



Company

Toms River MUA

Industry

Municipal Utility

Company profile

The Toms River MUA was established in 1949 with a mandate to provide reliable wastewater collection services to its ratepayers in an environmentally responsible and cost-effective manner. The TRMUA maintains 435 miles of underground utility lines, 18 pump stations, and serves 47,000 ratepayers covering an area of 55 square miles in Toms River, NJ (population 92,000).

A MIDSIZE UTILITY IN NEW JERSEY HAS MADE THE LEAP TO ADOPT A CUTTING-EDGE MIXED-REALITY (MR) HOLOGRAPHIC GIS APPLICATION TO IMPROVE PRODUCTIVITY AND SAFETY OF ITS FIELD WORKFORCE.

THE CHALLENGE

Municipalities and utility companies maintain vast networks of underground and above-ground infrastructure. This infrastructure is difficult to access - being buried underground - and often complex, as multiple utility types reside densely near each other. The combination of complexity and inaccessibility leads to high cost of any infrastructure-related initiative. Additionally, the inability of utility workers to directly see buried assets occasionally leads to excavation damages, estimated at \$6B annually for North America alone.

The traditional approach for locating utility assets relies on printed or digital maps in conjunction with specialized equipment such as electromagnetic locator. The locators would then spray-paint the utility schematics on the ground and compile a report. These schematics and reports are then passed to the excavation crews to use. This process is inefficient and time-consuming, leaving a lot of room for human error.

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“Meemim has pioneered vGIS technology, allowing organizations like ours, to literally 'see' underground utility locations, in the field, via Microsoft HoloLens. Truly innovative, truly transformative.”



Len Bundra

Director of GIS and IT
Toms River MUA

THE SOLUTION

Toms River has long recognized the challenge. With the data infrastructure in place, attention turned to the user experience of the field technicians—how could the wealth of data be better managed? Can they take advantage of new technologies such as Virtual Reality and Augmented Reality and still leverage a combination of hardware and software with an intuitive interface?

The solution was vGIS Utilities – a mixed-reality holographic GIS application designed by Meemim Inc. vGIS Utilities uses holographic headset by Microsoft equipped with cameras, audio, various sensors to display underground pipes and other assets as holograms. While wearing the HoloLens, utility workers see an unobstructed physical world in front of them as well as a holograph of the lines of wastewater pipes underground. The pipes are color coded and projected to scale, while remaining “world locked” in the same physical location.

SOLUTION HIGHLIGHTS

The vGIS platform combines client-provided GIS data with third-party information from multiple sources to create visuals to power purpose-built applications. vGIS works with traditional GIS data, 3D building models (ESRI CityEngine, Trimble SketchUp, and others), geological data, LiDAR scans, custom maps, and more.

Featuring stable and accurate holographic and augmented-reality projections, vGIS works on multiple devices—from phones and tablets to the Microsoft HoloLens. It features a patent-pending calibration process that allows high-precision locational and lateral accuracy to be established within seconds.

vGIS is designed for collaboration. Taking advantage of technologies designed for video games, vGIS connects people in a completely new way. Whether combining traditional phones, virtual reality, and live video streaming to connect municipal engineers with a field workforce or letting geologists and engineers review gas exploration sites from multiple locations around the world using Microsoft HoloLens, vGIS aims to take collaboration to a whole new level.



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THE IMPACT

vGIS Utilities grants companies with underground assets, like Toms River MUA, an age-old wish: to see through the ground. This helps field technicians close service tickets more quickly by reducing the time required to locate assets. Depending on the complexity of the location and the availability of utilities data, the system can save up to several hours on a single locate job.

Additionally, vGIS Utilities helps avoid costly repairs and line breaks. A line strike means that work comes to a halt until repairs are made. Many of those problems occur because the aboveground markings are inaccurate or incomplete. A simple two-hour markup may easily turn into a \$23,000 dig-up and repair. vGIS helps reduce the number of such strikes.

Lastly, vGIS is instrumental in identifying missing items, such as paved-over valves and manholes and capturing deficiencies in GIS data through an easy-to-use reporting functionality. vGIS software allows the wearer of the headset to mark the location electronically and then record an audio message to note the data discrepancies and any needed repairs.



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