



Asset Locations: Removing the Guesswork



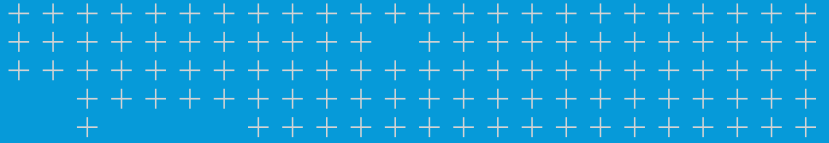
Hernando, Mississippi, built a GIS to track assets, including water towers, water mains and meters.

How a GIS expedites maintenance and repairs of vital municipal public works infrastructure

Cloud-based software and handheld devices make collecting field data simple and efficient

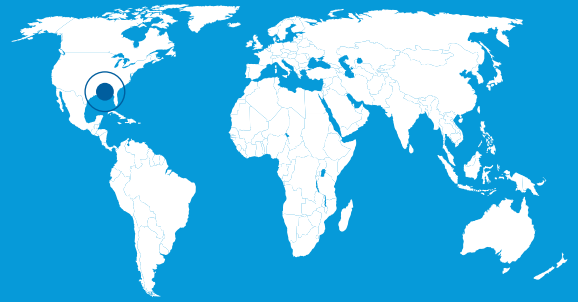
Solution

- Trimble® TerraFlex™ Software
- Trimble R2 GNSS Receiver
- Trimble TDC600 Handheld
- Trimble Connect Collaboration Platform



overview

The City of Hernando committed to developing a Geographic Information System (GIS) after experiencing frustration with inaccurate as-built information that often led to damaged pipes and interrupted service. Using a Trimble TDC600 handheld device running Trimble TerraFlex data collection software, field crews collect GPS coordinates and descriptions for important assets, such as water valves, water mains and storm drains. Now field crews can remotely access the exact location of their crucial infrastructure, expediting repairs and maintenance.



Location
HERNANDO, MISSISSIPPI,
US



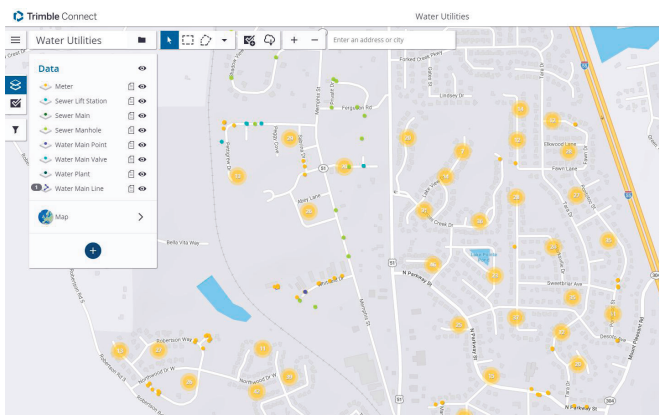
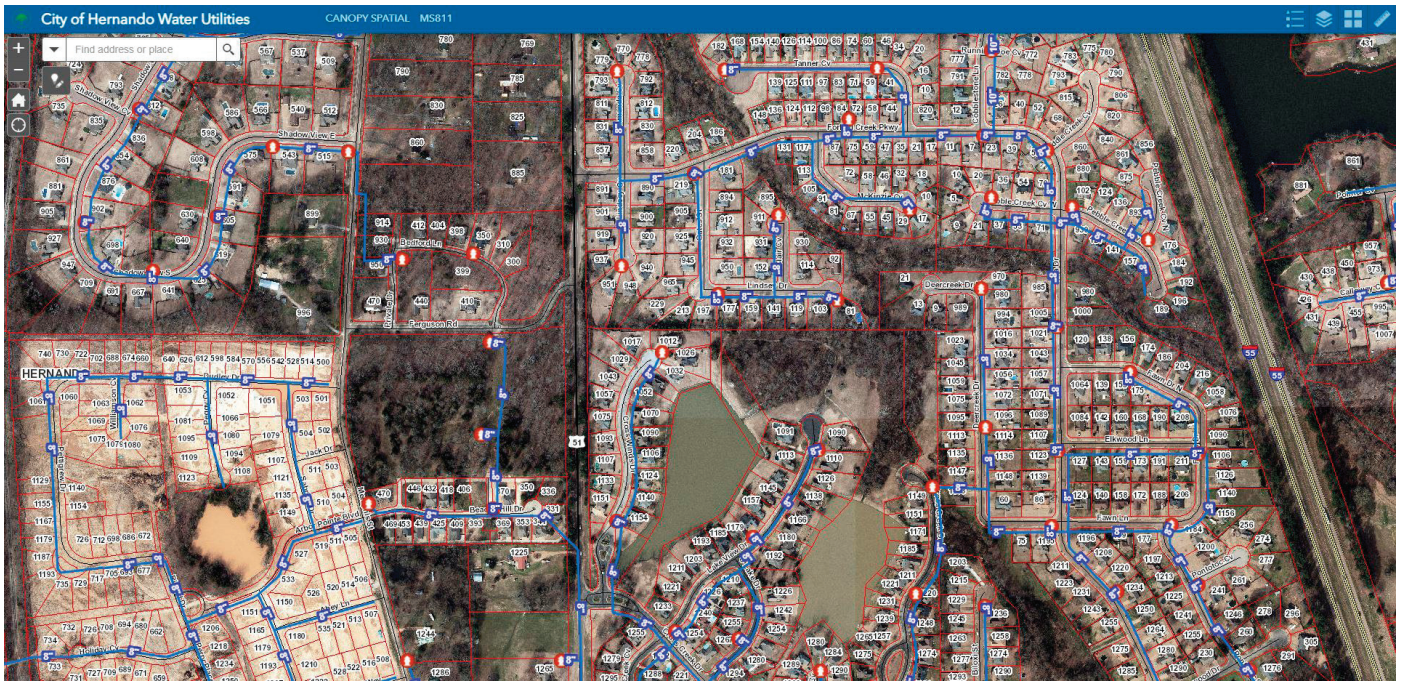
Like many small towns, the City of Hernando in northwest Mississippi struggled to maintain accurate records of its infrastructure—above and below ground. When evaluating resource availability for new developments or repairing damage, the Public Works Department had to contract for new surveys or rely on outdated information on paper maps.

“Our service area is about 40 square miles and we’re responsible for streetlights, street signs, ditch banks, sewer lagoons, thirty sewer lift stations, five water towers and everything related to the water system – valves, mains, storm drains,” said Lee Germany, Public Works Director, City of Hernando. “Contractors were always hitting our lines because they weren’t properly marked, and it could take hours for us to locate breaks and determine where to turn off valves. We really needed a better method to know where our assets are located.”

To develop a cost-effective solution, the city sought advice from GIS consulting firm Canopy Spatial and Navigation Electronics, Inc., an authorized Trimble dealer. A plan was proposed to combine base map information with newly collected GPS coordinates and detailed descriptions of assets to make the necessary information easily accessible in an online GIS.

USER-FRIENDLY TOOLS

To develop the new GIS, existing data were first compiled into a central database, to which new information is continuously uploaded and used to correct inaccuracies. Mapping the diverse assets of the City of Hernando is simple with Trimble TerraFlex, a cloud-based solution for field data collection that runs on the rugged Trimble TDC600 handheld, an Android™-based smartphone, or an iPad. Field



crews also use a Trimble R2 GNSS receiver that provides 1-3 centimeter positioning accuracy. For added efficiency, the streamlined workflow pushes new data from the field to the office when online or stores data on the device if offline.

Starting in March 2021, locations of 2,583 water meters and 237 sewer/drainage manhole covers were collected in five months. Additional information describing assets was also captured, such as whether a sewer main is above or below ground and the size of the water tanks at the water plant; photographs provide extra visual details. The existing database information is available to the field crew, so they don't waste time re-entering duplicate information.

"I use the Trimble Connect collaboration tool to build customized projects for the Hernando field crews to view on their TDC600 devices," said Scott Trapolino, project

Top: ArcGIS Online displays the basemap and all mapped infrastructure. Photo credit: Scott Trapolino

Upper Left: Trimble Connect clearly shows the locations of Hernando's utility assets. Photo credit: Scott Trapolino

Above: Collecting coordinates with the Trimble R2 GNSS Receiver and the TDC600 handheld device. Photo credit: Lee Germany



Like many old towns, Hernando lacked up-to-date infrastructure records. Photo credit: City of Hernando

manager solutions specialist at Canopy Spatial. “The input form is set up to ask for very specific information – for example, water lines, and sub tabs ask for dimensions, direction of flow, and other specifications. The customizable form speeds up the data input.”

In addition to dedicated data collection efforts, GPS data is captured when old pipes are being repaired, and new subdivisions are required to provide accurate as-builts for infrastructure assets that are relevant to the public works department.

“We currently have all our water towers and stations mapped, and we’re continuing with meters, mains, and manhole covers,” said Germany. “Our customer service is improved because the GIS allows the crew to see how our assets are connected. They can quickly locate



shut-off valves and calculate how many customers will be impacted by breaks. When called out to a site, they bring the right equipment to make the repairs instead of making multiple trips.”

The fast and efficient data collection process with Trimble TerraFlex encourages good maintenance of the GIS. Up-to-date GPS data, pictures and supporting notes aid long-term planning for new development and help enforce regulations intended to safeguard the community.

“Capturing data with TerraFlex enables us to populate our GIS with comprehensive asset information that we use to quickly locate problems, expedite our response and reduce any impacts on our customers.”

— Lee Germany, Public Works Director, City of Hernando

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NORTH AMERICA
Trimble Inc.
10368 Westmoor Drive
Westminster CO 80021
USA

EUROPE
Trimble Germany GmbH
Am Prime Parc 11
65479 Raunheim
GERMANY
+49-6142-2100-0 Phone
+49-6142-2100-140 Fax

ASIA-PACIFIC
Trimble Navigation
Singapore PTE Limited
3 HarbourFront Place
#13-02 HarbourFront Tower Two
Singapore 099254
SINGAPORE
+65-6871-5878 Phone
+65-6871-5879 Fax