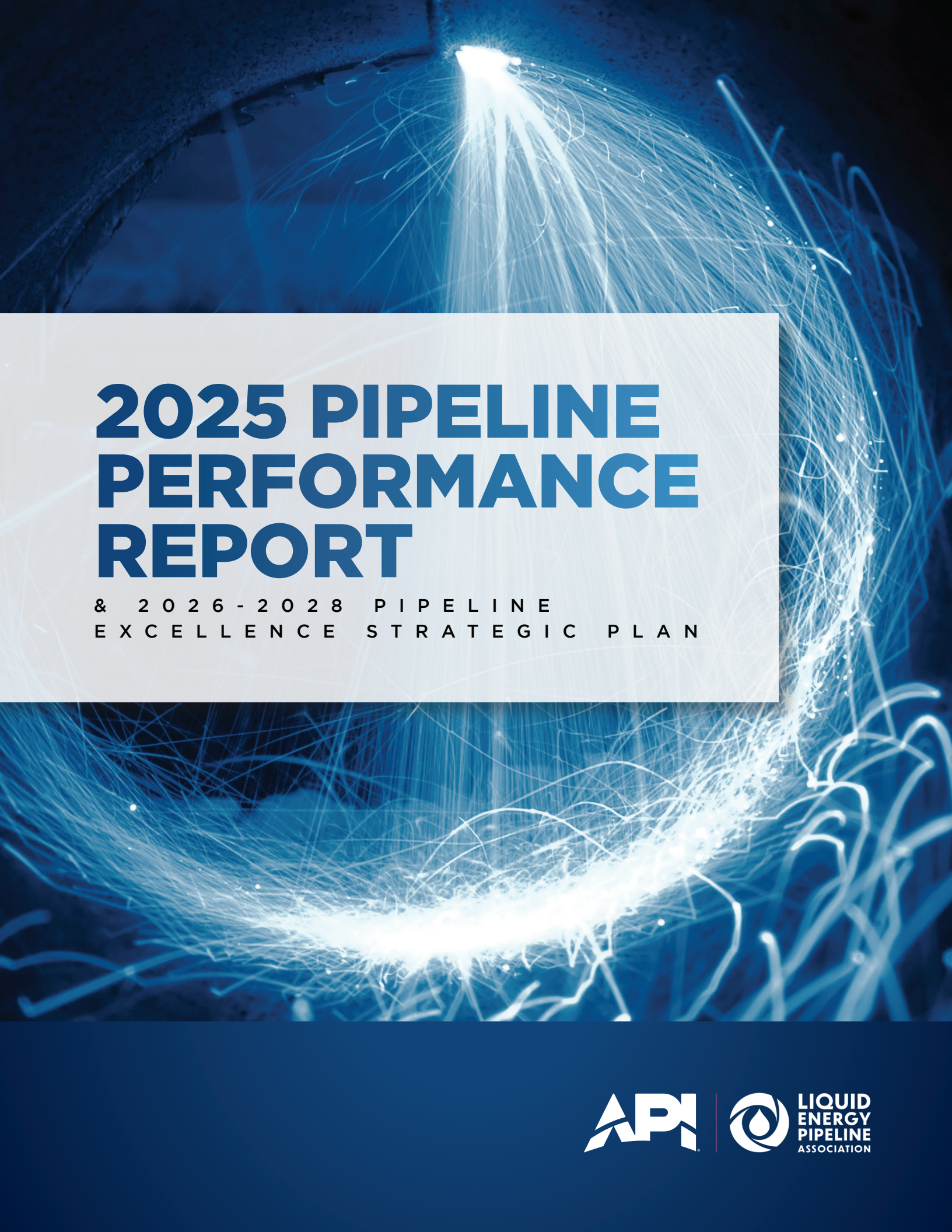




2025 PIPELINE PERFORMANCE REPORT

& 2026 - 2028 PIPELINE
EXCELLENCE STRATEGIC PLAN



LIQUID
ENERGY
PIPELINE
ASSOCIATION



The American Petroleum Institute (API) is the only national trade association that represents all aspects of America's oil and natural gas industry.

The Liquids Energy Pipeline Association (LEPA) promotes responsible policies, safety excellence, and public support for liquids pipelines. Its diverse membership includes large and small pipelines carrying crude oil, refined petroleum products, natural gas liquids (NGLs) and other liquids.

TABLE OF CONTENTS

Message from the Pipeline Safety
Excellence Steering Committee Chair 4

A Strategic Plan to
Improve Pipeline Safety 7

2025 Pipeline
Performance Report 23

Data Appendix 36

Definitions and Notes 46



STEVEN A. YATAURO

PRESIDENT, EXXONMOBIL PIPELINE COMPANY LLC

Chair, API-LEPA Pipeline Safety Excellence Steering Committee

Message from the

API-LEPA PIPELINE SAFETY EXCELLENCE STEERING COMMITTEE CHAIR

Here in the United States, we are facing an inflection point. Multiple forces are converging to drive up energy needs dramatically. New technologies are scaling at extraordinary speed. Supply chains are being rebuilt. The next 10 years are shaping up to be the Demand Decade, an era that will require historic amounts of new energy. Whether our nation can meet that demand will define its trajectory.

Pipelines, and infrastructure more broadly, are essential to meeting the Demand Decade. We have the natural resources, but too often the connection between production and consumption is blocked by outdated regulations, lack of coordinated permitting process and unnecessary delays. That's why permitting reform is essential to meet the speed, scale and reliability of the challenge presented by the Demand Decade.

Pipelines are meeting this challenge while the trend over the last five years is safer. Industry efforts to improve leak detection capabilities and inspection tools, implement safety management systems, publish leading practices and learn from others have helped advance safety performance. In 2025, total pipeline incidents declined by 22 percent since 2021, with over 80 fewer incidents compared to five years ago, according to the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). These improvements have occurred while pipelines delivered 25 percent more barrels of liquid energy between 2020 and 2024, the latest year these numbers were available. Looking closer, the rate of incidents per million barrels delivered fell by 31 percent for total incidents and 30 percent for incidents impacting people or the environment in that timeframe.

Pipeline operators recognize that more can be done to improve pipeline safety performance and are proactive in their pursuit of zero incidents. In 2025, the industry proactively published a consensus-based recommended practice for CO₂ transportation by pipeline to help meet emissions reduction goals while offering a framework for safe CO₂ pipeline networks.

Industry also published the first edition of a technical report on internal corrosion in pipeline facilities. Corrosion continues to be the leading cause of incidents and barrels released impacting people or the environment, and these types of guidance documents aim to drive further reductions in corrosion and material pipe/weld failures as witnessed in 2025. Additional safety initiatives included revisions to pipeline safety management systems' guidance, passing state legislation to limit excavation exemptions, proactively engaging with first responders and landowners, and advancing leak detection capabilities and inspection tools.

I invite you to learn more about the industry's commitment to safely and reliably transporting the liquid energy products we use every day. At a time of global strife and instability, our nation's natural resources and extensive pipeline network continue to provide safe, reliable and affordable energy to meet the Demand Decade and power our daily lives.



STEVEN A. YATAURO

President, ExxonMobil Pipeline Company LLC

Chair, API-LEPA Pipeline Safety Excellence Steering Committee

Total pipeline incidents have declined 22 percent over the last five years at the same time pipelines delivered 25 percent more barrels of liquid energy.

AMERICA BUILDS PIPELINES. AMERICA WINS.

AFFORDABLE ENERGY

Pipelines can deliver high volumes of energy, enough to make a difference meeting higher demand with new supplies. Building even a small new pipeline can allow more energy to flow faster and more easily which can make energy more affordable for consumers. A new pipeline can deliver the energy every day it would take over 13 trains each a mile long to transport. A new pipeline delivers per day the volume of more than 4,000 trucks. It's simple supply and demand. We can use pipelines to deliver more energy supplies, meeting demand and exerting downward pressure on prices.

RELIABLE ENERGY

The American economy is always on. We can't afford interruptions to our energy supply. A shortage of gasoline creates long lines for fuel. Planes are grounded if they can't get their jet fuel. Trucks can't deliver without diesel fuel. Families suffer when costs for home heating supplies increase. America is blessed with our reliable pipeline network. In all but the rarest emergencies, American energy flows to us where we need it and when we need it. As Americans move, to new homes or while traveling, energy is there to meet us, all because of the world's most extensive pipeline network. As we grow, building new pipelines will help us meet the energy needs of our future.



“ A new pipeline can deliver the energy every day it would take over 13 trains each a mile long to transport. A new pipeline delivers per day the volume of more than 4,000 trucks. ”

“ Pipeline operators are required by federal law and regulation to maintain robust pipeline operation and maintenance programs. This multi-layered safety system keeps American pipelines the safest in the world. ”

BUILD SAFE PIPELINES CONFIDENTLY

America needs to know that the pipelines we build are getting even safer. The protections provided by federal law and regulations, federal inspection and enforcement, and required operator safety programs allow us to build new pipelines confidently.

The foundation of safe pipelines are requirements in federal law and regulations that dictate how to build and operate pipelines. There are dozens of federal requirements on the design, construction, testing, operation and maintenance of pipelines. Congress periodically updates federal pipeline safety laws to mandate new safety requirements.

The federal government, through the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) ensures that federal safety requirements are met through regular inspections and enforcement actions if needed. PHMSA inspectors review operator programs, check to make sure they are adhering to requirements, and flag issues they may uncover. Even if the need to bring an enforcement action is rare, federal enforcement power always provides a deterrent and encourages good behavior.

Pipeline operators are required by federal law and regulation to maintain robust pipeline operation and maintenance programs. Operators have procedures for how and when to perform proactive inspections and preventive maintenance. Operators must maintain 24/7 monitoring over their pipeline controls and be ready at a moment's notice to respond to emergencies. When an operator constructs a new pipeline, it must make its plans available and receive site visits from inspectors. This multi-layered safety system keeps American pipelines the safest in the world.

2026-2028

PIPELINE STRATEGIC GOALS

1

PROMOTE ORGANIZATIONAL AND WORKFORCE EXCELLENCE

Develop and promote a robust safety culture through continuous improvement mechanisms and voluntary industry implementation of Pipeline SMS. Transform industrywide sharing into a robust, sustainable program and emphasize the benefits and power of data integration. Attract, train and retain a work force that is qualified to manage complex operations. Boost operator and first responder planning, preparedness and response capabilities.

2

IMPROVE SAFETY THROUGH TECHNOLOGY, INNOVATION AND ARTIFICIAL INTELLIGENCE

Drive industrywide engagement in advancing pipeline inspection capabilities to achieve the pipeline industry's goal of zero incidents. Create sustainable, workable frameworks for operator leak detection management and enhance detection capabilities. Improve corrosion detection and response capacity, as well as geohazard detection and mitigation capabilities.

3

INCREASE STAKEHOLDER AWARENESS AND ENGAGEMENT

Improve industry's engagement with the public and government through the adoption and implementation of a recommended practice. Promote robust and effective public awareness and damage prevention programs to reduce excavation damage from all parties and protect critical infrastructure systems.

4

ADDRESS CYBERSECURITY THREATS

Prevent cybersecurity incidents from occurring by engaging in effective policymaking, advancing cybersecurity best practices and promoting sharing and learning among operators and regulators. Promote safe and timely responses after cyber events through industrywide guidance.

5

ADVANCE A SAFE AND SUSTAINABLE ENERGY FUTURE

Facilitate pipeline transportation and storage of CO₂ through revised emergency planning and response guides for operators and expanded training for first responders. Prepare guidance for safe CO₂ pipeline construction and operations and participate in industry CO₂ pipeline research. Limit environmental and community impacts using a midstream conservation program for pipeline rights-of-way and expand liquids participation in environmental partnerships.



PROMOTE ORGANIZATIONAL AND WORKFORCE EXCELLENCE

Objective 1.1: Expand Safety Management Practices

Key Activities

1. Publish and continue implementation of RP 1173, *Pipeline Safety Management Systems (PSMS)*, 2nd edition
2. Encourage operators and contractors to adopt, implement and advance the maturity of PSMS
3. Assess 2027 safety culture survey results for industry-wide learnings and future focus areas

Pipeline operators are voluntarily and proactively implementing API Recommended Practice (RP) 1173, *Pipeline Safety Management Systems*, to improve safety performance and reinforce safety culture. Following the RP's initial publication in 2015, an industry-wide PSMS team formed, comprised of liquids and gas gathering, transmission, and distribution pipeline operators, as well as contractors and trade associations. It provides a unified approach to grow PSMS maturity, expand voluntary efforts, build safety culture and learn from others. The team continues to focus on four strategic initiatives: increase industry participation, support operator and contractor journeys, engage stakeholders and provide governance and oversight.

In 2025, API/LEPA made significant progress revising the 1st edition of RP 1173 through the creation of an annex for very small operators and identification of safety culture characteristics by program element. The revised document passed ballot, and the task group worked to resolve comments for improved clarity and implementation maturity. The PSMS Team published the 2024 Annual Report, which highlighted survey results and engaged PHMSA and NTSB stakeholders on industry progress. It also published a notable practices tool and

worked towards finalization of an industry process safety white paper. API also conducted numerous operator and contractor assessments while updating a benchmarking analysis that showed improvements across the majority of program elements.

In 2026, API/LEPA will publish the 2nd edition of RP 1173 in 2026 and help operators implement any necessary changes to programs and procedures. The PSMS Team will use the annex to encourage small operators to start their implementation journeys or as a resource for long-term implementers. Transmission operators will also participate in the 2027 safety culture survey, following the 2023 cycle which had over 31,000 respondents. The team will also conduct the 2025 annual survey, including the second contractor questionnaire, and findings will be published in the annual report. It will continue to engage external stakeholders on proactive industry progress and the impact of voluntary PSMS implementation on safety. Overall, the team will support operator and contractor journeys to reinforce safety culture and improve pipeline safety performance.

Objective 1.2: Promote Timely Safety Sharing & Learning

Key Activity

1. Foster organizational incorporation of industry lessons learned through safety sharing and learning

Sharing experiences and best practices is a cornerstone of liquids pipeline operators' safety and integrity programs and is one of the pillars of PSMS. The API-LEPA Sharing & Learning Subteam (Subteam) developed the *Guide to*

Sharing and Guide to Learning to provide guidelines for an open exchange of safety information among operators. The liquids pipeline industry has created a safety culture that constantly promotes the sharing of safety lessons and information. Sharing and learning occurs routinely among pipeline operators at many levels across the industry through networking, industry conferences and workshops, webinars, podcasts and other means. The liquids industry is building on these efforts to promote more deliberate and timely sharing of information throughout the industry and measure the benefits derived through surveys and interviews.

From 2023 to 2025, API sponsored two separate industrywide webinars to share information on integrity management incidents, including a girth weld failure on a liquids pipeline and a non-metallic material failure at a CO₂ pipeline facility, which included a joint meeting with the U.S. Department of Energy on CO₂ pipeline safety. In November each year, industry personnel gather for the annual API Pipeline Information eXchange (PIX) to share lessons learned with several hundred attendees, including workshops on leak detection program key performance indicators, integrity management of corrosion on pipelines and facilities, and assessment and management of dents in pipelines. API also published an Operator Advisory on facility piping and equipment releases that included

recommendations for enhancing operator facility integrity programs based on analysis of facility incident data that was completed by the API-LEPA Data Mining Team.

From 2026 to 2028, the liquids pipeline industry will develop a web-based platform for operators to share information and provide an open forum for exchanging information on pipeline safety incidents and near misses that will promote learning from the experiences of other companies and prevent similar incidents from occurring. Operators will also continue to sponsor informal roundtable discussions at all policy group and committee meetings and utilize Requests for Information among our membership to address topic areas that affect pipeline safety. These informal exchanges will supplement webinars, workshops, safety tailgates, the annual API Pipeline Conference and PIX, which are well-established sharing and learning venues currently used by the liquids industry. In addition, liquids pipeline operators will conduct peer-to-peer benchmarking sessions to promote information sharing at a more in-depth level among operators to help solve problems related to similar challenges (e.g., corrosion failures on pipeline rights of way).

The industry will also sponsor knowledge sharing sessions on AI technology and its advancement through roundtable discussions and workshops and include AI as a primary topic at PIX.



Objective 1.3: Attract, Train & Retain a Quality Workforce

Key Activities

1. Strengthen training through partnerships with educational institutions and field experience for high-demand pipeline roles
2. Collaborate with external partners, including organized labor, to close employment gaps
3. Promote pipeline career opportunities

Pipeline operations require a technically educated and experienced workforce to manage the complex operations of over 200,000 miles of liquids transmission pipelines across the U.S. To meet the expectation of safe operations, operators need to attract, train and retain a quality workforce in both the short term and long term. This goal requires promoting science, technology, engineering and mathematics (STEM) career opportunities, developing competency-building programs for prospective employees, training and upskilling current workers and retaining high performers in the industry.

In 2025, API formed a Workforce Development Group (WDG) of pipeline operators and began meeting regularly to identify the in-demand skills, competencies and job roles needed most in the industry. The WDG is working to promote these skills and jobs in school curriculum through state adoption of the Energy & Natural Resources (ENR) career cluster in priority states to improve career awareness. API is also engaging organized labor to validate apprenticeship programs, improve

coordination, and work to provide an adequate labor supply for needed skills and jobs. API's Midstream Committee held its fall 2025 meeting at a labor training center to tour the facility and engage labor leaders on collaboratively meeting the workforce development challenge. Also in 2025, LEPA launched the CareersInPipelines.com website to provide job seekers with information on the benefits and rewards of a pipeline sector career. The website contains a job board where prospective applicants can search current openings. In the second half of 2025, LEPA conducted digital media campaigns around job fairs and university career days to highlight pipeline opportunities. The effort drove over 1.1 million impressions and 28,000 visits to the site, 56% of whom clicked to the jobs page and 30% who advanced to a job posting on a member company website.

In 2026, LEPA will expand its pipeline digital media campaigns around job fairs and university career days, leveraging the CareersInPipelines.com website. The campaigns will target campuses with STEM and engineering events throughout the year and across operator service territories. WDG members will help promote the adoption of ENR among schools in targeted states to build early energy education, combined with previously developed lesson plans and activities. The group will also update pre-employment and on-the-job training with industry-approved external partners to promote previously identified skills and jobs. Through engagement with organized labor, API will also seek to streamline operator-labor coordination, validate apprentice curricula and improve stakeholder engagement for infrastructure projects.





Objective 1.4: Boost Operator and First-Responder Planning, Preparedness and Response Capabilities

Key Activities

1. Increase First Responder emergency response training
2. Promote cross-company learning through response and exercise sharing
3. Provide tools for emergency response capability improvement

Effective emergency planning, training and response require advanced planning with the operator and local emergency authorities, with operators bearing the ultimate responsibility for pipeline incident response. The pipeline industry offers a host of free training opportunities and guidance documents to improve preparedness in the event of an emergency. Conducting drills and exercises also develops relationships and ensures that response personnel are properly trained and maintain their skills.

In 2025, API and LEPA continued to support a free, online pipeline response training program for first responders. Developed in partnership with the National Association of State Fire Marshals (NASFM), the program trains local emergency personnel to respond safely to a pipeline emergency. The API-LEPA Emergency Response Group (ERG) reaffirmed for another

five years API Recommended Practice (RP) 1174, *Onshore Hazardous Liquid Pipeline Emergency Preparedness and Response*. This RP provides pipeline operators with a programmatic framework that promotes the continual improvement of emergency planning and response capabilities. Throughout the year, ERG members shared lessons learned from emergency responses to pipeline incidents, which included determining the responsible party and coordinating across multiple jurisdictions. ERG members also shared planning experiences by attending each other's response drills and offering constructive improvement suggestions.

In 2026 to 2028, API and LEPA will continue to support industry-funded first responder pipeline response training through its free, online NASFM portal. API and LEPA will promote the training to first responders through conferences and partnerships. The ERG will facilitate regular sharing of lessons learned from company emergency responses and coordinate cross-company participation in company exercises. To update and expand improvement resources, the ERG will develop and publish a tactical guide for an emergency response simplified planning cycle (SPC), which has shown benefits in many response scenarios. The ERG will also develop and publish guidance on the roles of local officials during an emergency response, which will enable efficient administration of response activities. Lastly, the ERG will begin the process to update RP 1174, building upon the programmatic foundation set by the original version and leveraging advances in operator capabilities since then.



IMPROVE SAFETY THROUGH TECHNOLOGY, INNOVATION AND ARTIFICIAL INTELLIGENCE

Objective 2.1: Advance Pipeline Inspection Technology & Analytics

Key Activities

1. Support the continued development and testing of advanced in-line inspection (ILI) tools and systems' capabilities
2. Advance non-destructive examination (NDE) technology while supporting field inspection guidance and certification programs
3. Revise API Standard 1163 on in-line inspection system qualification to reflect industry improvements
4. Publish the 2nd editions of API RP 1176 on pipeline cracking and RP 1183 on pipeline dents
5. Expand the application of AI into integrity management

Detecting and identifying conditions that represent a threat to pipeline integrity is central to ensuring the safe operation and reliability of pipelines. Pipeline operators inspect their systems on regular schedules, looking for indications that pipelines and pipeline facilities may need maintenance. Through these regular inspections using in-line inspection (ILI) and non-destructive examination (NDE) systems, pipeline operators analyze the health of pipelines and identify and fix issues before they become a problem. The systems include high-precision sensors and advanced methods of computational analytics to detect, characterize and locate anomalies in pipelines. Decisions on which anomalies require maintenance are supported by sophisticated engineering assessment methods and tools. Through its internal member company programs and membership in Pipeline Research Council International (PRCI), the liquids pipeline industry continuously leads initiatives to drive improvements in ILI and NDE technologies that have contributed to a decrease in pipeline releases that impact people or the environment.

In implementing the 2023-2025 Strategic Plan, the liquids industry funded and participated in research and development (R&D) projects that were targeted on confirming the capabilities of ILI and NDE tools, standardizing industrywide processes for data management and developing advanced analytical processes to improve engineering assessment methods to determine where response is needed. Work focused on ILI pull testing at the PRCI Technology Development Center (TDC), with feedback to the ILI vendors-based on NDE matched pair data and destructive testing to provide "truth" data. The results from these programs have advanced the industry state-of-the-art technology for pipeline inspection using ILI and NDE systems and identify where performance improvements and development of new technologies may be appropriate to continue advancing pipeline inspection. These results have been communicated to the API Standards Department for incorporation into industry consensus standards, where appropriate.

In the 2026-2028 Strategic Plan, API/LEPA will continue to focus on enhancements and improvements to ILI and NDE inspection technologies and engineering assessment methods that leverage advanced data analytics processes, which continue to evolve at a rapid pace. Through API's Pipeline Integrity and Global Information Services Groups, the liquids industry will coordinate with other industry trade associations and stakeholder groups to finalize and publish important industry integrity management standards and recommended practices (RPs), including API Standard 1163, *In-line Inspection Systems Qualification*, API RP 1176, *Assessment and Management of Cracking in Pipelines*, and RP 1183, *Assessment and Management of Pipeline Dents*.

In 2026-2028, the liquids pipeline industry will further evaluate AI applications to integrity management and pipeline operations to identify additional opportunities to leverage AI technology,

such as anomaly dig selection prioritizations, further improving probabilistic engineering assessment methods, data integration tools across multiple integrity data sets, effectiveness of preventive and mitigative (P&M) measures, and geohazard threat assessment. This work will include engagement with technology service providers, including ILI companies, leak detection software developers and other trade associations and stakeholders.

Objective 2.2: Enhance Leak Detection Capabilities

Key Activities

1. Create a risk assessment tool to help operators improve their leak detection programs and strategies
2. Develop and evaluate leak detection methodologies for facility pipeline and equipment
3. Implement and evaluate key performance indicators for assessing leak detection program performance

Liquids pipeline operators use multiple complementary systems and programs to detect leaks, including tracking product delivery volumes, monitoring pressure and flow sensors, and regular visual inspections of their systems from the ground, air, and, as technology has evolved, even space. The most significant challenge liquid pipeline operators face is small leak detection on pipeline rights-of-way and facilities. Operators are assisted by API RP 1175, which provides a framework for building and evaluating a comprehensive leak detection strategy, and API RP 1130, which covers computational pipeline monitoring (CPM). While these RPs provide a framework for operators to build effective leak detection programs, the industry continues to drive performance improvements for liquid pipeline leak detection and support research and development of additional guidance that is focused on continuous improvement for detecting small leaks.

For the 2023-2025 Strategic Plan, the liquids pipeline industry collected member company knowledge on leak detection program

management and key performance indicators (KPIs) to develop metrics for program performance through surveys, workshops and roundtable information exchanges on best practices. Initial work was conducted to identify parameters that should be included in the development of an industry risk tool for assessing liquid pipeline leak detection systems. In addition, research was completed to evaluate the current state-of-the-art technology for sensors and measurement systems that provide data used in CPM analytics systems for liquid pipeline leak detection. An industry advisory on releases associated with equipment failures and facility piping was also published in 2025.

For the 2026-2028 Strategic Plan, the liquids pipeline industry will finalize development of an industry leak detection risk assessment tool for assessing and benchmarking system performance. The industry will also focus on improving methods of leak prevention and detection associated with equipment failures and facility piping based on the recommendations from the facility piping advisory bulletin published in 2025, and continue working with liquid pipeline operators to gather and analyze data that established industry metrics and performance improvements tied to the metrics and meaningful measures of system improvements. The liquid pipeline industry will also continue research to improve the segmentation of liquid pipeline systems and use of sensors and other measurement devices and approaches to improve pipeline leak detection systems performance.



Objective 2.3: Improve Corrosion Detection & Response

Key Activities

1. Prepare and release the first edition of a recommended practice (RP) for the assessment and management of metal loss in pipelines
2. Publish joint trade association guidance on mitigating effects of increased electrical current interference from grid growth

Corrosion incidents continue to be the most frequent failure mode in energy pipeline systems and have remained a focus of the energy pipeline industry in advancing ILI technology development and pipeline safety regulations. Significant effort and attention have addressed corrosion prevention, mitigation, detection and repair in recent years, and a more detailed level of data analysis is being conducted by the Pipeline Integrity Group's Corrosion Subteam to better understand the root causes of corrosion-related failures, with emphasis on incidents that occur on pipeline rights-of-way (ROWs). Separate efforts are also being conducted to detect and mitigate corrosion threats within liquids pipeline facilities, where conditions are unique and distinct from ROW transmission operations.

From 2023 to 2025, liquids pipeline operators collaborated to share detailed information on incident analysis and root cause failure analysis for corrosion failures. The work expanded on the PHMSA database for incident statistics and the liquids industry Pipeline Strategic Data Tracking System (PSDTS) database to better understand the factors that led to incidents and provide information that can be directed to improve pipeline integrity programs (i.e., inspection, preventive and mitigative measures and fitness-for-service). In 2025, API published the 1st edition of Technical Report 1189, *Internal Corrosion in Pipeline Facilities*, as a complement to API RP 1188, *Hazardous Liquid Pipeline Facilities Integrity Management*, and the related API RP 1184, *Facility Construction Inspection*. These documents provide industry best practices and guidance for liquids pipeline operators to improve corrosion management programs at liquids pipeline facilities. In addition, work completed through PRCI-funded research provided modern engineering assessment

methods for corrosion features. From 2023 to 2025, the liquids pipeline industry also continued its work with PRCI and ILI service providers to drive improvements in ILI systems' performance to detect and characterize corrosion features.

For 2026-2028, the liquids industry will focus on developing an RP for the assessment and management of metal loss in pipelines. Currently, there is no existing industry guidance on the assessment and management of metal loss in pipelines with an emphasis on integrity management and program implementation. The RP will complement existing API and other industry standards and guidance for preventive and mitigative measures, as well as other API RPs that relate to corrosion management. The RP will provide guidance on inspection methods, data analysis and integration, response criteria, engineering assessment methods to evaluate fitness-for-service of metal loss, reassessment intervals and remediation and repair methods. In addition, the industry will coordinate with other trade associations and standards development organizations to prepare an advisory bulletin and supplemental guidance documents that address the emerging threats from reconductoring electric power transmission lines and the impacts on pipeline integrity and personnel safety.

Objective 2.4: Reduce Manufacturing & Installation Defects

Key Activities

1. Update API Specification 5L to address flat spots and peaks along the longitudinal seam
2. Develop guidelines to improve pipeline backfill procedures for maintenance excavations
3. Promote adoption of the latest edition of API RP 1104, *Welding Pipelines and Related Facilities*

Ensuring that pipelines are properly manufactured, assembled and installed is essential to safe operation over time. Industry standards, including those incorporated by reference into federal regulation, specify the requirements to produce steel line pipe used for pipeline transportation systems. Standards set quality parameters for chemical composition, mechanical properties

and dimensions of pipe to ensure the safety and reliability of these pipelines. When a pipe section is out of round, its weld connection to an adjoining pipe section may lack adequate strength. To ensure the long-term integrity of pipe welds, industry standards provide guidelines for welding techniques, welder qualifications and weld acceptance criteria, and set specifications for pipe manufacturing to control anomalies along the longitudinal seam. Proper installation of a pipeline also requires procedures for excavation and backfilling of a trench with proper stability and support.

Over the last few years, a notable pipeline incident cause included installation of pipe with peaking (also called roof topping), a manufacturing defect where the long edges of steel plate rolled into a cylinder did not form a round shape, creating stress on the weld and eventual failure. Another incident was caused in part when a pipeline section was installed without proper backfilling support to avoid stress and strain on the pipe.

From 2026 to 2028, the pipeline industry will develop, add to or promote adoption of industrywide specifications, guidance and recommended practices for the manufacturing and installation of pipe. API will include new guidance on improving the in-mill pipe manufacturing process to prevent peaking or flat spots along the longitudinal seam through improved standards, procedures, controls and operator inspection and oversight, including any necessary revisions to API Specification 5L for line pipe manufacturing. Industry will also develop an advisory bulletin with guidance on backfilling during pipeline construction and following maintenance procedures, such as anomaly repair or recoating of pipelines, to avoid imposing excessive stress and strain on the pipe. Finally, industry will promote pipeline operator adoption of the newest edition of API RP 1104, *Welding of Pipelines and Related Facilities*.





INCREASE STAKEHOLDER AWARENESS & ENGAGEMENT

Objective 3.1: Improve Pipeline Safety Engagement

Key Activities

1. Develop resources to support operators on their API RP 1185 implementation journeys
2. Increase public awareness effectiveness through 2027 Public Awareness Program Effectiveness Research Survey (PAPERS)
3. Continue to encourage PHMSA to incorporate API RP 1162, 3rd edition

Pipeline operators recognize the need for both one-way communication and two-way engagement with community stakeholders. Pipeline operators conduct annual public awareness campaigns on pipeline location, safety and signs of an incident as recommended in API RP 1162, *Public Awareness Programs for Pipeline Operators*, and regularly assess their program effectiveness. More recently, the industry expanded engagement efforts throughout the lifecycle of a pipeline, including the planning, construction and operation phases through API RP 1185, *Pipeline Public Engagement*. This framework provides consistent guidance for proactive engagements with the public based on transparency, respect, reciprocity, inclusiveness, accessibility and equity.

In 2025, API/LEPA supported operator commitment and implementation of API RP 1185 to improve public engagement through the RP 1185 Implementation Team. The team conducted the first-of-its-kind annual survey to measure industry's baseline implementation level, identify barriers to success and highlight leading practices. The team also published a gap analysis tool and field-level training. Additionally, pipeline operators conducted the PAPERS cycle of key stakeholders to assess public awareness program effectiveness while continually encouraging PHMSA to incorporate

the 3rd edition of RP 1162 to replace regulations outdated by more than 20 years.

In 2026-2028, API/LEPA will further support operator implementation of API RP 1185, including holding virtual webinars and in-person exchanges to disseminate leading practices. The RP 1185 Implementation Team will routinely conduct the annual survey, potentially publishing results in an annual report to demonstrate voluntary progress externally, and develop implementation tools to support operator journeys. The industry will also utilize aggregated results from the 2025 PAPERS survey to close gaps in damage prevention and conduct the 2027 cycle, engage local and emergency officials, and respond appropriately to state legislation on landowner rights. Through a multitude of efforts, the industry will also continue to encourage PHMSA to modernize its regulations related to public awareness by adopting the most recent edition of RP 1162.

Objective 3.2: Promote Innovative Approaches to Damage Prevention

Key Activities

1. Expand existing guidance for marine construction/dredging in training materials and federal/state regulations
2. Coordinate with priority state agencies and PHMSA to improve enforcement of one-call laws
3. Engage with priority state legislatures to limit exemptions to one-call requirements
4. Work with external partners in standardizing ticket management systems
5. Strengthen guidance on procedures for excavation clearance and tolerance zones for contractors and employees

The failure to call or click 811 before digging remains one of the leading causes of excavation incidents, in part due to stakeholder exemptions to the one-call process. Similarly, marine construction and dredging activity continues to increase, demanding updated legislative and regulatory coverage of marine damage prevention guidance to protect people, submerged infrastructure and the environment. States also vary widely in their enforcement of damage prevention violations, with many remaining ineffective in preventing the recurrence of incidents, damage or near misses. One-call centers locate tickets through disparate forms and varying keywords, complicating the ability to identify trends across the country and demonstrating the opportunity for standardization.

In 2025, the API/LEPA Damage Prevention Work Group (DPWG) worked to limit state exemptions, improve coverage of marine construction activities, advance enforcement and standardize ticket systems. The DPWG developed a list of priority states with high-risk exemptions and introduced legislation in two states, with North Carolina passing House Bill 247 to limit the agricultural exemption. The group also supported updates to the Common Ground Alliance's Best Practices

document for marine damage prevention and revised existing training materials. DPWG members identified states with ineffective or opaque enforcement processes and will start engaging with them to improve enforcement mechanisms moving forward. Lastly, the DPWG supported external partners' development of an open-ticket system in 2025 to reduce variability and improve trending capacity.

In 2026-2028, API/LEPA will continue making progress on its four main priority issues. The group will develop legislative proposals for priority states regarding exemption limitations, marine guidance and enforcement to maximize opportunities for reform. DPWG members will look to close gaps in regulatory or legislative frameworks in states that contain numerous waterbodies and dense pipeline operations. They will also work with state legislators to limit exemptions and with state agencies to improve enforcement and prevent incident recurrence. The DPWG will also support the pilot and implementation of an open-ticket system across state one-call centers and vendors to improve data standardization and consistency.





ADDRESS CYBERSECURITY INCIDENTS

Objective 4.1: Prevent Cybersecurity Incidents

Key Activities

1. Engage policymakers on effective pipeline cybersecurity strategies and interagency collaboration
2. Promote sharing and learning of cybersecurity expertise between operators and regulators

The U.S. pipeline network is critical to the national energy supply and security, which makes it a prime target for cyberattacks. The 2021 ransomware attack provided examples of both the criticality of pipeline systems and the importance of pipeline cyber defenses. The pipeline industry shares the cybersecurity objectives of policymakers to protect critical infrastructure, provide reliable energy for society, safeguard public safety and the environment and protect the intellectual property and marketplace competitiveness of companies. Pipeline companies employ layers of security to protect against cascading failure, including mechanical controls that are not capable of being overridden through any cyber compromise of industrial control systems.

In 2025, API and LEPA worked with member companies to provide comments on a Transportation Safety Administration (TSA) proposal to impose regulatory requirements on pipeline operator cybersecurity programs. TSA based the rulemaking proposal on its pipeline cybersecurity security directives (SDs) with the intent to make the temporary program a permanent part of federal regulations. API and LEPA developed comments in areas such as performance-based security measures, supply chain risk management, secure-by-design systems and codification of industry guidance. API and LEPA also urged Congress to reauthorize the U.S. Cybersecurity and Infrastructure Agency to facilitate the sharing of security information with industry partners.

In 2026-2028, API and LEPA will continue engagement with the federal government as it considers issuing a final rulemaking and/or reissuing expiring SDs. API and LEPA will ensure that policymakers consider the need for performance-based cybersecurity requirements and programs reflective of the operational technology used in pipeline operations. API and LEPA will also emphasize safe spaces for sharing security sensitive information, such as protection from information disclosure and antitrust concerns when sharing threat information between operators and the government.

Objective 4.2: Safe & Timely Restart from Cybersecurity and All Hazard Events

Key Activities

1. Finish development, balloting and publication of restart recommended practice
2. Support industry implementation through the development of tools, training and additional resources
3. Engage and educate regulators on the framework and industry initiatives in implementing the guidance

A cyber or all hazard/heavy weather incident can impact pipeline operations in multiple ways. It can affect business functions unrelated to pipeline operations, commercial systems supporting operations and operational technology itself, or can necessitate temporary suspension of operations during an impact assessment. A crucial challenge for pipeline operators is to safely resume operations. Many of the safety assurance and control

systems built into a pipeline system are digital and remote, and require electronic communications.

In 2024, API began development of a recommended practice to provide guidance to the industry on safely restarting and returning a pipeline to operations. The objective of the document is to establish a consistent framework for pipeline operators to manage return to operations following cyber or all hazard events. The recommended practice will provide industry with leading practices to provide reliable energy supplies and avoid consumer disruptions.

In the API-LEPA 2026-2028 Pipeline Strategic Plan, API will finish development, balloting and publication of the industrywide guidance (*Return to Operations*). Specifically, this risk-based framework will address Supervisory Control and Data Acquisition (SCADA) systems and operational procedures to return to operations, including manual operations where appropriate, following a shutdown or switch to manual operations after a cyberattack or other all hazard events. Additionally, it will cover operational technology and information technology where an interdependency exists and is needed for control, monitoring and restart. Included will be recommendations for assessing the impact of a cyber intrusion on the ability to safely operate the pipeline system. Lastly, the framework will address returning to functionality (e.g., manual operations) and returning to normal remote operations. The target for balloting the document is 2026.





SAFE & SUSTAINABLE ENERGY FUTURE

Objective 5.1: Safe CO₂ Pipeline Transportation & Storage

Key Activities

1. Promote implementation of API RP 1192 for CO₂ pipeline safety
2. Advocate for targeted updates to CO₂ pipeline safety requirements to reflect incident lessons learned
3. Support pipeline research and development (R&D) for CO₂ pipelines and operations

For over 40 years, pipelines have safely delivered carbon dioxide (CO₂) for use in enhanced oil recovery operations, food production and medical applications, as well as the manufacture of products such as refrigerants, foam rubber, fire extinguishers and carbonated beverages. Over 5,000 miles of CO₂ pipelines currently operate in the United States. New CO₂ pipeline systems have been proposed and/or are under development to transport CO₂ from carbon capture locations to permanent underground storage sites. The safety record of CO₂ pipelines is strong, with substantially fewer incidents per mile over the last five years than either crude oil or refined-products pipelines. While pipelines are the safest method to transport large volumes of CO₂ long distances, opportunities exist to improve CO₂ pipeline-specific best practices around emergency planning and response, integrity management and stakeholder outreach.

The liquids pipeline industry made significant advances regarding CO₂ pipeline safety from 2023 to 2025. In 2024, the API Pipeline Integrity Group (PLIG) formed a task group that published Recommended Practice (RP) 1192, CO₂ *Transportation by Pipeline*, in 2025. The RP provides guidance for design, construction, operation and maintenance of new CO₂ pipelines and the conversion of existing natural gas and liquids pipelines into CO₂ service. RP 1192 complements existing engineering consensus

standards on transporting CO₂ via pipeline by focusing on the unique considerations that relate to the transport of CO₂ versus other fluids through a pipeline. Additionally, API, LEPA and member companies supported pipeline sector research for CO₂ pipeline service, including participation in the CO₂ Steering Team within PRCI's Emerging Fuels Institute (EFI) and support for PHMSA R&D projects that focused on CO₂ pipeline safety as representatives on technical advisory panels. API's PLIG also conducted a comprehensive review and developed comments for PHMSA's pre-publication version of a notice of proposed rulemaking to revise CO₂ pipeline safety regulations.

In 2026-2028, the liquids industry will encourage PHMSA to make targeted updates to its CO₂ pipeline safety requirements using RP 1192 as a resource. API and LEPA will continue to advocate for uptake of the RP into pipeline operator procedures. The liquids industry will also work with government officials to ensure awareness of RP 1192 and how the document addresses a number of pipeline safety concerns raised in several states that prompted legislation banning or significantly limiting construction of CO₂ pipelines. Also, during 2026-2028, the liquids pipeline industry will continue to provide funding support for pipeline safety and reliability R&D projects through the PRCI Emerging Fuels Institute and the CO₂ Steering Team formed through the EFI.



Objective 5.2: Expand Conservation Practices on Facilities & Rights of Ways

Key Activities

1. Expand collaboration with industry stakeholders and government agencies to grow pipeline conservation programs and projects
2. Advocate for statutory and regulatory authorization of pipeline conservation practices
3. Establish performance metrics to measure effectiveness of pipeline conservation programs and ROI

While America's pipeline operators remain committed to responsibly delivering the affordable and reliable energy the public needs and wants, we recognize we must also do so sustainably. That means reducing our impact on the environment where possible. API and LEPA members are actively working together to track and improve their sustainability performance while striving for appropriate engagement and transparency with communities and stakeholders. Right-of-way (ROW) conservation programs serve as one way of achieving these goals, providing an integrated and systematic approach to planning, implementing and sustaining ROW land management that is value-driven. The results are enhanced safety, community benefits, operational efficiencies and a healthier ecosystem, while maintaining state and federal regulatory compliance.

In 2025, ROW conservation projects started in previous years by API and LEPA members continued to evolve, develop and expand, ranging from the Pacific Northwest to southern Louisiana. Each of these projects is designed to take into consideration the unique characteristics of the local environmental and conservation needs, and have provided operators with excellent platforms to develop lasting and meaningful relationships with non-traditional allies. Projects that have implemented conservation practices have resulted in less public opposition and led to increased support for and acknowledgement of industry stewardship in the communities surrounding the infrastructure. Also, engagement at the

state level has led to greater interest in partnership and involvement from elected officials and a desire for long-term engagement from the regulating agencies. While efforts on outreach and public engagement will continue to be a member company focus, the industry's reputation in this space has grown such that many non-industry organizations are proactively reaching out to identify opportunities for partnership and engagement. Importantly, these organizations are aligned with the industry's mission of advancing conservation projects and environmental protection while ensuring that pipeline safety is maintained.

In 2026 and beyond, API and LEPA member companies will continue to expand their conservation programs through collaboration and coordination with non-industry partners across state and federal regulators, non-profit organizations and academia. With greater and more meaningful relationships generated through conservation, the industry will be better positioned to address challenges on more near-term priorities and needs. While project work will continue to grow throughout the coming years, greater focus will be directed to the value and benefit of the improved relationships and increased company credibility that comes from this work. Success for operators both in the short term and long term will then be used to further fuel greater uptake of individual company projects while at the same time enhancing the performance of the industry at large.

Objective 5.3: Reduce Emissions from Tanks

Key Activities

1. Develop and implement liquids programs to include emission reductions related to tank inspections
2. Engage and respond to proposed PHMSA rulemaking on the allowance of risk-based inspections for regulated breakout tanks

Reducing environmental impacts from pipeline facility operations continues to be an expectation of government agencies and the general public. The liquids pipeline industry has embraced and acknowledged the importance of reducing

our environmental footprint, and continues to commit to more sustainable operations, including advancements in energy diversification, conservation initiatives, methane and volatile organic compound emissions reduction, and quantification and sustainable operational practices.

In 2023, API, through The Environmental Partnership (TEP), rolled out two new sustainability programs for liquid pipelines and began to capture data on improvements being made by liquid operators to reduce emissions and environmental impacts from pipeline operations. Annual TEP reports for 2024 and 2025 demonstrate the impacts of the initiatives and support reporting for the liquids industry, with the implementation

plans focused on energy efficiency in operations, and maintenance and integrity.

The 2026-2028 Pipeline Excellence Strategic Plan will evaluate the inclusion of a third program on emission reduction related to tank inspections. Work required to conduct out-of-service tank inspections for regulated breakout tanks generates significant emissions and waste, and is often not needed at the frequency mandated by regulation. Additionally, API and LEPA will continue to work with PHMSA to support the incorporation of the latest edition of API Standard 653 in regulation, which allows for a risk-based, performance-based approach to tank inspection based on detailed engineering analysis.





2025

PERFORMANCE REPORT



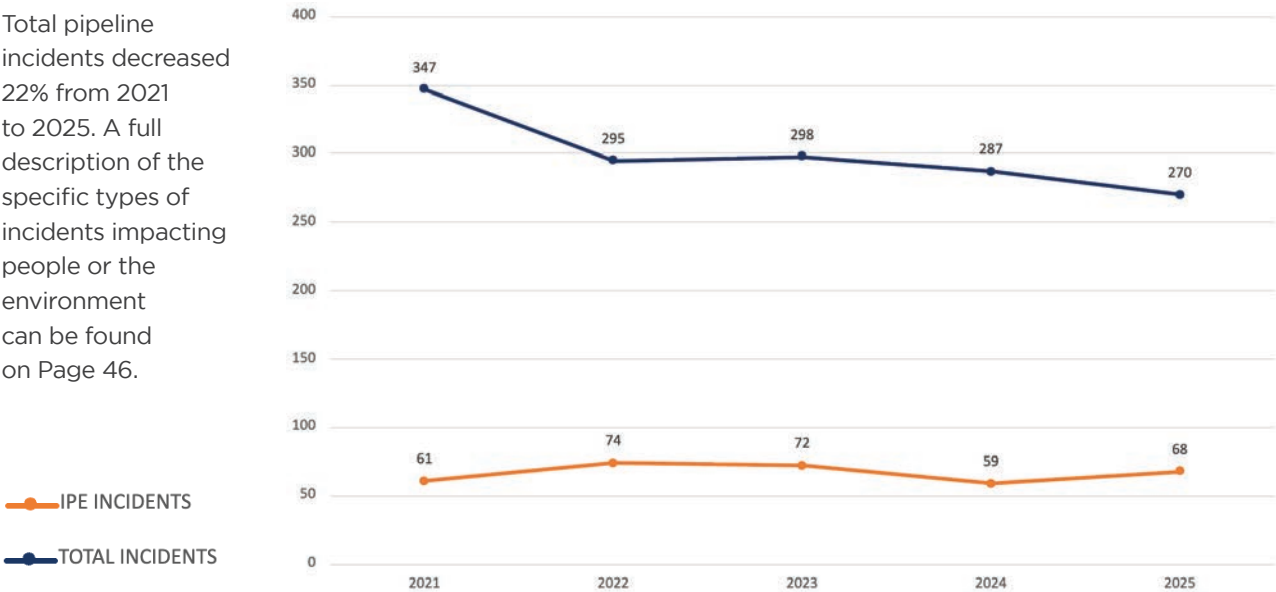
KEY PERFORMANCE INDICATORS

The “impacting people or the environment” metric was created through a recommendation of the U.S. National Transportation Safety Board in a collaborative effort between PHMSA, pipeline operators and public pipeline safety advocates represented by the Pipeline Safety Trust. They reflect the highest priority pipeline operators place on protecting people and the environment.

1

TOTAL INCIDENTS VS. INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT (2021-2025)

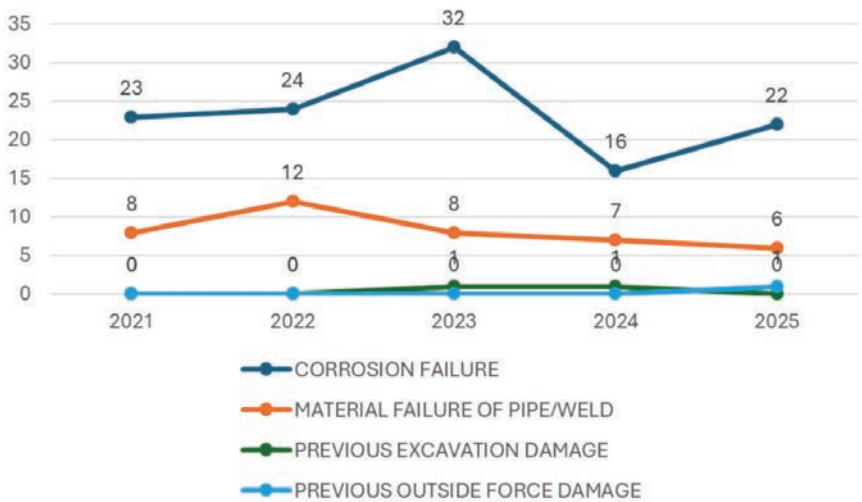
Total pipeline incidents decreased 22% from 2021 to 2025. A full description of the specific types of incidents impacting people or the environment can be found on Page 46.



2

INTEGRITY MANAGEMENT INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT (2021-2025)

Incidents related to the pipeline itself, such as corrosion, cracking or weld failure, were down 6% over the last five years in areas impacting people or the environment. Corrosion failures were down 4% and material failure of the pipe or weld were down 25% since 2021.





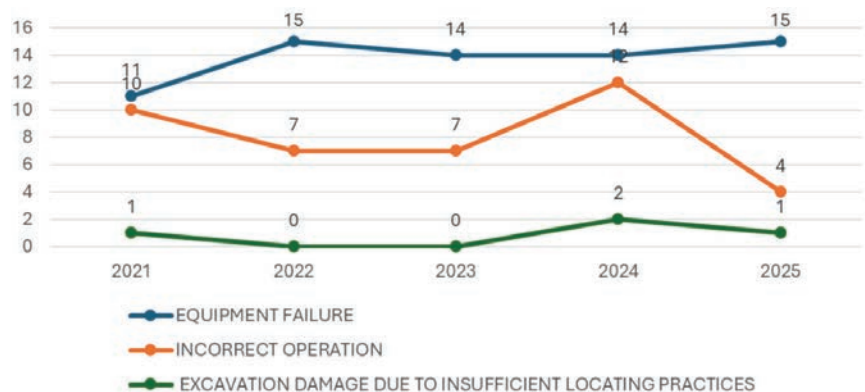
2025 PIPELINE PERFORMANCE REPORT

KEY PERFORMANCE INDICATORS

3

OPERATIONS & MAINTENANCE INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT (2021-2025)

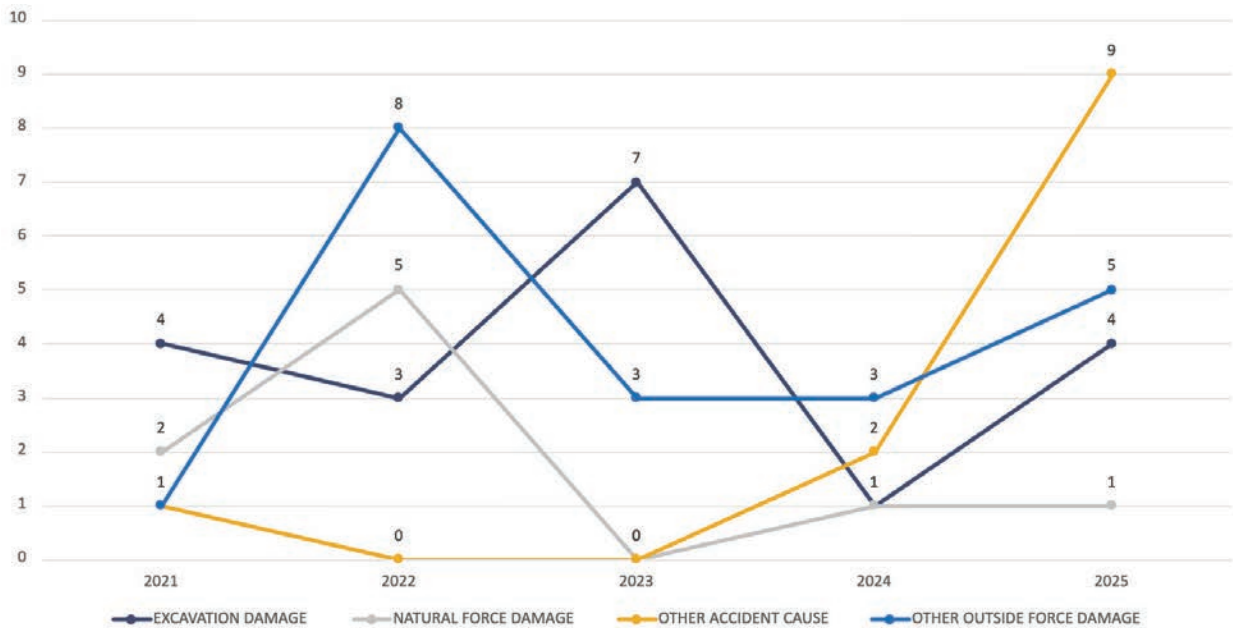
Incidents related to maintaining pipeline equipment or operating the pipeline and its valves or pumps were down 9% over the last five years in areas impacting people or the environment. In these areas, incidents caused by excavation damage due to insufficient locating practices remained flat and incidents caused by equipment failure rose 36%, while incidents caused by incorrect operation dropped 60% from 2021 to 2025.



KEY PERFORMANCE INDICATORS

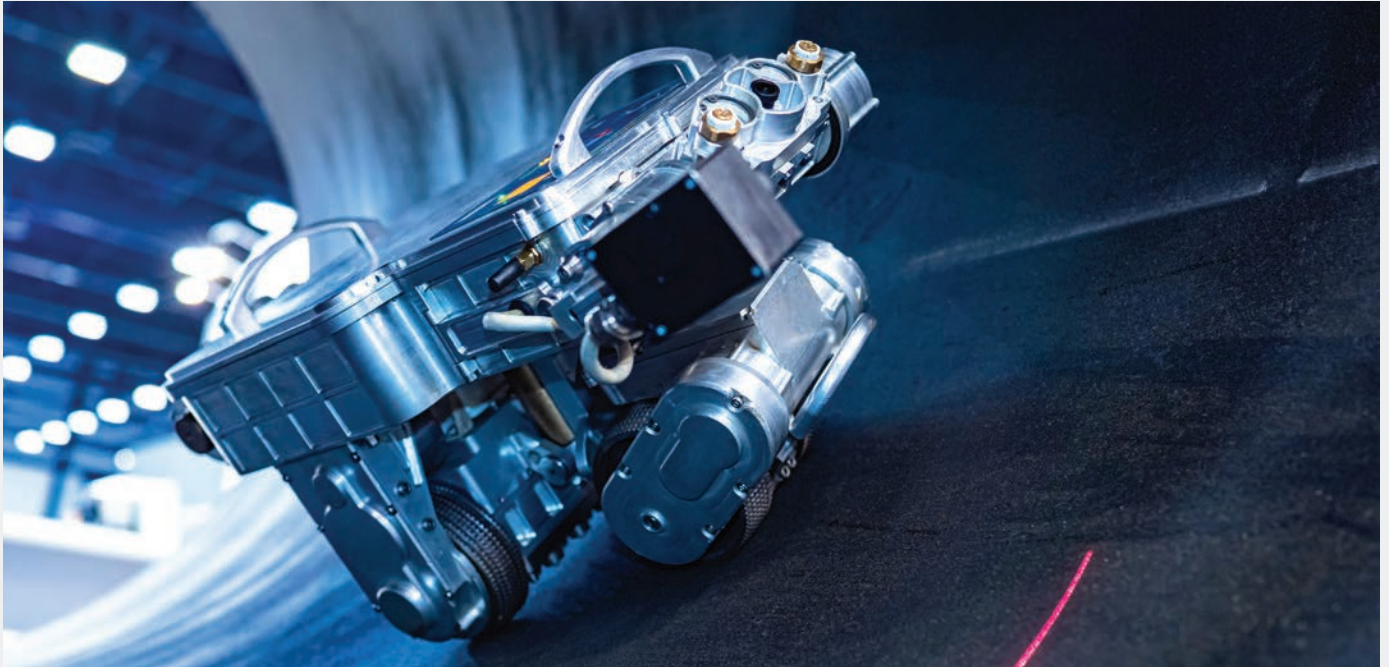
4

OTHER INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT (2021-2025)



Incidents impacting people or the environment from “other” causes increased from eight incidents to 19 over the last five years. Incidents caused by excavation damage did not change. Incidents from natural force damage, such as landslides, decreased from two to one, and incidents from other outside force damage, like a boat dragging an anchor that strikes a pipeline, increased from one to five between 2021 and 2025.





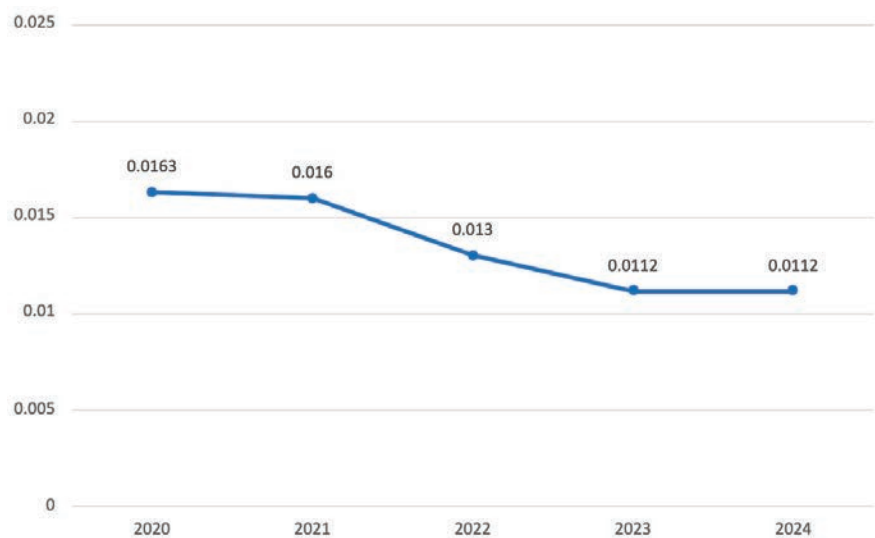
2025 PIPELINE PERFORMANCE REPORT

INCIDENTS PER MILLION BARRELS DELIVERED

5

INCIDENTS PER MILLION BARRELS DELIVERED (2020-2024)

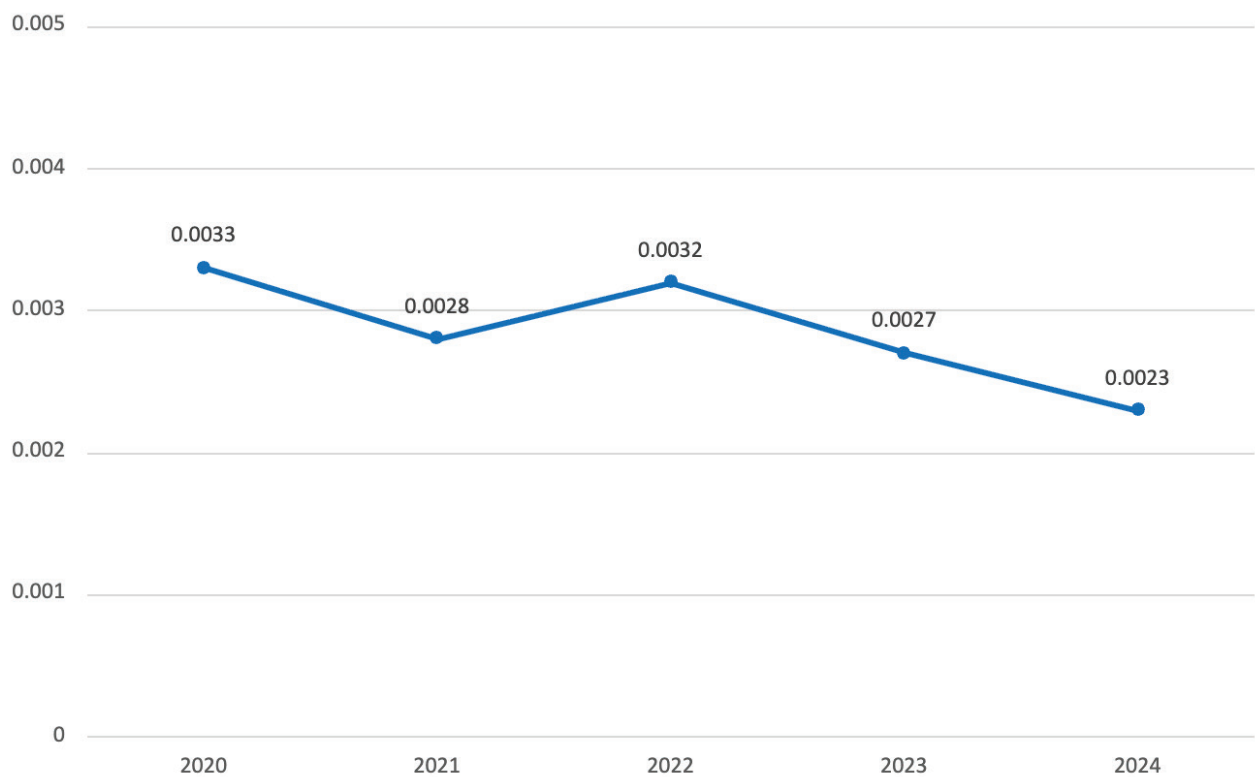
Total incidents per million barrels delivered fell 31% from 2020 to 2024 (the most recent year for which barrels-delivered data is available). In 2020, there were 0.0163 incidents per million barrels delivered, and that fell to 0.0112 incidents per million barrels-delivered in 2024. That means that, at the same time pipeline operators delivered 25% more crude oil and petroleum products, total pipeline incidents were down 22%.



INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT PER MILLION BARRELS DELIVERED

6

INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT PER MILLION BARRELS DELIVERED (2020-2024)



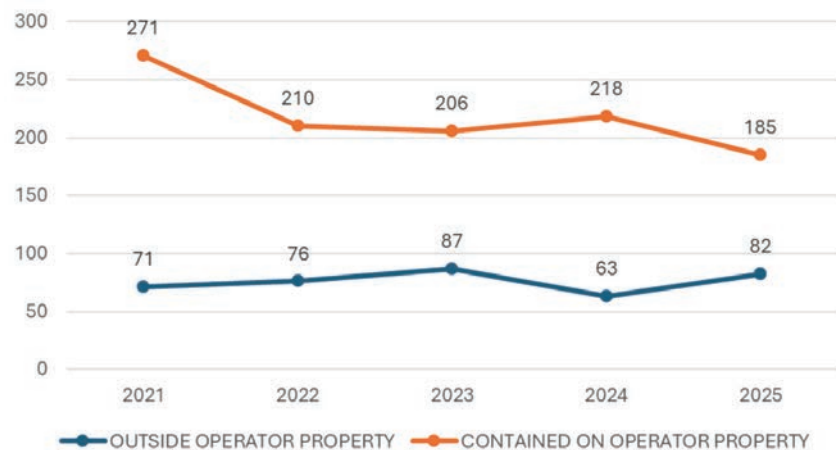
Total incidents impacting people or the environment per million barrels delivered fell 30% from 2020 to 2024 (the most recent year for which barrels-delivered data is available). In 2020, there were 0.0033 incidents impacting people or the environment per million barrels delivered and that fell to 0.0023 in 2024. While pipeline operators delivered 25% more barrels of liquid energy, they also improved the rate of incidents impacting people or the environment per million barrels delivered by 30%.

2025 PIPELINE PERFORMANCE REPORT**INCIDENTS BY LOCATION**

The location of a pipeline incident matters both when gauging the impact of an incident and developing strategies to prevent incidents in the future. Pipeline operators place the greatest emphasis on preventing and minimizing impacts to people or the environment. Tracking these incidents helps operators focus on this priority. Additional measures of incident impacts are whether they are contained on operator property or outside the operator's facilities, specifically in high consequence areas (HCAs), a regulatory term used by PHMSA.

7**PIPELINE INCIDENTS INSIDE & OUTSIDE OPERATOR PROPERTY
(2021-2025)**

In 2025, 69% of onshore incidents from liquids pipelines were contained within an operator's property. Examples of pipeline operator properties include pump stations, tank farms and terminals. Incidents occurring or reaching outside of operator property increased 15% from 2021 to 2025.





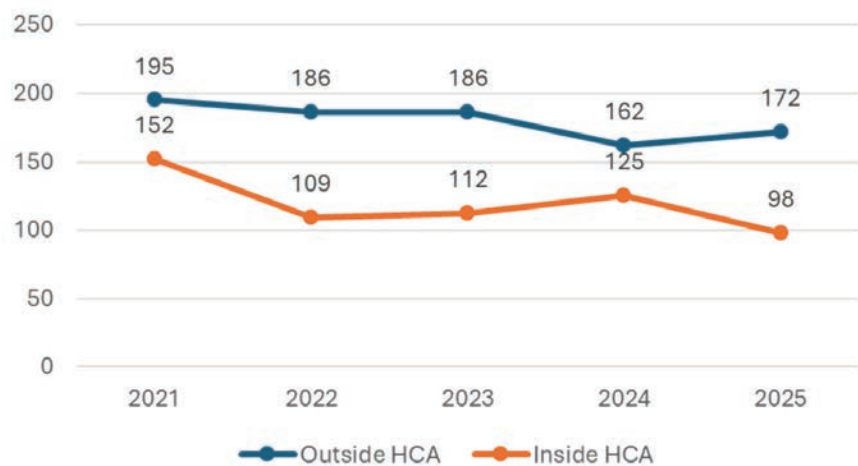
2025 PIPELINE PERFORMANCE REPORT

INCIDENTS BY LOCATION

8

PIPELINE INCIDENTS INSIDE AND OUTSIDE HCAs (2021-2025)

Liquids pipeline incidents occurring in high consequence areas (HCAs) declined 36% over the last five years. Through federal regulation, PHMSA defines HCAs as areas of population concentration, commercially navigable waterways or sensitive environmental locations. HCA data differs from incidents impacting people or the environment because, under PHMSA regulation, an incident can have no impact on people or the environment, remain wholly within an operator's facility and still count as an HCA if that facility is surrounded by an HCA.



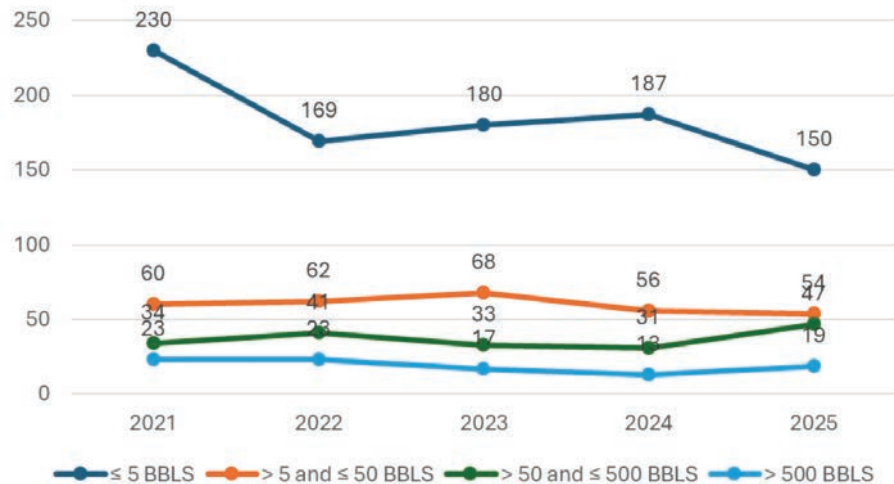
2025 PIPELINE PERFORMANCE REPORT

INCIDENTS BY SIZE

9

LIQUIDS PIPELINE INCIDENTS BY SIZE
(2021-2025)

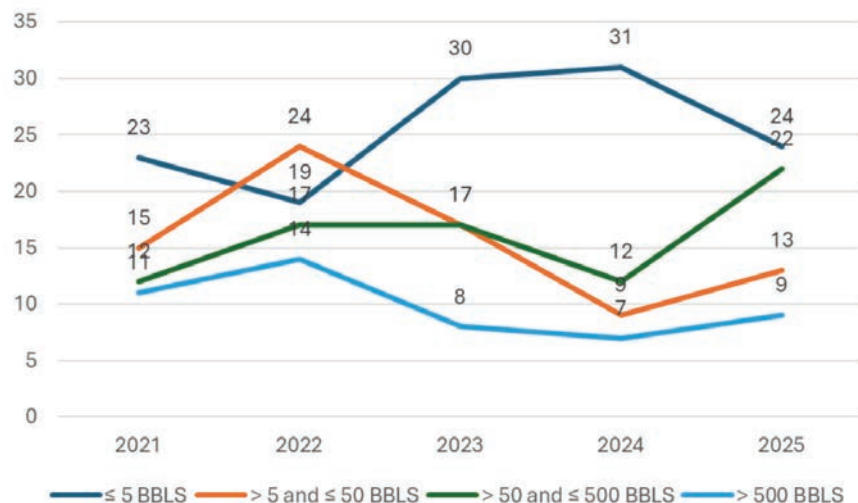
Most pipeline incidents are small. In 2025, 56% of incidents were less than five barrels and 76% were less than 50 barrels. Large pipeline incidents are also the rarest. In 2025, only 7% of incidents were 500 barrels or larger, and these large incidents are down 17% over the last five years.



10

INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT
BY SIZE (2021-2025)

Most incidents impacting people or the environment are small. In 2025, approximately 35% of such incidents were less than five barrels and 54% were less than 50 barrels, with only 13% of incidents impacting people or the environment 500 barrels or larger. These larger incidents impacting people or the environment fell 18% between 2021 and 2025.

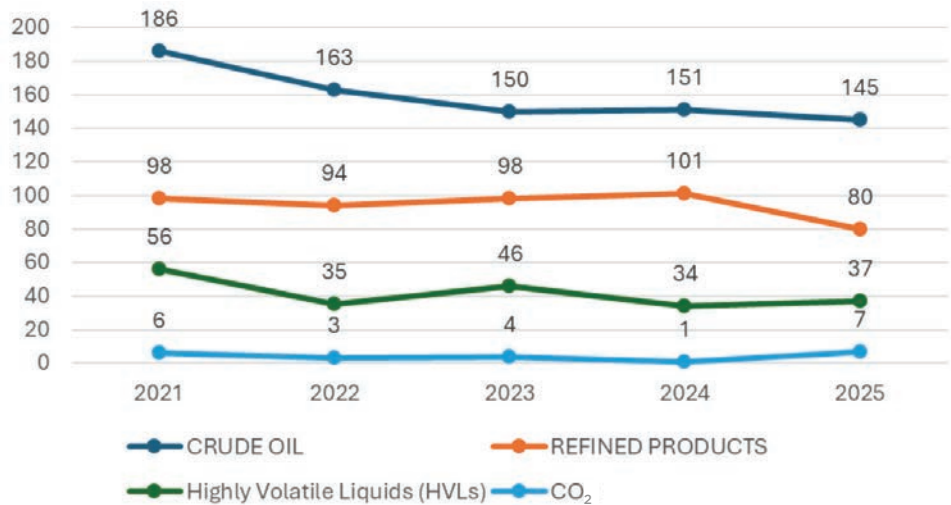


INCIDENTS BY COMMODITY

11

ALL INCIDENTS BY COMMODITY
(2021-2025)

Over the last five years, incidents from major commodities have declined with crude oil incidents down 22%, refined products down 18%, and highly volatile liquids down 34%.



2025 PIPELINE PERFORMANCE REPORT

INCIDENTS BY CAUSE

12

LIQUIDS PIPELINE INCIDENTS BY CAUSE
(2021-2025)

Equipment failure is the most frequent cause of all liquids pipeline incidents. Over the last five years, equipment failure represented 45% of incidents, corrosion failure 27% and incorrect operation 11%. Material pipe/weld failures, which include cracking, a primary source of large volume releases, represented only 6% of incidents since 2021. Evacuation incidents represented 2% of total liquids pipeline incidents between 2021 and 2025.



13

TOTAL INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT
BY CAUSE (2021-2025)

Over the last five years, corrosion failures (35%) were the most frequent cause of incidents impacting people or the environment, followed by equipment failure (21%), incorrect operation (12%) and material pipe/weld failures (12%). Evacuation incidents represented 7% of incidents impacting people or the environment between 2021 and 2025.



2025 PIPELINE PERFORMANCE REPORT

INCIDENTS BY CAUSE

14

PERCENT OF BARRELS RELEASED IMPACTING PEOPLE OR THE ENVIRONMENT BY CAUSE (2021-2025)

Corrosion failures (24%) were responsible for the most barrels released in incidents impacting people or the environment, followed by material pipe/weld failures (23%) and outside force incidents (14%). Evacuation incidents caused 8% of barrels released impacting people or the environment between 2021 and 2025.



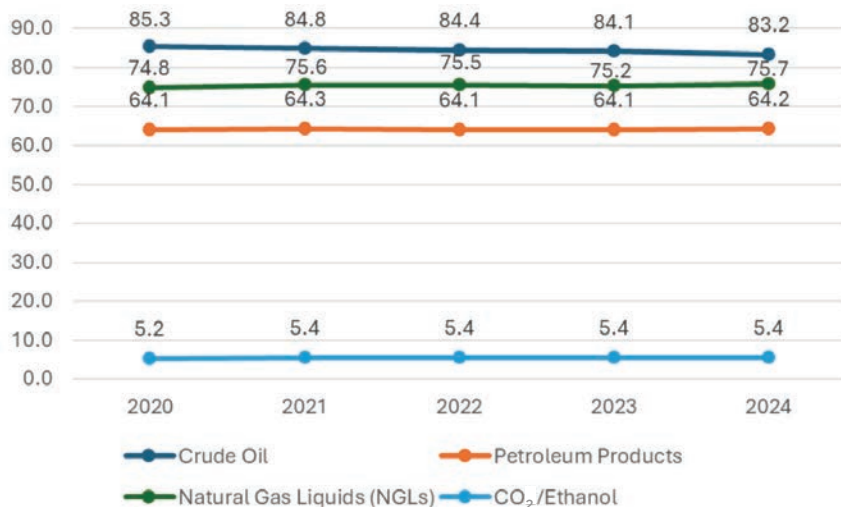
2025 PIPELINE PERFORMANCE REPORT

PIPELINE MILES & BARRELS DELIVERED

15

MILES OF U.S. PIPELINE BY PRODUCTS (2020-2024)
(THOUSANDS)

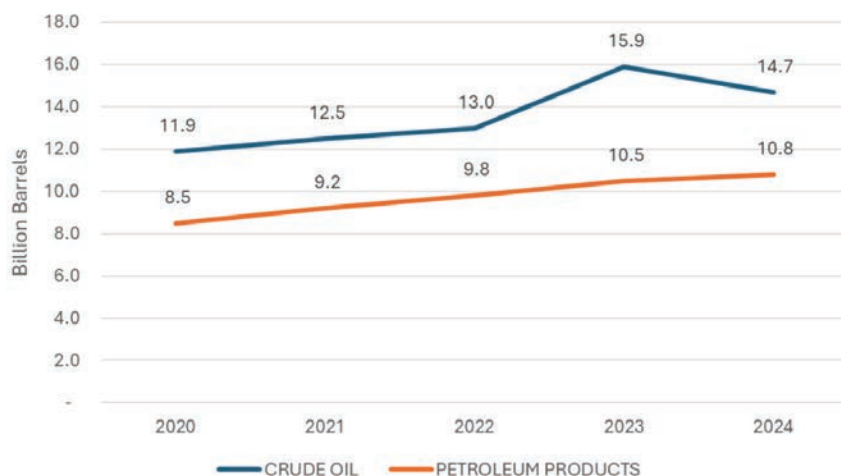
At the end of 2024 (the most recent year this data is available), there were 228,479 total miles of liquids pipelines, with crude oil pipelines representing 36% of the total 83,164 miles, natural gas liquids reflecting 33% at 75,706 miles and petroleum products at 28% with 64,244 miles.



16

BARRELS DELIVERED BY U.S. PIPELINE (2020-2024)
(BILLIONS)

In 2024, there were 25.5 billion crude oil and petroleum products barrels delivered by pipeline, with crude oil at 14.7 billion barrels (representing approximately 58%) and petroleum products at 10.8 billion barrels (representing 42%) of the barrels delivered. Total barrels delivered reflect a 25% increase from 2020.



Source: U.S. Federal Energy Regulatory Commission

DATA TABLES

KEY PERFORMANCE INDICATORS

1

TOTAL NON-IPE INCIDENTS & INCIDENTS IMPACTING PEOPLE AND THE ENVIRONMENT (2021-2025)

YEAR	IPE INCIDENTS	NON-IPE INCIDENTS	TOTAL
2021	61	286	347
2022	74	221	295
2023	72	226	298
2024	59	228	287
2025	68	202	270
Total Releases	334	1,163	1,497
% Change Since 2021	11%	-29%	-22%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

2

INTEGRITY MANAGEMENT INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT (2021-2025)

YEAR	CORROSION FAILURE	MATERIAL FAILURE OF PIPE/WELD	PREVIOUS EXCAVATION DAMAGE	PREVIOUS OUTSIDE FORCE DAMAGE	TOTAL INCIDENTS
2021	23	8	0	0	31
2022	24	12	0	0	36
2023	32	8	1	0	41
2024	16	7	1	0	24
2025	22	6	0	1	29
Total Releases	117	41	2	1	161
% Change Since 2021	-4%	-25%	0%	N/A	-6%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

DATA TABLES

KEY PERFORMANCE INDICATORS

3

OPERATIONS AND MAINTENANCE INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT (2021-2025)

YEAR	EQUIPMENT FAILURE	INCORRECT OPERATION	EXCAVATION DAMAGE DUE TO INSUFFICIENT LOCATING PRACTICES	TOTAL INCIDENTS
2021	11	10	1	22
2022	15	7	0	22
2023	14	7	0	21
2024	14	12	2	28
2025	15	4	1	20
Total Releases	69	40	4	113
% Change Since 2021	36%	-60%	0%	-9%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

4

OTHER INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT (2021-2025)

YEAR	EXCAVATION DAMAGE	NATURAL FORCE DAMAGE	OTHER ACCIDENT CAUSE	OTHER OUTSIDE FORCE DAMAGE	TOTAL INCIDENTS
2021	4	2	1	1	8
2022	3	5	0	8	16
2023	7	0	0	3	10
2024	1	1	2	3	7
2025	4	1	9	5	19
Total Releases	19	9	12	20	60
% Change Since 2021	0%	-50%	800%	500%	138%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

DATA TABLES

INCIDENTS PER MILLION BARRELS DELIVERED

5	INCIDENTS PER MILLION BARRELS DELIVERED (2020-2024)				
	2020	2021	2022	2023	2024
Total Barrels Delivered	20,383,545,445	21,746,539,037	22,840,773,470	26,402,438,617	25,480,301,942
Source: U.S. Federal Energy Regulatory Commission					
Total Incidents	332	347	295	298	287
Source: PHMSA					
Incidents Per Million Barrels Delivered	0.0163	0.0160	0.0130	0.0112	0.0112





DATA TABLES

INCIDENTS PER MILLION BARRELS DELIVERED

6

INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT PER MILLION BARRELS DELIVERED (2020-2024)

	2020	2021	2022	2023	2024
Total Barrels Delivered	20,383,545,445	21,746,539,037	22,840,773,470	26,402,438,617	25,480,301,942

Source: U.S. Federal Energy Regulatory Commission

Total Incidents	68	61	74	72	59
------------------------	----	----	----	----	----

Source: PHMSA

Incidents Per Million Barrels Delivered	0.0033	0.0028	0.0032	0.0027	0.0023
--	--------	--------	--------	--------	--------

DATA TABLES

INCIDENTS BY LOCATION

7

PIPELINE INCIDENTS INSIDE AND OUTSIDE OF OPERATOR PROPERTY (2021-2025)

YEAR	OUTSIDE OPERATOR PROPERTY	CONTAINED ON OPERATOR PROPERTY	OFFSHORE	TOTAL INCIDENTS
2021	71	271	5	347
2022	76	210	9	295
2023	87	206	5	298
2024	63	218	6	287
2025	82	185	3	270
Total Releases	379	1,090	28	1,497
% Change Since 2021	15%	-32%	-40%	-22%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

8

PIPELINE INCIDENTS INSIDE AND OUTSIDE OF HCAs (2021-2025)

YEAR	OUTSIDE HCA	INSIDE HCA	TOTAL INCIDENTS
2021	195	152	347
2022	186	109	295
2023	186	112	298
2024	162	125	287
2025	172	98	270
Total Releases	901	596	1,497
% Change Since 2021	-12%	-36%	-22%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

DATA TABLES

INCIDENTS BY SIZE

9

LIQUID PIPELINE INCIDENTS BY SIZE
(2021-2025)

YEAR	≤ 5 BBLS	> 5 AND ≤ 50 BBLS	> 50 AND ≤ 500 BBLS	> 500 BBLS	TOTAL INCIDENTS
2021	230	60	34	23	347
2022	169	62	41	23	295
2023	180	68	33	17	298
2024	187	56	31	13	287
2025	150	54	47	19	270
Total Releases	916	300	186	95	1,497
% Change from 2021	-35%	-10%	38%	-17%	-22%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

10

INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT BY SIZE
(2021-2025)

YEAR	≤ 5 BBLS	> 5 AND ≤ 50 BBLS	> 50 AND ≤ 500 BBLS	> 500 BBLS	TOTAL INCIDENTS
2021	23	15	12	11	61
2022	19	24	17	14	74
2023	30	17	17	8	72
2024	31	9	12	7	59
2025	24	13	22	9	68
Total Releases	127	78	80	49	334
% Change from 2021	4%	-13%	83%	-18%	11%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

DATA TABLES

INCIDENTS BY COMMODITY

11	ALL INCIDENTS BY COMMODITY (2021-2025)					
YEAR	CRUDE OIL	REFINED PRODUCTS	HIGHLY VOLATILE LIQUIDS (HVLs)	CO ₂	BIOFUEL/ ETHANOL	TOTAL INCIDENTS
2021	186	98	56	6	1	347
2022	163	94	35	3	0	295
2023	150	98	46	4	0	298
2024	151	101	34	1	0	287
2025	145	80	37	7	1	270
Total	795	471	208	21	2	1,497
% Change from 2021	-22%	-18%	-34%	17%	0%	-22%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026





DATA TABLES

INCIDENTS BY CAUSE

12

LIQUID PIPELINE INCIDENTS BY CAUSE
(2021-2025)

CAUSE	TOTAL INCIDENTS	PERCENTAGE
Equipment Failures	672	45%
Corrosion Failures	398	27%
Incorrect Operations	169	11%
Material Pipe/Weld Failures	94	6%
Natural Force Incidents	63	4%
Outside Force Incidents	36	2%
Excavation Incidents	34	2%
Other Incident Causes	31	2%
Total	1,497	100%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

DATA TABLES

INCIDENTS BY CAUSE

13

INCIDENTS IMPACTING PEOPLE OR THE ENVIRONMENT
BY CAUSE (2021-2025)

CAUSE	TOTAL INCIDENTS	PERCENTAGE
Corrosion Failures	117	35%
Equipment Failures	69	21%
Material Pipe/Weld Failures	41	12%
Incorrect Operations	40	12%
Excavation Incidents	25	7%
Outside Force Incidents	21	6%
Other Incident Causes	12	4%
Natural Force Incidents	9	3%
Total	334	100%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

14

BARRELS RELEASED IMPACTING PEOPLE OR THE ENVIRONMENT
BY CAUSE (2021-2025)

CAUSE	BARRELS RELEASED	PERCENTAGE
Corrosion Failures	35,937	24%
Material Pipe/Weld Failures	33,466	23%
Outside Force Incidents	21,281	14%
Equipment Failures	18,833	13%
Excavation Incidents	11,568	8%
Other Incident Causes	11,223	8%
Incorrect Operations	10,926	7%
Natural Force Incidents	4,451	3%
Total	147,685	100%

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026

DATA TABLES

PIPELINE MILES & BARRELS DELIVERED

15

MILES OF U.S. PIPELINE
(2020-2024)

	2020	2021	2022	2023	2024
Crude Oil	85,294	84,826	84,372	84,107	83,164
Petroleum Products	64,111	64,253	64,136	64,105	64,244
Natural Gas Liquids (NGLs)	74,819	75,601	75,486	75,152	75,706
CO ₂ /Ethanol	5,167	5,356	5,373	5,353	5,366
Total Miles	229,391	230,036	229,366	228,716	228,479

Source: Pipeline and Hazardous Materials Safety Administration (PHMSA), March 2026.

16

BARRELS DELIVERED BY U.S. LIQUIDS PIPELINE
(2020-2024)

	2020	2021	2022	2023	2024
Crude Oil	11,874,328,801	12,531,034,346	13,021,837,140	15,939,710,013	14,702,966,740
Petroleum Products	8,509,216,644	9,215,504,691	9,818,936,330	10,462,728,604	10,777,335,202
Total Barrels	20,383,545,445	21,746,539,037	22,840,773,470	26,402,438,617	25,480,301,942

Source: U.S. Federal Energy Regulatory Commission

APPENDIX

DEFINITIONS & NOTES

Barrels

One barrel of crude oil or petroleum products is equivalent to 42 gallons.

Barrels Released

PHMSA requires operators to report intentional releases of natural gas liquids in gas form into the atmosphere during maintenance activities. Unintentionally released barrels of crude oil and petroleum products form the basis of “barrels released” data and analysis in this report. This process displaces residual hydrocarbons in gas state from the section of pipeline set to undergo maintenance. Barrels released data in this report does not include intentional blowdown releases.

Natural Gas Liquids

Petroleum products that are liquids when traveling through a pipeline under high pressure and gases at atmospheric pressure are generally referred to as natural gas liquids (NGLs). Examples of NGLs transported by pipeline include propane, ethane and butane. They occur naturally in petroleum deposits and are produced along with crude oil or natural gas (methane). NGLs are separated from crude oil and natural gas after production and sent to manufacturers (ethane, butane) as an industrial raw material to produce consumer goods such as polymers, fertilizers and home goods, or for other commercial, agricultural or residential uses (propane).

Incidents Impacting People or the Environment (IPE) Criteria

If the criteria in either tier below is met for a crude oil or refined products pipeline, the incident counts as IPE:

- **TIER 1:** Regardless of location of incident: fatality; injury requiring

inpatient hospitalization; ignition; explosion; evacuation; wildlife impact; water contamination (ocean/seawater, groundwater or drinking water); or public/non-operator private property damage.

- **TIER 2:** For location of incident “not totally contained on operator-controlled property”: unintentional release volume greater than or equal to five gallons and in an HCA; unintentional release volume greater than or equal to five barrels and outside of an HCA; water contamination; or soil contamination.

PHMSA Incident Reporting

Pipeline operators regulated by PHMSA are required to report data related to pipeline incidents, including location, cause and consequences. PHMSA compiles this information in a publicly available online database. The pipeline safety data used in this report was obtained from PHMSA in March 2026.

Recommended Practice

A document that communicates proven industry practices. RPs may include both mandatory and nonmandatory provisions.

Refined Products

Products derived from the process of refining crude oil. Examples of refined products include gasoline, kerosene and lubricating oil.

Crude Oil

Includes condensate, light, medium and heavy unrefined hydrocarbons extracted from underground petroleum formations.



FOR MORE INFORMATION, CONTACT:

John Stoody at jstoody@liquidenergypipelines.org

Sam Minifie at minifies@api.org