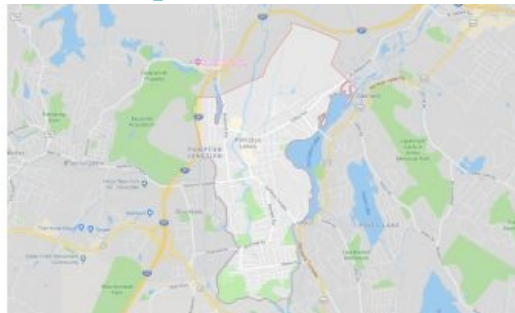


Drone Survey Technology Helps Map North Jersey Rivers



Surveyors are harnessing the power of drone technology by focusing on at-risk riparian areas of northern New Jersey. The images captured by unmanned aerial vehicles (UAVs) have become part of the documentation for a Federal Emergency Management Agency (FEMA) program that saves Pompton Lakes residents hundreds of thousands of dollars per year on flood insurance premiums.

Land-use consultancy Dresdner Robin, of Jersey City, N.J., recently worked with the Borough of Pompton Lakes, N.J., utilizing image-capture flights to gather overlapping photographs of three rivers in the borough.

Dresdner Robin Survey Director, Greg Gloor, volunteered on a project to assess Pompton Lakes' flood-prone waterways. Gloor flew 11 individual flights over the rivers – 215 feet above the water level. The UAV moved at 10mph, using a 15-millimetre, fixed-zoom lens, capturing 60-foot sections of the terrain. Images were snapped every two seconds (1,042 total) and were later analysed to locate obstructions in the river channel. The photos aided a stream-cleaning project that is part of the borough's flood mitigation program.

Community Rating System

The UAV-collected data was also submitted as part of Pompton Lakes' application to FEMA's Community Rating System (CRS) program. Waterway assessment is a key component of the CRS programme, and active participation saves the borough's residents over US\$300,000 on flood insurance premiums. Outside of cost benefits, the UAV program also saved the borough's volunteers hundreds of hours of 'first-hand' analysis time.

"The drones produced stunningly clear imagery, which enabled us to fully understand and prioritize which hazards needed to be cleared, providing an invaluable service to our residents," said Pompton Lakes Councilman Erik DeLine.

Dresdner Robin's survey director added that the image-capture project offers a feasible way to spot obstructions, and the visuals help facilitate FEMA's CRS program, spurring immediate financial benefits.

Ramapo River

Gloor's work has helped expand similar waterway assessments in the state, including the Ramapo River in Oakland, N.J. There, both video and still photography was used to assess river conditions for restorative work with the state.

As flooding continues to plague areas of northern New Jersey, especially following a particularly wet 2018, surveyors anticipate the need for survey and data acquisition of river corridors to rise.

"These river channels present unique challenges for access and safety," said Greg Gloor. "Dresdner Robin has been utilizing the capabilities of UAVs to provide critical data on river conditions to flood-prone communities in North Jersey."