



**Public Service
of New Hampshire**

The Northeast Utilities System

PUBLIC SERVICE OF NEW HAMPSHIRE

**DISTRIBUTION
GEOGRAPHIC INFORMATION SYSTEM
JANUARY – JUNE 2012 PROGRESS REPORT**

June 28, 2012

For Submission to the New Hampshire Public Utilities Commission.

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1. Summary

The settlement agreement approved by the Commission in PSNH's distribution rate case (Docket No. DE 09-035) required the implementation of a Geographic Information System (GIS) in order to support an Outage Management System (OMS):

6.3 Upon approval of the Settlement Agreement, PSNH will initiate and complete a High Level Design for the GIS project by July 1, 2011. The High Level Design will include project management details sufficient to establish milestones, base schedules, budget expenditures, and the vendor selection. PSNH commits to install and have operational those elements identified in accordance with the schedule established in the High Level Design by December 31, 2014. On a semi-annual calendar year basis commencing on July 1, 2011, PSNH will provide a progress report to the Settling Parties detailing project milestones and achievements for the prior 6-month project period. Additionally, the semi-annual reports shall include key project dates for the remainder of the project, comparison of capital and O&M expenditures to planned REP II budget amounts and a detailed definition of tasks for the upcoming 6-month and 12-month periods. The High Level Design will also incorporate design of a GIS-based Outage Management System (OMS), including an implementation schedule. Prior to the implementation of a GIS-based OMS, PSNH will continue to implement enhancements to its existing OMS that will provide improved outage restoration information to customers, state officials and the general public.

In support of this settlement, a multi-phase GIS project was established. Figure 1 represents the deployment schedule as presented to the PUC in the High Level Design submitted in July, 2011.

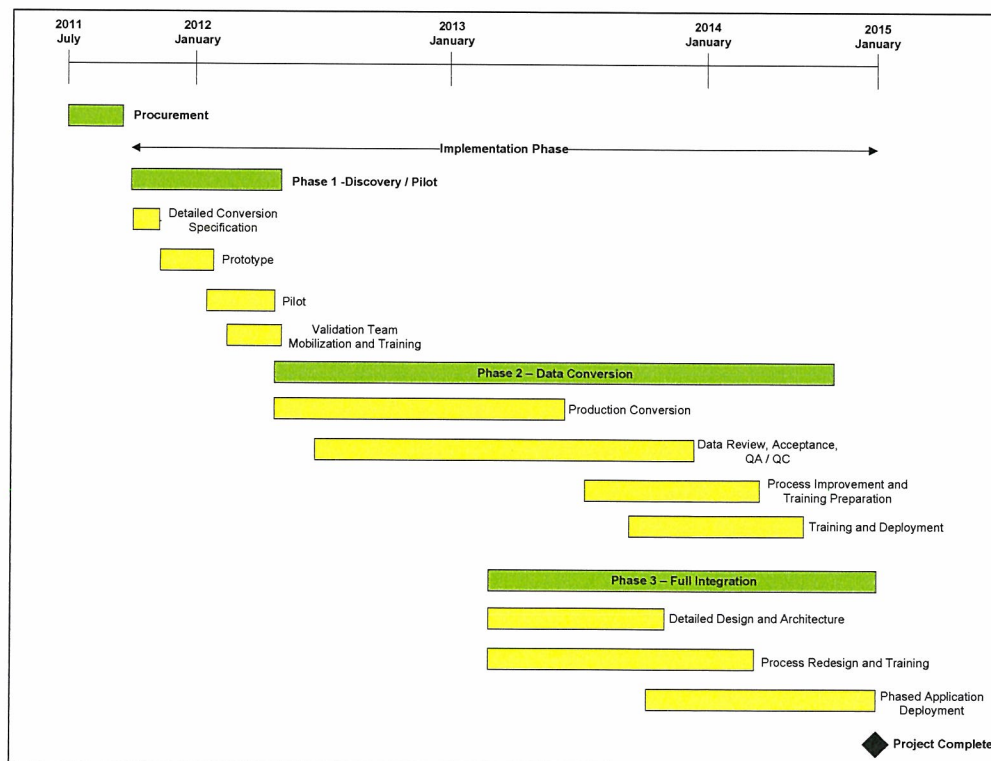


Figure 1 – PSNH GIS Project Schedule and Milestones

The GIS project continues to track to the schedule identified in Figure 1 and actual expenditures through June 2012 are consistent with the budgetary forecasts.

This document provides a semi-annual update for the period January to June 2012, in accordance with the settlement in NH PUC Docket No. DE 09-035. This update includes a six-month update on status and budget, and identifies tasks on the six- and twelve-month horizons.

2. Progress

After issuance of a Request for Proposal (RFP) seeking a highly-qualified vendor to provide GIS conversion and programming, PSNH selected Ramtech as the GIS project vendor for data conversion and GIS application development services. Ramtech, in conjunction with internal Northeast Utilities IT resources, will build the GIS platform to meet the functional requirements of the High Level Design submitted on July 1, 2011. Based on the work performed to date, the GIS will serve as the foundation for an Outage Management System, as well as an engineering and reliability analysis tool. PSNH continues to anticipate completion by December 31, 2014.

The following key milestones were achieved during the six-month reporting period:

1. Completed Construction of GIS Hardware and ESRI Software – Testing of the integrated GIS architecture was completed and the production environment was constructed and deployed for company use.
2. Prototype Review and Acceptance - The prototype, a GIS representation of a variety of PSNH infrastructure (substations, overhead lines, underground facilities), density (rural, urban), terrain (lines by road and lines in rights of way), and data sources (circuit maps, pole records, transformer records, customer information system), was delivered November 22, 2011, reviewed by PSNH, and accepted on January 9, 2012. The purpose of the prototype was for the vendor, Ramtech, to demonstrate understanding of PSNH infrastructure and data conversion requirements. The prototype was analyzed by PSNH to identify potential improvements to be applied to the pilot.
3. Pilot Delivery and Acceptance - A pilot project covering a service area of four substations and ten circuits in Laconia, NH was identified. The pilot provides a larger scale demonstration of the vendor's capabilities. Data sources for the pilot conversion include: overhead and underground circuit maps, circuits in Rights of Way, substation configuration, pole records, transformer records, and customer location information. The pilot was delivered April 9, 2012, reviewed by PSNH, and accepted on May 17, 2012. Analysis of the pilot will be integrated with the production conversion of Area Work Centers to improve their data quality.
4. Mobilization of Production Team – PSNH staffed, equipped and trained a quality review and acceptance team to evaluate and review deliverable quality for acceptance of the Area Work Center data.
5. Key Interface Development – PSNH developed an interface between the GIS and an electrical engineering analysis application. This interface is presently undergoing user acceptance testing. This interface will allow validation of a connected electrical model from substation to customer transformer.
6. Data Conversion – Delivery of the first converted production area (Pittsfield) was made on June 15, 2012. Delivery of the second (Franklin) is anticipated on June 29, 2012. Each will be reviewed, corrected and accepted.

7. University of New Hampshire Ortho Photography – PSNH obtained high-resolution (one foot per pixel) aerial ortho-photography for the entire state, and six inches per pixel for the seacoast and Nashua corridor from UNH's Technology Transfer Center.
8. State Parcel Data Test – In conjunction with the State Department of Revenue and UNH's Technology Transfer Center, PSNH acquired parcel map coverage for the towns of Barnstead, Canterbury, and Pittsfield. The purpose is to help ensure every address is connected to a transformer. PSNH's data conversion vendor utilized this during the first production run.
9. Business Process Improvement Activities - Business process change to incorporate GIS into PSNH's current business process has begun. A Facility Design / Build / Close out team determined the process to maintain desired data accuracy and timeliness going forward using the new GIS. A draft of an organizational change management communications plan was developed. The results are being reviewed by PSNH Management. Staff will be trained on the new processes and applications as converted data becomes available for their work centers.
10. Completed Development of the Initial Set of PSNH-specific Asset and Device GIS Models and Symbolology - Refinement of the GIS configuration files was performed to improve the look and feel of the display maps and network.
11. Completed Initial Release of Electrical Device Editor and Network Mark-up Tools – New software will enable design viewing, editing, field force improvement and refinement of GIS data quality from the field mobile devices.

3. Performance to Budget

Table 1 provides the budget to actuals and the forecast for the remainder of the project as of May 31, 2012. The cost against the project is heavily loaded to Phase 2, production data conversion (both to the vendor and internal acceptance and data cleanup activities).

<u>Project to Date</u>			
(In Millions)	Budget	Total Actuals All Years	2012 to 2014 Budget
Capital	\$10	\$2.76	\$7.24
O&M	\$1	\$0.054	\$0.946
TOTAL	\$11	\$2.81	\$8.19

Table 1: Budget to Actuals

4. Upcoming Activities

Over the course of the next six months, PSNH will undertake the following activities:

1. Key Interface Development – PSNH will complete development and testing of an interface between the GIS and an electrical engineering analysis application. This will allow PSNH to validate that data is useable in an OMS.
2. Business Process Improvement – Continuation of the business process improvement activities include PSNH management acceptance, training and implementation of the Design-Build process, technical support, and ongoing quality control

3. Data Conversion – Conversion and acceptance of five additional area work centers will take place. The five areas are: Laconia, Chocorua, Lancaster, Berlin, and Portsmouth.
4. Acceptance of GIS Infrastructure – Hardware and software components will be tested by end-users for functionality and performance to be accepted.
5. Refining User Interface – Based on feedback from user experience, modifications for improved end-user experience and functionality will be performed on the device editing and network mark-up tools.
6. Integration – PSNH will start the development and test interfaces to existing software applications to enable process automation and reduce duplicate data entry. These systems include a graphical design tool, customer information system, trouble reporting system, and engineering analysis tools.

During the first half of 2013, PSNH will undertake the following major activities:

1. Data Conversion – Conversion of five additional area work centers will take place. The five areas are: Epping, Rochester, Derry, Nashua, and Hooksett.
2. Employee Outreach – PSNH will act upon the organizational change management and communications plan to educate and inform employees of the new tools, data access, and processes.

5. Conclusion

During this reporting period, PSNH completed the conversion of a pilot data set. The pilot's success demonstrated the vendor not only understood PSNH's data, but also that their work processes were able to handle the scope and volume of the conversion. PSNH has also developed business process improvements to ensure GIS data is maintained in a timely and accurate manner, and that PSNH is best organized to take advantage of the GIS and its work flow benefits. Employee outreach has begun to incorporate GIS into employee workflows and processes. In summary, the project continues to track to the schedule and budget previously reported to the Commission, with an anticipated project completion date prior to December 31, 2014.