

## Underground Utility Locating Technology: Synthesis Report

Accurate locations of buried utility infrastructures are very important for utility owners, highway managers and engineers, designers, and contractors. A lack of reliable information on underground utilities not only can result in property damages, construction delays, design changes, claims, injuries, and even deaths, but also cause traffic delays, local business disruptions, environmental problems, and utility service breakdowns. Subsurface Utility Engineering (SUE) is an engineering practice that reduces the risk posted by potential underground utility conflicts throughout the project development process. SUE utilizes new and existing technologies to accurately identify, characterize, and map underground utilities through the integration of professional utility records research, visual site inspection, geophysics, survey, and utility exposure. SUE is often the most suitable method for mitigating risks associated with uncertain underground information. All industries suffer from the



limitations of short-lived, widely diverse data collection efforts and isolated data management strategies. The report investigates the current snap shot of utility engineering practices in other industries and synthesizes the best practices followed in locating underground utilities. The transportation industry is undoubtedly the most advanced in the in utility locating and data management practices thank to early introduction and continuous support from FHWA on SUE research and implementation. Thus, this synthesis heavily investigates the utility engineering practices followed by state Department of Transportation across the nation. The research provides not only the snap shot of the current practices and technologies, but also implementation recommendations to ensure the application of the best practices followed by other industries in utility locating. These recommendations would yield enormous benefits to all the stakeholders involved, including but not limited to water and wastewater utilities.

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