



An Association of Photogrammetry, Mapping, and Geospatial Firms ®

December 6, 2016

Anthony Foxx, Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Mr. Secretary:

Formed in 1982, MAPPS is the only national association exclusively comprised of private sector firms in the remote sensing, spatial data and geographic information systems field in the United States. The MAPPS membership spans the entire spectrum of the geospatial community, including Member Firms engaged in 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. MAPPS also includes Associate Member Firms, which are companies that provide hardware, software, products and services to the geospatial profession in the United States and other firms from around the world. Independent Consultant Members are sole proprietors engaged in consulting in or to the geospatial profession, or provides a consulting service of interest to the geospatial profession. MAPPS provides its member firms opportunities for networking and developing business-to-business relationships, information sharing, education, public policy advocacy, market growth, and professional development and image enhancement.

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.

Section 10 of the "Protecting Our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act", Public Law (P.L.) 114-183, provides authority that within 180 days of the bill's enactment (June 22, 2016), you "*shall convene a working group to consider the development of a voluntary information-sharing system to encourage collaborative efforts to improve inspection information feedback and information sharing with the purpose of improving gas transmission and hazardous liquid pipeline facility integrity risk analysis.*" And specifically, Section 10(b)(8) authorizes the opportunity to appoint "*other entities, as determined appropriate by the Secretary*" to this working group.

MAPPS respectfully urges you to appoint a member to the working group from the mapping and geospatial community. Precedent for such an appointment to include professional geospatial expertise is found in the membership of the Technical Mapping Advisory Council (TMAC) in the Department of Homeland Security's Federal Emergency Management Association (FEMA) stewardship of the National Flood Insurance Program (NFIP), and the Census Bureau's Scientific Advisory Committee, in the Department of Commerce, which meets twice a year to address policy, research and technical issues relating to a full range of Census Bureau programs and activities, including communications, decennial, demographic, economic, field operations, geographic, information technology and statistics.

The need for professional expertise from the surveying, mapping and geospatial community has been demonstrated in a variety of analysis and commentary by Federal agencies and non-partisan reports.

During a September 2015 hearing held by the Senate Commerce, Science and Transportation Committee, National Transportation Safety Board (NTSB) Chairman Christopher Hart testified:

*"We recognize that [Integrity Management (IM)] programs are complex and require expert knowledge and integration of multiple technical disciplines including engineering, material science, **geographic information systems**, data management, probability and statistics, and risk management. This complexity requires pipeline operator personnel and pipeline inspectors to have a high level of practical knowledge and skill to adequately perform their functions. This complexity can make IM program development and implementation, and the evaluation of operators' compliance with IM program requirements, difficult. The study illustrated the need to expand and improve PHMSA resources in guiding both operators and inspectors. ... The NTSB also recommended that PHMSA evaluate and improve gas transmission pipeline integrity*

assessment methods, including increasing the use of in-line inspection and ensuring that direct assessment is not the sole integrity assessment method. Other recommendations include evaluating the effectiveness of the approved risk assessment approaches for IM programs; developing minimum professional qualification criteria for all personnel involved in IM programs; and improving data collection and reporting, including geospatial data, to support the development of probabilistic risk assessment models and the evaluation of IM programs by state and federal regulators."

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.**"*

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**."

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 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, accurate safe utility location 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.

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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.

There is a need for accurate location of America's underground utilities. A 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.

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 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. Many location records do not reflect the “as-built” location of the infrastructure.

To reiterate, MAPPS respectfully urges you to appoint a knowledgeable expert from the mapping and geospatial profession to the working group authorized in Section 10 of P.L. 114-183. This appointment will help the working group to enable safe corridor utility distribution through 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. MAPPS will be pleased to recommend individuals to serve on the working group.

Thank you in advance for your consideration of this request and please do not hesitate to contact me if you have any questions.

Respectfully,

A handwritten signature in black ink, appearing to read "John Palatiello". The signature is fluid and cursive, written over a white background.

John Palatiello
Executive Director