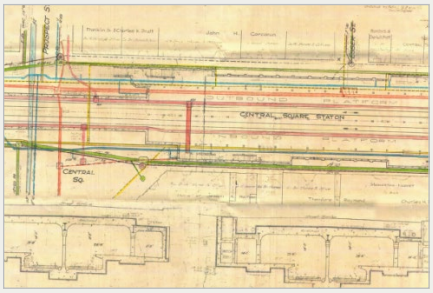
DGT Associates
Surveying & Engineering

EVERSOURCE

CLIENT
Eversource

PROJECT NAME
Allston, MA – Expanding Access to the Somerville, Cambridge, and Boston Electric Grids

SERVICES
- Subsurface Utility Mapping/ Engineering (SUM/SUE) with state-of-the-art instrumentation including EMI and wide-array 3D Ground-Penetrating Radar (GPR)
- ASCE 38-02 Quality Level A, B, C, and D
- Photogrammetry
- Ground Survey Control
- 2D CAD Drawings

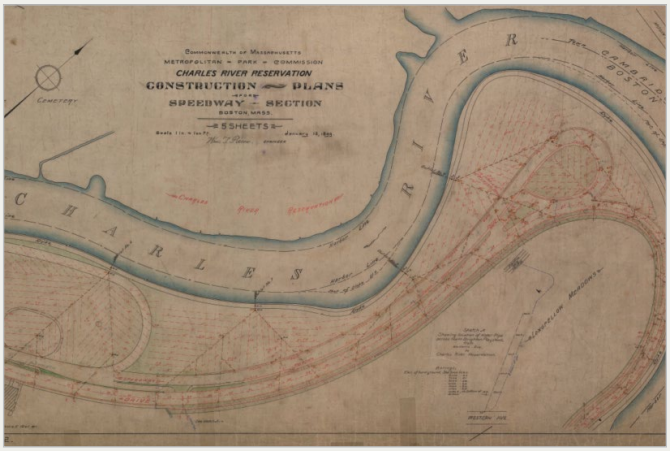


Subsurface Utility Mapping to Improve Boston's Electric Grid

SITE OVERVIEW & HISTORY
Allston, Massachusetts, has been drawing people to its quaint neighborhoods since the 1630s. When Allston became part of Boston in 1874, population growth accelerated, and today, what was once a community of early English settlers is now home to college students and families spanning all walks of life. The city also boasts a growing commercial area and houses Harvard University's science and engineering campus. With a population of 29,000 and counting, there's an increasing demand in Allston to expand the city's access to the electric grids of Boston, Somerville, and Cambridge.

PROJECT
To support increasing energy needs, Eversource, one of New England's leading energy provider, was hired to find the most feasible route to connect new and existing substations to existing powerplants without disrupting or striking subsurface utilities in the process.

To gain a thorough understanding of the underground utilities surrounding the potential transmission routes, Eversource contracted with DGT Associates to provide over 60 street-miles worth of ASCE 38-02 Quality Level C and D survey data.



To streamline data gathering, work product consistency, and client communication, Eversource hired DGT as the sole provider of Subsurface Utility Mapping (SUM) for the final stages of this project.

During the next phase of the project, surveying began with the use of photogrammetry to capture a large-scale aerial photo of the potential routes scouted by Eversource. Next, DGT conducted ground survey control to establish control networks throughout the streets. Attention then shifted to collecting legacy data from both public and private sources, including GIS data from the city of Cambridge, Boston Water and Sewer, National Grid, and many other asset owners. In total, DGT collected over 10,000 files of the underground then compiled and presented the records in a single uniform composite utility plan in CAD format to Eversource's design teams. With this information, Eversource was able to eliminate some of the routes and focus on the more practical ones.

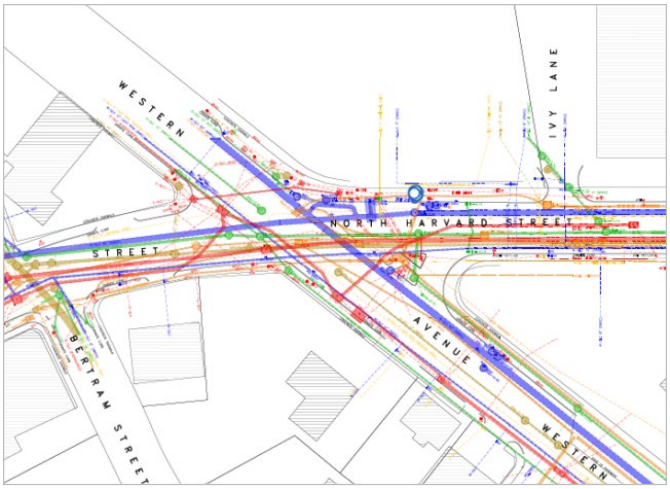
At this stage, Eversource sent the survey data to a third-party design firm that specializes in energy project engineering design. The firm selected five routes for power line alignments then DGT performed another round of surveying at a higher quality level. DGT set out to locate and map the five routes with multiple crews using our mobile wide-array Ground Penetrating Radar (GPR) system, handheld EMI equipment, pushcart GPR system, and traditional survey equipment. Upon completing the ASCE 38-02 Quality Level B survey, which included radar tomography, DGT presented the results to the design firm for more detailed analysis.

OUTCOME

In the final stage of the project, DGT is in the process of completing ASCE 38-02 Quality Level A surveying for the top five chosen routes. This is the highest quality of underground data, which uses vacuum excavation to precisely locate and map subsurface utilities along the project's path and mitigate conflicts arising from unmapped underground structures during the design phase. For this project, DGT will have completed hundreds of vacuum test holes and trenches to obtain precise underground measurements and uncover potential utility conflicts. Upon completion, which is projected to be in the middle of 2023, it will be up to the design firm to follow the appropriate channels to receive the stamp of approval on a major infrastructure project of this size. This will consist of talking to all the affected underground asset owners, university officials, city officials, and other community stakeholders that will be impacted by the added transmission routes.

It will likely take the design firm a full calendar year to analyze all of our mapping deliverables. Once they select the final route and receive approval from city officials, the last stage of the project will consist of constructing the new transmission routes. While we know this will likely take years to complete, we are hopeful that Eversource will bring DGT in to complete a round of as-built updates to the subsurface utility mapping that has been generated.

Learn more about our SUE/SUM services.



ABOUT DGT

DGT Associates is New England's premier surveying and engineering firm. With clients spanning the cross section of community stakeholders from developers and construction managers to municipalities and homeowners, DGT provides unparalleled experience in the region. DGT is committed to thoughtful innovation in the surveying and engineering industries. We utilize cutting-edge technology, combined with decades of field-work experience, to deliver valued, meaningful results. Our professional crews are trained and perform to the highest standards of precision and safety. And our team is sized for the flexibility required to take on projects of varying scales, timeframes and complexity.

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