



## GPS Survey of the Water and Sewer Systems

### Service Description

- Survey of geodesic positioning by GPS of the fire hydrants, isolating valves or watermain valves, manholes, sumps or other components of water distribution and/or sewer systems.
- Survey of the positioning of the underground metallic pipes in combination with the pipe detection or survey of the positioning of the manholes in combination with the diagnosis of the sewer system with the Aqua Zoom camera.
- GPS survey integrated with photographs of elements such as fire hydrants, manholes or other elements. Moreover, the survey of water distribution system break and leak history as well as sewer overflows can also be positioned using geocoded images including information such as date, time and location. This information can be integrated into the City's GIS or into the aquaGEO software.

### Technical Details

- A GPS survey is systematically performed for a sector or for the complete network and the elements are precisely identified using the customer's coding system.
- We can provide two degrees of precision: « Submeter » with precision of +/- 30 cm for the X and Y coordinates and 100 cm for the Z coordinate or « Centimetric », with precision of +/- 2 cm for the X and Y coordinates and 6 cm for the Z coordinate.
- All necessary measures are taken to ensure that the right element (number and type) is surveyed. In certain cases, this method requires the validation of the types of elements surveyed by opening the valve chamber and manhole covers to ensure they are properly identified before making the GPS survey.
- An update of the City's GIS is performed by adding or repositioning the elements to accurately represent the configuration of the system.
- Aqua Data uses a digital camera equipped with a GPS receiver which indicates the exact location the photo was taken. A modular tool then extracts the GPS data associated with the images and generates an ESRI shapefile. These images are automatically associated with a hyperlink indicating their insertion point.

### Deliverables

- aquaGEO file, shapefile or other format if needed including the exact location of the infrastructure surveyed.