EVERSOURCE ENERGY

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April 28, 2017

Debra Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301-2429

RE: Docket Nos. DE 09-035; DE 14-238
Public Service Company of New Hampshire d/b/a Eversource Energy

Reliability Enhancement Program – Compliance Filing – GIS

Dear Director Howland:

On June 28, 2016, the Commission issued Order No. 25,913 in the above captioned docket. As part of that order, the Commission noted that Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource") had agreed to provide certain reports and information relating to its Reliability Enhancement Program ("REP"). Relevant to this submission, Eversource was to provide regular reports on the status of its Geographic Information System ("GIS") and the related Field Connectivity Survey.

Included with this submission is the report covering January to March 2017. Eversource will continue reporting regularly until at least May 1, 2017 or the date upon which the report will have final data on the completed Connectivity Project and no additional GIS-related charges are anticipated to REP, consistent with Order No. 25,913.

If you have any questions, please do not hesitate to contact me. Thank you for your assistance with this matter.

Very truly yours,

Matthew J. Fossum
Senior Counsel

Enclosure
CC: Service List – Docket Nos. DE 09-035, DE 14-238

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
D/B/A EVERSOURCE ENERGY

GEOGRAPHIC INFORMATION SYSTEM &
FIELD CONNECTIVITY SURVEY PROJECT
JANUARY 2017 – MARCH 2017
PROGRESS REPORT

April 28, 2017

For Submission to the New Hampshire Public Utilities Commission.

Table of Contents

1. Summary

In compliance with Order No. 25,913 issued by the New Hampshire Public Utilities Commission on June 28, 2016, beginning on August 1, 2016, and every three months thereafter, Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource") will "resume regular reporting on the status of its Geographic Information System (GIS) Project – the last report on which was submitted on December 17, 2013." *See* Order No. 25,913 at 4, and Exhibit 41 in Docket No. DE 09-035. The reports are to include descriptions of any additional work and charges to the original GIS Project, and incorporate the Company's GIS Connectivity Project.

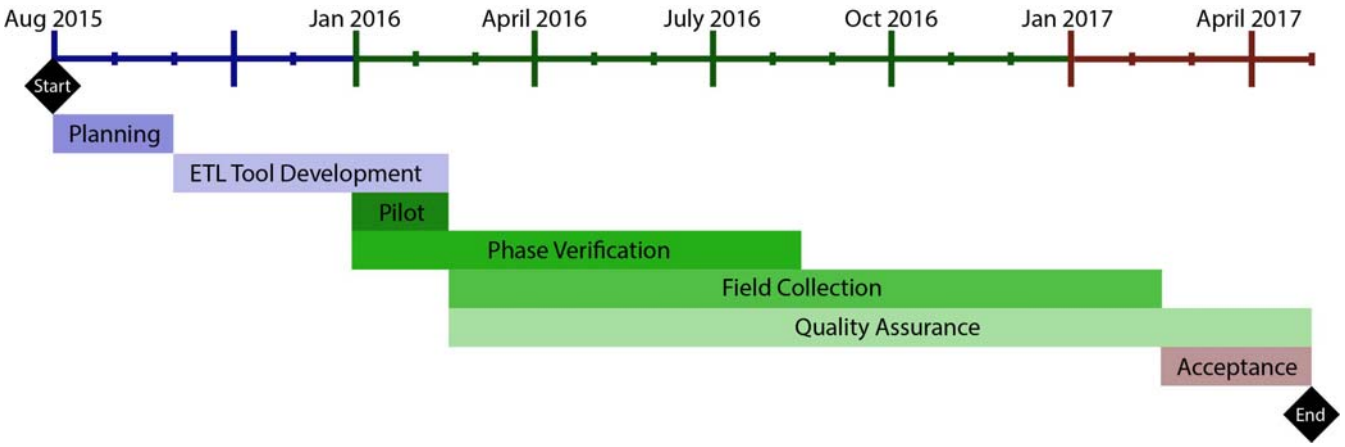
Eversource completed installation of a GIS in December 2013. In the December 17, 2013 final report to the Commission, Eversource stated, page 2, "It is however important to note that despite a high degree of correlation between the converted data and the original paper maps, supporting an OMS may require further data cleanup to ensure accuracy to the true field conditions." This paper-to-digital conversion included placement of 525,000 customers on over 13,000 miles of line. The primary data sources for this conversion were 5,000 manual maps of Eversource's distribution system along the road, and 1,000 profile mile sheets for distribution facilities in rights of way.

During the initial conversion, determining which customer was connected to which transformer data sources required the use of generic formulas, through which customers fed from an overhead unit were deemed connected in the GIS to the nearest transformer. In most instances such designations corresponded to the actual characteristics in the field. However, for some customers it is incorrect. Recognizing that correct customer connectivity is vital for optimal power restoration performance and reporting, Eversource began its Field Connectivity Survey as an extension of the GIS, and as contemplated in its December 2013 report. The increased accuracy following the Field Connectivity Survey significantly improves communication with customers, community leaders, media, and regulators during storms. Moreover, it will improve identification of fault locations and priorities for outage response, resulting in shorter outage durations and will provide better data to support post storm analysis and reporting. The Field Connectivity Survey includes: establishing GPS locations for all overhead transformers; phase validation for customer and transformer; validation of customer to overhead transformer connectivity; and correct association within GIS.

Figure 1 provides the overall project schedule.

Figure 1 – Eversource Connectivity Project Schedule and Milestones

Project is on schedule for completion by May 1, 2017



2. Progress through March 31, 2017

After issuance of a Request for Proposal (RFP) seeking the best qualified vendor to conduct a customer to transformer field connectivity survey, Eversource selected Utility Data Contractors ("UDC") as the project vendor for connectivity and data extract, transfer, and load ("ETL") development services. As part of the ETL process, UDC extracts Eversource GIS data and transfers it to their field devices, survey customer to transformer connectivity, and load corrected data back into Eversource's GIS platform to meet the requirements of the August 7, 2015 Scope of Work (SOW). Eversource continues to anticipate on schedule completion by May 1, 2017.

The following key milestones were achieved from January 2017 through the end of March 2017:

1. Quality Assurance / Quality Control (QA / QC) - The last four Deliveries: Rochester AWC, Tilton AWC, Portsmouth AWC, and Epping AWC, underwent QA /QC by both UDC and Eversource. All four received accuracy scores exceeding 98%.

2. Data Acceptance – Deliveries for the final four AWCs were accepted during this last reporting period: Rochester, Tilton, Portsmouth, and Epping. This completed all accepted deliveries to 14 AWC's. (See Table 1)

   "Accepted" means that a Delivery has been QA / QC'ed by Eversource with import and export quantities matching, circuit validation and integrity checks passing, and achieving at least a 98% accuracy score.

Table 1.

Production Milestone Report
Customer Connections

	Customer Connectivity Field Survey		
AWC	**Scheduled Completion Date**	**Completion date**	**% Complete**
Hooksett	08/22/2016	08/22/2016	100
Derry	10/12/2016	10/12/2016	100
Bedford	08/29/2016	09/19/2016	100
Lancaster	10/06/2016	09/30/2016	100
Berlin	10/28/2016	10/19/2016	100
Nashua	11/04/2016	11/04/2016	100
Milford	10/24/2016	11/16/2016	100
Chocorua	12/21/2016	12/01/2016	100
Keene	12/30/2016	12/21/2016	100
Newport	01/04/2017	12/23/2016	100
Rochester	02/10/2017	01/25/2017	100
Tilton	02/24/2017	02/24/2017	100
Portsmouth	03/14/2017	03/06/2017	100
Epping	03/16/2017	03/16/2017	100

Legend	Delayed	Caution	On Target	Ahead

3. Performance to Budget

Table 2 below, provides the project to date budget as of March 31, 2017

Table 2: Project to Date Budget to Actuals

(In Millions of Dollars)

	Budget*	Actuals	Variance
Capital	$5.10	$4.70	$0.40**
O&M	$0.00	$0.00	$0.00
Total	$5.10	$4.70	$0.40

* See January 31, 2017 project report for budget reconciliation.

** Reflects forthcoming $600,000 adjustment of an Unvouchered Liability in April.

Table 3 below, provides the total project cost and budget projection

Table 3: Total Project Cost and Budget Projection

(In Millions of Dollars)

	Budget	Projected	Variance
Capital	$5.10	$5.09	$0.01
O&M	$0.00	$0.00	$0.00
Total	$5.10	$5.09	$0.01

4. Upcoming Activities

Eversource will undertake the following activities in completing the project by May 1, 2017:

1. Project Acceptance – To formally "accept" the project, Eversource will validate the project as a whole, ensuring no connectivity issues exist between delivered data sets. Eversource will ensure stability of the surveyed data and perform circuit validation and continuity checks on the entirety of all the delivered data sets. After successful validation, Eversource will accept the vendor data sets as a whole from UDC by May 1, 2017.

2. Project Closeout – Eversource, in conjunction with UDC, will initiate and complete project data acceptance by May 1, 2017.

3. Data Stability – Eversource will verify and correct data issues outside the project scope discovered during the field connectivity survey. Example: verifying and GIS connecting, customers sourced in the field from pad mounted transformers that were connected to an overhead transformer in the GIS.

5. Survey Results.

Table 4 is a summary of total field corrections entered into the GIS system.

Table 4.

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	131,124	131,124	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	4,590	4%
(Single phase transformers locations			Transformer Bank on Wrong Pole	36,699	28%
as well as multiphase locations			Transformer Bank KVA Incorrect	8,031	6%
are counted as a transformer bank)			Transformer Bank not found	3,098	2%
			New Transformer bank found	4,659	4%
			Transformer Bank with no services	1,716	1%
			No Load Transformers	1,038	1%
Total number of ESP's	351,779	351,779	ESP in Wrong Location (needed to be moved)	178,935	51%
			New ESP found (added to GIS)	23,805	7%
Total number of Services	465,703	2,328,515	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	45,571	10%
			Service on Wrong Transformer	176,138	38%
			Service not in C2 (not found in C2 database)	2,796	1%
			Service at Wrong Address	56,438	12%
			New Service found (added to GIS)	2,796	1%
			ESP Visits Required	15,004	4%
			Meter Visits Required	23,966	5%
Total number of Poles with Tx or Secondary	276,236	552,472	Pole Ownership Incorrect	10,381	4%
Total number of secondary poles	73,131		Secondary Poles Added	8,524	12%
			Secondary Poles Removed	439	1%
			Number of Secondary Runs Added	201,938	N/A
Total Quanitity	1,224,842	3,363,890	Total Attributes Corrected	806,562	24%

Legend:

- Feature:
  Piece of equipment, infrastructure, or connection between equipment.

- Feature Quantity:
  Total count of specific features physically inspected during the field survey.

- Attribute Quantity:
  Attributes counts of all equipment, infrastructure, or connections physically inspected during the field survey.

- Attribute:
  A specific characteristic in GIS of a feature. Examples include transformer size or equipment location (circuit, phase, pole, address etc.)

- Attributes corrected in GIS: Attribute in GIS not matching field survey results. Correction made in GIS.

- % Incorrect:
  Percentage of attributes found incorrect out of the total number of attributes surveyed.

See Exhibit 1 for Attribute Detail Definitions.
See Exhibit 2 for details by Area Work Center.

6. Reliability Benefit

Table 5 cross references attributes to categories (i.e. Accurate Customer Count Per Outage) that improve reliability.

Table 5.

Reliability Benefit													
		Customer Placement	Eliminating Troubles	Quicker Response Time	Reduced Outage Time			Less Customers affected per trouble			Improved Communication		
					Prioritizing Outage Response			Strategy for Installing Additional Sectionalizing Devices					
	Attribute	Accurate Customer Count Per Outage	Remove Equipment	Accurate Location	Damage Assesment Priority	Dispatching Internal Crews	Decision to get Outside Resources	Recloser, switches, fuses	Distribution Automation Devices	Accurate reporting to Media, Munis, NH PUC	Accurate Customer Notifications
Surveyed equipment / connections	Transformer Bank on Wrong circuit	X		X	X	X	X	X	X	X	X
	Transformer Bank on Wrong Phase	X			X	X	X	X	X	X	X
	Transformer Bank on Wrong Pole	X		X	X	X	X	X	X	X	X
	Transformer Bank KVA Incorrect			X							
	Transformer Bank not found			X	X	X	X				X
	New Transformer bank found	X		X	X	X	X	X	X	X	X
	Transformer Bank with no services	X			X	X	X			X	X
	No Load Transformers		X								
	ESP in Wrong Location (needed to be moved)	X		X	X	X	X	X	X	X	X
	New ESP found (added to GIS)	X			X	X	X	X	X	X	X
	Service on Wrong Circuit	X		X	X	X	X	X	X	X	X
	Service on Wrong Phase	X			X	X	X	X	X	X	X
	Service on Wrong Transformer	X		X	X	X	X	X	X	X	X
	Service not in C2 (not found in C2 database)										X
	Service at Wrong Address			X							X
	New Service found (added to GIS)	X			X	X	X	X	X	X	X
	Pole Ownership Incorrect					X	X				
	Secondary Poles Added			X	X	X	X			X	
	Secondary Poles Removed			X	X	X	X			X	
	Number of Secondary Runs Added			X	X	X	X			X	

See Exhibit 3 for Attribute Detail Definitions

7. Conclusion

Last Quarter:

During this reporting period, Eversource completed delivery QA / QC and accepted four data Deliveries; bringing the project accepted total to fourteen. This completes data Delivery Acceptance. The project tracks to the schedule with an anticipated project completion date of May 1, 2017.

Project to Date:

806,562 attributes in the GIS did not match field survey results. An attribute is a specific characteristic in GIS of a: piece of equipment, infrastructure, or connection between equipment. Examples include transformer size or equipment location (circuit, phase, pole, address etc.). All 806,562 corrections have been made in GIS to match field survey results. This quantity was 24% of the 3,363,890 total attributes field surveyed. (See Table 2.)

For details of corrected attributes, see Section 5. Survey Results.

8. Exhibit 1

Overall:

- Transformer Bank: A single transformer or multiple transformers mounted on the same pole.
- ESP: An Electric Service Point is a parcel or location serving one or multiple customers. Examples include: Single family home, duplexes, apartment buildings.
- Service: A service corresponds to a single customer.

Table Definitions:

- Transformer Bank on Wrong Circuit: An overhead transformer bank mapped in GIS on one circuit, but found during the survey to be on a different circuit.
- Transformer Bank on Wrong Phase: An overhead transformer bank mapped in GIS to a particular phase, but found during the survey to be on a different phase.
- Transformer Bank on Wrong Pole: An overhead transformer bank mapped in GIS to a particular pole, but found during the survey to be on a different pole.
- Transformer Bank KVA Incorrect: The Transformer size in GIS did not match field survey results.
- Transformer Bank not Found: A bank that was mapped in GIS, but not existing in the field.
- New Transformer Bank Found: A bank found during the survey in the field, which was not mapped in GIS.
- Transformer Bank with no Services: A bank without any customers connected. These transformers do have connections to Eversource equipment or street lighting.
- No Load Transformers: A transformer bank without any connections whatsoever.
- ESP in Wrong Location: An ESP placed at the wrong address.
- New ESP Found (Added to GIS): An additional ESP found in the field that has been added to GIS.
- Service on Wrong Circuit: A service mapped in GIS on one circuit, but found during the survey to be on a different circuit.
- Service on Wrong Phase: A service mapped in GIS to a particular phase, but found during the survey to be on a different phase.
- Service on Wrong Transformer: Customer connected to the wrong source transformer
- Service not in C2: Meter in the field, but not in GIS from C2. This is due to timing of GIS AWC data extraction not being updated by C2 while the vendor survey's the AWC.

- Service at Wrong Address: Customer placed in incorrect parcel.
- New Service Found (Added to GIS): Additional customer added to GIS.
- ESP Visits Required: Parcel or location needing field verification due to customer address issues.
- Meter Visits Required: Customer meter needing field verification due to customer address issues.
- Pole Ownership Incorrect: Annotation of pole ownership incorrect or null in GIS.
- Secondary Pole Added: A pole with no primary conductor, only secondary or service conductor found in the field and added to GIS.
- Secondary Pole Removed: A pole with no primary conductor, only secondary or service conductor in GIS, but did not exist in the field.
- Number of Secondary Runs Added: The actual secondary and service path from the transformer to the customer added to GIS as a result of the field survey.

9. Exhibit 2

Hooksett AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	8,822	8,822	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	336	4%
(Single phase transformers locations			Transformer Bank on Wrong Pole	1,779	20%
as well as multiphase locations			Transformer Bank KVA Incorrect	315	4%
are counted as a transformer bank)			Transformer Bank not found	193	2%
			New Transformer bank found	209	2%
			Transformer Bank with no services	146	2%
			No Load Transformers	36	0%
Total number of ESP's	34,830	34,830	ESP in Wrong Location (needed to be moved)	13,834	40%
			New ESP found (added to GIS)	1,343	4%
Total number of Services	53,322	266,610	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	8,097	15%
			Service on Wrong Transformer	19,752	37%
			Service not in C2 (not found in C2 database)	110	0%
			Service at Wrong Address	7,505	14%
			New Service found (added to GIS)	110	0%
			ESP Visits Required	527	2%
			Meter Visits Required	661	1%
Total number of Poles with Tx or Secondary	19,918	39,836	Pole Ownership Incorrect	272	1%
Total number of secondary poles	4,631		Secondary Poles Added	649	14%
			Secondary Poles Removed	167	4%
			Number of Secondary Runs Added	15,003	N/A
All Features Checked	116,892	350,098	Total Attributes Corrected	71,044	20%

Bedford AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	14,932	14,932	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	350	2%
(Single phase transformers locations			Transformer Bank on Wrong Pole	2,274	15%
as well as multiphase locations			Transformer Bank KVA Incorrect	1,173	8%
are counted as a transformer bank)			Transformer Bank not found	343	2%
			New Transformer bank found	414	3%
			Transformer Bank with no services	163	1%
			No Load Transformers	52	0%
Total number of ESP's	33,561	33,561	ESP in Wrong Location (needed to be moved)	15,009	45%
			New ESP found (added to GIS)	1,892	6%
Total number of Services	46,402	232,010	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	4,068	9%
			Service on Wrong Transformer	16,595	36%
			Service not in C2 (not found in C2 database)	110	0%
			Service at Wrong Address	5,227	11%
			New Service found (added to GIS)	110	0%
			ESP Visits Required	960	3%
			Meter Visits Required	1,740	4%
Total number of Poles with Tx or Secondary	26,640	53,280	Pole Ownership Incorrect	524	2%
Total number of secondary poles	6,503		Secondary Poles Added	907	14%
			Secondary Poles Removed	43	1%
			Number of Secondary Runs Added	17,481	N/A
Total Quanitity	121,535	333,783	Total Attributes Corrected	69,435	21%

Derry AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	6,556	6,556	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	336	5%
(Single phase transformers locations			Transformer Bank on Wrong Pole	758	12%
as well as multiphase locations			Transformer Bank KVA Incorrect	501	8%
are counted as a transformer bank)			Transformer Bank not found	143	2%
			New Transformer bank found	177	3%
			Transformer Bank with no services	89	1%
			No Load Transformers	33	1%
Total number of ESP's	19,915	19,915	ESP in Wrong Location (needed to be moved)	9,907	50%
			New ESP found (added to GIS)	1,134	6%
Total number of Services	26,157	130,785	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	1,935	7%
			Service on Wrong Transformer	8,917	34%
			Service not in C2 (not found in C2 database)	99	0%
			Service at Wrong Address	3,413	13%
			New Service found (added to GIS)	99	0%
			ESP Visits Required	522	3%
			Meter Visits Required	821	3%
Total number of Poles with Tx or Secondary	13,897	27,794	Pole Ownership Incorrect	289	2%
Total number of secondary poles	3,350		Secondary Poles Added	278	8%
			Secondary Poles Removed	24	1%
			Number of Secondary Runs Added	10,607	N/A
Total Quanitity	66,525	185,050	Total Attributes Corrected	40,082	22%

Lancaster AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	6,621	6,621	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	173	3%
(Single phase transformers locations			Transformer Bank on Wrong Pole	2,323	35%
as well as multiphase locations			Transformer Bank KVA Incorrect	280	4%
are counted as a transformer bank)			Transformer Bank not found	120	2%
			New Transformer bank found	170	3%
			Transformer Bank with no services	88	1%
			No Load Transformers	95	1%
Total number of ESP's	13,209	13,209	ESP in Wrong Location (needed to be moved)	8,895	67%
			New ESP found (added to GIS)	1,324	10%
Total number of Services	16,161	80,805	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	1,314	8%
			Service on Wrong Transformer	6,012	37%
			Service not in C2 (not found in C2 database)	155	1%
			Service at Wrong Address	2,092	13%
			New Service found (added to GIS)	155	1%
			ESP Visits Required	1,093	8%
			Meter Visits Required	1,590	10%
Total number of Poles with Tx or Secondary	13,682	27,364	Pole Ownership Incorrect	485	4%
Total number of secondary poles	4,113		Secondary Poles Added	413	10%
			Secondary Poles Removed	6	0%
			Number of Secondary Runs Added	9,289	N/A
Total Quanitity	49,673	127,999	Total Attributes Corrected	36,072	28%

Nashua AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	9,089	9,089	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	473	5%
(Single phase transformers locations			Transformer Bank on Wrong Pole	2,327	26%
as well as multiphase locations			Transformer Bank KVA Incorrect	930	10%
are counted as a transformer bank)			Transformer Bank not found	219	2%
			New Transformer bank found	266	3%
			Transformer Bank with no services	198	2%
			No Load Transformers	41	0%
Total number of ESP's	38,517	38,517	ESP in Wrong Location (needed to be moved)	14,028	36%
			New ESP found (added to GIS)	1,451	4%
Total number of Services	50,721	253,605	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	5,380	11%
			Service on Wrong Transformer	19,766	39%
			Service not in C2 (not found in C2 database)	110	0%
			Service at Wrong Address	8,663	17%
			New Service found (added to GIS)	110	0%
			ESP Visits Required	823	2%
			Meter Visits Required	1,411	3%
Total number of Poles with Tx or Secondary	21,545	43,090	Pole Ownership Incorrect	419	2%
Total number of secondary poles	4,813		Secondary Poles Added	900	19%
			Secondary Poles Removed	54	1%
			Number of Secondary Runs Added	18,283	N/A
Total Quanitity	119,872	344,301	Total Attributes Corrected	75,852	22%

Berlin AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	2,654	2,654	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	122	5%
(Single phase transformers locations			Transformer Bank on Wrong Pole	922	35%
as well as multiphase locations			Transformer Bank KVA Incorrect	9	0%
are counted as a transformer bank)			Transformer Bank not found	70	3%
			New Transformer bank found	58	2%
			Transformer Bank with no services	49	2%
			No Load Transformers	32	1%
Total number of ESP's	8,113	8,113	ESP in Wrong Location (needed to be moved)	4,705	58%
			New ESP found (added to GIS)	548	7%
Total number of Services	10,615	53,075	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	1,330	13%
			Service on Wrong Transformer	3,980	37%
			Service not in C2 (not found in C2 database)	136	1%
			Service at Wrong Address	983	9%
			New Service found (added to GIS)	136	1%
			ESP Visits Required	723	9%
			Meter Visits Required	1,043	10%
Total number of Poles with Tx or Secondary	6,773	13,546	Pole Ownership Incorrect	230	3%
Total number of secondary poles	2,075		Secondary Poles Added	201	10%
			Secondary Poles Removed	4	0%
			Number of Secondary Runs Added	6,005	N/A
Total Quanitity	28,155	77,388	Total Attributes Corrected	21,286	28%

Milford AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	6,983	6,983	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	194	3%
(Single phase transformers locations			Transformer Bank on Wrong Pole	1,569	22%
as well as multiphase locations			Transformer Bank KVA Incorrect	442	6%
are counted as a transformer bank)			Transformer Bank not found	107	2%
			New Transformer bank found	148	2%
			Transformer Bank with no services	79	1%
			No Load Transformers	54	1%
Total number of ESP's	14,982	14,982	ESP in Wrong Location (needed to be moved)	7,213	48%
			New ESP found (added to GIS)	963	6%
Total number of Services	19,397	96,985	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	1,459	8%
			Service on Wrong Transformer	7,235	37%
			Service not in C2 (not found in C2 database)	61	0%
			Service at Wrong Address	2,112	11%
			New Service found (added to GIS)	61	0%
			ESP Visits Required	704	5%
			Meter Visits Required	1,285	7%
Total number of Poles with Tx or Secondary	13,222	26,444	Pole Ownership Incorrect	219	2%
Total number of secondary poles	3,268		Secondary Poles Added	403	12%
			Secondary Poles Removed	26	1%
			Number of Secondary Runs Added	9,189	N/A
Total Quanitity	54,584	145,394	Total Attributes Corrected	33,523	23%

Chocorua

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	7,366	7,366	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	180	2%
(Single phase transformers locations			Transformer Bank on Wrong Pole	3,551	48%
as well as multiphase locations			Transformer Bank KVA Incorrect	698	9%
are counted as a transformer bank)			Transformer Bank not found	230	3%
			New Transformer bank found	320	4%
			Transformer Bank with no services	81	1%
			No Load Transformers	123	2%
Total number of ESP's	14,793	14,793	ESP in Wrong Location (needed to be moved)	9,694	66%
			New ESP found (added to GIS)	2,145	15%
Total number of Services	17,799	88,995	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	729	4%
			Service on Wrong Transformer	7,787	44%
			Service not in C2 (not found in C2 database)	379	2%
			Service at Wrong Address	3,418	19%
			New Service found (added to GIS)	379	2%
			ESP Visits Required	1,548	10%
			Meter Visits Required	2,414	14%
Total number of Poles with Tx or Secondary	15,112	30,224	Pole Ownership Incorrect	616	4%
Total number of secondary poles	4,706		Secondary Poles Added	445	9%
			Secondary Poles Removed	13	0%
			Number of Secondary Runs Added	8,819	N/A
Total Quanitity	55,070	141,378	Total Attributes Corrected	43,569	31%

Newport AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	9,785	9,785	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	346	4%
(Single phase transformers locations			Transformer Bank on Wrong Pole	2,290	23%
as well as multiphase locations			Transformer Bank KVA Incorrect	508	5%
are counted as a transformer bank)			Transformer Bank not found	144	1%
			New Transformer bank found	151	2%
			Transformer Bank with no services	92	1%
			No Load Transformers	44	0%
Total number of ESP's	19,998	19,998	ESP in Wrong Location (needed to be moved	10,854	54%
			New ESP found (added to GIS)	1,279	6%
Total number of Services	25,902	129,510	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	2,110	8%
			Service on Wrong Transformer	8,753	34%
			Service not in C2 (not found in C2 database)	116	0%
			Service at Wrong Address	2,465	10%
			New Service found (added to GIS)	116	0%
			ESP Visits Required	705	4%
			Meter Visits Required	978	4%
Total number of Poles with Tx or Secondary	17,419	34,838	Pole Ownership Incorrect	1,670	10%
Total number of secondary poles	4,421		Secondary Poles Added	519	12%
			Secondary Poles Removed	9	0%
			Number of Secondary Runs Added	12,269	N/A
Total Quanitity	73,104	194,131	Total Attributes Corrected	45,418	23%

Keene AWC

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	21,565	21,565	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	622	3%
(Single phase transformers locations			Transformer Bank on Wrong Pole	5970	28%
as well as multiphase locations			Transformer Bank KVA Incorrect	522	2%
are counted as a transformer bank)			Transformer Bank not found	551	3%
			New Transformer bank found	1359	6%
			Transformer Bank with no services	232	1%
			No Load Transformers	182	1%
Total number of ESP's	42,741	42,741	ESP in Wrong Location (needed to be moved)	23188	54%
			New ESP found (added to GIS)	2969	7%
Total number of Services	56,462	282,310	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	3730	7%
			Service on Wrong Transformer	20136	36%
			Service not in C2 (not found in C2 database)	246	0%
			Service at Wrong Address	6033	11%
			New Service found (added to GIS)	246	0%
			ESP Visits Required	1957	5%
			Meter Visits Required	3202	6%
Total number of Poles with Tx or Secondary	37,475	74,950	Pole Ownership Incorrect	1104	3%
Total number of secondary poles	8,802		Secondary Poles Added	1236	14%
			Secondary Poles Removed	39	0%
			Number of Secondary Runs Added	22128	N/A
Total Quanitity	158,243	421,566	Total Attributes Corrected	95,652	23%

Rochester

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	10,965	10,965	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	504	5%
(Single phase transformers locations			Transformer Bank on Wrong Pole	3,895	36%
as well as multiphase locations			Transformer Bank KVA Incorrect	855	8%
are counted as a transformer bank)			Transformer Bank not found	393	4%
			New Transformer bank found	485	4%
			Transformer Bank with no services	157	1%
			No Load Transformers	85	1%
Total number of ESP's	38,424	38,424	ESP in Wrong Location (needed to be moved)	19,235	50%
			New ESP found (added to GIS)	2,651	7%
Total number of Services	48,411	242,055	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	6,223	13%
			Service on Wrong Transformer	20,564	42%
			Service not in C2 (not found in C2 database)	624	1%
			Service at Wrong Address	787	2%
			New Service found (added to GIS)	624	1%
			ESP Visits Required	1,706	4%
			Meter Visits Required	2,805	6%
Total number of Poles with Tx or Secondary	27,779	55,558	Pole Ownership Incorrect	959	3%
Total number of secondary poles	8,004		Secondary Poles Added	795	10%
			Secondary Poles Removed	24	0%
			Number of Secondary Runs Added	23,096	N/A
Total Quanitity	125,579	347,002	Total Attributes Corrected	86,467	25%

Tilton

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	15,187	15,187	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	432	3%
(Single phase transformers locations			Transformer Bank on Wrong Pole	5,544	37%
as well as multiphase locations			Transformer Bank KVA Incorrect	1,149	8%
are counted as a transformer bank)			Transformer Bank not found	317	2%
			New Transformer bank found	511	3%
			Transformer Bank with no services	159	1%
			No Load Transformers	132	1%
Total number of ESP's	38,464	38,464	ESP in Wrong Location (needed to be moved)	22,836	59%
			New ESP found (added to GIS)	3,277	9%
Total number of Services	48,655	243,275	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	3,730	8%
			Service on Wrong Transformer	17,857	37%
			Service not in C2 (not found in C2 database)	249	1%
			Service at Wrong Address	6,786	14%
			New Service found (added to GIS)	249	1%
			ESP Visits Required	1,967	5%
			Meter Visits Required	3,317	7%
Total number of Poles with Tx or Secondary	34,478	68,956	Pole Ownership Incorrect	2,658	8%
Total number of secondary poles	10,221		Secondary Poles Added	928	9%
			Secondary Poles Removed	17	0%
			Number of Secondary Runs Added	25,630	N/A
Total Quanitity	136,784	365,882	Total Attributes Corrected	97,745	27%

Portsmouth

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	3,292	3,292	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	295	9%
(Single phase transformers locations			Transformer Bank on Wrong Pole	1,027	31%
as well as multiphase locations			Transformer Bank KVA Incorrect	219	7%
are counted as a transformer bank)			Transformer Bank not found	136	4%
			New Transformer bank found	96	3%
			Transformer Bank with no services	91	3%
			No Load Transformers	42	1%
Total number of ESP's	13,832	13,832	ESP in Wrong Location (needed to be moved)	6,657	48%
			New ESP found (added to GIS)	1,171	8%
Total number of Services	19,761	98,805	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	3,262	17%
			Service on Wrong Transformer	9,035	46%
			Service not in C2 (not found in C2 database)	203	1%
			Service at Wrong Address	3,144	16%
			New Service found (added to GIS)	203	1%
			ESP Visits Required	783	6%
			Meter Visits Required	1,136	6%
Total number of Poles with Tx or Secondary	9,117	18,234	Pole Ownership Incorrect	382	4%
Total number of secondary poles	2,469		Secondary Poles Added	324	13%
			Secondary Poles Removed	6	0%
			Number of Secondary Runs Added	8,909	N/A
Total Quanitity	46,002	134,163	Total Attributes Corrected	37,121	28%

Epping

Feature	Feature Quantity	Attribute Quantity	Attribute	Attributes corrected in GIS	% incorrect
Total number of OH Transformer Banks	7,307	7,307	Transformer Bank on Wrong circuit	N/A	N/A
			Transformer Bank on Wrong Phase	227	3%
(Single phase transformers locations			Transformer Bank on Wrong Pole	2,470	34%
as well as multiphase locations			Transformer Bank KVA Incorrect	430	6%
are counted as a transformer bank)			Transformer Bank not found	132	2%
			New Transformer bank found	295	4%
			Transformer Bank with no services	92	1%
			No Load Transformers	87	1%
Total number of ESP's	20,400	20,400	ESP in Wrong Location (needed to be moved)	12,880	63%
			New ESP found (added to GIS)	1,658	8%
Total number of Services	25,938	129,690	Service on Wrong Circuit	N/A	N/A
(Service corresponds to an individual customer)			Service on Wrong Phase	2,204	8%
			Service on Wrong Transformer	9,749	38%
			Service not in C2 (not found in C2 database)	198	1%
			Service at Wrong Address	3,810	15%
			New Service found (added to GIS)	198	1%
			ESP Visits Required	986	5%
			Meter Visits Required	1,563	6%
Total number of Poles with Tx or Secondary	19,179	38,358	Pole Ownership Incorrect	554	3%
Total number of secondary poles	5,755		Secondary Poles Added	526	9%
			Secondary Poles Removed	7	0%
			Number of Secondary Runs Added	15,230	N/A
Total Quanitity	72,824	195,755	Total Attributes Corrected	53,296	27%

10. Exhibit 3

- Attribute: A specific characteristic in GIS of a: piece of equipment, infrastructure, or connection between equipment. Examples include transformer size or equipment location (circuit, phase, pole, address etc.)

If checked in Table 5, the field survey positively impacts reliability in the following categories:

- Customer Placement: Accurate matching customer placement between GIS and the Field.
- Accurate Customer Count per Outage: Improving customer counts grouped to outage.
- Remove Equipment: Infrastructure identified by the field survey that can be removed from service, eliminating the possibility of the equipment causing an outage.
- Quicker Response Time: The ability to expedite resources to trouble / outage locations.
- Accurate Location: Determining the correct actual field location for the source of an outage or trouble.
- Prioritizing Outage Response: Direct company resources first to the troubles impacting the greatest number of customers.
- Damage Assessment Priority: Improve prioritizing storm impact to company infrastructure by accurately tabulating the number of customers affected per outage.
- Dispatching Internal Crews: Prioritizing Line Crew resources to storm troubles with the greatest number of customers affected, by accurately tabulating the number of customers per outage.
- Decision to get Outside Resources: Accurate trouble and outage numbers to project the need for outside assistance.
- Strategy for Installing Additional Sectionalizing Services: Reduces number of customers affected per trouble.
- Reclosers, Switches, Fuses: Sectionalizing devices without remote control.
- Distribution Automation Devices: Sectionalizing devices with remote control from, and the ability to send data to the System Operations Center.
- Accurate Reporting to Media, Munis, NH PUC: Give high confidence level data to outside entities regarding number of customers affected and projected restoration times.
- Accurate Customer Notifications: Give high confidence level data to specific customers regarding outage restoration time.