



An Association of Photogrammetry, Mapping, and Geospatial Firms ®

Statement for the  
Committee on Commerce, Science and Transportation  
Subcommittee on Surface Transportation and Merchant Marine  
Infrastructure, Safety, and Security  
U.S. Senate  
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Pipeline Safety: State and Local Perspectives

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MAPPS ([www.mapps.org](http://www.mapps.org)) is a national association of private sector geospatial firms. Our member firms span the entire spectrum of the geospatial community, including satellite and airborne remote sensing, surveying, photogrammetry, aerial photography, LiDAR, hydrography, bathymetry, charting, aerial and satellite image processing, GPS, and GIS data collection and conversion services and companies that provide hardware, software, products and services to the geospatial profession in the United States and other firms from around the world. A significant number of our member firms are prime contractors or subcontractors to USDOT, PHMSA and other Federal agencies, and to the state and local governments that receive Federal grant monies, as well as to private sector pipeline operators, utilities, and other commercial clients.

We enthusiastically support the oversight of pipeline safety by Senators Fischer of Nebraska and Daines of Montana. We commend this leadership on the ongoing focus on reauthorization of the Pipeline and Hazardous Materials Safety Administration (PHMSA) and related activities and programs.

MAPPS is deeply concerned about the lack of location data on pipelines, as well as other underground infrastructure and utilities. This is an important missing ingredient in assuring pipeline safety, as well as providing for accident prevention and post-incident mitigation.

In July 2015, at a [hearing](#) held by the House Committee on Energy and Commerce on the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Stacy Cummings, then-Interim Executive Director of PHMSA testified that:

*“PHMSA has consistently requested additional funding to support enhancing our risk management, analytical frameworks and mapping capabilities. Through PHMSA grants, state pipeline safety programs are funded up to 80 percent, but **PHMSA has limited insight into state data on where interstate pipelines actually exist, their conditions, and the inspection reports performed by our state partners.**”*

In January 2013, at a [hearing](#) on pipeline safety, then-Commerce Committee Chairman Senator Jay Rockefeller (D-WV) said:

*“They crisscross underneath our cities and country sides, yet most of the time we are not even aware they are there. They deliver critical fuel that powers our homes, factories, and offices, and also transport the oil and gas that keep our cars, trucks, and planes operating...Compared to other forms*

*of transportation, pipelines are a relatively safe, clean and efficient way of transporting the goods they carry. Unfortunately, this is not always the case...**Lack of records about older pipelines is a real problem** and contributed to a catastrophic pipeline explosion in California that killed several people.”*

As recently as January 2013, the Government Accountability Office (GAO) released a study ([GAO-13-168](#)) on pipeline safety urging “better data” with an emphasis on “location”, “proximity” and “topography.”

The National Transportation Safety Board (NTSB) has also issued numerous accident reports, findings, and recommendations regarding the location of pipelines, utilities and infrastructure. In January, 2015, NTSB [adopted](#) a safety study on integrity management of gas transmission pipelines in high consequence areas that calls for

*“expanded and improved resources and guidance at the federal level, including improvements to the National Pipeline Mapping System and better integration of geographic information system (GIS) technology.”*

Existing records have many problems. A large number of these records are either positionally inaccurate, reference physical features that may no longer exist, are incapable of being found, were altered during conversion to other formats, or have other problems.

It is estimated that the pipelines in the United States could encircle the Earth 25 times. The American Public Works Association estimates that an underground utility line is hit somewhere in the United States every 60 seconds. There is a critical need for current, accurate location data regarding pipelines.

Geospatial information directly influences all aspects of Accurate Safe Utility Location (ASUL) risk assessment and emergency management. Advanced location surveying technologies, including light detection and ranging (LiDAR), sonar, radar and imagery, provide input into Geographic Information System (GIS) data and other geospatial assets are of most critical value in emergency response during the initial hours and days immediately following any incident. When utilized in the field at specific incident response locations, ASUL maps can be effective and life-saving tools. In California, a utility’s disastrous gas pipeline incident brought forth an emergency plan from an independent review panel, NTSB, industry associations and regulators such as PHMSA, California Public Utilities Commission (CPUC),

former NTSB leadership, American Gas Association (AGA), Interstate Natural Gas Association of America (INGAA) and others.

Over the past decade, many deaths, injuries, and billions of dollars in repairs to the utilities and damaged property have been associated with poorly mapped or maintained distribution systems. Millions of dollars in environmental cleanup, countless road and facility closures, and dozens of evacuations are the additional results of these breakdowns. It is important to note that these systems most often physically parallel and work in tandem with existing transportation corridors, such as railroad and highway structures. These systems connect nearly every household to a common grid, often exposing citizens to unsafe and potentially explosive conditions. Because Federal, state and local governments control the corridor rights-of-way, report, and react to incidents (through state One Call, Miss Utility, or 811 systems), and issue permits for projects surrounding these systems, accurate geo-location surveying and mapping must be in place so that these facilities are not damaged or allowed to further deteriorate.

Federal officials, transportation designers, telecom, and utilities and pipeline operators, as well as government, need accurate location information to manage existing underground infrastructure and plan for future growth and development. Surveys and maps of underground utilities are often inaccurate. In many cases, they don't even exist. The lack of location data is often cited by the NTSB, GAO, and other authorities as a factor in pipeline and other utility accidents. The inaccuracy of location data, unmarked utilities, and crowding within rights of way are major factors contributing to disruption to underground infrastructure. Digging, drilling or excavating in the vicinity of unknown, unmarked, unmapped, or incorrectly located utilities can be costly in terms of wasted excavation time, service disruption and utility downtime, environmental damage, and—worst of all—personal injury or loss of life. One Call, Miss Utility, or 811 systems are often nonresponsive to surveyors.

An Accurate Safe Utility Location + Infrastructure Mapping Reform (ASUL+IMR) is needed for accurate location of America's underground utilities. This data partnership program will save lives, time, and money. Such a partnership should begin with current private sector protocols and practices and be open to evolving standards and technologies. This initiative should include both management of physical infrastructure, the information technology systems used to manage our most basic daily consumption of power, water, communications, transportation and natural gas, and be compatible with One Call, Miss Utility, or 811 systems. Accurate geospatial location can enable safe corridor utility distribution through

surveying and mapping data sets provided by and for terrestrial and mobile LiDAR; acoustical sounding; data from ground penetrating radar as well as other applicable geophysical technologies; GPS; structures and topography; critical infrastructure; cadastral; airborne imagery and elevation; and transportation and pipeline. Small businesses providing surveying, mapping and geospatial data, products and technologies can work closely with utilities, end users, and government to provide innovation and flexibility in the planning, mitigation, response, and remediation phase.

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MAPPS respectfully urges the Committee to enable safe corridor utility distribution through legislative reforms that will apply cost-effective, current, state-of-the-art professional geospatial services and technology to location requirements in Federal law governing pipeline and underground utility safety. Conformance with American Society of Civil Engineers (ASCE) standard guideline 38-02 for the collection and depiction of existing subsurface utility data will help contribute to public health, safety and welfare.

Once again, thank you for your leadership and MAPPS stands ready to work with the Senate and the committee to enact legislation allowing for safer operation of pipelines.