



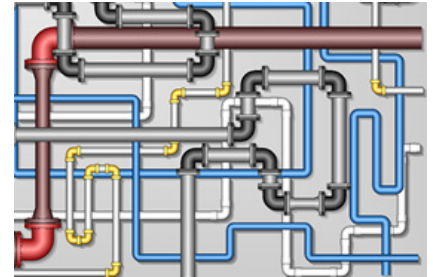
GIS MAPPING OF UNDERGROUND INFRASTRUCTURE

Maze of Underground Utilities

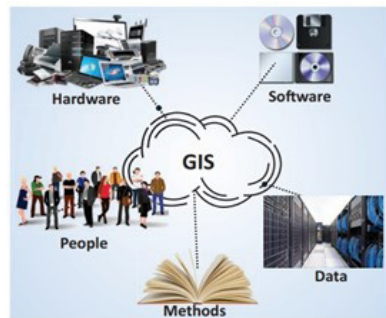
- ▶ The underground has become a spider's web of utility networks, and accurate mapping of underground utility pipelines has become a challenging and difficult task.
- ▶ Ensuring for accurate mapping of underground facilities is a top priority for DCA, and use of GIS mapping should be increased.



Source: Omaha World Herald



Source: The Water Network



Source: ESRI

GIS Mapping

- ▶ Geographic information systems (GIS) create, manage, analyze, and map all types of data related to underground facilities. GIS connects data to a map, integrating location data with a range of limiting information regarding the subsurface facilities in that area, and it allows for layering of data tied to geographic points.
- ▶ Rather than restricting the user to limited features on a static map, GIS mapping allows for viewing customizable combinations of data layers in a single dynamic tool.

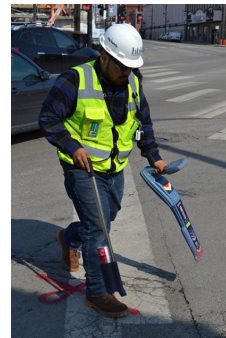


Source: PODS

Pillars of Damage Prevention

DCA supports damage prevention policy that reflects shared responsibility among all stakeholders in the process and promotes four principal pillars to damage prevention: **1)** membership of all owners/operators of underground facilities to the state one-call center, **2)** accurate and timely locating, **3)** potholing of underground facilities; and **4)** full and balanced enforcement of state damage prevention statutes.

- ▶ Accurate mapping of underground facilities is a fundamental part of accurate and timely locating, and ensuring the use of GIS will undoubtedly bolster damage prevention and pipeline safety.



Source: HBK Engineering



Source: ComEd



Source: Geospatial World

Impacts of IJJA

Passed in 2021, the Infrastructure Investment and Jobs Act included allocated funding for municipal gas distribution replacement, demonstration projects related to carbon capture, use and storage as well as increased transportation of hydrogen, broadband deployment, hardening America's electric grid, and infrastructure improvements in several other subsurface utility markets, meaning underground facility damage prevention practices are critical, and all responsibilities must be met.

Since the first municipal bond in 1812, our market has provided the necessary capital for states, local governments, and non-profit borrowers to finance improvements. Today, the more than \$4.0 trillion municipal market continues to serve communities well.