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COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON RAILROADS, PIPELINES, AND HAZARDOUS MATERIALS
HEARING ON PIPELINE SAFETY: REVIEWING IMPLEMENTATION OF THE PIPES ACT OF 2020 AND EXAMINING FUTURE SAFETY NEEDS

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Introduction

Chairman Nehls, Ranking Member Payne, Jr., and members of the Subcommittee, thank you for inviting me to testify today on the U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration's (PHMSA) pipeline safety program. I appreciate this subcommittee's support for strengthening pipeline safety across our country. I am here on a panel of pipeline safety experts to discuss PHMSA's work advancing pipeline safety, but I want to acknowledge that as an agency, as a department, and across the Federal Government, we also remain focused on holding Norfolk Southern accountable for the terrible tragedy in East Palestine, OH—and will continue to provide support to that community and to the National Transportation Safety Board, the independent lead investigator. Over the years, despite often fierce opposition from the industries we regulate, PHMSA has worked to strengthen safety measures for transporting hazardous materials via rail and other modes of transportation, We look forward to working with members on both sides of the aisle to continue those efforts by statute, by regulation, or any other means of achieving results for the people of East Palestine and many other communities that have suffered similar incidents in the past.

At DOT, and within PHMSA, safety is the top priority for Secretary Buttigieg, Deputy Secretary Trottenberg, me, and all of the employees at PHMSA. Specifically, PHMSA is responsible for overseeing the safe transport of hazardous materials—through pipelines and also via other modes of transportation—including planes, trains, trucks, and vessels. PHMSA oversees the safe design, operation, and maintenance of the Nation's nearly 3.4 million miles of oil, gas, and other hazardous materials pipeline facilities for hydrogen, carbon dioxide, and other emerging fuels. Additionally, PHMSA's oversight of hazardous materials via other modes includes nearly 1 in 10 goods that are transported in the U.S., everything from nuclear waste to lithium-ion batteries, to

explosives used in excavation, mining, and energy production. PHMSA also chairs the International Civil Aviation Organization's Dangerous Goods Panel, the international standards making body that sets the global framework for the safe and efficient transport of these materials across borders and around the world.

Under Secretary Buttigieg's leadership, PHMSA has been focused on executing bipartisan congressional mandates in the Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020 (PIPES Act of 2020), historic infrastructure investments from the Infrastructure Investment and Jobs Act of 2021, strengthening our safety mission, and ensuring that the U.S. has the safest, most efficient and competitive transportation system in the world.

From the standpoint of the volume of work before us as an agency, the challenges in carrying out our safety mission have never been greater. We oversee an aging infrastructure that requires robust maintenance, and, when needed, replacement. Most of the cross-country pipeline infrastructure was built shortly after World War II—meaning many pipelines are over 80 years old—and there are even a few gas distribution segments that were installed during the Civil War era, more than 150 years ago.

PHMSA has been integral to the whole-of-government approach to mitigating unnecessary greenhouse gas emissions—an essential component of operating the safest, most efficient and economically competitive transportation and energy system of the 21st century.

Nearly two-thirds of the energy we consume in the U.S. is transported via pipeline. Over the past few decades, growth in energy production in the United States has increased to record levels. Concurrently, U.S. transportation of these products has necessarily increased, and exports of energy have—according to the Energy Information Administration—also reached record levels. This has placed new and heightened demands on our pipeline and refined products storage infrastructure, as well as export facilities, such as liquefied natural gas (LNG) terminals, which PHMSA also regulates.

The bipartisan PIPES Act of 2020 significantly strengthened PHMSA's jurisdiction related to the minimization of methane emissions across all of our regulated entities in an effort to improve public safety and protect our environment. Our efforts on this front include completing three major legacy pipeline safety rulemakings, each of which was more than a decade in the making, including new regulations on 400,000 miles of "gas gathering" pipelines—significantly increased by the fracking boom that began in the 2000s but remained unregulated at the Federal level until this past year. Since the enactment of the PIPES Act of 2020, Congress has added new incentives for infrastructure aimed at decarbonizing energy and industrial sectors. Both the Infrastructure Investment and Jobs Act and the Inflation Reduction Act include significant incentives for the build-out of the hydrogen and carbon capture utilization and storage (CCUS) sectors. To address new risks—both safety and environmental—related to this infrastructure, PHMSA has focused on strengthening its regulations and improving its research in these areas. On the other side of the agency, which focuses on hazardous materials transportation via other modes of transportation, the agency has focused on improving safety in the transportation of hydrogen and other cryogenic materials—via truck, train, plane, and vessel—which is seeing new technology development and investments from nearly every sector of the economy.

Also, since the enactment of the PIPES Act of 2020, PHMSA has worked with Congress to advance its first-ever infrastructure grant program, via the Infrastructure Investment and Jobs Act. The Natural Gas Distribution Infrastructure Safety and Modernization (NGDISM) Grant Program provides $1 billion spread over five years to improve the safety of high-risk, leak-prone legacy natural gas distribution infrastructure with a specific emphasis on benefiting underserved rural and urban communities, among other considerations. Eligible entities are municipality- or community-owned utilities, and funds are available to these entities seeking assistance in repairing, rehabilitating, or replacing high-risk, leak-prone natural gas distribution infrastructure. Funds may also be used to acquire equipment to assist in identifying and reducing natural gas distribution pipeline incidents and fatalities. This grant funding will help communities of all sizes make their infrastructure safer, create good jobs, reduce heat-trapping methane from the atmosphere, and reduce the risks of fatality and serious injury for residents and businesses. As of this hearing, we expect to announce the first round of these grants imminently.

Rulemaking

Our regulatory agenda over the past two years has been exceptionally full. PHMSA has been hard at work closing out years-long, and in some cases decade-long, efforts on final rules as well as initiating important new rulemakings from the 2020 PIPES Act.

Some of PHMSA's recently completed final rules include the sibling rules to the Safety of Gas Transmission Pipelines final rule that we published in 2019, including improved regulation of higher-risk gas gathering pipelines; the 400,000 miles of additional pipelines previously mentioned; required reporting of safety information for all gas gathering pipelines; improved repair criteria for gas transmission pipelines; and other enhanced safety requirements for gas transmission pipelines regarding corrosion control, management of change, and inspections following extreme weather events.

Additionally, in April of 2022, PHMSA published the long-awaited final rule addressing rupture detection and rupture-mitigation valve installation for many gas transmission, hazardous liquid, and gas and hazardous liquid gathering pipelines, including carbon dioxide lines. Among other important provisions, this rule requires the installation of remote-control or automatic-shutoff valves, or equivalent technology, that can close within 30 minutes of an operator being notified of a potential rupture—saving lives and reducing methane emissions.

In response to Congress' very stringent timeline for issuing a final rule for Coastal Ecological Unusually Sensitive Areas (90 days), PHMSA issued an Interim Final Rule to include additional coastal waters, the Great Lakes, and coastal beaches within the definition of an "unusually sensitive area" for the purposes of resilience and risk reduction through hazardous liquid pipeline integrity management—strengthening protections for these treasured natural environments. PHMSA subsequently held a Liquid Pipeline Advisory Committee meeting on the rulemaking and emerged from that meeting with recommendations to help finalize this rule while addressing stakeholder concerns.

PHMSA has initiated several priority rulemakings that look to address important PIPES Act of 2020 mandates and emerging safety issues, including leak detection and leak repair, the safety of gas distribution pipelines (as directed in the Leonel Rondon Pipeline Safety Act), updated LNG facilities regulations, and an overhaul of the safety requirements for pipelines transporting carbon dioxide.

As required by Congress, PHMSA continues to update the Federal pipeline safety regulations (PSRs) to reflect new and revised voluntary consensus standards developed and adopted by standards-setting bodies (see e.g., PHMSA's periodic standards update rulemakings). We understand how important updating and aligning standards can be to ensure the PSR include up-to-date standards that reflect current best practices and technologies—and to serve as a higher bar, from which the regulated community can continue to improve.

Finally, PHMSA published a Notice of Proposed Rulemaking (NPRM) in October 2020 for Class Location Change Requirements. As you are aware, PHMSA is required by statute to hold advisory committee meetings on our proposed rules to solicit recommendations to ensure our rulemakings are reasonable, feasible, cost-effective, and practicable. These advisory committee meetings have helped derive consensus around highly technical regulatory policies. The PIPES Act of 2020 requires PHMSA to hold an advisory committee meeting on the NPRM for this rule. Based on the aggressive timelines and safety priorities included in the PIPES Act of 2020, PHMSA is working to make efficient use of agency resources and advisory committee members' time and anticipates holding an advisory committee meeting on the NPRM in conjunction with publishing the most important safety agenda items identified by Congress.

It is important to point out that rulemaking is designed to be an iterative process that encourages maximum participation by all stakeholders and rigorous analysis in support of decision making. This process helps ensure the promulgation of comprehensive rules that protect the public and the environment and meet our statutory requirement for rules with benefits that exceed their costs. PHMSA holds public meetings and workshops and conducts significant outreach prior to rulemakings, using the information gathered to establish a legal record and to strive to craft the most effective rules possible. Such collaboration, well in advance of the rulemaking process, allows PHMSA to identify concerns and potential solutions and to allocate its limited resources where they are needed most. In the past, these comprehensive efforts have also helped avoid expending additional resources on legal challenges.

In addition to congressionally mandated rules, many of PHMSA's rulemakings underway address important recommendations from the National Transportation Safety Board, resulting from safety issues identified during investigations in the aftermath of some tragic accidents. PHMSA's rules also address recommendations from the U.S. Government Accountability Office (GAO), the DOT Inspector General (DOT IG), and the agency's own safety findings. When PHMSA proceeds with such rulemakings identified by independent sources, it must make sure that its regulations account for known safety issues, technological feasibility, and cost-effectiveness.

Increased litigation

With all the good work that is being done to advance pipeline safety by the promulgation of new rules, PHMSA also faces a new normal in terms of increased challenges to its rulemakings, resulting in longer development timelines and diversion of personnel resources to respond to legal challenges—which could otherwise be utilized to advance the myriad congressional directives and regulatory priorities of the agency and stakeholders.

PHMSA has also seen a dramatic increase in interest in its rulemakings pertaining to energy resources. By way of example, PHMSA's LNG by Rail Suspension NPRM, issued in November 2021, has had over 7,000 comments—including a coordinated letter-writing campaign by environmental advocacy organizations and a letter signed by over 20 State Attorneys General, as well as many members of the House of Representatives on both sides of the aisle.

Specifically, PHMSA has finalized four major rulemakings over the last year, and each of which has been the subject of judicial and/or administrative challenges. PHMSA currently faces pending litigation brought by pipeline industry trade groups on the Gas Gathering Final Rule, Valve Installation and Repair Final Rule, among others, from stakeholder groups and governments, across the spectrum.

PHMSA rulemaking resources are consequently spread thin. The same subject matter experts, attorneys, and economists who develop new PHMSA rules are also the ones who must help develop the briefs and arguments to respond to legal challenges after issuance.

Enforcement and Compliance

While PHMSA's enforcement cases have remained relatively steady, we have set records for our proposed civil penalties in 2021 and again in 2022. These cases, many of which are still being adjudicated, include the worst carbon dioxide pipeline incident on record as well as a case related to the 2021 Colonial Pipeline cybersecurity incident. PHMSA continues to pursue 100% collections of the civil penalties it has imposed; however, some operators with smaller civil penalties have significantly delayed paying the penalties they owe.

In terms of forward-looking, potential rulemakings, the PSRs currently include emergency planning, response, and timely notification requirements for pipeline operators. However, incidents involving, for example, carbon dioxide pipelines as well as LNG facilities, do not necessarily require communications to communities who rightfully have an increased fear of these facilities after a safety incident occurs. PHMSA will look to its rulemaking authorities to help address the lack of post-incident communications but we also welcome congressional ideas in this space.

Another issue we're examining involves the safety and performance of pipes manufactured outside of the U.S. Many larger operators deploy their own inspectors when utilizing foreign-made pipe in their projects—in order to ensure maximum safety and performance. However, when those U.S. companies find non-spec pipe (pipe not meeting Federal or industry standards), they may simply refuse to purchase it—which may result in another U.S. pipeline construction

company ultimately purchasing or utilizing the same non-spec piping. On the hazardous materials side of our agency, PHMSA deploys inspectors across the globe to ensure products that are moving hazardous materials in the U.S. are inspected by U.S. inspectors. PHMSA is conducting analysis to better understand if non-spec foreign made pipes are being utilized in the U.S.

Research and Innovation

While PHMSA continues to advance pipeline safety by strengthening its regulations and enhancing its inspector training, inspections, and enforcement programs, many of the root causes of incidents are best addressed through research and technological innovation.

PHMSA's Pipeline Safety Research Program works with academia, the regulated community, private research consortiums and federal partners to sponsor research and development (R&D) projects focused on providing near-term solutions for pipeline transportation infrastructure issues that will improve safety, reduce environmental impact, and enhance reliability.

Hydrogen/Carbon Dioxide (CO_2)

In FY 2022, PHMSA awarded approximately $6 million in research investments on hydrogen projects. Specifically, under the Competitive Academic Agreement Program, PHMSA awarded two projects on pipeline infrastructure and modernization for hydrogen networks to two universities. These research opportunities expose students to the pipeline safety sector to encourage them to join the federal or state pipeline safety workforce or the private sector after graduation. PHMSA also leverages the University Transportation Centers Program to meet its research needs.

Also, in FY 2022, PHMSA awarded four projects related to hydrogen pipelines and storage, under our Core Research Program, totaling just over $2 million. These projects will research the safe transportation and storage of hydrogen via repurposing existing infrastructure used for natural gas transport and underground storage, improving hydrogen leak detection, and characterizing hydrogen-specific pipeline integrity threats.

PHMSA is collaborating with the Department of Energy (DOE) and other DOT modes on developing a Memorandum of Understanding to establish collaborative partnerships on R&D and safety associated with the transport of carbon dioxide and hydrogen via pipelines, rail, barge, ship, and truck.

Lastly, PHMSA announced last year new research topics to better determine impact areas for the safer operations of carbon dioxide pipelines. The results of this may help inform a current rulemaking related to carbon dioxide pipelines but congressional attention related to these issues is also welcome.

LNG

Recent global fluctuations in natural gas supplies as well as a transition from more carbon-intensive energy sources continue to spark investments in LNG. Currently, there are eight LNG export terminals with a total LNG production capacity of approximately 14 billion standard cubic feet per day (bcf/d) in the United States. There are also five LNG projects under construction, which will add an estimated 11.9 bcf/d in LNG production capacity. To that end PHMSA has funded 14 R&D LNG-safety-related research projects since 2007; with nine completed/closed and five currently active, all totaling $5.7 million.

Additionally, in the Consolidated Appropriations Act, 2023, Congress allocated up to $8.4 million to PHMSA for the creation of an LNG Center of Excellence aimed at positioning the United States as the leader and foremost expert in LNG operations—including safety and environmental performance. PHMSA has already initiated planning for the establishment of the Center which will enhance U.S. LNG operations and safety education and oversight and may result in LNG regulatory improvements. It will also serve as a repository of information and facilitate collaboration among stakeholders to enhance safety and environmental performance through research.

Funding for State Pipeline Safety Programs

Since 1970, when a national, uniform standard of pipeline safety regulations was published, states have had the authority, through PHMSA, to regulate the safety of intrastate pipelines. Under the authority of Sections 60105 and 60106 of Title 49 U.S. Code (49 U.S.C.) for state pipeline safety program certifications, states have been allowed to assume safety authority for the inspection and enforcement of intrastate pipelines. PHMSA sets the minimum Federal regulations for pipeline safety, which the participating states then adopt into their state code and enforce. States are allowed, under 49 U.S.C Section 60104(c), to adopt more stringent safety standards than the minimum standards PHMSA sets. This allows states to codify and enforce regulations that deal with specific, regional (or local) risks that might not be feasible or cost-beneficial to regulate at the Federal level. Many states have established safety regulations that are more stringent than the Federal regulations.

PHMSA relies on this extremely important partnership to accomplish its safety mission, which is to protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives. New pipeline safety regulations and new infrastructure (such as gas gathering lines) specific to state safety authority have and will continue to require state pipeline safety programs to increase staff—in order to handle the additional infrastructure oversight responsibilities. These state pipeline safety programs employ approximately 435 inspectors who are responsible for inspecting over 85 percent of the Nation's pipeline infrastructure through certification with PHMSA.

The PIPES Act of 2020 allows PHMSA to pay not more than 80 percent of the total cost of the personnel, equipment, and activities reasonably required by the state agency for the conduct of its pipeline safety program during a given calendar year. This was changed from 50 percent in the 2006 PIPES Act. However, for fiscal years 2019 to 2021 State Base Grant federal funding

covered less than 70 percent of the actual total state program costs. The actual federal funding is estimated to be approximately 60 percent of the state program's total costs for fiscal year 2022. Unfortunately, current year 2023 federal funding is estimated to be only 56 percent of the total state program costs—due, in part, to increasing needs from states. This is another area where we welcome congressional ideas on how to support states and their vital role in implementing many of the new regulations previously discussed.

Control Room Management and Cyber Security

Not only is the industry facing expansion in the number of regulated pipeline miles and changes in product demand, both industry and regulators are addressing the growing threat of cyberattacks. PHMSA, the Transportation Security Administration (TSA), and DOE have a mutual interest in ensuring coordinated, consistent, and effective activities that improve transportation security. PHMSA's safety oversight of pipeline control rooms forms a nexus with TSA's cybersecurity oversight, the Cybersecurity and Infrastructure Security Agency's (CISA's) role as the national coordinator for critical infrastructure security, and DOE's national energy management. The 2021 cyber-attack on Colonial Pipeline demonstrated how critical it is for a whole-of-government approach to safeguarding our Nation's critical infrastructure—as well as collaboration with the private sector when it comes to planning and communications.

PHMSA is leveraging its authorities to inspect and enforce three components of pipeline operations including pipeline control room regulations, integrity management plan requirements, and emergency response plan regulations by incorporating cybersecurity questions in inspections that focus on considering cyber as a risk and having emergency response plans in place that consider the threat of cyberattacks as well as envision measures to mitigate impacts to operations. PHMSA has also engaged with CISA and TSA on cybersecurity exercises for pipeline operators.

To help advance our safety mission as it relates to cybersecurity, PHMSA is in the process of hiring pipeline and cybersecurity experts to assist in control room management inspections and provide cyber expertise support to PHMSA leadership. Cyber specialists can better identify pipeline infrastructure-related cyber risks, incidents, and significant issues that PHMSA currently lacks expertise in. This would help increase information sharing, create better understanding between agencies, and identify key issues between the nexus point of safety and security.

PHMSA is increasing cybersecurity training opportunities for its staff, as well as the staff of its state partners. By expanding the knowledge base of inspectors, we are better positioned to identify risks during routine control room inspections and coordinate when needed with colleagues in TSA.

PHMSA is also developing an adaptable emergency preparedness plan that will address the Agency's response to all-threat, all-hazard, notice and no-notice incidents, including cybersecurity. As part of the process, PHMSA is developing an organizational framework to respond to those incidents, formal situational reporting internal and external to PHMSA, formal information sharing processes, and specific coordination methods between PHMSA, TSA, CISA, DOT Operating Administrations, DOE, and the Federal Emergency Management Agency.

OIG inspection, GAO audits, and NTSB recommendations

In terms of PHMSA's compliance and inspection program, we recently underwent a DOT IG audit, which was initiated in May 2022, to review PHMSA's implementation of its Integrated Inspection Program. Throughout the audit, the PHMSA team provided detailed overviews and walkthroughs of its Integrated Inspection Program, including, but not limited to planning, training, inspection conduct, and governing policies. PHMSA even organized and facilitated the OIG's participation in several ongoing integrated inspections, and, at PHMSA's invitation, OIG personnel attended the Office of Pipeline Safety's annual inspection planning meeting in October 2022. The DOT IG provided helpful feedback and we consider the audit to have been beneficial to PHMSA's continual improvement. PHMSA learned valuable lessons and received three DOT IG recommendations. We continue to have a constructive working relationship with the DOT IG, and the audit helped us to continue to move toward our common goal of advancing pipeline safety.

In August 2020, the GAO published a study finding Federal agencies have incorporated most but not all key collaboration practices in the permitting processes for export facilities for LNG. The GAO identified key practices for PHMSA, that can help sustain collaboration among federal agencies.

PHMSA's team worked with GAO to adopt a process for conducting standards-specific reviews approximately every two to three years. The new process will ensure that a sufficient review is conducted and that PHMSA makes appropriate determinations about whether to update standards.

When it comes to our work with the National Transportation Safety Board (NTSB), PHMSA is addressing recommendations that include requiring control room operators to notify emergency call centers in impacted communities when potential ruptures take place, equip control rooms with supervisory controls and data acquisition systems to pinpoint leaks along transmission lines, and amend Title 49, Code of Federal Regulations (CFR) to require automatic shutoff valves or remote-control valves at high consequence areas. We continue working to resolve any open recommendations—some of which we are constrained by resources and some by statutes—such as the congressional prohibition on applying the Automatic/Remote Shut Off Valve Rule to existing pipelines.

PHMSA continues to work with NTSB to address recommendations that have been made following other natural gas and hazardous liquid accidents. We collaborate with NTSB often, including opportunities for cross-training of our respective staff. We'll continue to engage with NTSB as a partner in advancing safety.

All of these efforts are important because continual improvement is a key principle of safety management systems and high-reliability organizations, and one we embrace for both the agency and the industries we regulate.

Transparency, Equity, Environmental Justice, and Outreach to Underserved Communities

To both implement the President's executive orders on equity (EO 13985 and EO 14008), as well as to help address historic inequities in the transportation system, PHMSA's Office of Pipeline Safety has expanded its efforts to make public pipeline safety incidents and enforcement data (which was also recently the subject of a GAO report that lauded PHMSA's transparency and encouraged further actions). Specifically, PHMSA has created a publicly available pilot, interactive mapping tool that allows users to view the location of pipeline incidents, as well as a geographic overlay with underserved communities.

When PHMSA first viewed the preliminary information from this tool, staff felt inspired to act—to help ensure all communities are receiving requisite safety protections. As part of this effort, PHMSA has engaged our state and federal partners, as well as stakeholders, to share our findings, and they, too, are engaging in dialogues with pipeline operators to ensure maintenance and safety measures do not leave underserved communities behind.

These communities are identified through U.S. Census and internal DOT/PHMSA data focused on underserved and transportation-disadvantaged communities that have experienced excavation damages, and other pipeline incidents and accidents.

PHMSA has also expanded its public outreach and education on pipeline awareness and safety as well as community-based excavation damage prevention initiatives to historically underserved and socioeconomically challenged geographic areas.

Increased Engagement with the Public

PHMSA is committed to enhancing all stakeholder engagement and has increased the number of public meetings and information briefings it hosts—holding four public meetings and information briefings so far in FY 2023, with additional public meetings and information briefings planned. Personally, I have visited community members and victims, on-site, where pipeline facilities have failed (e.g. Kalamazoo, MI; Bellingham, WA; Satartia, MS; and Freeport, TX).

PHMSA has also increased its engagement with public interest groups like the Pipeline Safety Trust, pipeline worker labor unions, and environmental groups, actively participating in conferences and meetings to hold a two-way dialogue on important pipeline safety issues, emphasizing that pipeline safety is a shared responsibility.

In November and December 2022, PHMSA partnered with the DOE in a series of Community Engagement Workshops on Carbon Capture, Utilization, and Storage and continues to serve as a resource regarding pipelines to DOE and the public. PHMSA has also supported requests from individuals and groups to participate in meetings to discuss CO_2 pipeline projects to listen to concerns on safety, environmental justice, environmental impacts, and emergency response preparedness, as well as meet with representatives at the state legislature level. As previously noted, in May of 2022, I personally visited the community of Satartia, MS—about an hour

northwest of Jackson—the site of one of the worst carbon dioxide pipeline incidents in history, in order to hear directly from the community and first responders that helped the community during that serious incident.

Similarly, just yesterday I visited with members of the community in and around Freeport, TX, which is home to the Freeport LNG facility. In June of 2022, an explosion at the facility resulted in a massive fireball and understandably left lasting concerns with the community. In February of this year, PHMSA, along with our co-regulators of LNG export facilities (the Federal Energy Regulatory Commission and the U.S. Coast Guard) held a town hall meeting in the community—with simultaneous bilingual translation—to help inform the surrounding community members of our work to investigate the incident and require changes needed to enhance safety at the facility.

In 2022, PHMSA's Office of Pipeline Safety participated in nearly 220 public meetings, events, and conferences to educate our stakeholders on pipeline safety and damage prevention initiatives and to address questions about the Federal pipeline safety regulations or concerns about pipeline-related matters. PHMSA continues to promote the 'Call 811 Program' through participation in events as well as through social media and digital campaigns encouraging safe digging practices.

Efficiencies in Oversight, Taxpayer Stewardship, and Focus on Employees

Roughly 169 midstream oil and gas industry projects are expected to begin operations in the United States from 2021 to 2025, according to the Pipeline and Gas Journal. Over the last five years, liquid pipeline incidents have fallen by 21% while pipeline mileage and barrels delivered have increased by more than 27%. As previously noted, and to put it simply, our oversight responsibilities continue to grow both in terms of the types of facilities we regulate as well as the number of facilities we regulate: PHMSA has increasing responsibility for LNG facilities, underground natural gas storage, as well as natural gas gathering lines. PHMSA's budget, excluding the new gas distribution grant program, does not grow at a rate commensurate with its responsibilities. Consequently, PHMSA has had to continuously operate relatively leaner as compared to our expanded universe of regulated facilities. To this end, PHMSA has also utilized advisory bulletins, public meetings, research solicitations, and increased collaboration with coregulators such as the Federal Energy Regulatory Commission, the Environmental Protection Agency, the Department of Interior, the U.S. Coast Guard, and our state partners through collaboration with the National Association of Pipeline Safety Representatives.

Hiring times at PHMSA have been reduced by 25% unfortunately – due in part to the pandemic – PHMSA was not spared the so-called great resignation, losing many individuals to both retirements and other departures. But PHMSA is exploring ways to continue to improve the agency's hiring and recruitment to make it both more efficient and effective in recruiting and retaining talented applicants.

On the hiring, recruitment, and retention front, unfortunately—due in part to the pandemic—PHMSA was not spared the so-called great resignation, losing many individuals to both retirements and other departures.

To meet congressional directives to improve efforts to attract and retain pipeline engineers and inspectors, PHMSA has undertaken new recruitment and retention efforts—seeking approval from the Office of Personnel Management to increase special pay rates for some engineer inspectors—commensurate with similar federal special pay rates, developing new tuition reimbursement efforts, and utilizing new online recruitment methods. PHMSA is also utilizing the Department of Defense's Operation Warfighter (OWF) program that matches qualified wounded, ill, and injured Service members with federal internships for veterans to gain valuable work experience during their recovery and rehabilitation—and create a pathway from the military to permanent employment. PHMSA has kept up with the PIPES Act of 2020 hiring mandates—both for inspectors as well as for regulatory personnel, that have helped lead the agency to some of its most productive years ever in terms of both finalizing regulations as well as enforcement actions and a reduction trend in hazardous materials and pipeline incidents.

PHMSA has also utilized technologies like iPads to eliminate paperwork for inspectors—which has resulted in more efficient use of inspectors' time and increased the accuracy and standardization of inspections.

On an agency-wide basis, PHMSA has reduced or eliminated its use of nearly two dozen disparate software systems in favor of less costly, integrated systems. PHMSA is utilizing the cost savings of this nature to continue investing in more long-term, cost-saving programs.

Conclusion

In closing, I would like to thank you again for the opportunity to engage with you on the critical issues facing PHMSA and in turn facing a major component of the largest, most sophisticated energy transportation system in the world. And most importantly, I would like to emphasize my deep gratitude to the nearly 600 full-time federal employees and nearly 200 contractors that make up what I believe is the most unsung agency in the Federal Government. Congress has charged us with tremendous responsibilities—from ensuring the safe transportation of some of the most valuable goods that move in commerce, like satellites and spacecraft, as well as some of the most essential goods like fertilizer used on our farms, which can be transported by pipeline. As we take on ever greater oversight responsibilities with oversight of the build-out of carbon dioxide and hydrogen pipelines and other energy products of the future, PHMSA must either continue to grow our resources, or continue to reassess multiple and increasing priorities with the same amount of resources.

We look forward to continuing to work with Congress to improve pipeline and hazardous materials safety and to reduce associated environmental impacts.

Thank you again for inviting me here today. I look forward to your questions.