

# Spatial Data Infrastructure for Watershed Monitoring, Cambridge, Massachusetts



## Services / Expertise

Geospatial & Data Solution  
ArcGIS Online  
Survey123  
ArcGIS Collector  
Microsoft PowerApps

## Markets

Municipal Government  
Public Works/Water Department

## Project Location

Cambridge, Massachusetts

## Date Completed

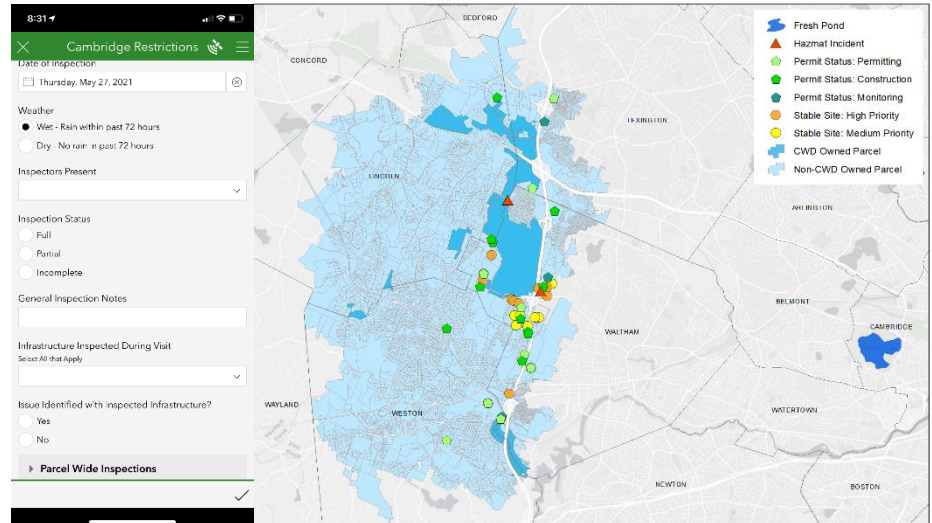
2020 - present

## Project Owner

Cambridge Water Department

## Project Team

Nick Floersch  
Warren Rich



*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 unmanageable. 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 further changes and updates without relying on a contractor. Stone worked with the SMP team, the Cambridge GIS team, and Cambridge IT to build a solution that integrates many tools the city was already licensed for into a new infrastructure that supports the SMP team's work, while avoiding custom software development.

Stone's solution for the City of Cambridge Water Department 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. This integration provides an out of the box solution, meeting the CWD's goal of editing, managing, and interacting with their data while in the office and during field site visits. ArcGIS Online applications utilized include Survey123, Collector, Web AppBuilder, and associated web maps.