

MOVING HAZARDS

Transportation Systems and Environmental Disasters



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Cover Photo: East Palestine, Ohio train disaster, National Transportation Safety Board.

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INTRODUCTION

They were some of the biggest news stories of the past couple years.

A cargo ship so large it rivaled in length the Eiffel Tower, carrying 56 containers of hazardous materials, lost power and crashed into Baltimore, Maryland's Francis Scott Key Bridge. The collision not only caused the bridge to collapse, killing six construction workers. It also may have damaged 14 containers filled with alkyl sulfonic acids, corrosive liquids, flammable and other environmentally-hazardous substances, two of which fell into the Patapsco River at the mouth of the Chesapeake Bay. Tons of concrete and steel also



fell into the water, and explosives are now being used to break up what's left of the bridge as chunks of steel continue falling into the river.

A tanker truck transporting about 8,500 gallons of gasoline flipped over and caught fire while exiting the heavily traveled I-95 interstate in Philadelphia, Pennsylvania. The fire was so hot that the I-95 northbound lanes completely collapsed onto the ramp. At the time, predictions were that it would take months to

fix this major commercial artery but the repair took only 12 days. While that was great for the area economy, local residents will spend years worrying about latent health effects from chemical emissions and liquid spillage.

A nearly two-mile-long freight train containing combustible liquids and cancer-causing gases derailed in East Palestine, Ohio. Fires, liquid spillage, and gas releases occurred immediately and residents evacuated. The railroad company, Norfolk Southern, then unnecessarily blew open five tank cars filled with 115,580 gallons of vinyl chloride and burned it. While the air was still extremely toxic, residents were told to go home. A couple months later, a truck carrying soil from the site overturned on a local highway, spilling about 20,000 pounds of toxic dirt.

The nation's network of transportation systems is responsible for moving frightening amounts of hazardous materials ("hazmat") over our roads, rails, waters, and land: 1.2 million shipments each day, 1.6 billion tons each year.¹ Hazmat accidents are unnervingly frequent: more than 24,000 incidents reported in 2023,² with over 8,400 occurring in transit.³ What's more, numbers could be far higher. We will never know because hazmat incidents are often not reported and government record-keeping is poor.⁴ The need to rely largely on self-reporting by industry is a situation which less responsible corporations can exploit to their advantage.

When something does go wrong, toxic chemicals, fossil fuels, asbestos, nuclear waste, and countless other lethal substances can be spewed into the air, spilled into waterways, and seep into the soil.⁵ While many economic and health consequences of hazmat incidents are immediate, some health problems may not be known for decades because of the “lag between exposure and the onset of disease.”⁶ Cancers, reproductive harm, and severe respiratory ailments can take years to manifest. Establishing a link between exposure and latent disease requires honest reporting followed by rigorous epidemiological studies,⁷ which are typically not done and even when they are, can be infected by corporate influence.⁸ As this report will show, these are just some of the many problems created by our regulatory structure, which places responsibility for public health and safety on a combination of private, money-making corporations and under-resourced government agencies.



Pipeline and Hazardous Materials Safety Administration

The U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHMSA) is the primary regulatory body when it comes to hazmat transportation.⁹ Within PHMSA is the Office of Hazardous Materials Safety (OHMS), which oversees safety and investigates incidents.¹⁰ OHMS also works with other agencies depending on the mode of transportation, including the Federal Motor Carrier Safety Administration (FMCSA) for trucks, Federal Railroad Administration (FRA) for rails, and the U.S. Coast Guard (USCG) for vessels.¹¹ PHMSA’s Office of Pipeline Safety (OPS) focuses on the U.S. pipeline system and certain liquefied natural gas (LNG) facilities.¹²

When radioactive materials, including extremely dangerous high-level nuclear waste, are transported, the Nuclear Regulatory Commission (NRC) is also involved.¹³ Most nuclear waste is transported on roads where big truck accidents happen far too frequently irrespective of their cargo.¹⁴ Sometimes nuclear materials simply catch fire on their own, as recently occurred on a semi-truck traveling down I-40 in Nashville, TN.¹⁵

The U.S. Environmental Protection Agency (EPA) enters the picture after the damage has been done. EPA is charged with leading containment, cleanup, and mitigation efforts. It also has the authority to hold companies accountable for violations of environmental laws through fines, mandated corrective actions, legal action, and other tools.¹⁶ However, throughout history, the agency has had troubling credibility problems,¹⁷ recently apparent following the East Palestine, OH train disaster.¹⁸

This report presents an overview of four major hazmat transportation systems: roads, rails, vessels, and pipelines. It examines how these systems work and some of the most well-known case studies within each transportation mode. It also shows how important it is for victims to seek some kind of recourse in our civil courts following a disaster. And it explores the ever-shrinking legal options that are available to some harmed individuals who seek compensation and accountability in court.

THE ROADS

The transportation system responsible for movement of the largest volume of hazardous materials is the U.S. network of streets and highways.¹⁹ In 2023, trucks carried nearly 856 million tons of gasoline, more than 644 million tons of fuel oils, over 460 million tons of natural gas and other fossil fuel products, and more than 19 million tons of crude petroleum over U.S. roads.²⁰ It is not hard to imagine the dangers associated with this type of hazmat transportation. A few grim headlines perhaps say it all: “Tanker Truck Carrying Thousands of Gallons of Fuel Goes Over Bridge in Ohio, Explodes, Driver Killed,”²¹ “Illinois semi-truck crash causes 5 fatalities and an ammonia leak evacuation for residents,”²² “Tanker truck crash in the Adirondacks leaks 3,500 gallons of hazardous liquid,”²³ “Tanker crashes on Maryland highway, killing driver and setting homes ablaze,”²⁴ “Diesel tanker rolls over, spills thousands of gallons of fuel into Athol creek; recovery efforts ongoing.”²⁵

While a single truck accident may not create the same kind of environmental destruction as, say, a 20-car train derailment, the sheer quantity and growth of road crashes compared to accidents within any other transportation system warrant tremendous concern.²⁶ To put this in perspective, for every hazmat train accident, there are 33 hazmat incidents involving big rigs.²⁷ As FMCSA Associate Director for Safety Darrell L. Ruban stated recently, “With the volume of HM [hazmat] moved, and over 146,000 HM motor carriers registered with FMCSA, the possibility of HM incidents occurring is of major concern, especially considering that transportation by highway mode accounts for most incidents reported year-over-year.”²⁸



Many hazmat releases are the result of cargo tank trucks rolling over. There are, on average, nearly 4 such rollovers every day.²⁹ However, their causes vary. More than three-quarters of the time, driver error – largely fatigue and inattention – is to blame, with the troubling fact that “over 90% of the time, the rollover is not the ‘first’ event.”³⁰ In addition, load size can have a tremendous impact on driving, with “some 63% of rollover crashes occur[ing] with cargo tanks carrying partial loads, so drivers must understand the ‘slosh and surge’ effect of liquid loads.”³¹ And sometimes, the vehicles are to blame, particularly brake defects. For example, one study found that “54% of vehicles in rollovers had a brake defect of some sort.”³²

The toxic impact of rollovers and other hazmat accidents cannot be overstated. What’s extremely worrisome, explained former PHMSA official Bob Richard, “are potential large hazardous materials accidents ‘in highly densely populated areas where there’s a release of what’s called a toxic by annihilation material, like chlorine [which could] vaporize.’”³³ Common types of releases involve liquids transported for home fuel oil, which can catch fire.³⁴ In addition, tanker spills, leaks, and explosions may contaminate surface water, such as rivers, streams, creeks, lakes, and reservoirs, as well as ground water,

which is the source of drinking water for “more than 90 percent of the rural population who do not get their water delivered to them....”³⁵

For almost three decades, the National Transportation Safety Board (NTSB) has recommended that hazmat-carrying trucks have safety features to reduce the risk of crashes and releases.³⁶ But NTSB does not regulate the trucking industry or the domestic transportation of hazardous materials by truck. PHMSA and FMCSA do.³⁷ Yet for years, these two agencies have failed to adequately mitigate known dangers and police the industry.³⁸ And according to a September 2023 U.S. Government Accountability Office (GAO) report, FMCSA’s system for collecting and addressing safety complaints against hazmat-carrying trucks and other motor carriers has such serious deficiencies that many dangers are not uncovered or known, which allows them to continue.³⁹

Under the Biden administration, there has been some movement to finally require a few new safety features on all commercial vehicles, such as speed limiters and automatic braking.⁴⁰ However, the process has been rife with rule-making delays.⁴¹ And there has been no progress on many other long-advised safety features, such as rollover prevention.⁴²



Furthermore, often when agencies do take action, they result in recommendations not mandates. Take, for example, hazardous chemical cargo tanks known as “nurse tanks,” used commonly to transport anhydrous ammonia.⁴³ FMCSA and PHMSA know of nurse tanks’ well-documented potential for catastrophic failure and significant hazmat releases.⁴⁴ But when given the opportunity to do something about this, they chose to issue a “recommendation” instead of a rule.⁴⁵ In addition, potential fines against bad actors have been kept at levels too low to have much impact.⁴⁶

The trucking industry’s success at blocking federal regulatory safety and enforcement advancements seems clear.⁴⁷ As Jackie Gillan, veteran safety advocate and President Emerita of Advocates for Highway and Auto Safety, put it, “It’s been a constant battle of the trucking industry against even the weakest safety standards.”⁴⁸

Finally, whether it’s maintaining roads, inspecting vehicles, or working with the federal government on hazmat enforcement programs, states also play a large role.⁴⁹ However, a recent FMCSA memo indicates that states are not doing enough to lower and mitigate the risks associated with the transportation of hazardous materials.⁵⁰ For example, there has been a “downward trend” in the number of state inspections regarding hazmat drivers and vehicles,⁵¹ plus a lack of state inspectors to oversee cargo tank facilities “to ensure that cargo tanks are built to the required specifications, repaired correctly, and maintained,” which is particularly worrisome given that there are approximately 3,500 of these facilities and “less than 100 per year are reviewed” to check for problems.^{52,53}

RECOURSE FOR VICTIMS

In general, lawsuits following any sort of big truck accident are extremely rare, with less than 2 percent of trucking insurance claims turning into lawsuits.⁵⁴ But the horrific nature and avoidable causes of many of these crashes will sometimes lead victims to pursue court action. That said, there may be significant obstacles in a victim's quest to reach the courthouse.

Federally-mandated insurance minimums can have a profound impact on a victim's ability to recover for hazmat-related truck accidents. Under FMCSA regulations, private big rigs transporting oil must have \$1 million per accident in insurance liability coverage while private carriers that haul all other hazardous material must have \$5 million in insurance liability coverage.⁵⁵ These insurance limits



function as a cap, providing a single fund of available compensation that is indifferent to the number of victims hurt or killed. In addition, these liability limits fail to incentivize insurers to make safer practices a condition of coverage, thereby allowing trucking companies to treat deaths and catastrophic injuries as part of the cost of doing business.

But that is hardly the only problem for victims. In recent years, the trucking industry has been lobbying heavily for tort restrictions to make legitimate lawsuits more difficult to bring and compensation less available to victims.⁵⁶

It should first be noted that many general tort restrictions already benefit the trucking industry. For example, some states broadly cap compensatory damages in injury cases.⁵⁷ Juries are typically not told about these caps when rendering verdicts. Other laws limit punitive damages, which are awarded when wrongdoing is particularly egregious. Of the 45 states that allow punitive damages, at least one-third have enacted some form of cap.⁵⁸

A number of state tort limits have recently been enacted with either the support of the trucking industry or at its specific behest. They include the following below.

Iowa and West Virginia: Caps on Damages

Within the last year, new laws were passed in both states that cruelly cap non-economic damages available to injured victims, including children, harmed in truck crashes.⁵⁹ These \$5 million caps apply even in hazmat incidents.



Florida: Package of Broad Tort Restrictions

The trucking industry supported a new set of tort limits signed into law, many of which strip away the legal rights of truck crash victims. Among them: laws that reduce compensation to victims, make liability more difficult to prove, and reduce the time limit for victims to file cases.⁶⁰

Texas: Increasing Burdens on Truck Victims

In September 2021, a law went into effect that forces injured or killed victims and their families to establish truck driver negligence in court before they're able to take legal action against a trucking company that caused avoidable death or harm.⁶¹ This two-tiered system, pushed by the state's trucking industry,⁶² "limits corporate liability and throws roadblocks into the recovery process for grieving families," explained Adrian Shelley, Director of Public Citizen Texas.⁶³

Montana and Louisiana: Reducing Compensation to Truck Victims

In May 2021, Montana's governor signed legislation backed by the trucking industry and other business groups, allowing wrongdoers to escape responsibility for paying the full cost of victims' medical bills.⁶⁴ The American Trucking Associations "cheered the legislative action."⁶⁵

Similarly, in July 2020, Louisiana's "Civil Justice Reform Act" was signed into law after support from the trucking industry.⁶⁶ The Act, similar to Montana's law, allows wrongdoers to reduce their financial responsibility for injuries they caused, lets juries hear about payments from outside sources unrelated to the wrongdoer, and prevents juries from learning that the defendant has insurance coverage.⁶⁷

Missouri: Punitive Damages Limits

In July 2020, the state "raised the bar for ordering a trucking company to pay punitive damages,"⁶⁸ which as noted earlier are only awarded when wrongdoing is particularly egregious.

I-95 CHRONICLES

Anyone who has traveled up or down the East Coast is undoubtedly familiar with I-95. It's one of the largest, most important, and infamously dangerous highway stretches in America.⁶⁹ When major crashes happen on I-95, traffic can become a nightmare for hours. When major crashes involving hazardous materials happen, the impact on air, land, and water can be devastating. And if I-95 is forced to close, the entire U.S. economy can be affected. Within the past year, two such horrendous hazmat truck crashes have occurred on I-95.

At 5:30 a.m. on May 2, 2024, a Chevy Camaro unsafely tried to merge onto I-95, right in the path of a Kenworth Construct T800 truck carrying 8,500 gallons of gasoline. The front of the truck hit the car, swerved left, and hit another truck, causing the Kenworth T800 to burst into flames. When it finally stopped, the flaming truck was under the Fairfield Avenue overpass, severely damaging the bridge and closing I-95 for what seemed at the time could be a prolonged I-95 shutdown. Said Connecticut Governor Ned Lamont, "I worry about supply chain issues."⁷⁰ But just 80 hours later, the overpass was demolished and I-95 was reopened, far sooner than originally thought due to some incredibly fast work by demolition and construction crews.⁷¹

Connecticut Department of Energy and Environmental Protection (DEEP) officials have downplayed any environmental concerns despite the fact that 4,000 of the truck's 8,500 gallons of gasoline "were burned or spilled."⁷² But DEEP has clearly recognized risks to the public, taking steps to "excavat[e] soil in that area to mitigate contamination" while "conducting 'vacuum recovery efforts at the storm water basin' along with cleaning of storm drains." DEEP says it is continuing to monitor the area.



Perhaps even more concerning was the I-95 crash that occurred at 6:17 a.m. on June 11, 2023, when a tanker truck carrying about 8,500 gallons of gasoline from Wilmington, DE to a Philadelphia, PA gas station flipped over and caught fire while exiting an I-95 northbound off-ramp in Philly.⁷³ The driver, who lost control of the truck, was killed. The fire was so hot that the I-95 northbound lanes completely collapsed onto the ramp. At the time, predictions were that it would take months to repair this major interstate,⁷⁴ with real economic concerns about the supply chain for the entire country.⁷⁵ But in an amazing feat of engineering, the repairs took just 12 days and I-95 reopened.⁷⁶

While there was much to celebrate about the highway's quick fix, area residents now must worry about latent health effects due to chemical emissions from the blaze⁷⁷ as well as the crash's proximity to local drinking water treatment plants serving about 58% of city residents.⁷⁸ The official story to date has been that the gas mainly leaked on land and the small amount dumped in the water was quickly contained.⁷⁹ However, NTSB has yet to release its final investigative report. What has been found to date is that in addition to the driver losing control,⁸⁰ he was operating the tanker truck for a gas-hauling company that (per a FMCSA database) "was still 'not authorized' to operate in an interstate capacity following a 2015 crash on an approach to [Philadelphia's] Betsy Ross Bridge."⁸¹

THE RAILS

The roughly 140,000 miles of freight rails across the United States, which transport nearly a billion tons of hazardous materials each year,⁸² are controlled by private companies.⁸³ The seven largest and most powerful of them, categorized as Class I railroads, are BNSF Railway, Canadian National Railway, Canadian Pacific, CSX Transportation, Kansas City Southern, Norfolk Southern Railway, and Union Pacific.⁸⁴



Given how many dangerous hazmat rail accidents occur in this country, it's clear that safety is not as high a priority as it should be for these corporations. In the first five months of 2024, there were already 105 reported "incidents."⁸⁵ The previous year, 332 were reported,⁸⁶ one of which occurred less than two months after the East Palestine disaster, when more than half of a 40-car BNSF train, 14 cars of which contained hazardous chemicals including ethanol, derailed. Four cars ignited and caught fire, necessitating the evacuation of residents living within a half-mile radius.⁸⁷

Another example: On April 25, 2023, one car in a train traveling from Wyoming to California arrived empty. The rail car had been carrying roughly 60,000 pounds of ammonium nitrate (a fertilizer also used for explosives), which apparently had entirely leaked out.⁸⁸

The Federal Railroad Administration (FRA) oversees this industry,⁸⁹ and of course Congress also plays a safety role. Unfortunately, both bodies often bow to industry pressure to weaken existing regulations, fail to remedy urgent problems in a timely manner, or do anything at all.⁹⁰ Take the Railway Safety Act of 2023, a bipartisan bill designed to ensure safer transport of hazardous freight on rail lines and introduced in response to the East Palestine disaster. The railroad industry strongly opposed it and it has not passed.⁹¹ Similarly, in December 2017, the rail industry pressured regulators to stop a rule that would have required flammable hazmat-carrying rail cars to have electronically controlled pneumatic brakes (ECP),⁹² which can prevent or reduce the size of a derailment pile-up.⁹³ Reports *The Intercept*, "After the rule was eventually repealed, meeting notes from Trump administration Transportation Secretary Elaine Chao show a scheduled call with Carl Ice, then president and CEO of BNSF Railway, for him to 'thank her for ECP.'"⁹⁴

Among many other problems compounded by weak federal regulation:

Narrow definition of “high-hazard flammable train” (HHFT). Federal regulations require that HHFTs follow more stringent safety requirements,⁹⁵ such as speed limits, routing guidelines, tank car specifications, and information sharing with state agencies.⁹⁶ But the definition of high-hazard flammable train is so narrow that even trains carrying flammable gases like vinyl chloride, such as the East Palestine train, do not qualify. That meant, among other things, that the state of Ohio was not notified of its passing through. Said Ohio Governor Mike DeWine, “Frankly, if this is true, this is absurd. ...We should know when we have trains carrying hazardous materials that are going through the state of Ohio.”⁹⁷



Inadequate defect detection.

The nation’s freight rail industry isn’t required to equip their trains or tracks with systems to detect defects, increasing the likelihood of derailments.⁹⁸ For example, there are no requirements for wayside

detectors (*i.e.*, automated devices located on the side of tracks),⁹⁹ which can detect hot bearings, hot wheels, dragging equipment, high, wide, or shifted loads, and environmental hazards.

However, even when wayside detectors are installed, the railroads do not properly process or communicate information.¹⁰⁰ This problem is exacerbated by the fact that train inspections are insufficient or poor.¹⁰¹

In addition, there is no real-time tracking of hazardous cargo by the Federal Railroad Administration,¹⁰² and “railroads aren’t required to share real-time information with anyone – even emergency personnel.”¹⁰³ That means firefighters or police arriving on the scene may have no idea what spilled.¹⁰⁴ Moreover, when companies are held accountable by the government, there are paltry fines even for egregious safety violations involving hazardous materials when people die.¹⁰⁵

Regulatory and congressional inaction has left the rail industry to largely police itself,¹⁰⁶ resulting not only in obvious safety failures but also severe undercounts of hazmat “incidents” by self-reporting rail companies.¹⁰⁷ Five of the seven major freight railroads still refuse to join a government hotline program that would allow workers to anonymously report safety violations without fear of retribution.¹⁰⁸ Said Debbie Berkowitz, who helped lead the U.S. Occupational Safety and Health Administration during the Obama administration, “Their opposition to this hotline – which only increases protection for the public and workers – is just part of a decades-old effort to suppress reporting of injury and hazards so that they can appear to the public and regulators as safer than they are.”¹⁰⁹

Clearly, in far too many ways rail companies are focused on profits rather than safety. For example, there is a dangerous new trend of freight trains being controlled remotely, without a conductor or engineer onboard or at least in the cab, leading to a “recent rash of accidents.”¹¹⁰ It is “part of a cost-cutting effort that has seen the railroad industry cut its work force by nearly a third and shift to longer and heavier trains. ...Many now run through residential and commercial neighborhoods, sometimes carrying hazardous cargo such as petroleum or hydrochloric acid.”¹¹¹ It has been reported that remote trains can have “160 cars — 1.5 miles long, about three times longer than the Federal Railroad Administration

recommends in its 2007 safety guidelines for such trains, and eight times more than the guidance the agency set two years earlier.”¹¹²

In addition, faced with competition from the long-haul trucking industry,¹¹³ railroad corporations have followed a moneymaking strategy known as precision scheduled railroading “to move cargo faster than ever, with fewer workers on trains that are consistently longer than at any time in history.”¹¹⁴ As reported by *ProPublica*, under this approach, “companies are forgoing long-held safety precautions, such as assembling trains to distribute weight and risk or taking the proper time to inspect them.... Instead, their rushed workers are stringing together trains that stretch for 2 or even 3 miles, sometimes without regard for the delicate physics of keeping heavy, often combustible tanker cars from jumping off the tracks.”¹¹⁵



This scheme has also created working protocols and conditions that contribute to safety issues. For example, in the absence of federal regulations specifying a minimum time for inspection of railcars, “the time taken for workers to inspect cars has dropped from two minutes to 40 or 45 seconds.”¹¹⁶ In addition, as Greg Regan, President of the Transportation Trades Department of the AFL-CIO, told *The Lever*, “The massive reduction in the workforce, attendance policies that encourage people to come to work when they’re sick or exhausted, lack of access to [paid] leave, the stress that is constantly put on workers

because of how lean the workforce has become, it creates a negative culture in terms of safety.”¹¹⁷ He characterized the railroads’ strategy as “moving as fast as possible, as lean as possible, and generating as much profit as possible.”¹¹⁸ And indeed, in 2023, the six biggest rail operators reported “more than \$25 billion in profits.”¹¹⁹ As U.S. Secretary of Transportation Pete Buttigieg put it in March 11, 2024,¹²⁰

The major freight railroads are widely and increasingly regarded as being obsessed with quarterly profits and short-term operating margins, to the exclusion of other vital priorities like safety, long-term network development, customer service, worker wellbeing, and community engagement. When your industry objects to safety provisions, this perception deepens.

RECOURSE FOR VICTIMS

When someone is injured or killed by a train transporting hazardous cargo, their legal rights (and those of surviving family members) are similar to those of any other injury victim hurt by a defective product or negligence. Depending on what and who caused the accident, a case is usually brought in state court under state products liability tort law (*e.g.*, for train defects) or other state negligence law (*e.g.*, for failure to inspect cars carrying hazmat). A train’s owner/operator and manufacturer are not the only possible defendants, and these cases can be complex. Compensation for injuries or wrongful death may be available; punitive damages are also possible. Damages laws vary from state to state. For example, some

states cap damages in all negligence cases or only products liability cases. Other state tort restrictions can limit victims' rights in varying ways. It all depends on where the case is filed.¹²¹

Below are recent examples of victims turning to the civil courts for justice against rail companies. (See *also*, East Palestine.)

- Hundreds of Libby, MT residents have filed lawsuits against BNSF Railway for asbestos exposure from tainted mining material hauled through the town over the course of decades. In April 2024, jurors in the first community exposure case to reach trial – which sought to hold BNSF accountable for the deaths of Joyce Walder and Tom Wells – found that the company had contributed to their deaths and handed down a verdict of \$4 million in compensatory damages to each of the victims' families. BNSF appealed; as of publication, the case remains unresolved.¹²²
- In the afternoon of November 22, 2023, Thanksgiving Eve, a CSX train derailed in Rockcastle County, KY. Two of the 16 cars involved in the derailment “contained molten sulfur, three cars contained magnesium hydroxide, and one car was empty but had previously held methanol.” Part of the spilled sulfur caught on fire, burning for nearly a day while filling the air with poisonous gas and causing untold injuries to area residents. In the immediate aftermath, “2,500 tons of contaminated soil had been replaced.” Victims filed a class action lawsuit against CSX. The case is pending.¹²³
- On June 22, 2018, 33 cars of a 110-car BNSF oil train derailed near Doon, IA, spilling approximately 160,000 gallons of oil from 10 tank cars “into the flood waters and causing catastrophic property and environmental damage.” Five years later, Philip, Kristi, John, and Helen Koomia sued BNSF for contaminating their 464 acres, which has required extensive and ongoing cleanup and resulted in diminished property values. In February 2024, BNSF settled the case for an undisclosed amount.¹²⁴
- Shortly before midnight on July 1, 2015, the wheel bearings on a Union tank car on a CSX train, which was carrying approximately 24,000 gallons of the carcinogenic and highly toxic acrylonitrile, overheated and derailed in Blount County, TN. The train did not stop. Instead, “the train crew dragged the derailed car more than nine miles.” At that point, “the axle broke and punctured the tank, causing the toxic chemical acrylonitrile in the tank to burn for more than 19 hours,” prompting the evacuation of over 5,000 people with at least 87 people going to the hospital. In December 2017, area residents filed a class action lawsuit against CSX and Union; both companies settled under confidential terms in February 2018 and June 2019, respectively.¹²⁵



EAST PALESTINE

At about 8:55 p.m. on February 3, 2023, Norfolk Southern Railway's 32N freight train, nearly two miles long, derailed in East Palestine, Ohio, a village about a quarter-mile west of the Ohio-Pennsylvania state line and home to approximately 4,700 people.¹²⁶ More than a third of the train's 150 cars went off the rails,¹²⁷ 20 of which contained combustible liquids, flammable liquids, and flammable gas, including cancer-causing vinyl chloride. The immediate dangers were enormous: "Some cars caught fire. Some cars spilled their loads into an adjacent ditch that feeds Sulphur Run, a stream that joins Leslie Run, which eventually empties into the Ohio River."¹²⁸



Yet the environmental destruction only got worse when three days later, officials, who received incorrect information about a possibly imminent explosion,¹²⁹ allowed Norfolk Southern to blow open five tank cars filled with vinyl chloride and burn the toxic chemical. This filled the air with thick, poisonous black smoke; more than a thousand residents were

evacuated.¹³⁰ There was immediate evidence of resulting environmental damage, with 3,500 fish in local rivers and streams killed as chemical compounds from the release created hydrochloric acid in the water.¹³¹ In addition, homes retained a terrible odor.¹³² Nonetheless, residents were given the all-clear to return five days after the derailment.¹³³ However, as *CNN* reported,¹³⁴

To reassure residents, the train's operator, Norfolk Southern, and the US Environmental Protection Agency offered to check the air in homes for chemicals. More than 600 households signed up. What they didn't know was that the handheld devices used for the screening couldn't detect one of the main chemicals spilled from the train – butyl acrylate – at levels that could irritate the eyes, nose, throat and lungs. ...“I would say this is one of the most significant errors associated with the response,” said Dr. Andrew Whelton, an environmental engineer at Purdue University who has done independent testing in East Palestine. “It's because of this so many people were chemically exposed when they returned.”

The public's health was instantaneously put a risk, with almost everyone reporting headaches, and most reporting coughing or burning eyes, as well as dizziness, breathlessness, and mental health issues.¹³⁵ Tens of thousands of minnows died, as did thousands of other fish and macroinvertebrates.¹³⁶ A few months later, “176,000 tons of contaminated soil and over 44 million gallons of tainted water” were taken out of the area.¹³⁷ And to add insult to injury, a truck carrying soil from the site overturned on a local highway, spilling about 20,000 pounds of toxic soil.¹³⁸

An initial National Transportation Safety Board investigation found that the derailment could have been avoided. More specifically, an overheating wheel bearing on one of the railcars wasn't detected in time.¹³⁹ At a February 2023 news conference, NTSB Chair Jennifer Homendy said what happened in East Palestine “was 100 percent preventable.”¹⁴⁰

The following year, the NTSB Chair revealed more shocking news, telling Congress in March 2024 that the decision to do a controlled burn of the 115,580 gallons of vinyl chloride wasn't justified.¹⁴¹ The chemical shipper OxyVinyls had told Norfolk Southern that an explosion was not imminent because the tank cars were already significantly "cooling down" yet the rail company did not give officials this key information.¹⁴² While Norfolk Southern defended its actions,¹⁴³ U.S. Senator Sherrod Brown (D-Ohio) said what was obvious to everyone else: "This explosion – which devastated so many – was unnecessary. The people of East Palestine are still living with the consequences of this toxic burn. This is more proof that Norfolk Southern put profits over safety & cannot be trusted."¹⁴⁴

Now more than a year later, there are numerous signs of an ongoing environmental and public health tragedy. Chemicals are still in local creeks, some of it appearing as "rainbow-colored residue."¹⁴⁵ More fish are dying.¹⁴⁶ And area residents, both in Ohio and Pennsylvania, still suffer what are considered "classic symptoms of chemical exposure, while at least several dozen residents haven't returned to their homes."¹⁴⁷ But even more worrying are the long-term health effects, like cancer, that may take years to develop.¹⁴⁸ One physician was quoted as saying that "she's already seen people with symptoms similar to health problems military veterans developed after working around toxic burn pits during the Gulf War, but that it's hard to predict what might develop in East Palestine because there isn't good research on the chemicals that spilled."¹⁴⁹

The U.S. Environmental Protection Agency says it almost never declares a public health emergency for environmental disasters. EPA explains this would only be warranted where there are not only continuing health problems but also "ongoing chemical exposures," which they maintain have not been documented in



East Palestine.¹⁵⁰ Without a public health emergency declaration, the community must rely on the railroad to clean up the environmental damage.¹⁵¹ And sick individuals cannot access taxpayer-funded medical benefits that might otherwise be available through Medicaid.¹⁵² A fund to cover "long-term health needs of the community," promised by the company, "hasn't happened yet."¹⁵³

In February 2023, residents, businesses, and property owners filed a class action lawsuit against the railroad. Norfolk Southern then tried to shut down the case by arguing that it was preempted by federal law, a tactic the court rejected in March 2024. Less than a month later, the company agreed to a \$600 million settlement.¹⁵⁴ However, a number of residents are concerned the amount is too low.¹⁵⁵ In addition, those who agree to settle would be releasing from additional liability not only Norfolk Southern but also third-party defendants OxyVinyls, "GATX Corporation (owner of the tank cars that held the vinyl chloride), General American Marks Company (owner of hopper car on which the hot wheeling failed) and Trinity Industries Leasing Company (the owner of another hopper car),"¹⁵⁶ while at the same time preserving Norfolk Southern's ability to seek damages against those three companies.¹⁵⁷

On May 21, 2024, the court issued preliminary approval of the settlement;¹⁵⁸ a final approval hearing is scheduled for September 25, 2024.¹⁵⁹ As reported by the *Associated Press*, "Residents who don't think the settlement provides enough have until July 1 to opt out of the deal and preserve their right to file an individual lawsuit later. That means they will have time to read the National Transportation Safety Board's final report on the derailment that will be released at a June 25 hearing in East Palestine."¹⁶⁰

Finally, on May 23, 2024, Norfolk Southern agreed (subject to court approval) to pay more than \$300 million – most of it to cover clean-up costs – to settle a lawsuit brought against the company by the U.S. Justice Department and EPA.¹⁶¹ The company admits no wrongdoing and faces no criminal penalties but will pay a \$15 million civil penalty for violating the Clean Water Act. It has also pledged to make safety improvements, including installing a couple hundred hot-bearing detectors, as well as pay for some environmental and medical monitoring. However, the money cannot be used for medical treatments. As one local activist put it, “Medical monitoring is not enough. We need to be reassured that our exams, our treatments and any follow-up services will not make us go bankrupt.”¹⁶²

THE WATER

When thinking about the sources of hazmat releases in the United States, ship accidents may not immediately come to mind. Yet a tremendous amount of hazardous cargo is shipped on U.S. waterways¹⁶³ and there are indeed accidents. History has shown that crashes, leaks, spills as well as fires on vessels transporting hazmat can cause large-scale environmental damage while also putting the health of ship workers, clean-up workers, and nearby communities at terrible risk.¹⁶⁴



While major incidents are infrequent, they happen far more often than they should. For example, right before publication of this study, a 30,000-gallon capacity fuel barge hit a bridge pillar north of Galveston, TX, spilling oil into Galveston Bay.¹⁶⁵ Five years earlier, a tanker barge, with nearly 600,000 gallons of oil, collided with a tanker ship near Bayport, TX, rupturing the barge’s storage tanks and discharging oil into the Houston Ship Channel and Galveston Bay, as well as onto the coastline, affecting all types of marine life and other activities.¹⁶⁶ And one need only think back to March 1989 when the oil tanker *Exxon Valdez* struck a reef in Prince William Sound, AK, spilling more than 11 million gallons of crude oil,¹⁶⁷ considered one of worst environmental disasters in U.S. history, affecting “more than 1,300 miles of shoreline, with immense impacts for fish and wildlife and their habitats, as well as for local industries and communities.”¹⁶⁸

Given the sensitive ecological environments through which hazmat cargo vessels move, one would think that passing strong laws and regulations outlining safe and acceptable practices for such ships would be a priority for lawmakers and regulators. But that has not been the case. Instead, the regulatory scheme relies primarily on after-the-fact federal enforcement, which while important does nothing to erase the immediate, long-term, or sometimes irreparable consequences to health, safety, and the environment caused by dangerous hazmat-carrying vessels. As one expert put it, “Most regulations are written in blood. It takes something like [the Baltimore Key Bridge disaster] for people to say, ‘Whoa, we should do something.’”¹⁶⁹ The issues are considerable.

The current regulatory scheme depends heavily on self-inspection by commercial vessels with an EPA “general vessel permit.” Ship owners or operators are supposed to both diagnose and fix problems as well as to monitor releases.¹⁷⁰ This includes, for example, controlling releases of ballast water, which “can introduce invasive species or damage local species by disrupting habitats.”¹⁷¹ According to the U.S. Coast Guard (USCG) Office of Commercial Vessel Compliance’s 2023 annual report, “Compliance with ballast

water management regulations continues to be one of the most challenging issues faced by the maritime industry.”¹⁷² Clearly, federal oversight is lacking.

USCG is the federal agency responsible for vessel safety¹⁷³ and marine environmental protection,¹⁷⁴ but they are only two of the agency’s 11 statutorily-mandated missions.¹⁷⁵ Per recent GAO reports, there appears to be a persistent lack of institutional will to make them priorities. For example, according to the latest federal data, marine safety accounted for only eight percent and marine environmental protection constituted a mere two percent of USCG’s total operating expenses for FY 2011-2020.¹⁷⁶



Among the many areas where USCG’s lack of resources or agency will is impacting safety: vessel inspections. Take gas carrier ships, which transport highly combustible liquefied natural gas that can pose serious safety and environmental risks. USCG is supposed to inspect them annually. However, these inspections do not always happen because of a shortage of marine inspectors.¹⁷⁷ Another problem is inspection of foreign vessels entering U.S. ports. USCG inspects a relatively small percentage of these ships given the volume of traffic, potentially allowing many non-compliant ships that pose environmental and other safety risks to operate in U.S. waters.¹⁷⁸ In fact, the total number of ships detained by USCG in 2023 for non-

compliance with U.S. environmental protection, safety, and security regulations totaled 101 out of nearly 11,000 ships.¹⁷⁹ The low number of foreign commercial vessels detained raises concerns about the thoroughness of inspections and whether non-compliant ships are slipping through the regulatory net.

RECOURSE FOR VICTIMS

After the *Exxon Valdez* disaster, Congress enacted the Oil Pollution Act of 1990.¹⁸⁰ It says, among other things, that a vessel’s owner or operator is strictly liable for the full costs of environmental clean-up of an oil spill.¹⁸¹ At the same time, the law also caps their liability for economic damages according to a formula depending on the type of vessel.¹⁸² However, actions relating to gross negligence or willful misconduct are exempt from this cap. Vessel cases involving non-oil pollutants, as well as personal injury claims, are not covered by the Act.¹⁸³ But victims face other issues.

Unlike land-based claims, those harmed by vessels must sue under federal maritime law.¹⁸⁴ State law may supplement federal maritime law where necessary. But generally, maritime tort law is its own separate body of common law developed largely by federal courts and the U.S. Supreme Court,¹⁸⁵ which, as one expert put it, are not “modern, consumer-oriented” laws, but rather “nineteenth-century legal principles, the purpose being to insulate these companies from legitimate...claims.”¹⁸⁶

Proving negligence under maritime law is generally the same as proving it under state law with some differences, both good and bad. Because typical tort cases are brought under federal maritime law, they would not be subject to the same kind of state tort limits that land-based victims are, such as caps on non-economic damages. On the other hand, the federal Limitation of Liability Act¹⁸⁷ (LOLA), an

anachronistic law on the books since 1851, provides an avenue for vessel owners to try to drastically limit their liability.

After a crash, LOLA allows a vessel owner to sue preemptively.¹⁸⁸ Victims then must prove that the owner had “privity or knowledge” of “any loss, damage, or injury by collision, or any act” covered by the law.¹⁸⁹ If they cannot, liability for an entire accident could be limited to the *post-accident value of the vessel and pending freight*, “regardless of the severity of the catastrophe.”¹⁹⁰ This defense mechanism was recently invoked by the manager and the owner of the *Dali*, Synergy and Grace Ocean, respectively, who within six days of the Key Bridge disaster filed a joint petition to cap their legal liability at roughly \$43.6 million.¹⁹¹

While victims can usually show negligence and quash the law’s use in most vessel accidents, the “immediate effect of the filing of a limitation action is to stay all actions currently pending against the [vessel] owner and to cause a notice to issue, forcing all claimants to file their claims in the [vessel] owner’s limitation action”¹⁹² or possibly lose their claims entirely. As one attorney put it in congressional testimony, “[B]ecause of draconian limitation periods built into the law, ship owners [may] attempt to misuse the statute to deprive victims of remedies by defaulting them, without appropriate due process.”¹⁹³



In recent years, the shipping industry has benefited from heavy lobbying by the cruise industry, which has been credited with blocking congressional repeal of LOLA.¹⁹⁴ Specifically, after the tragic 2010 *Deepwater Horizon* oil rig explosion,¹⁹⁵ which killed 11 workers and created a major environmental disaster in the Gulf, the U.S. House of Representatives passed a bill repealing LOLA and amending other maritime laws that limit victims’ rights.¹⁹⁶ However, the legislation went no further and has yet to become law.

THE KEY BRIDGE COLLAPSE

In the early morning of March 26, 2024, the *Dali* cargo ship – “nearly as long as the Eiffel Tower is tall”¹⁹⁷ and carrying 56 containers of hazardous material (alkyl sulfonic acids, corrosive liquids, flammable and



other environmentally hazardous substances) – lost power and rammed into Maryland’s Francis Scott Key Bridge as it left the Port of Baltimore for Sri Lanka.¹⁹⁸ The collision not only caused the bridge to collapse, killing six construction workers and destroying a major transportation artery, but also damaged 25 percent of the hazardous material containers on the vessel,¹⁹⁹ caused two hazmat containers to

fall in the water,²⁰⁰ and “dumped tons of steel, joists and concrete into the Patapsco River at the mouth of the Chesapeake Bay.”²⁰¹

The major water and wildlife environmental concerns center around both bridge steel and concrete falling into the water plus bridge removal, which stirs up sediment.²⁰² As William Dennison, interim president of the University of Maryland Center for Environmental Science, told the *Baltimore Banner*, “[T]he beginning of the cleanup poses as much of a risk, and maybe more, to the debris in the water in the first place,”²⁰³ and he voiced “fears there will be pressure for a quick bridge removal and rebuilding – a process that might bypass the traditional environmental safeguards that protect waterways.”²⁰⁴ Indeed, right before publication, a new chunk of bridge broke away and slid into the river after explosives were detonated on the bridge.²⁰⁵

At this moment, it’s still too early to know the full impact of the collision and collapse on the environment and the public.



THE LAND

Vehicles, trains, and ships are not the only means to transport large amounts of hazardous materials in the United States. These materials can also move independently through a huge network of pipelines that run through both rural and very populated areas.²⁰⁶ While hazmat crashes involving other transportation systems tend to garner the most headlines, the health, safety, and environmental impacts of U.S. energy pipeline incidents may be the most widespread of all.



In the United States, there are “approximately 3.3 million miles of pipeline transporting natural gas, oil, and other hazardous liquids.”²⁰⁷ All of these systems are vulnerable to accidents as well as intentional attacks by bad actors.²⁰⁸ Explosions, fires, spills, and uncontrolled releases can result. According to January 2024 congressional testimony from the independent watchdog Pipeline Safety Trust,²⁰⁹ since December 2020, “there have been 1,486 reportable pipeline failures, more than one per day; 122 people have been either killed or injured to the point of

in-patient hospitalization, someone every nine days; and property damages over \$1.3 Billion, over \$1 Million every single day....”²¹⁰ In addition, “[i]ncident rates within High Consequence Areas as compared to outside HCAs continue to climb and get worse in the case of hazardous liquid pipelines and, while improving, are not statistically significantly better with regards to gas transmission pipelines.”²¹¹

The causes of pipeline failures vary.²¹² For example, PHMSA data show that equipment, material, or corrosion failure are the most common reasons behind significant onshore natural gas transmission pipeline incidents.²¹³ Other problems include: older transmission pipelines, including antiquated “leaky and deteriorating” cast iron pipes in natural gas distribution systems, many over a half century old²¹⁴; insufficient leak-detection and mitigation methods in natural gas transmission and distribution pipelines²¹⁵; construction of larger natural gas gathering lines²¹⁶ in more populous regions; “outdated safety standards for liquefied natural gas facilities, and pipelines carrying carbon dioxide, hydrogen, or hydrogen-methane blends”²¹⁷; and PHMSA’s authorization of Special Permits that allow pipeline operators to bypass agency pipeline safety regulations.²¹⁸ What’s more, there is rampant underreporting of incidents, which not only keeps vulnerable communities in the dark²¹⁹ but also prevents problems from being understood and remedied.²²⁰ As Pipeline Safety Trust Executive Director Bill Caram told a congressional subcommittee in January 2024, “While you can slice and dice data opportunistically to demonstrate progress, when you look at the PHMSA reported data objectively, we are not making real progress on pipeline safety.”²²¹

Pipeline safety falls under the auspices of PHMSA,²²² and more specifically, its Office of Pipeline Safety (OPS).²²³ But as with other transportation systems, the agency also relies on states to do inspections, with most inspectors being state employees.²²⁴ In addition, PHMSA works with the Federal Energy Regulatory Commission on pipeline safety-related matters involving the siting of interstate natural gas pipelines.²²⁵

Like other regulatory agencies, PHMSA's ongoing budget shortfall has compromised safety.²²⁶ Pipeline Safety Trust's Caram pointed this out in congressional testimony, stating that "PHMSA, already a notoriously underfunded and understaffed agency, has had large increases in Congressional mandates without a corresponding increase in funding." He explained,²²⁷

PHMSA has long been considered underfunded and understaffed and therefore reliant on the industry it is tasked to regulate for technical expertise on rulemaking. A 2015 Politico investigation found that PHMSA is an agency "that lacks the manpower to inspect the nation's...oil and gas lines, that grants the industry it regulates significant power to influence the rule-making process, and that has stubbornly failed to take a more aggressive regulatory role, even when ordered by Congress to do so." PHMSA has also long had difficulty in attracting and retaining experienced personnel as the industry often hires staff away at higher salaries.

One clear result of this situation: PHMSA's response to corporate violations of federal pipeline safety law has been wholly inadequate.²²⁸ As Pipeline Safety Trust's Caram told the U.S. House Energy, Climate, and Grid Security Subcommittee in January 2024:²²⁹

PHMSA's penalty authority, and the agency's implementation of that authority, results in civil penalties that are economically insignificant to operators, are significantly smaller than those imposed by some states, and are disproportionate to the harm inflicted by pipeline failures. PHMSA's criminal penalty authority sets too high of a bar for criminal behavior and fails to hold companies accountable for criminal acts.



Incredibly, the maximum penalty for discrimination against employees providing pipeline safety information is a mere \$1,544.²³⁰

RECOURSE FOR VICTIMS

Faced with the devastating consequences of pipeline disasters, some victims have sought accountability through the civil justice system. The following are recent examples where those harmed prevailed against dangerous operators. (*See also*, Recent Pipeline Tales.)

- On May 19, 2015, a corroded Plains All American pipeline – transporting crude oil inland from Santa Barbara’s coast – spilled 140,000 gallons, which “blackened popular beaches for miles, killing or fouling hundreds of seabirds, seals and other wildlife and hurting tourism and fishing.”²³¹ Local fishermen and property owners filed a class action lawsuit against Plains All American, and in May 2022, the company settled for \$230 million. Nearly two years later, Plains All American settled with another class of landowners for \$70 million and promised new safety measures.²³²
- In October 2015, the Aliso Canyon natural gas storage facility in Los Angeles County, CA experienced an uncontrolled gas leak that lasted nearly four months and ultimately released an estimated 109,000 metric tons of methane, “a pollutant more potent than carbon dioxide,” into the air, forcing over 8,000 families in Porter Ranch to flee. It was the largest natural gas leak in U.S. history. More than 35,000 individuals who suffered illnesses and property damage to their homes pursued civil lawsuits against Southern California Gas Co. and its parent company, Sempra Energy; their cases were consolidated into a single state court case in February 2016. During the litigation, SoCalGas and its counsel “racked up \$5.7 million in discovery sanctions” for misconduct. In September 2021, both companies settled for a total of \$1.8 billion.²³³



RECENT PIPELINE TALES

There are too many catastrophic pipeline incidents to list. Below are only a few recent examples (with earlier incidents including conclusions of government studies as well as litigation results).

2023

West Reading, PA explosion. A natural gas pipeline exploded and caught fire at a factory due to “a fitting with known safety failures on a section of pipe the operator believed to be out of service.”²³⁴ Seven people died, 10 others were hospitalized, and nearby buildings were damaged.²³⁵

Gulf of Mexico spill. An estimated 1 million gallons of crude oil spilled into the Gulf when a pipeline failed.²³⁶ As of February 2024, the source of the leak was still unknown.²³⁷

Washington State spill. A tubing problem caused BP’s Olympic pipeline to fail, spilling “more than 20,000 gallons of gasoline into a creek shockingly close to an elementary school.”²³⁸

2022

Freeport, TX explosion. An explosion and fire at the nation’s second-largest liquefied natural gas export terminal caused the facility to shut down for months.²³⁹ A report “blamed inadequate operating and testing procedures, human error and fatigue”²⁴⁰ for the incident.

Washington, KS spill. The Keystone pipeline ruptured, spilling about 13,000 barrels of crude oil, “some of which reached a nearby creek.”²⁴¹ An

investigative report concluded that “[p]ipeline design issues, lapses by its operators and problems caused during its construction”²⁴² led to the massive spill.



2021

San Pedro Bay spill. Beta Offshore’s pipeline ruptured and leaked nearly 25,000 pounds of crude oil into the ocean off California’s Huntington Beach, severely impacting coastal property owners, waterfront tourism operators, and thousands of commercial fishermen.²⁴³ Both PHMSA and NTSB blamed a number of errors on employees who had not been properly trained and also waited 14 hours before reporting the incident to federal authorities.²⁴⁴ Homeowners with property along the coastline, tourism shops, and thousands of fishermen filed a class action lawsuit. Amplify Energy Corp., Beta Offshore’s parent company, settled the case for \$50 million in October 2022, while also agreeing to install and implement new safety equipment and procedures.²⁴⁵

2020

Sartartia, MS release. A carbon dioxide pipeline ruptured, resulting in a “mass poisoning” with “more than 200 people evacuated and at least 45 people hospitalized. Cars stopped working, hobbling emergency response. People lay on the ground, shaking and unable to breathe. First responders didn’t know what was going on.” As Yazoo County Emergency Director Jack Willingham put it, “It looked like you were going through the zombie apocalypse.”²⁴⁶

2019

Danville, KY explosion. An Enbridge Inc. pipeline ruptured while carrying gas from the Gulf of Mexico to the Northeast, “releasing approximately 101.5 million cubic feet of natural gas that ignited”²⁴⁷ and killed 58-year-old Lisa Derringer – who “collapsed in the heat as she tried to get away and died”²⁴⁸ – destroyed five homes in a nearby mobile-home park, damaged 14 other homes, and scorched 30 acres of land.²⁴⁹ In



addition, six people were hospitalized for burns and 75 people were forced to flee their homes. The explosion “ejected 30 feet of piping from the earth and left a 26,000-cubic-foot crater in the rural area about six miles south of Danville.”²⁵⁰

A PHMSA report “found a dozen pipe defects that the pipeline’s operator missed over nine years of self-inspections.”²⁵¹ Later, NTSB investigators concluded that “the combination of a pre-existing manufacturing defect – known as a hard spot – together with a degraded pipeline coating and ineffective cathodic protection, led to hydrogen-induced cracking at the outer surface of the pipe.”²⁵² According to the agency, “Enbridge underestimated the risk posed by hard spots because its processes and procedures were inconsistent with PHMSA guidance and industry knowledge of hard spot threat interaction.”²⁵³

In August 2019, Lisa’s family filed a wrongful death lawsuit against Enbridge, previous pipeline owner Texas Eastern, and other companies.²⁵⁴ The following year, over 80 people who suffered physical injury or property damage from the explosion sued as well.²⁵⁵ The company settled with Lisa’s family for an undisclosed amount.²⁵⁶ Per September 2022 news reports, all victims in the other case reached confidential settlements.²⁵⁷

2018

Merrimack Valley, MA explosions. Widespread fires and explosions caused by natural gas distribution pipeline leaks in Lawrence, Andover, and North Andover killed one person, injured at least 22 others (who were transported to area hospitals), damaged 131 structures, and caused 50,000 residents to evacuate. A state emergency was declared.²⁵⁸ When residents returned home three days later, many had no heat, gas, or hot water – a problem that lasted for the next three months.²⁵⁹ NTSB concluded that the situation was caused by Columbia Gas of Massachusetts’ “inadequate management and poor oversight that led to a cast iron pipe being improperly abandoned.”²⁶⁰

Residents and business owners pursued a class action lawsuit, which the company settled in September 2019 for \$143 million.²⁶¹ In addition, Columbia Gas paid \$80 million to three communities for infrastructure damage.²⁶² It also reached settlements with two families. Specifically, in April 2019, the company settled with Shakira Figueroa, 21, who “was severely injured” as well as two other family

members hurt in the blast; the agreement was for an undisclosed amount and “includes providing a motorized wheelchair, a mobility van and modifications to the family’s Lawrence home,”²⁶³ which was heavily damaged.²⁶⁴ In July 2019, Columbia Gas reached a confidential settlement with the family of 18-year-old Leonel Rondon, a family friend of the Figueroas who died when their chimney collapsed on his SUV in their driveway.²⁶⁵



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¹⁵⁰ Josh Funk, “EPA didn’t declare a public health emergency after fiery Ohio derailment,” *Associated Press*, April 3, 2024, <https://apnews.com/article/east-palestine-derailment-epa-public-health-emergency-be238b72219ecc4b6e5c7b88eefbf6f9>

<https://apnews.com/article/east-palestine-derailment-epa-public-health-emergency-be238b72219ecc4b6e5c7b88eefbf6f9>

¹⁵¹ *See* U.S. Environmental Protection Agency, “EPA Orders Norfolk Southern to Conduct All Cleanup Actions Associated with the East Palestine Train Derailment,” February 21, 2023, <https://www.epa.gov/newsreleases/epa-orders-norfolk-southern-conduct-all-cleanup-actions-associated-east-palestine>

¹⁵² Josh Funk, “EPA didn’t declare a public health emergency after fiery Ohio derailment,” *Associated Press*, April 3, 2024, <https://apnews.com/article/east-palestine-derailment-epa-public-health-emergency-be238b72219ecc4b6e5c7b88eefbf6f9>

<https://apnews.com/article/east-palestine-derailment-epa-public-health-emergency-be238b72219ecc4b6e5c7b88eefbf6f9>

¹⁵³ *Ibid.*

¹⁵⁴ Linda Chiem, “What’s In The Norfolk Southern \$600M Derailment Deal,” *Law360*, April 9, 2024,

<https://www.law360.com/articles/1823628/what-s-in-the-norfolk-southern-600m-derailment-deal>; David Shepardson and Clark Mindock, “Norfolk Southern agrees to pay \$600 million to settle Ohio derailment lawsuit,” *Reuters*, April 9, 2024, <https://www.reuters.com/legal/norfolk-settle-ohio-derailment-class-action-lawsuit-600->

[mln-2024-04-09/](#); Clark Mindock, “Norfolk Southern must face East Palestine residents’ lawsuit, judge rules,” *Reuters*, March 13, 2024, <https://www.reuters.com/legal/litigation/norfolk-southern-must-face-east-palestine-residents-lawsuit-judge-rules-2024-03-13/>; Clark Mindock, “Norfolk Southern says East Palestine residents’ suit barred by US law,” *Reuters*, June 5, 2023, <https://www.reuters.com/legal/norfolk-southern-says-east-palestine-residents-suit-barred-by-us-law-2023-06-05/>; Zack Budryk, “East Palestine residents file class-action against Norfolk,” *The Hill*, February 24, 2023, <https://thehill.com/policy/energy-environment/3872818-east-palestine-residents-file-class-action-against-norfolk-southern/>

¹⁵⁵ Josh Funk, “Norfolk Southern agrees to \$600M settlement in fiery Ohio derailment. Locals fear it’s not enough,” *Associated Press*, April 9, 2024, <https://apnews.com/article/norfolk-southern-ohio-bd020560b01f5cb58bb6e15072ca97a1>. According to AP, “Residents can decide to accept money for property damage without taking the personal injury payment. ...Residents who don’t think the settlement provides enough have until July 1 to opt out of the deal and preserve their right to file an individual lawsuit later. That means they will have time to read the National Transportation Safety Board’s final report on the derailment that will be released at a June 25 hearing in East Palestine.” Josh Funk, “Judge signs off on \$600 million Ohio train derailment settlement but residents still have questions,” *Associated Press*, May 22, 2023, <https://apnews.com/article/east-palestine-ohio-train-derailment-settlement-464c1312b19dc075ea159ae0e7ee0b0a>

¹⁵⁶ Stephanie Elverd, “Settlement will release long list of parties,” *Morning Journal*, May 3, 2024, <https://www.morningjournalnews.com/news/local-news/2024/05/settlement-will-release-long-list-of-parties/>

¹⁵⁷ Josh Funk, “Judge signs off on \$600 million Ohio train derailment settlement but residents still have questions,” *Associated Press*, May 22, 2023, <https://apnews.com/article/east-palestine-ohio-train-derailment-settlement-464c1312b19dc075ea159ae0e7ee0b0a>. In addition, “broad language in the fine print of the agreement mentions that ‘governmental agencies, entities, and authorities, whether federal, state, county, or local, their employees, officers, agents, members, and volunteers’ are among the released parties.”

¹⁵⁸ Josh Funk, “Judge signs off on \$600 million Ohio train derailment settlement but residents still have questions,” *Associated Press*, May 22, 2023, <https://apnews.com/article/east-palestine-ohio-train-derailment-settlement-464c1312b19dc075ea159ae0e7ee0b0a>; “Court grants preliminary approval to \$600 million East Palestine settlement,” *Pittsburgh Post-Gazette*, May 21, 2024, <https://www.post-gazette.com/local/region/2024/05/21/court-preliminary-approval-600-million-settlement-east-palestine-norfolk-souther/stories/202405210109>

¹⁵⁹ Stephanie Elverd, “Class action counsel asks settlement be approved,” *Morning Journal*, April 30, 2024, <https://www.morningjournalnews.com/news/local-news/2024/04/class-action-counsel-asks-settlement-be-approved/>

¹⁶⁰ Josh Funk, “Judge signs off on \$600 million Ohio train derailment settlement but residents still have questions,” *Associated Press*, May 22, 2023, <https://apnews.com/article/east-palestine-ohio-train-derailment-settlement-464c1312b19dc075ea159ae0e7ee0b0a>

¹⁶¹ Peter Eavis, “Norfolk Southern to Pay \$310 Million for East Palestine Accident,” *New York Times*, May 23, 2024, <https://www.nytimes.com/2024/05/23/business/east-palestine-ohio-train-derailment-settlement.html>; David Shepardson and Clark Mindock, “Norfolk Southern to pay \$15 million civil penalty, cleanup costs over 2023 Ohio derailment,” *Reuters*, May 23, 2024, <https://www.reuters.com/legal/norfolk-southern-agrees-15-million-civil-penalty-over-2023-ohio-derailment-court-2024-05-23/>

¹⁶² Peter Eavis, “Norfolk Southern to Pay \$310 Million for East Palestine Accident,” *New York Times*, May 23, 2024, <https://www.nytimes.com/2024/05/23/business/east-palestine-ohio-train-derailment-settlement.html>

¹⁶³ In 2023 alone, vessels transported over 133 million tons of fuel oils, more than 130 million tons of natural gas and other fossil fuel products, over 105 million tons of crude petroleum, and more than 67 million tons of gasoline. Bureau of Transportation Statistics, “Moving Goods in the United States,” <https://data.bts.gov/stories/s/Moving-Goods-in-the-United-States/bcvt-rqmu/#commodities> (viewed April 20, 2024).

¹⁶⁴ For example, Rich McLoughlin, Head of Maritime Engagement at Lloyd Register company Safetytech Accelerator, told *CBS Boston* that “ship captains are seeing cargo fires on their vessels roughly occurring at the rate of one a week, and any of these incidents has the potential for significant loss of life, loss of property, and damage

to the environment.” Cheryl Fiandaca, “I-Team: Undeclared dangerous goods pose risk to cargo ships, crew,” *CBS Boston*, May 24, 2023, <https://www.cbsnews.com/boston/news/i-team-undeclared-dangerous-hazmat-goods-risk-cargo-ships-crew/>. In addition, the National Cargo Bureau, a non-profit organization that works with carriers and the Coast Guard, found that 158 of 500 containers it inspected were dangerous goods or hazmat cargo, heading to the United States, and had a failure rate of 70%, “an ‘enormously high number’ that posed serious safety risks to the ship, cargo, and crew.” These findings are especially troublesome given that “[n]inety percent of traded goods are shipped by sea and 10% contain what is called dangerous goods, according to the World Shipping Council.” Cheryl Fiandaca, “I-Team: Undeclared dangerous goods pose risk to cargo ships, crew,” *CBS Boston*, May 24, 2023, <https://www.cbsnews.com/boston/news/i-team-undeclared-dangerous-hazmat-goods-risk-cargo-ships-crew/>

¹⁶⁵ Juan Lozano and Lekan Oyekanmi, “Barge hits bridge connecting Galveston and Pelican Island, causing partial collapse and oil spill,” *Associated Press*, May 15, 2024, <https://apnews.com/article/bridge-barge-galveston-texas-6c112f0032ab88fbd0c78d1957247c8>

¹⁶⁶ The crash resulted in “several categories of impacted and potentially impacted resources, including marine mammals, fish, invertebrates, oysters, shoreline and subtidal habitats, and water column, as well as effects to human use/recreation resulting from impacts on these natural resources.” National Oceanic and Atmospheric Administration, “Bayport Channel Oil Spill,” September 3, 2021, <https://darrp.noaa.gov/oil-spills/bayport-channel-oil-spill>

¹⁶⁷ U.S. Environmental Protection Agency, “Exxon Valdez Spill Profile,” November 27, 2023, <https://www.epa.gov/emergency-response/exxon-valdez-spill-profile>

¹⁶⁸ National Oceanic and Atmospheric Administration, “Exxon Valdez,” August 17, 2020, <https://darrp.noaa.gov/oil-spills/exxon-valdez>

¹⁶⁹ Joyce Sohyun Lee et al., “‘We’re a dead ship’: Hundreds of cargo ships lost propulsion in U.S. waters in recent years,” *Washington Post*, April 16, 2024, <https://www.washingtonpost.com/investigations/2024/04/16/dead-ships-propulsion-loss/>

¹⁷⁰ U.S. Environmental Protection Agency, “EPA Settles with Shipping Company over Claims of Clean Water Act Violations,” February 12, 2024, <https://www.epa.gov/newsreleases/epa-settles-shipping-company-over-claims-clean-water-act-violations>

¹⁷¹ *Ibid.*

¹⁷² Office of Commercial Vessel Compliance, *Port Control in the United States, 2023 Annual Report*, <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/CG-5PC/CG-CVC/CVC2/psc/AnnualReports/annualrpt2023a.pdf>

¹⁷³ “The Marine Safety mission promotes safety at sea and the prevention of maritime accidents, personnel casualties, and property losses. To fulfill this mission, the Coast Guard investigates maritime accidents and inspects vessels and marine facilities. ...It also establishes safety standards and policies for vessel design and construction, safety equipment, and vessel safety checks.” National Academies of Sciences, Engineering, and Medicine, *Leveraging Unmanned Systems for Coast Guard Missions* (2020). Washington, DC: The National Academies Press, <https://nap.nationalacademies.org/read/25987/chapter/4>

¹⁷⁴ Regarding USCG’s marine environmental protection mission, its job is “to protect the marine ecosystem by developing and enforcing regulations to prevent and respond to oil and hazardous substance spills in the marine environment, the introduction of invasive species into the maritime environment, and unauthorized ocean dumping.” National Academies of Sciences, Engineering, and Medicine, *Leveraging Unmanned Systems for Coast Guard Missions* (2020). Washington, DC: The National Academies Press, <https://nap.nationalacademies.org/read/25987/chapter/4>

¹⁷⁵ 6 U.S.C. §468, <https://www.law.cornell.edu/uscode/text/6/468>

¹⁷⁶ U.S. Government Accountability Office, *Coast Guard: Information on Defense Readiness Mission Deployments, Expenses, and Funding*, GAO-21-104741, September 15, 2021, <https://www.gao.gov/assets/gao-21-104741.pdf>. Despite recommendations from GAO dating back to 2020 and USCG expressing its own concerns regarding workforce shortfall and missed recruiting targets, the maritime agency “has not adequately determined its workforce needs,” making it difficult to “ensure that the Coast Guard has the right number of people with the right

set of skills to meet its mission demands.” Also, USCG refuses to collect more information on marine accidents despite having the authority to do so. GAO recommended the agency take action years earlier, in March 2021, arguing that the additional information “could help [USCG] assess the efficacy of lifesaving equipment and improve marine safety.” Ignoring repeated GAO concerns, USCG is years behind schedule in replacing its aging fleet of cutter patrol boats (“which have exceeded their design service lives”) with new ones that can more effectively support law enforcement missions. And according to GAO, “[T]he Coast Guard projects to have a reduced number of cutters available for operation starting in 2024 and through 2039,” “increasing the risk of potential capability gaps.” U.S. Government Accountability Office, *Coast Guard: Asset, Workforce, and Technology Challenges Continue to Affect Law Enforcement Missions*, GAO-24-107144, November 14, 2023, <https://www.gao.gov/assets/d24107144.pdf>

¹⁷⁷ U.S. Government Accountability Office, *Coast Guard: Actions Needed to Improve Mission Execution and Resource Management*, GAO-23-106852, June 21, 2023, <https://www.gao.gov/assets/gao-23-106852.pdf>

¹⁷⁸ Specifically, “[i]n 2023, a total of 10,959 individual vessels, from 80 different flag administrations, made 81,854 port calls to the U.S.,” yet only 8,278 safety exams were conducted. The number of exams was nearly 5 percent lower than the previous year. Looking at the number of safety exams by ship type, there were few inspections of foreign hazmat/dangerous goods vessels relative to the number entering U.S. ports, for example, chemical tankers (1,201 exams), oil tankers (988 exams), and gas carriers (674 exams). The fact that 18.4 percent, 13.6 percent and ten percent of those oil tanker, chemical tanker, and gas carrier exams, respectively, uncovered environmental protection, safety, and security-related deficiencies – plus USCG’s discovery of over 820 total deficiencies during its exams of those vessels – clearly indicates the need for significantly more federal oversight of foreign hauling ships. Office of Commercial Vessel Compliance, *Port Control in the United States, 2023 Annual Report*, <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/CG-5PC/CG-CVC/CVC2/psc/AnnualReports/annualrpt2023a.pdf>

¹⁷⁹ Ibid.

¹⁸⁰ U.S. Environmental Protection Agency, “Exxon Valdez Spill Profile,” November 27, 2023, <https://www.epa.gov/emergency-response/exxon-valdez-spill-profile>

¹⁸¹ 33 U.S.C §2702, <https://www.law.cornell.edu/uscode/text/33/2702>

¹⁸² 33 U.S.C §2704, <https://www.law.cornell.edu/uscode/text/33/2704>. See also, recent USCG adjustments per 33 CFR 138.240, <https://www.law.cornell.edu/cfr/text/33/138.240>

¹⁸³ 33 U.S.C §§2701, <https://www.law.cornell.edu/uscode/text/33/2701>

¹⁸⁴ 46 U.S.C. §§30102, 30103, <https://www.law.cornell.edu/uscode/text/46/30102> and <https://www.law.cornell.edu/uscode/text/46/30103>, respectively.

¹⁸⁵ Congressional Research Services, *Federal Admiralty and Maritime Jurisdiction Part 4: Torts and Maritime Contracts or Services*, September 20, 2022, <https://crsreports.congress.gov/product/pdf/LSB/LSB10827>

¹⁸⁶ Justice Thomas A. Dickerson, “The Cruise Passenger’s Rights and Remedies 2014: The COSTA CONCORDIA Disaster: One Year Later, Many More Incidents Both on Board Megaships and During Risky Shore Excursions,” 38 *Tul. Mar. L.J.* 515 (Summer 2014).

¹⁸⁷ 46 U.S.C. §§30501-30512, §30523, <https://www.law.cornell.edu/uscode/text/46/30501> and <https://www.law.cornell.edu/uscode/text/46/30523>, respectively. For details about the Act, see Testimony of Paul M. Sterbcow, Lewis, Kullman, Sterbcow & Abramson, LLC, before U.S. House Committee on Transportation and Infrastructure, Coast Guard, and Maritime Transportation Subcommittee hearing on “Commercial and Passenger Vessel Safety: Challenges and Opportunities,” November 14, 2019, <https://www.congress.gov/116/meeting/house/110181/witnesses/HHRG-116-PW07-Wstate-SterbcowP-20191114.pdf>

¹⁸⁸ Stephen F. White, “Understanding the limitations of shipowners’ liability,” *PropertyCasualty360*, February 6, 2019, <https://www.propertycasualty360.com/2019/02/06/understanding-limitation-of-shipowners-liability/>

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- ¹⁹⁰ 46 U.S.C. §§30501-30512, §30523, <https://www.law.cornell.edu/uscode/text/46/30501> and <https://www.law.cornell.edu/uscode/text/46/30523>, respectively. For details about the Act, see Testimony of Paul M. Sterbcow, Lewis, Kullman, Sterbcow & Abramson, LLC, before U.S. House Committee on Transportation and Infrastructure, Coast Guard, and Maritime Transportation Subcommittee hearing on “Commercial and Passenger Vessel Safety: Challenges and Opportunities,” November 14, 2019, <https://www.congress.gov/116/meeting/house/110181/witnesses/HHRG-116-PW07-Wstate-SterbcowP-20191114.pdf>
- ¹⁹¹ Linda Chiem, “Baltimore Bridge: Biden’s Visit, Recovery, Supply Chain,” *Law360*, April 5, 2024, <https://www.law360.com/articles/1822553/baltimore-bridge-biden-s-visit-recovery-supply-chain>; Michael Kunzelman and Rebecca Boone, “Cargo ship’s owner and manager seek to limit legal liability for deadly bridge disaster in Baltimore,” *Associated Press*, April 1, 2024, <https://apnews.com/article/baltimore-bridge-collapse-liability-litigation-16de885948e769566e7181ffa35b1753>
- ¹⁹² Stephen F. White, “Understanding the limitations of shipowners’ liability,” *PropertyCasualty360*, February 6, 2019, <https://www.propertycasualty360.com/2019/02/06/understanding-limitation-of-shipowners-liability/>
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- ¹⁹⁴ See, e.g., Stephanie Mencimer, “Will the Cruise Ship Industry Do BP’s Dirty Work?; How the cruise ship lobby could help BP dodge liability for workers killed on the Deepwater rig,” *Mother Jones*, June 14, 2010, <https://www.motherjones.com/politics/2010/06/cruise-ship-industry-bp-liability/>
- ¹⁹⁵ Andy Segal, “Little-known law could work in Transocean’s favor,” *CNN*, June 10, 2010, <https://www.cnn.com/2010/CRIME/06/10/oil.spill.transocean.lawsuits/index.html> (“The Deepwater Horizon is technically a mobile offshore drilling unit. Under maritime law, it is classified as a seagoing vessel, just like a freighter or passenger ship.”)
- ¹⁹⁶ H.R. 5503, “Securing Protections for the Injured from Limitations on Liability Act,” 111th Cong. (2010), <https://www.congress.gov/bill/111th-congress/house-bill/5503>
- ¹⁹⁷ Lea Skene and Brian White, “Biden OKs \$60M in aid after Baltimore bridge collapse as governor warns of ‘very long road ahead,’” *Associated Press*, March 28, 2024, <https://apnews.com/article/baltimore-bridge-collapse-a41073d33d08125b41c292b14b899d0a>
- ¹⁹⁸ National Transportation Safety Board, *Contact of Containership Dali with the Francis Scott Key Bridge and Subsequent Bridge Collapse*, Marine Investigation Preliminary Report, May 14, 2024, https://www.nts.gov/investigations/Documents/DCA24MM031_PreliminaryReport%203.pdf. NTSB’s preliminary report found that the *Dali* “had a pair of catastrophic electrical failures minutes before the crash and had experienced two blackouts a day earlier.” Pete Muntean, Gregory Wallace, and Eric Levenson, “Ship that struck Baltimore bridge lost power twice before crash, NTSB preliminary report finds,” *CNN*, May 14, 2024, <https://www.cnn.com/2024/05/14/us/baltimore-bridge-collapse-ntsb-report/index.html>; National Transportation Safety Board, *Contact of Containership Dali with the Francis Scott Key Bridge and Subsequent Bridge Collapse*, Marine Investigation Preliminary Report, May 14, 2024, https://www.nts.gov/investigations/Documents/DCA24MM031_PreliminaryReport%203.pdf. U.S. Coast Guard (USCG) records show that the situation was far from a one-off when it comes to large cargo ships losing propulsion near critical infrastructure. More specifically, “424 cargo ships longer than 600 feet reported losing propulsion – meaning the engines were shut down – in U.S. waters over the past three years. About a quarter of the incidents occurred near a port, bridge or other infrastructure.” Joyce Sohyun Lee et al., “‘We’re a dead ship’: Hundreds of

cargo ships lost propulsion in U.S. waters in recent years,” *Washington Post*, April 16, 2024, <https://www.washingtonpost.com/investigations/2024/04/16/dead-ships-propulsion-loss/>

¹⁹⁹ National Transportation Safety Board, *Contact of Containership Dali with the Francis Scott Key Bridge and Subsequent Bridge Collapse*, Marine Investigation Preliminary Report, May 14, 2024, https://www.nts.gov/investigations/Documents/DCA24MM031_PreliminaryReport%203.pdf. The Unified Command represented to NTSB that “no hazardous material from containers has reached the water. Salvors are transferring the bulk liquid acid to intact tanks and moving containers ashore.”

²⁰⁰ Royale Bonds and Rona Kobell, “Environmental concerns loom in aftermath of the Key Bridge collapse,” *Baltimore Banner*, March 29, 2024, <https://www.thebaltimorebanner.com/community/climate-environment/environmental-concerns-key-bridge-cleanup-XQDMLV6G6FACVJRKDWMTKEQ2U/>

²⁰¹ *Ibid.*

²⁰² *Ibid.*

²⁰³ *Ibid.* Tony Friedrich, policy director for the American Saltwater Guides Association, was particularly concerned about the steel and concrete from the bridge that fell into the harbor. “That thing was built in the ‘70s. Do we even know what fell into the water?” he said to the *Banner*. “We should probably figure out what fell into the water and get it out as soon as we can to restore the economy of this critical port as well as avoid any long-term effects to a recovering ecosystem.”

²⁰⁴ *Ibid.*

²⁰⁵ Hayes Gardner and Jean Marbella, “Explosives break up Key Bridge section atop Dali, readying to refloat vessel,” *Baltimore Sun*, May 14, 2024, <https://www.baltimoresun.com/2024/05/13/explosives-key-bridge-section-dali-ship/>

²⁰⁶ Congressional Research Service, *DOT’s Federal Pipeline Safety Program: Background and Issues for Congress*, March 31, 2023, <https://sgp.fas.org/crs/misc/R44201.pdf>

²⁰⁷ Specifically, “[o]f the nation’s approximately half-million miles of long-distance transmission pipeline, roughly 230,000 miles carry hazardous liquids – over 80% of the nation’s crude oil and refined products – along with other products. It also contains some 47,000 miles of crude oil gathering pipelines.... The U.S. natural gas pipeline network consists of around 302,000 miles of transmission and 434,000 miles of gathering lines. The natural gas transmission pipelines feed around 2.3 million miles of regional pipeline mains in some 1,500 local distribution networks serving over 70 million customers.” Congressional Research Service, *DOT’s Federal Pipeline Safety Program: Background and Issues for Congress*, March 31, 2023, <https://sgp.fas.org/crs/misc/R44201.pdf>

²⁰⁸ Congressional Research Service, *DOT’s Federal Pipeline Safety Program: Background and Issues for Congress*, March 31, 2023, <https://sgp.fas.org/crs/misc/R44201.pdf>

²⁰⁹ The Pipeline Safety Trust was created at the behest of the U.S. Justice Department as part of a settlement in the aftermath of an avoidable pipeline tragedy in Bellingham, WA in 1999 that spilled nearly a quarter-million gallons of gasoline into a salmon stream in the heart of the community “which eventually ignited and killed three boys.” Testimony from Bill Caram, Executive Director, Pipeline Safety Trust, Hearing on “Fueling America’s Economy: Legislation to Improve Safety and Expand U.S. Pipeline Infrastructure” before the U.S. House Energy, Climate, and Grid Security Subcommittee of the Committee on Energy and Commerce, January 18, 2024, <https://pstrust.org/wp-content/uploads/2024/01/Caram-Pipeline-Safety-Trust-House-EC-Testimony-1-18-24docx19.pdf>

²¹⁰ Testimony from Bill Caram, Executive Director, Pipeline Safety Trust, Hearing on “Fueling America’s Economy: Legislation to Improve Safety and Expand U.S. Pipeline Infrastructure” before the U.S. House Energy, Climate, and Grid Security Subcommittee of the Committee on Energy and Commerce, January 18, 2024, <https://pstrust.org/wp-content/uploads/2024/01/Caram-Pipeline-Safety-Trust-House-EC-Testimony-1-18-24docx19.pdf>; U.S. Senate Commerce, Science, and Transportation Committee, “Committee Leaders Commend Passage of Pipeline Safety Legislation,” December 22, 2020, <https://www.commerce.senate.gov/2020/12/committee-leaders-commend-passage-of-pipeline-safety-legislation>. In 2023 alone, there were 613 reported pipeline incidents, which resulted in 17 deaths and 38 injuries requiring in-patient hospitalization. The industry costs (*i.e.*, “damage to the pipeline system, emergency response, and cost of

lost product”) and public costs (i.e., “damage to property not owned by the pipeline operator”) of those incidents totaled over \$291 million. And in 2024 to date, there have been 221 reported pipeline incidents that resulted in five deaths and one injury requiring hospitalization, with industry and public costs related to those incidents totaling over \$50 million. Pipeline and Hazardous Materials Safety Administration, “All Reported Incident 20 Year Trend,”

https://portal.phmsa.dot.gov/PDMPublicReport/?url=https://portal.phmsa.dot.gov/analytics/saw.dll?Portalpages&PortalPath=%2Fshared%2FPDM%20Public%20Website%2F_portal%2FSC%20Incident%20Trend&Page=All%20Reported (data as of May 22, 2024). For definitions of “industry costs” and “public costs,” see Pipeline and Hazardous Materials Safety Administration, “Significant Incident Consequences,”

https://portal.phmsa.dot.gov/analytics/saw.dll?Portalpages&PortalPath=%2Fshared%2FPDM%20Public%20Website%2F_portal%2FSC%20Incident%20Trend&Page=Significant%20Incidents%20Consequences (viewed April 28, 2024).

²¹¹ Testimony from Bill Caram, Executive Director, Pipeline Safety Trust, Hearing on “Fueling America’s Economy: Legislation to Improve Safety and Expand U.S. Pipeline Infrastructure” before the U.S. House Subcommittee on Energy, Climate, and Grid Security of the Committee on Energy and Commerce, January 18, 2024, <https://pstrust.org/wp-content/uploads/2024/01/Caram-Pipeline-Safety-Trust-House-EC-Testimony-1-18-24docx19.pdf>. “High Consequence Areas” generally are “areas where an incident could have the greatest impact to public safety or property....” U.S. Government Accountability Office, *Gas Pipeline Safety: Better Data and Planning Would Improve Implementation of Regulatory Changes*, GAO-24-106690, April 3, 2024, <https://www.gao.gov/assets/d24106690.pdf>

²¹² See National Transportation Safety Board, “Most Wanted List Archive” (2021-2023 chart), https://www.nts.gov/Advocacy/mwl/Pages/mwl_archive.aspx (viewed March 26, 2024); Testimony from Bill Caram, Executive Director, Pipeline Safety Trust, Hearing on “Fueling America’s Economy: Legislation to Improve Safety and Expand U.S. Pipeline Infrastructure” before the U.S. House Subcommittee on Energy, Climate, and Grid Security of the Committee on Energy and Commerce, January 18, 2024, <https://pstrust.org/wp-content/uploads/2024/01/Caram-Pipeline-Safety-Trust-House-EC-Testimony-1-18-24docx19.pdf>; Congressional Research Service, *DOT’s Federal Pipeline Safety Program: Background and Issues for Congress*, March 31, 2023, <https://sgp.fas.org/crs/misc/R44201.pdf>; National Transportation Safety Board, *2021–2022 NTSB Most Wanted List of Transportation Safety Improvements*, <https://www.nts.gov/Advocacy/mwl/Documents/2021-2022/2021-22-MWL-Brochure.pdf>

²¹³ An April 2024 GAO report found an average of 61 significant onshore gas transmission pipeline incidents per year from 2010-2022, i.e., 61 incidents resulting “in a fatality, an injury requiring hospitalization, or property damage that exceeds \$50,000 in total costs (in 1984 dollars).” According to GAO, “From 2010-2022, PHMSA data show that nearly half (43 percent) of significant onshore gas transmission pipeline incidents were caused by equipment or material failure, followed by corrosion failure (16 percent).” Regarding significant pipeline incidents in high consequence areas, approximately 37 percent “were caused by equipment or material failure.... According to PHMSA, pipeline equipment and materials can fail due to malfunction of equipment like valves or compressors or design defects.” U.S. Government Accountability Office, *Gas Pipeline Safety: Better Data and Planning Would Improve Implementation of Regulatory Changes*, GAO-24-106690, April 3, 2024, <https://www.gao.gov/assets/d24106690.pdf>

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²¹⁵ Ibid.

²¹⁶ “Natural gas gathering lines are pipelines that collect produced gas from wellheads and transport it to centralized collection points. The latter are usually gas processing facilities where impurities are removed and gas constituents (e.g., methane, propane) are separated into distinct products for further shipment to market.” Ibid.

²¹⁷ Ibid.

²¹⁸ “If a pipeline operator believes unique circumstances would make it impracticable or inappropriate to comply with PHMSA’s pipeline safety regulations, the operator may apply to the agency for a Special Permit to waive or modify compliance.” Ibid.

²¹⁹ The public is left in the dark “about the levels of risk they face from pipelines in their communities and near their homes. Unfortunately, this information is often shielded from the public eye: Concerned citizens cannot obtain information about High Consequence Areas (HCAs), Medium Consequence Areas (MCAs), Potential Impact Radii (PIRs), or class locations nor can they obtain pipe size or pressure information, such as Maximum Operating Pressure (MOP) or Maximum Allowable Operating Pressure (MAOP).” Testimony from Bill Caram, Executive Director, Pipeline Safety Trust, Hearing on “Fueling America’s Economy: Legislation to Improve Safety and Expand U.S. Pipeline Infrastructure” before the U.S. House Subcommittee on Energy, Climate, and Grid Security of the Committee on Energy and Commerce, January 18, 2024, <https://pstrust.org/wp-content/uploads/2024/01/Caram-Pipeline-Safety-Trust-House-EC-Testimony-1-18-24docx19.pdf>

²²⁰ PHMSA’s current incident reporting regulations “keep it in the dark because its regulations only require reporting if certain thresholds are met. Additionally, impacts to the public are often underrepresented due to vague definitions of reportable injuries.” As a result, “many large and potentially dangerous incidents are not reported to the administration. This means that PHMSA’s safety data likely underrepresents incident prevalence and that the opportunity to use these incidents as a learning opportunity is lost.” Ibid. Moreover, per an April 2024 GAO report, when it comes to gas pipeline safety, “there are gaps in the safety agency’s evaluation of impact zones and a lack of detailed data required from pipeline operators after a pipeline incident.” Appalachian Voices, “Appalachian Voices statement on Government Accountability Office report on pipeline safety deficiencies,” April 9, 2024, <https://appvoices.org/2024/04/09/phmsa-gao/>, discussing U.S. Government Accountability Office, *Gas Pipeline Safety: Better Data and Planning Would Improve Implementation of Regulatory Changes*, GAO-24-106690, April 3, 2024, <https://www.gao.gov/assets/d24106690.pdf>

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²²⁵ Ibid.

²²⁶ In January 2024, PHMSA Deputy Administrator Tristan Brown told a congressional panel, “PHMSA’s budget, excluding the Infrastructure Investment and Jobs Act’s gas distribution grant program, does not grow at a rate commensurate with its responsibilities. Consequently, PHMSA has had to continuously operate relatively leaner as compared to our expanded universe of regulated facilities.” Testimony from Tristan Brown, Deputy Administrator, Pipeline and Hazardous Materials Safety Administration, Hearing on “Pipeline Safety, Modernization, and Expansion Act of 2023” before the U.S. House Subcommittee on Energy, Climate, and Grid Security of the Committee on Energy and Commerce, January 18, 2024, <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2024-01/Written%20Testimony%20for%20Tristan%20Brown%20House%20EC%20Hearing.pdf>

²²⁷ Testimony from Bill Caram, Executive Director, Pipeline Safety Trust, Hearing on “Fueling America’s Economy: Legislation to Improve Safety and Expand U.S. Pipeline Infrastructure” before the U.S. House Subcommittee on Energy, Climate, and Grid Security of the Committee on Energy and Commerce, January 18, 2024, <https://pstrust.org/wp-content/uploads/2024/01/Caram-Pipeline-Safety-Trust-House-EC-Testimony-1-18-24docx19.pdf>

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²²⁹ Testimony from Bill Caram, Executive Director, Pipeline Safety Trust, Hearing on “Fueling America’s Economy: Legislation to Improve Safety and Expand U.S. Pipeline Infrastructure” before the U.S. House Subcommittee on Energy, Climate, and Grid Security of the Committee on Energy and Commerce, January 18, 2024, <https://pstrust.org/wp-content/uploads/2024/01/Caram-Pipeline-Safety-Trust-House-EC-Testimony-1-18-24docx19.pdf>

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