

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

**GEOGRAPHIC INFORMATION SYSTEM &  
FIELD CONNECTIVITY SURVEY PROJECT  
AUGUST 2015 – JULY 2016 PROGRESS  
REPORT**

**August 2, 2016**

*For Submission to the New Hampshire Public Utilities Commission.*

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## 1. Summary

In compliance with Order No. 25,913 issued by the New Hampshire Public Utilities Commission on June 28, 2016, beginning on or around 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 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 Eversource’s 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 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, 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 will significantly improve 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 it 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.

The \$3.9 million capital investment project (internal and external costs) for the Field Connectivity Survey is funded through the Reliability Enhancement Program (“REP”). The \$3.9 million is composed of \$2.1 million in vendor costs and \$1.8 million in internal costs.

The internal \$1.8M costs include: Project Management, Field and GIS Quality Assurance / Quality Control, and Eversource IT Support. Figure 1 provides the overall project schedule.

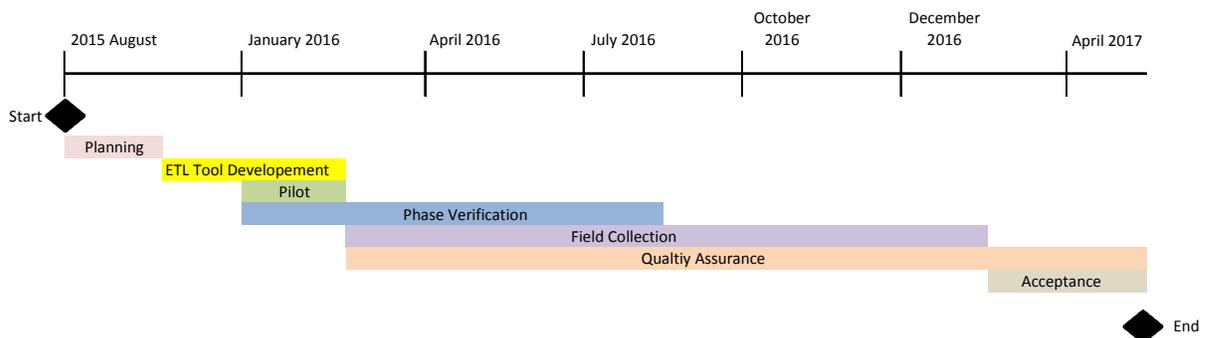


Figure 1: Eversource Connectivity Project Schedule and Milestones

## 2. Progress

After issuance of a Request for Proposal (RFP) seeking a highly-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, surveys customer to transformer connectivity, and loads corrected data back into Eversource’s GIS platform. Eversource continues to anticipate on schedule completion by May 1, 2017.

The following key milestones were achieved from the August 2015 project inception through the end of July 2016:

1. ETL Tool Development – A GIS data Extract, Transfer, and Load tool developed by UDC and tested by Eversource was completed and deployed for project use.
2. Pilot Delivery and Acceptance - A pilot project covering a service area of three circuits in Manchester, Dunbarton, and Litchfield, NH was identified. The pilot provided a large scale demonstration of the vendor’s capabilities under varied demographic conditions: rural, suburban, and urban. Data sources for the pilot conversion included: overhead and underground circuit maps, circuits in rights of way, substation configuration, pole records, transformer records, and customer location information. Pilot data was delivered on January 11, 2016, and was then reviewed by Eversource and accepted on January 28, 2016. Analysis of the pilot was integrated by the UDC field production team to improve its data quality in capturing field information.
3. Mobilization of Production Team – Eversource staffed, equipped and trained a quality review and acceptance team to evaluate and review quality for acceptance of the circuit and field data.
4. Field Survey Underway – Survey of two production areas: Hooksett AWC, and Bedford AWC, are underway. These two deliveries are undergoing Quality Assurance / Quality Control (QA / QC) by both UDC and Eversource. Surveying of six additional AWCs has begun (Milford, Keene, Nashua, Derry, Lancaster, and Berlin). See Exhibits A and B for a detailed schedule.
5. Phasing Survey Completed – Phasing surveys for Hooksett, Derry, Bedford, Lancaster, Berlin, Nashua, Milford, Chocorua, Keene, Newport, Rochester, and Tilton have been completed.

## 3. Performance to Budget

Table 1, below, provides the budget to actuals of the project as of July 25, 2016

<u>Project to Date</u>		
<u>(In Millions)</u>	<u>Budget</u>	<u>Actuals</u>
Capital	\$3.9	\$1.1
O&M	\$0	\$0
<b>Total</b>	<b>\$3.9</b>	<b>\$1.1</b>

Table 1: Budget to Actuals

#### **4. Upcoming Activities**

Over the course of the next three months, Eversource will undertake the following activities (all references are to AWC areas):

1. Complete Field Survey – Eversource, in conjunction with UDC, will complete field surveying in Hooksett, Derry, Bedford, Lancaster, Berlin, Nashua, Milford, Chocorua, and Keene.
2. Start Field Survey – Eversource, in conjunction with UDC, will start field surveying in Newport, Rochester, Tilton, Portsmouth, and Epping.
3. Complete Phasing Survey – Eversource, in conjunction with UDC, will complete phasing surveying in Portsmouth and Epping.

#### **5. Conclusion**

During this reporting period, Eversource completed the surveying and conversion of a pilot data set. The pilot's success demonstrated the vendor not only understood Eversource's data, but also that the vendor's work processes were able to handle the scope and volume of the conversion. An ETL tool has been successfully developed, tested, and deployed by the vendor in support of production activities. Eversource has also developed project processes for QA / QC, ensuring vendor accuracy. In summary, the project tracks to the schedule and budget reported, with an anticipated project completion date prior to May 1, 2017.

# Production Milestone Report – Phasing

as of 7/25/16

AWC	Phase Verification		
	Scheduled Completion Date	Actual Delivery Date	% Complete
Hooksett	03/03/2016	02/19/2016	100
Derry	04/01/2016	03/16/2016	100
Bedford	04/01/2016	03/07/2016	100
Lancaster	04/22/2016	04/05/2016	100
Berlin	05/13/2016	04/29/2016	100
Nashua	04/22/2016	03/30/2016	100
Milford	04/29/2016	04/13/2016	100
Chocorua	05/27/2016	05/13/2016	100
Keene	05/13/2016	05/02/2016	100
Newport	05/20/2016	05/05/2016	100
Rochester	06/20/2016	06/05/2016	100
Tilton	08/09/2016	07/25/2016	100
Portsmouth	08/19/2016		95
Epping	09/02/2016		7

Legend

Delayed

Caution

On Target

Ahead

Exhibit A

# Production Milestone Report

## Customer Connections as of 7/25/16

	<b>Customer Connectivity Field Survey</b>		
<b>AWC</b>	<b>Start Date</b>	<b>Completion Date</b>	<b>% Complete</b>
Hooksett	03/04/2016	08/22/2016	86
Derry	04/27/2016	09/02/2016	35
Bedford	04/01/2016	09/19/2016	56
Lancaster	05/04/2016	09/30/2016	38
Berlin	06/07/2016	10/19/2016	19
Nashua	05/12/2016	11/04/2016	21
Milford	06/23/2016	11/16/2016	5
Chocorua	06/30/2016	12/01/2016	8
Keene	07/15/2016	12/21/2016	2
Newport	08/11/2016	12/23/2016	
Rochester	08/25/2016	01/25/2017	
Tilton	09/16/2016	02/24/2017	
Portsmouth	10/14/2016	03/06/2017	
Epping	10/25/2016	03/16/2017	

Legend

Delayed

Caution

On Target

Ahead

Exhibit B