Pipe Size      | 2"  |
| Install Date   | 1912                                      |
| Wall Thickness | Unknown                                   |
| Age            | 98  |
| Pressure       | 12 in water column                        |
| Ground PH      | 7.5                                       |
| Pipe Condition | Multiple Large Holes/ Very Poor Condition |



# FY 2011

|                |  |
|----------------|--|
| Address        | <b>116-130 Bowers St</b>               |
| Town           | <b>Nashua</b>                          |
| Pipe Size      | <b>2"</b>                              |
| Install Date   | <b>1913</b>                            |
| Wall Thickness | <b>Unknown</b>                         |
| Age            | <b>97</b>                              |
| Pressure       | <b>12 in water column</b>              |
| Ground PH      | <b>7</b>                               |
| Pipe Condition | <b>Heavy Wall Loss/ Poor Condition</b> |



# FY 2011

|                |                                      |
|----------------|--------------------------------------|
| Address        | 1-19 Perkins St & 41-46 Bradley St   |
| Town           | Concord                              |
| Pipe Size      | 1.5"                                 |
| Install Date   | 1955                                 |
| Wall Thickness | Unknown                              |
| Age            | 55                                   |
| Pressure       | 12 in water column                   |
| Ground PH      | 7                                    |
| Pipe Condition | Deep Pitting/ Fair to Poor Condition |



# FY 2011

|                |                                    |
|----------------|------------------------------------|
| Address        | Chester St-59 Berkeley St          |
| Town           | Nashua                             |
| Pipe Size      | 2"                                 |
| Install Date   | 1947                               |
| Wall Thickness | Unknown                            |
| Age            | 63                                 |
| Pressure       | 12 in water column                 |
| Ground PH      | 7                                  |
| Pipe Condition | Visible Holes/ Very Poor Condition |





# 2010 Bare Steel Replacement Reports



# FY 2010

|                |                |
|----------------|----------------|
| Address        | 2-7 Cornell St |
| Town           | Concord        |
| Pipe Size      | 2"             |
| Install Date   | 1955           |
| Wall Thickness | Unknown        |
| Age            | 54             |
| Pressure       | 60 psig        |
| Ground PH      | 7 to 8         |
| Pipe Condition | Good Condition |
|                | Coated Steel   |



# FY 2010

|                |                                     |
|----------------|-------------------------------------|
| Address        | 83 Pleasant St                      |
| Town           | Concord                             |
| Pipe Size      | 2"                                  |
| Install Date   | 1900                                |
| Wall Thickness | Unknown                             |
| Age            | 109                                 |
| Pressure       | 12 in water column                  |
| Ground PH      | 6                                   |
| Pipe Condition | Some Areas of Pitting and Wall Loss |



# FY 2010

|                |                       |
|----------------|-----------------------|
| Address        | <b>25-28 Depot St</b> |
| Town           | <b>Franklin</b>       |
| Pipe Size      | <b>2"</b>             |
| Install Date   | <b>1931</b>           |
| Wall Thickness | <b>Unknown</b>        |
| Age            | <b>78</b>             |
| Pressure       | <b>60 psig</b>        |
| Ground PH      | <b>6</b>              |
| Pipe Condition | <b>Good Condition</b> |
|                | <b>Coated Steel</b>   |



# FY 2010

|                |                          |
|----------------|--------------------------|
| Address        | 80-113 Blossom St        |
| Town           | Nashua                   |
| Pipe Size      | 2"                       |
| Install Date   | 1908 & 1913              |
| Wall Thickness | Unknown                  |
| Age            | 101                      |
| Pressure       | 12 in water column       |
| Ground PH      | 5                        |
| Pipe Condition | Extremely Poor Condition |



# FY 2010

|                |  |
|----------------|--|
| Address        | 5-11 Bristol St                          |
| Town           | Nashua                                   |
| Pipe Size      | 4"                                       |
| Install Date   | 1947, 1951, 1954, 195?                   |
| Wall Thickness | Unknown                                  |
| Age            | 62                                       |
| Pressure       | 12 in water column                       |
| Ground PH      | 7  |
| Pipe Condition | Moderate Uniform Pitting/ Fair Condition |



# FY 2010

|                |                               |
|----------------|-------------------------------|
| Address        | 12-25 Buck St                 |
| Town           | Nashua                        |
| Pipe Size      | 2"                            |
| Install Date   | 1901, 1903 & 1911             |
| Wall Thickness | Unknown                       |
| Age            | 108                           |
| Pressure       | 12 in water column            |
| Ground PH      | 6 to 7                        |
| Pipe Condition | Heavy Pitting/ Poor Condition |



# FY 2010

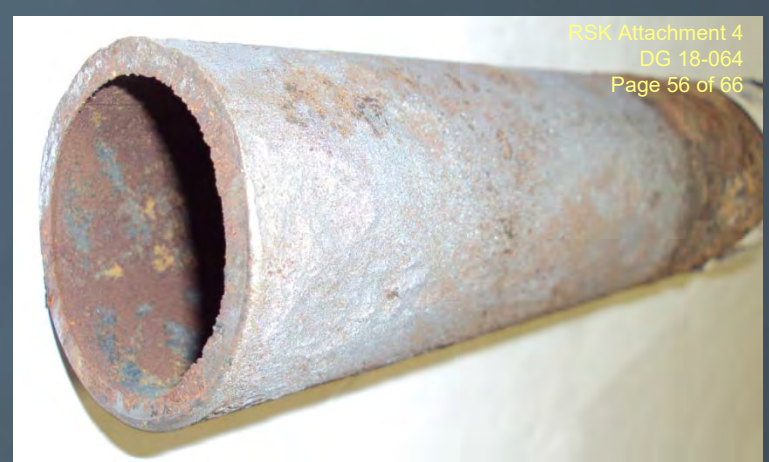
|                |  |
|----------------|--|
| Address        | 2-4 Fourth St                            |
| Town           | Nashua                                   |
| Pipe Size      | 2"                                       |
| Install Date   | 1926                                     |
| Wall Thickness | Unknown                                  |
| Age            | 83                                       |
| Pressure       | 12 in water column                       |
| Ground PH      | 6  |
| Pipe Condition | Significant Deep Pitting/ Poor Condition |





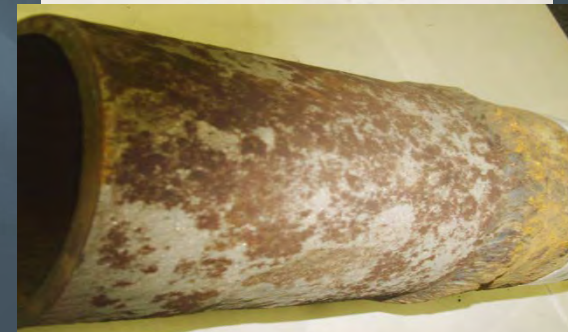
# FY 2010

|                |                                       |
|----------------|---------------------------------------|
| Address        | 31-39 Newbury St                      |
| Town           | Nashua                                |
| Pipe Size      | 2"                                    |
| Install Date   | 1898, 1910, 1928                      |
| Wall Thickness | Unknown                               |
| Age            | 111                                   |
| Pressure       | 12 in water column                    |
| Ground PH      | 3 to 4                                |
| Pipe Condition | Significant Wall Loss/ Poor Condition |



# FY 2010

|                |                |
|----------------|----------------|
| Address        | 5-21 Winter St |
| Town           | Tilton         |
| Pipe Size      | 4"             |
| Install Date   | 1931           |
| Wall Thickness | Unknown        |
| Age            | 78             |
| Pressure       | 60 psig        |
| Ground PH      | 7              |
| Pipe Condition | Fair Condition |



# 2009 Bare Steel Replacement Reports



# FY 2009

|                |   |
|----------------|---|
| Address        | <b>Concord St</b>                         |
| Town           | <b>Concord</b>                            |
| Pipe Size      | <b>2"</b>                                 |
| Install Date   | <b>1953</b>                               |
| Wall Thickness | <b>0.166 in</b>                           |
| Age            | <b>55</b>                                 |
| Pressure       | <b>12 in water column</b>                 |
| Ground PH      | <b>7 to 8</b>                             |
| Pipe Condition | <b>Deep pitting/Significant wall loss</b> |



# FY 2009

|                |   |
|----------------|---|
| Address        | <b>2 Woodman St</b>                       |
| Town           | <b>Concord</b>                            |
| Pipe Size      | <b>1.5"</b>                               |
| Install Date   | <b>1929</b>                               |
| Wall Thickness | <b>0.130 in</b>                           |
| Age            | <b>79</b>                                 |
| Pressure       | <b>12 in water column</b>                 |
| Ground PH      | <b>7 to 8</b>                             |
| Pipe Condition | <b>Deep pitting/Significant wall loss</b> |



# FY 2009

|                |   |
|----------------|---|
| Address        | <b>Connell St</b>                         |
| Town           | <b>Hudson</b>                             |
| Pipe Size      | <b>2"</b>                                 |
| Install Date   | <b>1928</b>                               |
| Wall Thickness | <b>0.139 in</b>                           |
| Age            | <b>80</b>                                 |
| Pressure       | <b>12 in water column</b>                 |
| Ground PH      | <b>6 to 7</b>                             |
| Pipe Condition | <b>Deep pitting/Significant wall loss</b> |



# FY 2009

|                |                       |
|----------------|-----------------------|
| Address        | <b>Gloria Avenue</b>  |
| Town           | <b>Hudson</b>         |
| Pipe Size      | <b>2"</b>             |
| Install Date   | <b>1954</b>           |
| Wall Thickness | <b>0.148 in</b>       |
| Age            | <b>54</b>             |
| Pressure       | <b>60 psig</b>        |
| Ground PH      | <b>7 to 8</b>         |
| Pipe Condition | <b>Fair Condition</b> |



# FY 2009

|                |                    |
|----------------|--------------------|
| Address        | Library St         |
| Town           | Hudson             |
| Pipe Size      | 4"                 |
| Install Date   | 1908               |
| Wall Thickness | 0.234 in           |
| Age            | 100                |
| Pressure       | 12 in water column |
| Ground PH      | 6                  |
| Pipe Condition | Fair Condition     |





# FY 2009

|                |                           |
|----------------|---------------------------|
| Address        | Mulberry St               |
| Town           | Nashua                    |
| Pipe Size      | 2"                        |
| Install Date   | 1912                      |
| Wall Thickness | 0.124 in                  |
| Age            | 96                        |
| Pressure       | 12 in water column        |
| Ground PH      | 7 to 8                    |
| Pipe Condition | Concentrated Deep Pitting |



# FY 2009

|                |                                 |
|----------------|---------------------------------|
| Address        | Prescott St & Putnam St         |
| Town           | Nashua                          |
| Pipe Size      | 2"                              |
| Install Date   | 1924                            |
| Wall Thickness | Not Taken Due to Poor Condition |
| Age            | 84                              |
| Pressure       | 12 in water column              |
| Ground PH      | 6 to 7                          |
| Pipe Condition | Pipe Breakage and Pit Holes     |



# FY 2009

|                |                       |
|----------------|-----------------------|
| Address        | Reed Ct               |
| Town           | Nashua                |
| Pipe Size      | 2"                    |
| Install Date   | 1908                  |
| Wall Thickness | 0.121 in              |
| Age            | 100                   |
| Pressure       | 12 in water column    |
| Ground PH      | 6                     |
| Pipe Condition | Significant Wall Loss |



**SERVICE LIST - EMAIL ADDRESSES - DOCKET RELATED**

---

**Pursuant to N.H. Admin Rule Puc 203.11 (a) (1): Serve an electronic copy on each person identified on the service list.**

Executive.Director@puc.nh.gov  
al-azad.iqbal@puc.nh.gov  
amanda.noonan@puc.nh.gov  
brian.buckley@oca.nh.gov  
brian.frost@libertyutilities.com  
catherine.mcnamara@libertyutilities.com  
david.simek@libertyutilities.com  
james.brennan@oca.nh.gov  
jayson.laflamme@puc.nh.gov  
karen.sinville@libertyutilities.com  
lynn.fabrizio@puc.nh.gov  
maureen.karpf@libertyutilities.com  
michael.sheehan@libertyutilities.com  
ocalitigation@oca.nh.gov  
Paul.Kasper@puc.nh.gov  
pradip.chattopadhyay@oca.nh.gov  
randy.knepper@puc.nh.gov  
shawn.furey@libertyutilities.com  
Stephen.Hall@libertyutilities.com  
steve.frink@puc.nh.gov  
steven.mullen@libertyutilities.com

Docket #: 18-064-1      Printed: June 18, 2018

**FILING INSTRUCTIONS:**

**a) Pursuant to N.H. Admin Rule Puc 203.02 (a), with the exception of Discovery, file 7 copies, as well as an electronic copy, of all documents including cover letter with:**

DEBRA A HOWLAND  
EXECUTIVE DIRECTOR  
NHPUC  
21 S. FRUIT ST, SUITE 10  
CONCORD NH 03301-2429

**b) Serve an electronic copy with each person identified on the Commission's service list and with the Office of Consumer Advocate.**

**c) Serve a written copy on each person on the service list not able to receive electronic mail.**