



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Avenue, SE  
Washington, DC 20590

December 28, 2021

The Honorable Maria Cantwell  
Chair  
Committee on Commerce, Science,  
and Transportation  
United States Senate  
Washington, DC 20510

Dear Chair Cantwell:

Enclosed please find the report titled, Pipeline Safety Enhancement Programs Report to Congress – December 2021 (Report), as required by the “Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020” (PIPES Act of 2020; Pub. L. 116-260 at Division R). This Report summarizes the status of the Pipeline and Hazardous Materials Safety Administration’s (PHMSA’s) implementation of Pipeline Safety Enhancement Programs (Programs) authorized by the PIPES Act of 2020 to facilitate the testing and evaluation on natural gas pipeline facilities and some hazardous liquid (HL) pipeline facilities of innovative, safety-improving technologies and operational practices.

Section 104 of the PIPES Act of 2020, codified at 49 U.S.C. § 60142, also requires the Secretary of Transportation to submit, within one year of enactment, a Report to Congress examining the benefits and costs of that statute’s prohibition on HL pipelines located in high consequence areas (HCAs) from participating in Pipeline Safety Enhancement Programs. PHMSA has not received statements of interest for participation in Pipeline Safety Enhancement Programs, so PHMSA is unable to conduct a meaningful evaluation of the costs and benefits of expanded eligibility to participate in those Programs. However, in this Report, PHMSA has outlined some of the considerations that could inform its evaluation of costs and benefits, should operational experience and testing data from such Programs become available.

A similar letter has been sent to the Ranking Member of the Senate Committee on Commerce, Science, and Transportation; the Chair and the Ranking Member of the House Committee on Energy and Commerce; and the Chair and the Ranking Member of the House Committee on Transportation and Infrastructure.

Sincerely,

Tristan H. Brown

Enclosure



U.S. Department  
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**Pipeline and Hazardous  
Materials Safety  
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1200 New Jersey Avenue, SE  
Washington, DC 20590

December 28, 2021

The Honorable Roger Wicker Ranking  
Member  
Committee on Commerce, Science,  
and Transportation  
United States Senate Washington, DC  
20510

Dear Ranking Member Wicker:

Enclosed please find the report titled, Pipeline Safety Enhancement Programs Report to Congress – December 2021 (Report), as required by the “Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020” (PIPES Act of 2020; Pub. L. 116-260 at Division R). This Report summarizes the status of the Pipeline and Hazardous Materials Safety Administration’s (PHMSA’s) implementation of Pipeline Safety Enhancement Programs (Programs) authorized by the PIPES Act of 2020 to facilitate the testing and evaluation on natural gas pipeline facilities and some hazardous liquid (HL) pipeline facilities of innovative, safety-improving technologies and operational practices.

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A similar letter has been sent to the Chair of the Senate Committee on Commerce, Science, and Transportation; the Chair and the Ranking Member of the House Committee on Energy and Commerce; and the Chair and the Ranking Member of the House Committee on Transportation and Infrastructure.

Sincerely,

A handwritten signature in black ink that reads "Tristan H. Brown".

Tristan H. Brown

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U.S. Department  
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1200 New Jersey Avenue, SE  
Washington, DC 20590

December 28, 2021

The Honorable Frank Pallone, Jr.  
Chair  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, DC 20515

Dear Chair Pallone:

Enclosed please find the report titled, Pipeline Safety Enhancement Programs Report to Congress – December 2021 (Report), as required by the “Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020” (PIPES Act of 2020; Pub. L. 116-260 at Division R). This Report summarizes the status of the Pipeline and Hazardous Materials Safety Administration’s (PHMSA’s) implementation of Pipeline Safety Enhancement Programs (Programs) authorized by the PIPES Act of 2020 to facilitate the testing and evaluation on natural gas pipeline facilities and some hazardous liquid (HL) pipeline facilities of innovative, safety-improving technologies and operational practices.

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Sincerely,

Tristan H. Brown

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U.S. Department  
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**Pipeline and Hazardous  
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1200 New Jersey Avenue, SE  
Washington, DC 20590

December 28, 2021

The Honorable Cathy McMorris Rodgers Ranking  
Member  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, DC 20515

Dear Ranking Member McMorris Rodgers:

Enclosed please find the report titled, Pipeline Safety Enhancement Programs Report to Congress – December 2021 (Report), as required by the “Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020” (PIPES Act of 2020; Pub. L. 116-260 at Division R). This Report summarizes the status of the Pipeline and Hazardous Materials Safety Administration’s (PHMSA’s) implementation of Pipeline Safety Enhancement Programs (Programs) authorized by the PIPES Act of 2020 to facilitate the testing and evaluation on natural gas pipeline facilities and some hazardous liquid (HL) pipeline facilities of innovative, safety-improving technologies and operational practices.

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Sincerely,

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Tristan H. Brown

Enclosure



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
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1200 New Jersey Avenue, SE  
Washington, DC 20590

December 28, 2021

The Honorable Peter A. DeFazio Chair  
Committee on Transportation and  
Infrastructure  
U.S. House of Representatives  
Washington, DC 20515

Dear Chair DeFazio:

Enclosed please find the report titled, Pipeline Safety Enhancement Programs Report to Congress – December 2021 (Report), as required by the “Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020” (PIPES Act of 2020; Pub. L. 116-260 at Division R). This Report summarizes the status of the Pipeline and Hazardous Materials Safety Administration’s (PHMSA’s) implementation of Pipeline Safety Enhancement Programs (Programs) authorized by the PIPES Act of 2020 to facilitate the testing and evaluation on natural gas pipeline facilities and some hazardous liquid (HL) pipeline facilities of innovative, safety-improving technologies and operational practices.

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Enclosure



U.S. Department  
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**Pipeline and Hazardous  
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1200 New Jersey Avenue, SE  
Washington, DC 20590

December 28, 2021

The Honorable Sam Graves Ranking  
Member  
Committee on Transportation and  
Infrastructure  
U.S. House of Representatives  
Washington, DC 20515

Dear Ranking Member Graves:

Enclosed please find the report titled, Pipeline Safety Enhancement Programs Report to Congress – December 2021 (Report), as required by the “Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020” (PIPES Act of 2020; Pub. L. 116-260 at Division R). This Report summarizes the status of the Pipeline and Hazardous Materials Safety Administration’s (PHMSA’s) implementation of Pipeline Safety Enhancement Programs (Programs) authorized by the PIPES Act of 2020 to facilitate the testing and evaluation on natural gas pipeline facilities and some hazardous liquid (HL) pipeline facilities of innovative, safety-improving technologies and operational practices.

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Tristan H. Brown

Enclosure





U.S. Department of Transportation

**Pipeline and Hazardous Materials Safety Administration**



## **Pipeline Safety Enhancement Programs Report to Congress – December 2021**

**PIPES Act of 2020 – 49 U.S.C. § 60142**

**Pipeline Safety Enhancement Programs Report to Congress December**  
**2021**  
**PIPES Act of 2020 – 49 U.S.C. § 60142**

**Contents**

Abbreviation List ..... iii

Executive Summary ..... 1

1. Introduction..... 2

    1.1 Pipeline Safety Enhancement Programs – 49 U.S.C. § 60142..... 2

    1.2 Limitations – High Consequence Areas for Hazardous Liquid Pipelines – 49 U.S.C. § 60142(b)(3)(B) & 49 U.S.C. § 60142(b)(4)..... 2



## Abbreviation List

CFR	Code of Federal Regulations
DOT	Department of Transportation or The Secretary
FR	Federal Register
HCA	High Consequence Area
HL	Hazardous Liquid
IM	Integrity Management
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIPES Act of 2020	Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020
Program(s)	Pipeline Safety Enhancement Programs
U.S.C.	United States Code

## Executive Summary

The mission of the Pipeline and Hazardous Materials Safety Administration (PHMSA) is to protect people and the environment by advancing the safe transportation of energy products and other hazardous materials that are essential to our daily lives. PHMSA oversees the transportation of hazardous materials, including energy products, through all modes of the transportation industry. PHMSA operates in a dynamic and challenging environment in which changes in technology, manufacturing, and energy production affect transportation safety. PHMSA anticipates growth in the scope and complexity of its safety mission, which requires continuous evaluation of how it uses information and technology to achieve the safety goals of the U.S. Department of Transportation (DOT). PHMSA collaborates with all stakeholders who share the goal of developing new technologies, products, and knowledge aimed at improving safety in all areas of its regulatory agenda focused on addressing existing and future safety threats.

Due to the importance of energy products and other hazardous materials to our economy and standard of living, PHMSA evaluates new innovative technologies and operational practices through testing programs that ensure pipeline safety and reliability, and the efficient and reliable performance of the Nation's pipeline transportation system.

In compliance with section 104 of the Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020 (Pub. L. 116-260; PIPES Act of 2020), codified at 49 United States Code (U.S.C.) § 60142(b)(4), PHMSA is submitting this report to Congress. This report describes extending eligibility for participation in Pipeline Safety Enhancement Programs authorized by § 60142(a) to hazardous liquid (HL) pipelines that are located in high consequence areas (HCAs) as defined in 49 Code of Federal Regulations (CFR) § 195.450. In addition, the report describes how PHMSA is pursuing approaches for notifying potential test program applicants of how to apply.

# 1. Introduction

## 1.1 Pipeline Safety Enhancement Programs – 49 U.S.C. § 60142

Section 104 of the PIPES Act of 2020 (Pub. L. 116-260), codified at 49 U.S.C. § 60142, authorizes the Secretary of DOT (the Secretary) to establish and carry out limited, safety-enhancing testing programs to evaluate innovative technologies and operational practices directed toward improving the safe operation of natural gas pipeline and some HL pipeline facilities (Pipeline Safety Enhancement Programs or Program(s)). The Secretary has delegated that authority to PHMSA pursuant to 49 CFR § 1.97(a)(1).

The PIPES Act of 2020 specifies a number of required parameters governing PHMSA's authority to approve Pipeline Safety Enhancement Programs, including the following: eligibility limitations; application windows and maximum Program duration; pertinent safety standards and considerations; use of data and findings by PHMSA; revocation and termination authorities; states' opt-out rights; PHMSA's review processes for Program applicants; notice requirements; and congressional and public reporting requirements. Notably among the eligibility limitations in 49 U.S.C. § 60142(b)(3)(B) is a prohibition of testing within approved Programs of HL pipelines located in HCAs.

PHMSA is pursuing approaches for publicizing processes for the application, review, noticing, and Program approval that follow the requirements of 49 U.S.C. § 60142. This includes the expected publication of a Federal Register (FR) notice informing potential applicants and other stakeholders of procedural and substantive requirements governing the establishment of Pipeline Safety Enhancement Programs.

## 1.2 Limitations – High Consequence Areas for Hazardous Liquid Pipelines – 49 U.S.C. § 60142(b)(3)(B) and 49 U.S.C. § 60142(b)(4)

Subparagraph (b)(4) of 49 U.S.C. § 60142 requires that, no later than 1 year after the date of enactment of the PIPES Act of 2020, the Secretary submit a report to Congress examining the benefits and costs of the 49 U.S.C. § 60142(b)(3)(B) prohibition of HL pipelines located in HCAs from participating in Programs testing safety-enhancing new technologies and approaches. The PIPES Act of 2020 also requires PHMSA to evaluate

whether additional testing conditions would be necessary to protect HCAs, should HL pipelines located in HCAs be authorized to participate in such testing Programs.

PHMSA has, as of November 8, 2021, not received any statements of interest from potential applicants for participation in Pipeline Safety Enhancement Programs under 49 U.S.C. § 60142. PHMSA is pursuing issuance of a FR notice to inform potential applicants and other stakeholders of procedural and substantive requirements that would govern the Programs. Until such Programs initiate, however, PHMSA is unable to estimate the costs and benefits (whether measured in dollars, impact on public safety, or possible damage to natural resources) from potential extension of eligibility to HL pipelines located in HCAs.

Once PHMSA has received and approved applications from pipeline operators for participation in Pipeline Safety Enhancement Programs, it is obliged by 49 U.S.C. § 60142(f)(2) to post to the DOT website an annual report describing the current status of each approved testing Program. On the completion of each Program, PHMSA will (as required by 49 U.S.C. § 60142(k)) post to its website a report identifying PHMSA's findings and conclusions with respect to that completed Program, including any recommendations for revisions to law and regulations implementing standards that are both (1) safety-enhancing and (2) technically, operationally, and economically feasible.

Once pipeline operators have begun participation in Pipeline Safety Enhancement Programs, PHMSA will evaluate each Program's scope, location, and the impact to public safety and the environment. For HL pipelines in particular, PHMSA will require the applicant to develop procedures for operation and monitoring of the testing Program, based upon the type of HL product in the pipeline, and also take into account the pipeline's location to ensure the testing Program does not affect HCAs.

PHMSA expects it will be able to leverage the lessons learned and test results from such Programs to inform its evaluation of the costs and benefits of allowing the testing of new technologies and practices on HL pipelines located in HCAs. That evaluation may consider the following risk factors which are part of PHMSA's HL pipeline integrity management (IM) regulations specified in 49 CFR § 195.452(e)(1):

- 1) Results of the previous integrity assessment, defect type and size that the assessment method can detect, and defect growth rate.<sup>1</sup>
- 2) Pipe size, material, manufacturing information, coating type and condition, and seam type.<sup>2</sup>
- 3) Leak history, repair history, and cathodic protection history.
- 4) Product transported.
- 5) Operating stress level.<sup>3</sup>
- 6) Existing or projected activities in the area.
- 7) Local environmental factors that could affect the pipeline (e.g., seismicity, corrosivity of soil, subsidence, climatic).
- 8) Geo-technical hazards.
- 9) Physical support of the segment such as by a cable suspension bridge.

Similarly, PHMSA's evaluation may also consider use of the IM risk factor guidance in Appendix C of 49 CFR part 195 to identify any additional test conditions necessary to maintain safety and protect the environment when extending eligibility to HL pipelines that could affect HCAs. Potential test conditions that could be imposed may include conditions pertaining to any of the following: a minimum distance of a HL pipeline in a HCA from unusually sensitive areas,<sup>4</sup> water crossings, water bodies, and population areas; the anticipated timing to isolate a HL pipeline segment; product type in the pipeline, possible spill volumes, and clean-up requirements and timing should a spill occur.

Further, should Congress determine to extend eligibility for participation in Pipeline Safety Enhancement Programs to HL pipelines located in HCAs, PHMSA would be authorized under 49 U.S.C. § 601042(h) to terminate any such Program as required to assure public safety and environmental protection. Similarly, any testing information and

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<sup>1</sup> Integrity information reviewed will include assessment type, assessment findings, remediation results, type of threats to the pipeline found during the assessments, and reassessments including the locations of any remediation or threat findings to the testing program, as applicable for the testing Program.

<sup>2</sup> Pipeline design specifics that will be reviewed include the pipe diameter, wall thickness, seam type, coating type and condition of the pipe coating, design factor, depth of soil cover, hydrostatic pressure test, non-destructive testing of pipe girth welds, and location of valves, as applicable for the testing Program.

<sup>3</sup> Operational parameters that will be reviewed include the location of valves, time to close the valves to isolate the pipeline, coating survey results and remediation, leak history, and failure history as applicable.

<sup>4</sup> An unusually sensitive area means a drinking water or ecological resource area that is unusually sensitive to environmental damage from a HL pipeline release (49 CFR § 195.6).

data obtained from such Programs could inform its review of future applications by HL pipeline operators for participation in Pipeline Safety Enhancement Programs to ensure adequate protection of public safety and the environment. PHMSA notes that it would also be required to: (1) post to the DOT website annual progress reports on such Programs involving HL pipelines in HCAs pursuant to 49 U.S.C. § 60142(f)(2); and (2) post on the DOT website at the conclusion of each Program a report with any findings, conclusions, and recommendations from the Program testing protocols as required by 49 U.S.C. § 60142(k).