

Spatial Data Infrastructure for Watershed Monitoring, Cambridge, Massachusetts

STONE
ENVIRONMENTAL
100% EMPLOYEE-OWNED

Services / Expertise

Geospatial & Data Solutions
ArcGIS Online
Survey123
Microsoft PowerApps

Markets

Municipal Government
Public Works/Water Department

Project Location

Cambridge, Massachusetts

Date Completed

2020–Present

Project Owner

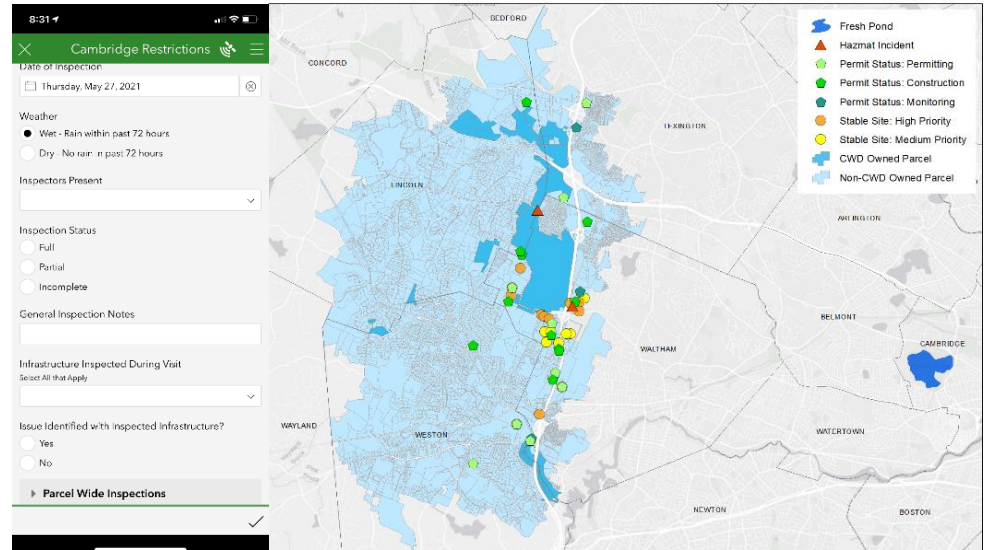
Cambridge Water Department

Project Manager

Paige Gebhardt
pgebhardt@stone-env.com

Project Team

Nick Floersch
Paige Gebhardt
Christina Nick



Left: Survey123 reporting tool developed for the City of Cambridge. Right: Display map of the City of Cambridge watershed, including parcel boundaries and site monitoring locations and status.

THE CITY OF Cambridge, Massachusetts' water supply is made up of multiple watersheds. The Cambridge Water Department's (CWD) Watershed Protection Team runs a site monitoring program (SMP) to track potential impacts to the watersheds that feed the city. The CWD SMP oversees the use, maintenance, and development of many properties and lands that are sources of runoff into the watersheds feeding the city. While some of the lands are conserved and protected, most of the SMP efforts focus on ensuring new development projects appropriately manage runoff, or that completed development projects are maintained according to permitting restrictions and practices. As a result, the SMP team spends a lot of time in the field inspecting new and existing projects for compliance, and in the office tracking the planning, permitting, and communications related to development projects. A few years ago, they realized that their paper-based management system was no longer functional. They engaged Stone to help prepare a modern spatial data infrastructure that supported their field and office work, as well as their budget.

Stone prepared a system that empowered them to make updates without relying on a contractor. Stone worked with various teams at the City of Cambridge to build a solution that integrates many tools the city was already licensed to use into a new infrastructure that supports the SMP team's work, while avoiding custom software development.

Stone's solution integrated Microsoft PowerApps data entry forms and ArcGIS Online's data collection and spatial capabilities, centered around a SQL Server database hosted on ArcGIS Server. The team innovatively integrated Power Apps with Experience Builder using URL parameters for a seamless user experience. This integration provides an out-of-the-box solution, meeting the water department's goal of editing, managing, and interacting with their data while in the office and during field site visits.

