



**STATE OF NEW HAMPSHIRE  
BEFORE THE  
PUBLIC UTILITIES COMMISSION**

Docket No. DE 19-XXX

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities  
Reliability Enhancement Program and Vegetation Management Program

Report for Calendar Year 2018

March 15, 2019

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1           **INTRODUCTION**

2           Liberty Utilities (Granite State Electric) Corp. (“Liberty” or the “Company”) hereby  
3           submits the results of the Reliability Enhancement Plan (“REP”) and Vegetation  
4           Management Plan (“VMP”) for the calendar year 2018 (“CY2018”). These results for  
5           the CY2018 Plan are submitted consistent with the requirements in Attachment F to the  
6           Settlement Agreement in Docket No. DE 13-063 (the “Settlement Agreement”) that was  
7           approved by the Commission in Order No. 25,638 (March 17, 2014) as amended by the  
8           Settlement Agreement in Docket No. DE 16-383 that was approved by the Commission  
9           in Order No. 26,005 (April 12, 2017). For ease of reference, a copy of Attachment F is  
10          included as Appendix 8 to this report. This report contains the following information:

- 11           1.    A comparison of actual to budgeted spending on operating and maintenance  
12           (“O&M”) activities related to the VMP in CY2018. Appendix 1, line 12, column  
13           (b) shows that total actual O&M spending that occurred during 2018 was  
14           \$2,422,443. As shown in column (b), the CY2018 O&M expenses, after taking  
15           into account credits for amounts from Consolidated Communications  
16           (“Consolidated”) of \$478,142, totaled \$1,994,301, or \$265,357 more than the  
17           budgeted amount of \$1,677,086.
- 18           2.    A comparison of actual investment to budgeted spending on capital projects for  
19           REP in CY2018. Appendix 2, line 7, column (d) shows that the total capital  
20           investment recorded on Granite State’s books in CY2018 was \$1,087,416<sup>1</sup>. This

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1           This investment includes \$433,290 associated with CY2017 capital projects that was not booked to plant until 2018 and is being included in the CY2018 rate adjustment.

1 actual investment is \$512,584 less than the budgeted amount of \$1,600,000  
2 primarily due largely to delays in Consolidated setting poles in the telephone pole  
3 set areas which delayed the completion of projects.

- 4 3. A request to recover \$1,944,301 of O&M costs. That amount consists of  
5 \$444,301 representing the CY2018 incremental O&M spending above the  
6 \$1,500,000 base amount. The recovery of costs calculation is provided for in the  
7 testimony of David Simek.
- 8 4. A request to recover \$247,919 of revenue associated with a total of \$1,087,416 in  
9 capital investment, split between two program years: CY2017 carryover; and  
10 CY2018; and
- 11 5. A summary of reliability performance for CY2018, and distribution feeder  
12 reliability performance for those that are part of the REP/VMP Plan.

13 The Company is submitting the joint testimony of Joel Rivera and Heather Green, which  
14 provides further information regarding the Company's actual O&M cost and capital  
15 investment made during CY2018. In addition, the testimony of David Simek addresses  
16 the Company's request for a net increase in distribution rates associated with the  
17 REP/VMP Adjustment Provision and the REP Capital Investment Allowance described  
18 above, and includes typical bill impacts.

19 **Section 1: CY2018 O&M Budget vs. Actual O&M Expenses for VMP**

20 The proposed operating and maintenance ("O&M") budget for VMP activities for  
21 CY2018 is shown in Appendix 1, line 12, column (a). Liberty initially proposed a budget  
22 of \$2,390,000 (or \$1,851,000 net after Consolidated credits). The final budget was

1 reduced at Staff's request. This reduced budget was a 9.9% reduction from the CY2017  
2 net costs after Consolidated credits, or \$1,677,086. Liberty Utilities subsequently  
3 submitted to Staff a proposed budget of \$2,157,086, which included \$480,000 that  
4 Liberty estimated it would bill to Consolidated for its share of the planned vegetation  
5 maintenance work. As shown on Appendix 1, line 14, column (a), those estimated  
6 reimbursements were excluded from the total amount of VMP O&M expenses to be  
7 recovered, resulting in an adjusted total VMP O&M expense budget of \$1,677,086.  
8 Subsequent to submitting the CY2017 budget to Staff in November 2016, the Base Plan  
9 O&M amount was increased to \$1,500,000 as part of the Settlement Agreement in  
10 Docket No. DE 16-383. With that revision, the CY2018 O&M budget was \$177,086  
11 above the base amount. The agreement the Company has with Consolidated allows for  
12 invoicing for completed work January through June in July and completed work July  
13 through December in January of the following year. The Company invoiced  
14 Consolidated \$478,142 (Appendix 1, line 13, column (b)) for CY2018 and has included  
15 that amount in calculating the REP/VMP Adjustment Factor.

16 As shown in Appendix 1, line 14, column (b), the Company's actual total spending level  
17 for CY2018 was \$1,994,301 for O&M activities related to the VMP, or \$265,357 more  
18 than the filed budgeted amount of \$1,677,086. Budget variances related to the total  
19 CY2018 VMP O&M spending are described below. In addition to Appendix 1, which  
20 shows total O&M expenses, Appendix 5 shows the actual VMP O&M expenses by  
21 month, while Appendix 4 contains the work plan of completed VMP O&M activities by  
22 feeder.

1 The Company completed all of the vegetation management work contained in its CY2018  
2 plan. Some of the spending variances are described below.

3 The Company spent \$23,841 less on work planning than anticipated. Some funds  
4 budgeted for work planning was used on tree removals. Additionally, time was also  
5 allocated to planning on capital projects and storm damage assessment.

6 Spot tree trimming was over spent \$4,812 due to higher than anticipated volume of  
7 electric service orders and customer calls.

8 The trouble and restoration budget is for unplanned work based on actual occurrence.  
9 Spending exceeded the budget by \$2,078 due to an increase in unplanned non-storm  
10 related trouble call volume and support of the overhead line department.

11 The Company spent the budgeted amount on planned cycle pruning. Two feeders, 18L1  
12 and 8L2 did not require vegetation work as one is predominantly underground and the  
13 other is owned by National Grid. Additionally, the number of recorded miles for the  
14 12L1 has been adjusted due to a feeder reconfiguration. The planned footprints of work  
15 remained the same.

16 In 2017, the Company received approval to accrue for invoices that were received at the  
17 end of the calendar year, but paid in the following year due to timing of the receipt of the  
18 invoices. The variance of \$46,569 in Appendix 1, line 5, is due to the accrual at the end  
19 of 2017 accounted for as \$295,567, rather than the actual invoiced amount of \$342,136.

1 The planned cycle pruning was on budget for 2018, but due to the variance in the accrual  
2 vs. actual invoices, the total amount on line 5 provides for a higher number than budget.

3 The Company spent \$112,083 more than anticipated for traffic control. Police detail  
4 costs from the Town of Salem and other police departments were considerably larger  
5 than the tree crew cost on a per mile basis. The Salem police are required for all work  
6 performed on all Salem streets. The trimming on the 12L1 circuit in Salem required a  
7 significantly higher number of traffic controller hours versus the previous trim on the  
8 feeder. While knowing that the costs increased for traffic control and police details, the  
9 Company could not reduce its trimming to accommodate the fact that those costs may  
10 come in higher than budgeted because the Company would then be out of compliance  
11 with the PUC rules. Additionally, the number of roads that are requiring traffic control  
12 have been increasing over the years. This has also put a strain on the budget.

13 The Company spent \$135,490 more than budgeted on hazard tree removals.  
14 Approximately half of the additional cost is due to tree removals identified in 2016 and  
15 2017 that were not removed in those VMP program years. Additional trees located in the  
16 clearance zone, as defined in Puc 307.10, and additional risk trees with a higher  
17 probability of failure resulting in a negative reliability impact were identified during the  
18 work planning process. The highest risk ranked trees with the highest potential to impact  
19 a large number of customers or trees that were a backlog of previous year's work were  
20 removed. The removals included both smaller diameter trees located in the clearance  
21 zone, which eliminates future work or addresses the health or structural conditions that

1 demonstrate higher risk to the electric corridor and its assets. We deferred the remaining  
2 outstanding marked tree removals.

3 Interim trimming is generally unplanned work. We underspent by \$321. We deferred  
4 any remaining work.

5 Tree planting was underspent by \$655. Priorities for reduction on spending to account  
6 for the increased spend on tree removals affected this line.

7 Sub-Transmission Right of Way sideline work was underspent by \$10,858. 2018 did not  
8 have planned Sub-Transmission Feeder work. This line was for unplanned work and spot  
9 work as needed. We experienced less than expected needs for this work. Additionally  
10 priorities for reduction on spending to account for the increased spend on tree removals  
11 affected this line.

12 **Section 2: CY2018 Capital Budget vs. Actual Capital Investment for REP**

13 The proposed Capital Investment budget for REP activities for 2018 is shown in  
14 Appendix 2, line 6, column (b). For calendar year 2018, Liberty proposed to spend  
15 \$1,600,000 on capital investments related to REP activities, including \$100,000 related to  
16 CY2017 carryover work (Appendix 2, line 5, column (b)). As discussed with  
17 Commission Staff, the capital budget included installation of one single-phase recloser  
18 and replacement of 3.65 miles of bare primary conductors. Details of the REP capital  
19 investment projects and costs are included in Appendix 3.

1 Single-phase reclosers target circuit segments that would realize reliability benefits from  
2 single phase tripping and reclosing and from isolating faults down to the smallest single  
3 phase segment possible. These devices are designed to interrupt circuit segments  
4 following a transient or temporary fault condition, and then automatically restore the  
5 segment after a short period to allow the fault to clear. These devices not only improve  
6 reliability of service, but also avoid the cost of dispatching a trouble shooter or line crew  
7 to replace the fuse.

8 A significant portion of this budget was targeted towards the re-conductoring of 3.65  
9 miles of bare mainline primary conductor with spacer cable in tree outage prone areas  
10 where it is too costly to rely on vegetation management practices alone to mitigate feeder  
11 lockouts. The application of spacer cable, a covered conductor resistant to tree related  
12 outages, significantly improves mainline circuit performance during windy and stormy  
13 conditions as well as affords protection against incidental tree-conductor contact at the  
14 end of the trim cycle and contact resulting from branches falling from above or outside  
15 the trim zone.

16 In Appendix 2, the Company provides the carryover capital investment from 2017 of  
17 \$433,290, as shown in Appendix 2, line 5, column (d). There are five projects that make  
18 up the carryover, but the largest piece is attributable to the Bare Conductor Replacement  
19 Project 14L2 - Mammoth Rd. In May 2017, Consolidated approved the Company's  
20 request for pole sets for this project. At the end of May, we reached out to their  
21 operations group requesting the pole installations be completed, and by August 2017, the  
22 poles still had not been set. In September 2017, Liberty requested an update on the pole

1 sets but did not receive a reply. The Company decided to notify Consolidated of its  
2 intent to complete Consolidated's pole installation responsibilities and commence our  
3 project to reconductor the lines. These delays and other delays, which include the major  
4 storm event experienced on Halloween weekend, prevented the project from being  
5 completed until February 2018. This project accounts for \$331,053 of work that was  
6 started in CY2017, but was not completed and placed in service until CY2018.

7 Another factor contributing to carryover is timing differences due to projects from the  
8 previous calendar year being placed into service in that calendar year, but not closed to  
9 plant in service until the following year as the Company provides for 90 days after a  
10 project is placed into service to allow for all charges to be processed. This can typically  
11 occur as capital work is performed, completed, invoiced to vendors, and processed  
12 through the accounting system. These projects (Appendix 3, lines 1, 2, 4, and 5, column  
13 (f), account for \$102,237 of charges being placed into service in CY2018 from work that  
14 was completed in CY2017.

15 As shown on line 4, column (c) of Appendix 2, the Company's total spending for  
16 CY2018 was \$654,126 for 2018 capital activities related to REP, or \$845,874 less than  
17 the filed budgeted amount for those projects of \$1,500,000.

18 Additional details of the variance in each of the CY2018 REP projects are provided  
19 below:

1        Single Phase Reclosing Applications: As shown in Appendix 2, line 2, column (c),  
2        CY2018 capital expenditures incurred for Single Phase Reclosing Installations amounted  
3        to \$0, or \$50,000 less than the proposed budget of \$50,000. The variance in this program  
4        was due to the installation of Single-Phase Recloser – Dutton Rd being started in  
5        CY2018, but not completed or placed into service until CY2019. These costs will be part  
6        of the CY2019 reconciliation report. The major factors for not completing this job in  
7        2018 were driven primarily by delays with setting a pole in a telephone set area and  
8        delays in receiving the equipment from the manufacturer.

9        Bare Conductor Replacement: As shown in Appendix 2, line 1, column (c), CY2018  
10       capital expenditures incurred for Bare Conductor Replacement amounted to \$654,126, or  
11       \$795,874 less than the proposed target of \$1,450,000. The variance in the Bare  
12       Conductor Replacement Program was due to the Bare Conductor Replacement – Route  
13       12 being started in CY2018, but not completed or placed into service until CY2019. The  
14       scope of this project was reduced to 1.5 miles from 2.65 and will be part of the CY2019  
15       reconciliation report.

16       The major factor for not completing this job in 2018 was driven by delays in setting poles  
17       in a telephone set area. On April 25, 2018, the Company’s design engineer contacted  
18       Consolidated’s engineers requesting pole sets for this project. On May 30, 2018,  
19       Consolidated’s engineer responded to the request noting that Consolidated has approved  
20       the project. On July 13, 2018, Liberty’s Engineering department notified its Legal  
21       department that Consolidated still had not started the job. Liberty’s Legal department  
22       reached out to Consolidated requesting that Liberty be allowed to set the poles and were

1 told that due to union labor agreements Liberty would not be permitted to set the poles.  
2 On September 5, 2018, the contractor hired by Consolidated to set the poles finally began  
3 work. Due to Consolidated's pole work being started in September, Liberty's contractor  
4 had not been able to start its work on the project. On October 3, 2018, Liberty met with  
5 its contractor for its preconstruction meeting to begin the project. On November 1, 2018,  
6 Liberty was notified that Consolidated has refused to have their contractor set four off-  
7 road poles due to not being able to access the poles via a landowner's property. By  
8 November 5, 2018, Liberty decided to hire its contractor to complete pole setting.  
9 Liberty's contractor started work on the project (less the poles with the property-owner  
10 issue) that should have started in the late spring. On November 26, 2018, the contractor  
11 Liberty hired to set the four poles set the poles by hand-digging and utilizing a crane.  
12 The pole sets were completed on December 4, 2018. There were approximately 55 pole  
13 sets required for this project. The work continued through December 31, 2018, and  
14 included framing the poles, installing and energizing new spacer cable wire for  
15 approximately 50% of the job, and completing transfers and removal of overhead  
16 equipment. After January 1, 2019, Liberty's contractor still had to frame the remaining  
17 poles, install new spacer cable wire for the remaining half of the job, energize the new  
18 wire, and complete the rest of the transfers and removals of overhead equipment for the  
19 remaining portion of the job. All of this was completed by February 28, 2019.

20 **Section 3: Reliability Results – Calendar Year 2018**

21 Consistent with Section VII.b within Attachment F of the Settlement Agreement,  
22 reliability metrics for CY2018 are presented in the table below based on both the PUC

1 Standard<sup>2</sup> for excluding major weather events and the IEEE Standard 1366<sup>3</sup> method for  
2 excluding major event days. The metrics presented on the next page also exclude  
3 transmission supply outages, planned or notified outages, and all other applicable  
4 exclusions<sup>4</sup>. The metrics include customers interrupted (“CI”), customer minutes  
5 interrupted (“CMI”), system average interruption frequency index (“SAIFI”), system  
6 average interruption duration index (“SAIDI”), customer average interruption duration  
7 index (CAIDI), and customers interrupted per interruption index (CIII).

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2 PUC Major Storm: [(CI >= 15 % of Customers Served and 30 concurrent events) or (45 concurrent events)], Using PUC criteria, ten days were excluded in Calendar Year 2018: March 7 – March 12, April 4 – April 5, April 16 – April 17.

3 IEEE Major Event Days: Using IEEE criteria, four days were excluded in Calendar Year 2018: March 7 – March 8, April 16, June 18.

4 Events that are excluded are those involving loss of supply from another utility, customer-owned facilities, fire or police emergency requests, load shedding, planned maintenance, events whose duration was 5 minutes or less and/or events which involve only one customer.

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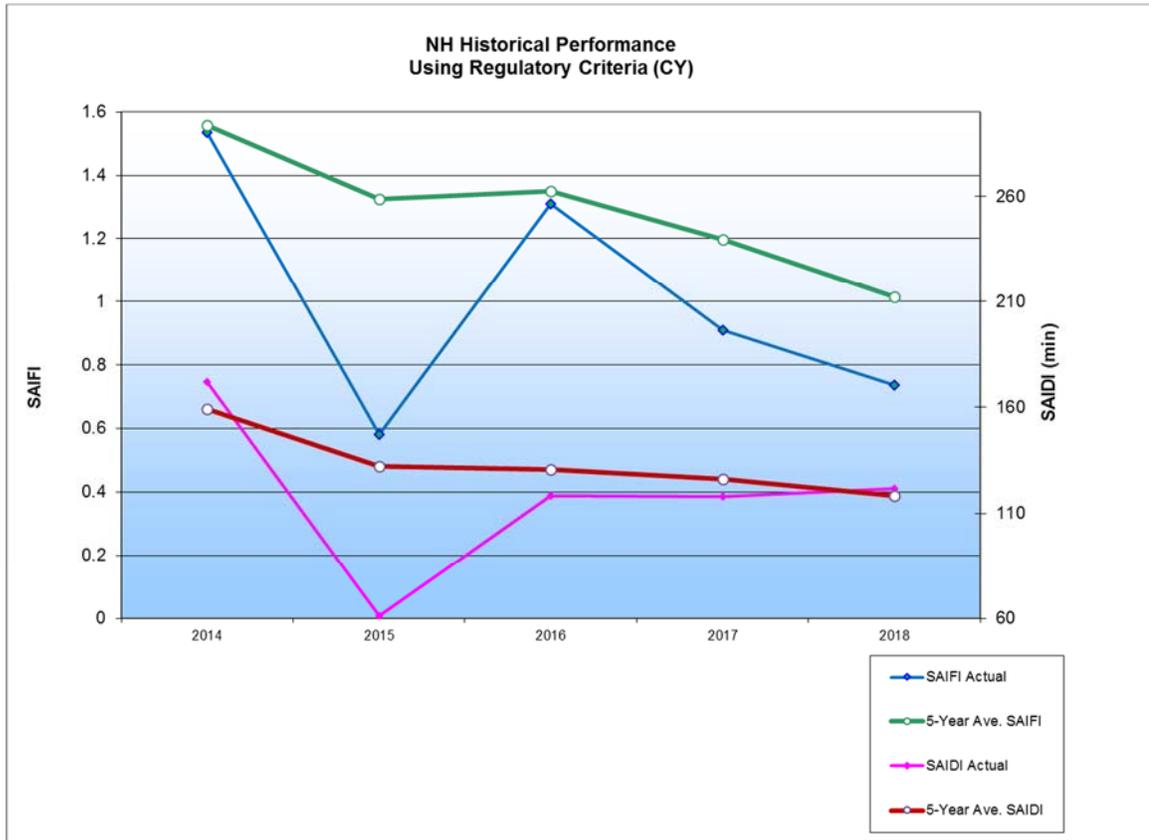
**Calendar Year 2018 Reliability Results**

<b>No Exclusions</b>									
Year	Events	Customers Interrupted	Customer Minutes Interrupted	Customers Served	SAIFI	SAIDI	CAIDI	CIII	
2018	972	82,403	50,151,750	44,284	1.8669	1141.724	608.62	84.78	
<b>Excludes Only IEEE Major Events</b>									
Year	Events	Customers Interrupted	Customer Minutes Interrupted	Customers Served	SAIFI	SAIDI	CAIDI	CIII	
2018	812	45,230	6,997,837	44,284	1.0202	158.073	154.72	55.70	
<b>Excludes Only PUC Major Events</b>									
Year	Events	Customers Interrupted	Customer Minutes Interrupted	Customers Served	SAIFI	SAIDI	CAIDI	CIII	
2018	717	45,156	6,325,222	44,284	1.0178	142.470	140.07	62.98	
<b>Excludes Only Loss of Supply by Other Utility or Transmission Outage</b>									
Year	Events	Customers Interrupted	Customer Minutes Interrupted	Customers Served	SAIFI	SAIDI	CAIDI	CIII	
2018	964	74,120	49,469,803	44,284	1.6804	1126.372	667.43	76.89	
<b>Excludes Only Planned Maintenance</b>									
Year	Events	Customers Interrupted	Customer Minutes Interrupted	Customers Served	SAIFI	SAIDI	CAIDI	CIII	
2018	885	81,608	50,056,529	44,284	1.8490	1139.570	613.38	92.21	
<b>All Exclusions: IEEE Major Events, loss of supply, transmission, planned maintenance, Load Shedding, Single Customer Outages, Fire/Police Request</b>									
Year	Events	Customers Interrupted	Customer Minutes Interrupted	Customers Served	SAIFI	SAIDI	CAIDI	CIII	
2018	601	34,528	6,516,245	44,284	0.7794	147.2275	188.72	57.45	
<b>All Exclusions: PUC MEDs, loss of supply, transmission, planned maintenance, Load Shedding, Single Customer Outages, Fire/Police Request</b>									
Year	Events	Customers Interrupted	Customer Minutes Interrupted	Customers Served	SAIFI	SAIDI	CAIDI	CIII	
2018	492	32,681	5,406,674	44,284	0.7371	121.786	165.44	66.42	

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**Calendar Year Historical Reliability Performance**



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As shown on the Calendar Year Historical Reliability Performance graph above, the SAIFI performance of 0.74 and the SAIDI performance of 121.79 for CY2018 continue on an improving, downward trend, with the 2018 SAIFI performance slightly better than that of 2014, 2016 and 2017. Calendar year 2015 was an exceptionally favorable year and the Company would not expect to consistently achieve that level of performance.

8

For 2018, there were two storm events that did not qualify as major events per the PUC Major Storm criteria, but yet had a significant impact on our reliability performance.

10

Between May 3–May 5, rain and wind impacted our service territory resulting in a SAIDI performance of 20.58 and a SAIFI performance of 0.046. Most notably on May 4, an F1

11

1 tornado hit Charlestown, Langdon, and South Acworth causing delays to complete  
2 restorations. Between June 18–June 19, rain and wind impacted our service territory  
3 resulting in a SAIDI performance of 13.83 and a SAIFI performance of 0.03. These two  
4 weather events made up 28% of the SAIDI and 10% of the SAIFI performance for  
5 CY2018. Mitigation measures, both inside and outside of the REP, were implemented in  
6 2018 to improve our reliability performance, specifically targeting radial and poor  
7 performing areas.

8 In summary, the Company met its SAIFI and SAIDI targets of 1.19 and 126.27 minutes,  
9 respectively, with actual results of 1.01 and 118.17, respectively, which are based on a  
10 five-year rolling average and are shown in Appendix 7. For the past four years, the  
11 Company has met all of its SAIFI and SAIDI targets. Some level of variability is to be  
12 expected in the year to year metrics, typically rooted in weather pattern changes. Liberty  
13 expects this overall positive performance in SAIFI and SAIDI to continue as further  
14 positive impacts from our reliability initiatives are experienced. A summary of historical  
15 reliability performance for distribution feeders that were part of the 2018 REP/VMP Plan  
16 are shown in the table below, which is the tabular data for the individual feeders. This  
17 same information is also provided in the charts below. As vegetation management was  
18 performed or reliability investments were installed on those feeders during 2018,  
19 improved reliability results would not yet be evident.

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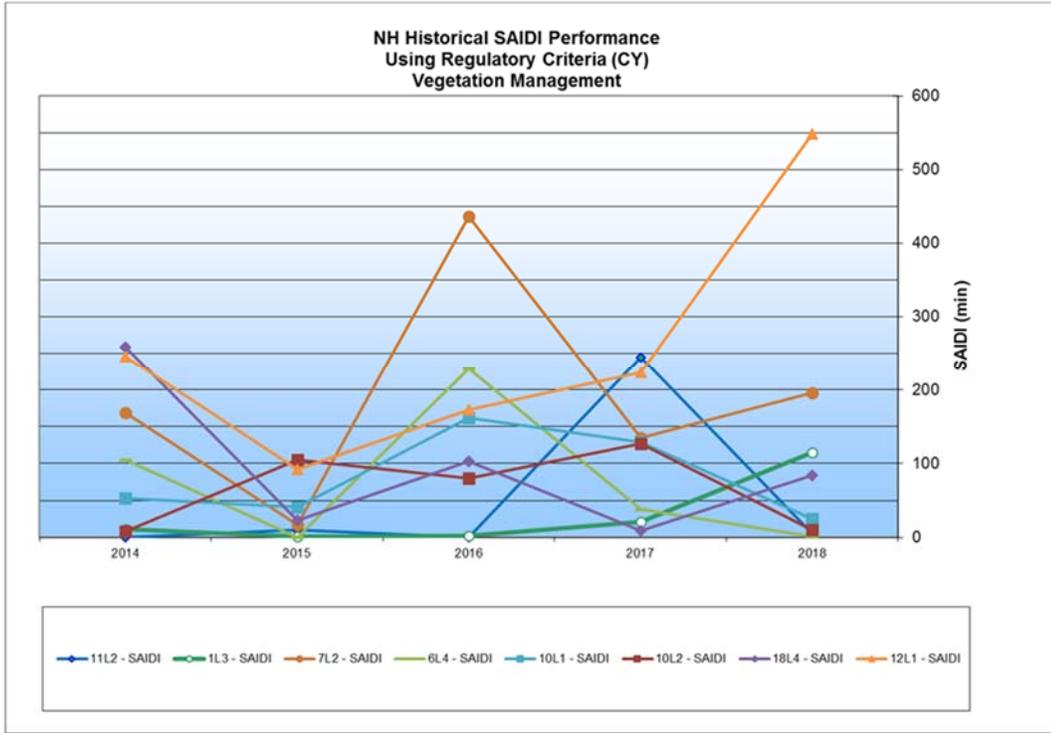
**Calendar Year Historical Reliability Performance – REP/VMP Program 2018**

Vegetation Management Program			Vegetation Management Program			Reliability Enhancement Program		
Feeder	cKAIDI	cKAIFI	Feeder	cKAIDI	cKAIFI	Feeder	cKAIDI	cKAIFI
<b>41-1112</b>			<b>42-1012</b>			<b>41-112</b>	<b>691.61</b>	<b>5.95</b>
2015	10.97	0.09	2014	7.89	0.13	2014	196.96	1.39
2017	244.37	1.99	2015	104.67	0.91	2015	27.73	0.23
2018	4.86	0.10	2016	80.41	1.16	2016	102.79	2.48
<b>41-113</b>			2017	127.91	0.79	2017	239.87	1.41
2014	11.15	0.08	2018	9.71	0.28	2018	44.34	0.28
2015	1.32	0.01	<b>42-1814</b>			<b>42-1411</b>	<b>580.21</b>	<b>4.95</b>
2016	1.72	0.03	2014	299.12	1.29	2014	129.93	1.91
2017	20.92	0.07	2015	22.89	0.10	2015	71.84	0.79
2018	114.90	0.87	2016	102.94	2.93	2016	193.91	1.18
<b>41-614</b>			2017	9.09	0.23	2017	126.29	1.93
2014	103.44	0.93	2018	84.35	1.17	2018	64.91	0.98
2016	228.66	0.94	<b>43-1211</b>			<b>43-1212</b>	<b>1547.68</b>	<b>8.55</b>
2017	37.96	0.03	2014	243.64	2.43	2014	138.84	1.32
2018	1.02	0.06	2015	91.48	0.92	2015	61.01	0.61
<b>41-712</b>			2016	179.13	1.83	2016	303.82	2.97
2014	169.26	1.97	2017	224.19	1.91	2017	384.79	1.83
2015	16.89	0.11	2018	348.80	1.13	2018	639.22	1.60
2016	436.23	3.44	<b>42-1811</b>					
2017	194.54	1.49	2014	52.97	1.92			
2018	193.98	1.38	2015	41.99	0.46			
			2016	162.91	1.62			
			2017	126.54	0.66			
			2018	23.37	0.20			

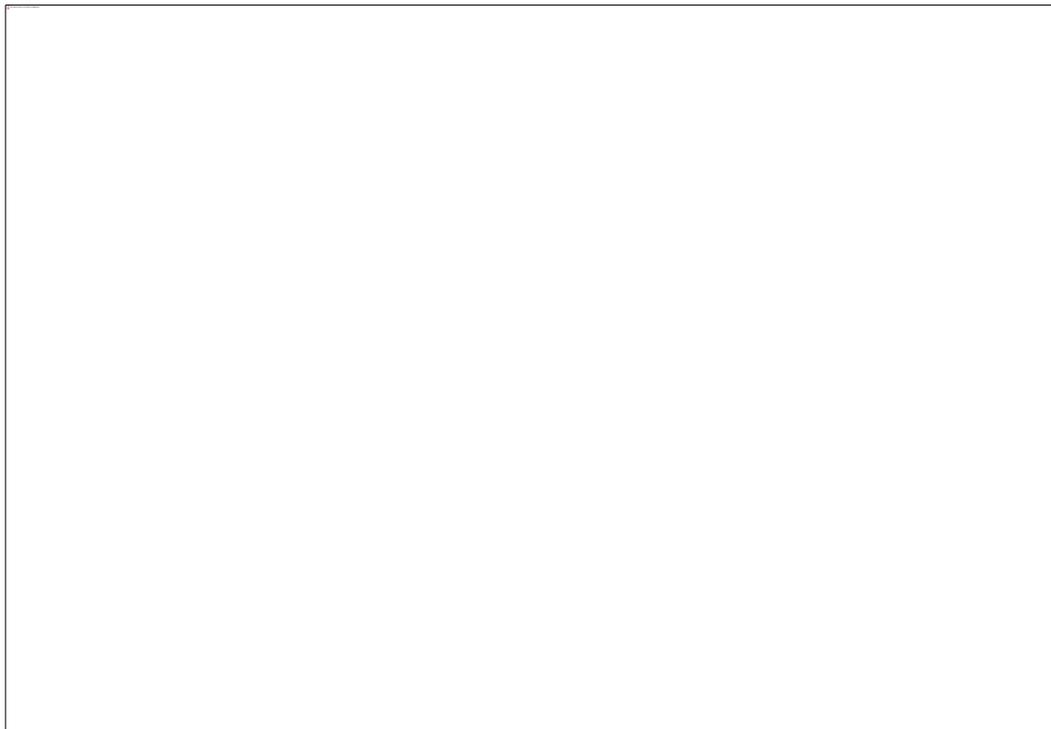
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**Calendar Year Historical Reliability Performance – Vegetation Management**



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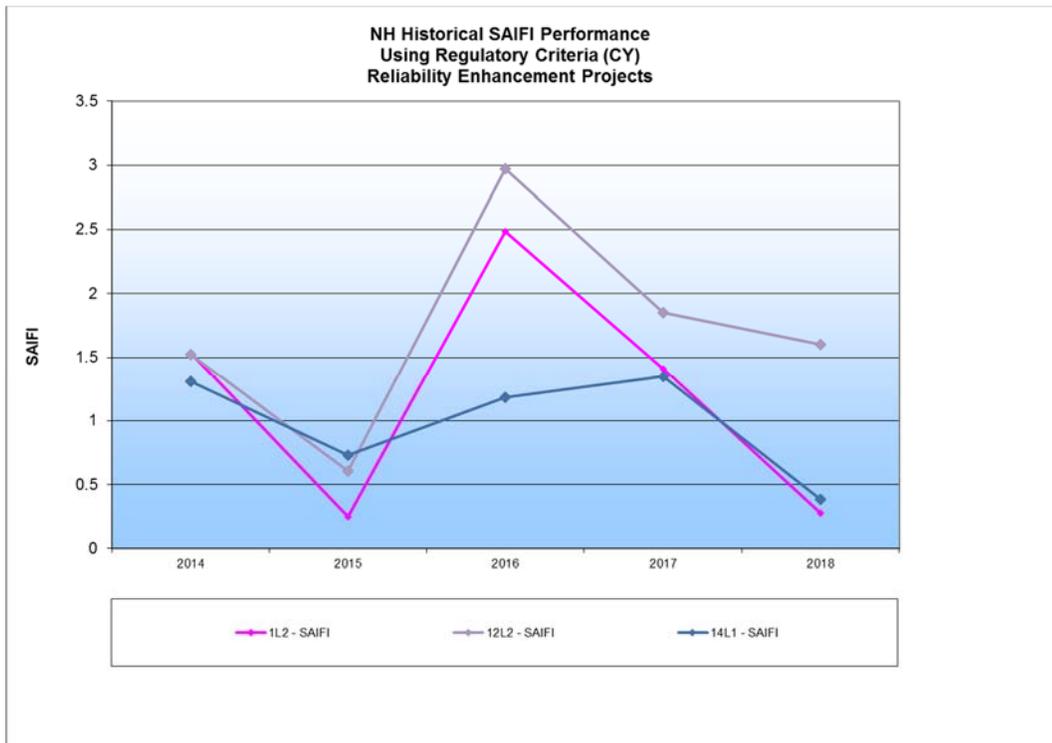
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**Calendar Year Historical Reliability Performance – Bare Replacement Program**



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