

3D Utility Location Data Repository

New technology makes storing and retrieving 3D data for underground utilities a reality

With the ever-changing and increasing use of underground utilities, it is becoming more critical for state and local transportation agencies to identify and track the locations of new and existing underground facilities. The large amounts of existing data identifying these locations need efficient storage and retrieval technology so the data are available for future use.

Technologies to Support Storage, Retrieval, and Use of 3D Utility Location Data

The Solution

Developed through the second Strategic Highway Research Program (SHRP2), this **state-of-the-art 3D storage and retrieval data model** will accommodate large volumes of data, interface with existing design software, and provide designers with a tool to use captured data on underground utilities. **The data provide horizontal and vertical location of the facility, as well as information regarding the type of utility that is buried at the location.** This information is valuable both to designers and utility owners; enabling them to identify alternative design solutions to prevent the costly relocation of the utilities. Once stored in the system, the underground utility location data are available for future reference.

The Benefits

Storing and easy retrieval of underground utility location data provide numerous benefits in the design, field data collection, and construction areas of transportation projects. Designers can change designs to accommodate extensive utility locations, thus avoiding costly utility moves. The ability to collect data in a single operation can minimize costs of data collection efforts. Contractors can avoid encountering unknown utilities in the field, preventing lengthy and costly modifications to the project. Other benefits:

- The attribute data about each utility enables more efficient and productive coordination with utility owners.
- Knowing the location and depth of utilities enables designers to change designs to avoid costly utility relocation and delays in project delivery.

Technological solutions for storage and retrieval of underground utilities data

**FOCUS AREA:
Renewal R01A**

3D data modeling allows for easy identification, tracking, and retrieval of utility information.

Save Lives

- Accurate underground utility location data helps prevent unsafe contact with utility facilities during construction operations.

Save Money

- Efficient data storage and retrieval systems help prevent costly relocation of the existing facilities in the future.

Save Time

- Early and accurate utility location can minimize time delays during construction.

- During construction, contractors can pull up mapping systems that accurately display the location and depth of the utilities, so the utilities can be avoided and delays prevented.
- The ability to store data in a single platform can minimize the cost of data collection on future projects as well.

Who can use these tools?

State and local transportation agencies and consultants are the first line of use with contractors and utility companies also accessing this information. California, the District of Columbia, Indiana, Kentucky, Michigan, Montana, Oklahoma, Oregon, Pennsylvania, Texas, Utah, and Washington are currently using this product through the FHWA/AASHTO Implementation Assistance Program.

How can you learn more?

For more information, contact Matt Leuderalbert at FHWA, Ken.Leuderalbert@dot.gov, or Keith Platte at AASHTO, kplatte@aaashto.org. Updates on current implementation efforts can be found at the AASHTO Utilities products webpage at <http://shrp2.transportation.org/Pages/UtilityRelatedProducts.aspx> or at www.fhwa.dot.gov/GoSHRP2.

About SHRP2 Implementation



The second Strategic Highway Research Program is a national partnership of key transportation organizations: the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the Transportation Research Board. Together, these partners conduct research and deploy products that will help the transportation community enhance the productivity, boost the efficiency, increase the safety, and improve the reliability of the Nation's highway system.

Strategic Highway Research Program
