

**TRAIN WRECK: PUBLIC RISK COMMUNICATIONS IN THE  
WAKE OF THE EAST PALESTINE DERAILMENT**

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## ABSTRACT

*Following the February 2023 derailment of a hazardous materials freight train, residents of the small Ohio town of East Palestine began noticing alarming physical symptoms and adverse environmental effects, including burning throats and eyes and thousands of dead fish. These warning signs directly contradicted official claims of air and water safety. In the wake of the derailment, media and residents alike have repeatedly highlighted poor risk communication and public distrust towards government officials responsible for ensuring resident safety.*

*This Article delves into risk communications in the aftermath of the East Palestine derailment. I begin by examining how the history and geography of “rainside” Rust Belt communities, including East Palestine, limit their ability to prepare for and respond to emergencies. I then scrutinize existing federal and state legislative and regulatory mechanisms governing risk communication—including the Emergency Planning and Community Right-to-Know Act and the Hazardous Materials Transportation Act—examining how previously unexamined gaps in these regulations impede effective communication for rainside communities. I conclude by proposing solutions to address these gaps. These solutions include increased corporate accountability, improvements in railroad labor and infrastructure conditions, and the adoption of a community-based participatory research framework for risk communication.*

## INTRODUCTION

On February 3, 2023, flames and smoke blotted out the night sky over the small town of East Palestine, Ohio.<sup>1</sup> That evening, a 150-car Norfolk Southern<sup>2</sup> freight train carrying over 100,000 gallons of vinyl chloride

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1. Jess Thomson, *Could Toxic Chemicals Reach 100 Miles Radius of East Palestine?*, NEWSWEEK (Feb. 15, 2023, 12:19 PM), <https://www.newsweek.com/toxic-chemicals-ohio-train-derailment-east-palestine-spread-far-1781465>.

2. Norfolk Southern is one of the six highest-revenue (Class I) freight rail companies operating in the United States. *Class I vs. Short Line & Regional Railroads*, GENESSEE & WYOMING, <https://www.gwrr.com/freight-railroads/class-i-vs-short-line-railroads/> (last visited Sept. 30, 2023); see *An Introduction to Class I Freight Railroads*, RAILINC (Mar. 23, 2023), <https://public.railinc.com/about-railinc/blog/introduction-class-i-freight-railroads> (describing Class I railroads as those with operating revenues above an annually-readjusted threshold and listing seven Class I railroads prior to the Canadian Pacific-Kansas City Southern merger).

derailed just over the Pennsylvania border.<sup>3</sup> This event exposed those within a radius as great as 100 miles to a known carcinogen.<sup>4</sup>

The next day, East Palestine's mayor declared a state of emergency,<sup>5</sup> and authorities ordered those living within one mile of the burn to evacuate and asked the remaining town residents to shelter in place.<sup>6</sup> Nevertheless, local officials repeatedly claimed that the air and water in the town were safe.<sup>7</sup>

Two days after the derailment, while the fires still burned, the warnings escalated in urgency, advising residents to abide by the evacuation order or face potential arrest.<sup>8</sup> Fearing an imminent explosion of one car, Ohio Governor Mike DeWine issued his first press release on the derailment,<sup>9</sup> contradicting local officials' previous safety declarations. On February 6, the East Palestine Unified Command, comprised of Norfolk Southern representatives as well as local, state, and federal officials, signed off on Norfolk Southern's plan to conduct a controlled explosion of five train cars to circumvent the impending explosion.<sup>10</sup> Officials warned all 5,000 residents of the town to shelter in place.<sup>11</sup> Governor DeWine and Pennsylvania Governor Josh Shapiro expanded the evacuation order to include a one- by two-mile area around the derailment, taking weather patterns into account.<sup>12</sup> This evacuation order communicated a much higher

3. See Rebekah Riess et al., *Train Derailment in Northeastern Ohio Sparks Massive Fire*, CNN, [https://www.cnn.com/2023/02/04/us/east-palestine-ohio-train-derailment-fire?cid=external-feeds\\_iluminar\\_msn](https://www.cnn.com/2023/02/04/us/east-palestine-ohio-train-derailment-fire?cid=external-feeds_iluminar_msn) (Feb. 4, 2023, 10:17 PM), *reprinted in* ABC7 NEWS (Feb. 4, 2023), <https://abc7news.com/east-palestine-ohio-train-derailment-fire-news/12769727/>.

4. Thomson, *supra* note 1.

5. East Palestine Information, *Declaration of Emergency*, FACEBOOK (Feb. 4, 2023, 9:29 AM), <https://www.facebook.com/photo/?fbid=558513309662948&set=a.302221145292167>.

6. Riess et al., *supra* note 3.

7. See, e.g., East Palestine Information, FACEBOOK (Feb. 4, 2023, 11:39 AM), <https://www.facebook.com/EPInformation/posts/pfbid0KwaJDNtRcN8GaAVrHXyPakAkCidUuwUerGNHq1ABPTmZfHDGschxQAoYYB3puSQL>; East Palestine Information, *Press Release [sic] 1:30 pm 2/4/23*, FACEBOOK (Feb. 4, 2023, 2:44 PM), <https://www.facebook.com/photo/?fbid=558679672979645&set=a.302221145292167> (asserting that water is safe to drink); Columbiana County EMA, FACEBOOK (Feb. 5, 2023, 2:51 PM), [https://www.facebook.com/permalink.php?story\\_fbid=pfbid0wnW4mF92mfPyA46SeQtXRQ9yCyR8giXGg7YBZto7hW9HrPNrXAsawWY5RepSYytul&id=100064673290311](https://www.facebook.com/permalink.php?story_fbid=pfbid0wnW4mF92mfPyA46SeQtXRQ9yCyR8giXGg7YBZto7hW9HrPNrXAsawWY5RepSYytul&id=100064673290311) (confirming that air and water were safe following the derailment).

8. Mike DeWine (@GovMikeDeWine), TWITTER (Feb. 5, 2023, 8:40 PM), <https://twitter.com/GovMikeDeWine/status/1622409784593993729>.

9. *Id.*

10. *Protecting Public Health and the Environment in the Wake of the Norfolk Southern Train Derailment and Chemical Release in East Palestine, Ohio: Hearing Before S. Comm. on Env't & Pub. Works*, 118th Cong. (2023) [hereinafter *Committee Hearing*] (statements of Eric Brewer, Director and Chief of Hazardous Materials Response, Beaver County Department of Emergency Services, and Alan Shaw, President and CEO, Norfolk Southern Corporation).

11. Riess et al., *supra* note 3.

12. Press Release, Governor Mike DeWine, East Palestine Update: Evacuation Area Extended, Controlled Release of Rail Car Contents Planned for 3:30 p.m. (Feb. 6, 2023), <https://governor.ohio.gov/media/news-and-media/east-palestine-update-evacuation-area-extended-controlled-release-of-rail-car-contents-planned-for-3-30-pm-02062023>.

sense of urgency than had previously been conveyed. Despite repeated reassurances that the air and water around the site were safe, the Governor's office warned that those in the evacuation zone faced "grave danger of death" or "high risk of severe injury [if they remained], including skin burns and serious lung damage."<sup>13</sup>

The controlled explosion of the five derailed cars and their cargo created an imposing mushroom cloud and released phosgene gas, a chemical used as a weapon during World War I, into the atmosphere.<sup>14</sup> Less than a day after this explosion, in familiar refrain, federal and state officials returned to assuring residents that nothing unsafe was detected in the air or water.<sup>15</sup> Yet the fumes, which were noticeable miles from the burn site,<sup>16</sup> told a different story. Just two days after the controlled explosion and five days after the initial derailment, state authorities told residents it was safe to return home.<sup>17</sup>

In the midst of this ongoing disaster, many East Palestine residents grew distrustful of the government officials nominally responsible for ensuring public safety.<sup>18</sup> Clear signs of adverse impacts on both humans and the environment were abundant from the start. Within days of the derailment, tens of thousands of fish and other aquatic animals were reported dead downstream.<sup>19</sup> Scores of residents reported unexplained symptoms, including headaches, congestion, throat and eye irritation, bloody noses, and skin rashes.<sup>20</sup> A group of Centers for Disease Control and Prevention (CDC) investigators, who had worked 18-hour days conducting door-to-door health

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13. *Id.*

14. Brittany Peterson & Seth Borenstein, *Toxic Gases Connected to Ohio Train Derailment Cause Concern*, ASSOCIATED PRESS (Feb. 8, 2023, 12:53 PM), <https://apnews.com/article/rail-accidents-evacuations-ohio-health-climate-and-environment-3f84663f0b97837cc74a8ce9a50ef6c7>.

15. U.S. EPA Region 5 (@EPAGreatLakes), TWITTER, <https://twitter.com/EPAGreatLakes/status/1623033901391159298?t=TCe0kNoq5YqzSrzm0U9kZg&s=19> (Feb. 7, 2023, 2:00 PM); Grace Christopher & Erin Simonek, *Officials Provide Updates on Controlled Release of Chemicals in East Palestine*, WFMJ, <https://www.wfmj.com/story/48323539/officials-provide-updates-on-controlled-release-of-chemicals-in-east-palestine> (Feb. 6, 2023, 11:48 PM).

16. U.S. EPA Region 5, *supra* note 15.

17. Press Release, Governor Mike DeWine, East Palestine Update: Residents Can Safely Return Home (Feb. 8, 2023), <https://governor.ohio.gov/media/news-and-media/east-palestine-update-residents-can-safely-return-home-02082023>.

18. See, e.g., Benji Jones, *What the Ohio Train Derailment Teaches Us About Poisoning Public Trust*, VOX (Mar. 8, 2023, 7:00 AM), <https://www.vox.com/science/23624376/east-palestine-derailment-air-quality-safety> (illustrating that locals were losing trust in government officials).

19. Press Release, Governor Mike DeWine, East Palestine Update - 3/6/23 (Mar. 6, 2023), <https://governor.ohio.gov/media/news-and-media/East+Palestine+Update-3-6-23-03062023>.

20. Gabrielle Gurley, *Whose Test Results Should East Palestine Believe?*, AM. PROSPECT (Mar. 23, 2023), <https://prospect.org/environment/2023-03-23-test-results-east-palestine/>; Brenda Goodman, *First on CNN: CDC Team Studying Health Impacts of Ohio Train Derailment Fell Ill During Investigation*, CNN, <https://www.cnn.com/2023/03/31/health/ohio-train-derailment-cdc-team-symptoms/index.html> (Mar. 31, 2023, 8:48 AM); see also Emily Baumgaertner, *One Family's Toxic Train Wreck Ordeal: Illness, Exile and Debt*, N.Y. TIMES, <https://www.nytimes.com/2023/08/16/health/east-palestine-ohio-train-derailment-crisis.html> (Aug. 21, 2023) (explaining that some East Palestine residents continue to experience mysterious health complications following the derailment).

surveys of residents near the derailment site, fell ill with the same symptoms a month after the fire was extinguished.<sup>21</sup> Representatives from Norfolk Southern canceled their attendance at a town hall meeting due to “growing physical threat” from unspecified “outside parties.”<sup>22</sup> But all the while, government officials repeatedly assured residents that, despite safety concerns rooted in personal observations and experiences, the air and water posed no threats.<sup>23</sup> As one resident put it, “Why are people getting sick if there’s nothing in the air or water?”<sup>24</sup>

This Article does not assert that government officials deliberately lied to residents. Rather, it argues that the gap between lived experiences and official communications about the East Palestine derailment creates a frustrating feeling—real or imagined—of governmental “gaslighting”<sup>25</sup> and highlights the need for stronger communication about environmental risks. While several statutes and regulations aim to provide comprehensive risk communication protocols, large gaps leave towns like East Palestine uniquely vulnerable to being under- or uninformed about the hazards they face daily. This Article highlights these gaps and proposes solutions.

Part I of this Article begins by situating East Palestine as a “rainside community” in America’s Rust Belt, one of many towns that are host to America’s 140,000 miles of freight rail. It discusses how rainside communities face unique risks, much like the fenceline communities that abut polluting infrastructure, given the transitory and varied nature of the substances moving through them. Part II then outlines current statutes and regulations governing risk communication, arguing that glaring gaps in these laws and regulations leave towns like East Palestine severely under-protected. Finally, Part III offers a range of solutions that would better protect

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21. Goodman, *supra* note 20. As of August 2023, the Occupational Safety and Health Administration (OSHA) has opened an investigation into the incident but has issued no citations. News Release, U.S. Dep’t of Labor, Department of Lab., Norfolk Southern Corp., Teamsters’ Railways Union Enter Agreement to Enhance Safety at East Palestine, Ohio, Derailment Site (Aug. 9, 2023), <https://www.dol.gov/newsroom/releases/osha/osha20230809>.

22. Patrick Orsagos, *Upset Ohio Town Residents Seek Answers over Train Derailment*, ASSOCIATED PRESS (Feb. 16, 2023, 12:15 AM), <https://apnews.com/article/ohio-derailment-town-hall-meeting-b95ef5c6389f417b9cbe088c109b9d84>; *Norfolk Southern Says It Won’t Attend Town Hall, Fearing ‘Growing Physical Threat,’* WSYX ABC 6 (Feb. 15, 2023, 5:17 PM), <https://abc6onyourside.com/news/local/norfolk-southern-east-palestine-ohio-town-hall-fearing-growing-physical-threat>.

23. East Palestine Information, *supra* note 7; Columbiana County EMA, *supra* note 7; U.S. EPA Region 5, *supra* note 15; Christopher & Simonek, *supra* note 15.

24. Brooks Sutherland & Max Filby, *‘Why Are People Getting Sick?’ East Palestine Residents Voice Concerns; Norfolk Southern Skips Meeting*, CINCINNATI ENQUIRER, <https://www.cincinnati.com/story/news/local/2023/02/15/norfolk-southern-skips-crowded-east-palestine-meeting-after-derailment/69909098007/> (Feb. 16, 2023, 8:59 AM).

25. Charles Creitz, *Erin Brockovich Torches East Palestine, Ohio Disaster Response from Government: ‘Not Going to Gaslight Me,’* FOX NEWS (Feb. 24, 2023, 9:44 PM), <https://www.foxnews.com/media/erin-brockovich-torches-east-palestine-ohio-disaster-response-government-not-going-gaslight-me>.

residents of railyards communities, including corporate accountability and transparency measures, labor and infrastructure improvements, and community-based participatory research frameworks.

### I. AMERICA'S RUST BELT, FREIGHT RAILWAYS, AND RAILSIDE COMMUNITIES

Before examining the statutory and regulatory gaps that leave towns like East Palestine vulnerable, it is critical to understand how East Palestine's status as a Rust Belt town and a "railyard community" contributes to its vulnerability.

#### A. Rust Belt Vulnerability

The Rust Belt is not a strictly defined geographical area but is generally said to stretch from Upstate New York to Illinois.<sup>26</sup> First known as America's "manufacturing belt," this area thrived in the late 19th to the mid-20th centuries as the core of the country's automotive and steel industries.<sup>27</sup> More than half of the country's manufacturing jobs were clustered in this region in 1950,<sup>28</sup> and the manufacturing industry accounted for high percentages of total employment in Rust Belt states.<sup>29</sup> In Ohio, for example, manufacturing accounted for more than one-third of all employment in the state and more than 40% of male employment statewide.<sup>30</sup> Many of these manufacturing jobs were likely also high-paying union jobs; while statistics for union membership by state do not appear to exist prior to 1983, the manufacturing industry has historically been one of the most unionized industries.<sup>31</sup>

Over the latter half of the 20th century, as union manufacturing jobs—the backbone of the region's economy—were automated or shipped overseas

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26. Mark Abadi et al., *MAP: From the Bible Belt to the Rust Belt, the United States Has 13 Distinct 'Belts,'* BUS. INSIDER, <https://www.businessinsider.com/regions-america-bible-belt-rust-belt-2018-4> (Feb. 20, 2023, 6:30 AM).

27. David R. Meyer, *Midwestern Industrialization and the American Manufacturing Belt in the Nineteenth Century*, 49 J. ECON. HIST. 921, 921 (1989); Lee E. Ohanian, *Competition and the Decline of the Rust Belt*, FED. RSRV. BANK OF MINNEAPOLIS (Dec. 20, 2014), <https://www.minneapolisfed.org/article/2014/competition-and-the-decline-of-the-rust-belt>.

28. SIMEON ALDER ET AL., CTR. FOR QUANTITATIVE ECON. RSCH., *THE DECLINE OF THE U.S. RUST BELT: A MACROECONOMIC ANALYSIS* 4, [https://www.atlantafed.org/-/media/documents/cqer/publications/workingpapers/cqer\\_wp1405.pdf](https://www.atlantafed.org/-/media/documents/cqer/publications/workingpapers/cqer_wp1405.pdf).

29. *Id.* at 5.

30. 2 HOWARD G. BRUNSMAN, U.S. BUREAU OF THE CENSUS, U.S. CENSUS OF POPULATION: 1950, CHARACTERISTICS OF THE POPULATION, PART 35, OHIO, 35-69 (1952), <https://www2.census.gov/library/publications/decennial/1950/population-volume-2/37783896v2p35ch3.pdf>.

31. GERALD MAYER, CONG. RSCH. SERV., RL32553, *UNION MEMBERSHIP TRENDS IN THE UNITED STATES* 16-17 (2004), <https://sgp.fas.org/crs/misc/RL32553.pdf>.

to lower labor costs, former manufacturing hubs struggled to stay afloat.<sup>32</sup> The “Rust Belt” refers to these former manufacturing hubs.<sup>33</sup> Exact characteristics may vary, but most scholars correlate Rust Belt cities and towns with declining populations and a milieu of social problems, including unemployment, poverty, and abandoned or blighted buildings.<sup>34</sup> While every city and town within the Rust Belt has its own unique history, many scholars have outlined the deindustrialization-to-disinvestment pipeline that pervades the region.<sup>35</sup> As localities lost well-paying, union manufacturing jobs, un- and under-employment rates increased, property values plummeted, local tax bases dissolved, residents left, and public services and municipal funding were gutted.<sup>36</sup>

Across the Rust Belt, this deindustrialization has a wide-reaching social ripple effect. Rust Belt communities generally face increased rates of suicide, opioid addiction, and domestic violence, as well as “loss of faith in institutions such as government.”<sup>37</sup> Deindustrialization has also led to negative environmental impacts, as businesses abandon factories and leave them to decay for decades.<sup>38</sup> These social and environmental issues often continue over decades, and deindustrialized Rust Belt towns become “sites of persistent struggle, creating a cycle of failure from which it is difficult to escape.”<sup>39</sup> Consequently, Rust Belt residents are more likely to lack strong safety nets or robust public support networks.

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32. Others have proposed alternate explanations for the Rust Belt’s manufacturing decline. *See, e.g.*, JASON R. HACKWORTH, *MANUFACTURING DECLINE: HOW RACISM AND THE CONSERVATIVE MOVEMENT CRUSH THE AMERICAN RUST BELT* 60-61, 215 (2019) (describing how “the construction of blackness as threatening to white safety, political power, and property,” as opposed to market forces and globalization, produces urban decline through five unique modalities).

33. Amy E. Mersol-Barg, Note, *Urban Agriculture & the Modern Farm Bill: Cultivating Prosperity in America’s Rust Belt*, 24 *DUKE ENV’T L. & POL’Y F.* 279, 280-81 (2013); Emily A. Shrider, *Welcoming Cities, Welcoming Policies? Immigration Policymaking and Immigrant Renewal Strategies in the Rust Belt*, 28 *S. CAL. INTERDISC. L.J.* 661, 669-70 (2019).

34. *See, e.g.*, David Brady & Michael Wallace, *Deindustrialization and Poverty: Manufacturing Decline and AFDC Reciprocity in Lake County, Indiana 1964-93*, 16 *SOCIO. F.* 321, 323, 347 (2001) (explaining how deindustrialization led to manufacturing job loss); Shrider, *supra* note 33; Joseph Schilling & Jonathan Logan, *Greening the Rust Belt: A Green Infrastructure Model for Right Sizing America’s Shrinking Cities*, 74 *J. AM. PLAN. ASS’N* 451, 452 (2008); Mersol-Barg, *supra* note 33.

35. John Russo & Sherry Lee Linkon, *The Social Costs of Deindustrialization*, *YOUNGSTOWN ST. UNIV.: CTR. FOR WORKING CLASS STUDIES*, <https://ysu.edu/center-working-class-studies/social-costs-deindustrialization> (last visited Oct. 30, 2023).

36. J. Lawrence Broz et al., *Populism in Place: The Economic Geography of the Globalization Backlash*, 75 *INT’L ORG.* 464, 465, 473 (2021); Sharryn Kasmir, *On Difference and Combination: Politics and Social Movement Organizations in a Pennsylvania Rust-Belt Region*, 95 *FOCAL* 74, 78 (2023).

37. Russo & Linkon, *supra* note 35, at 152; Broz et al., *supra* note 36.

38. *Id.* at 156.

39. *Id.*; Shawna J. Lee et al., *Racial Inequality and the Implementation of Emergency Management Laws in Economically Distressed Urban Areas*, *CHILD. & YOUTH SERVS. REV.*, Nov. 2016, at 1, 2 (“[Rust Belt areas] continue to grapple with prolonged economic stagnation and decline that stem from business loss and relocation, among other factors.”); *see* Broz et al., *supra* note 36, at 477.

Lying in the heart of America's Rust Belt, East Palestine, Ohio has followed the same general trajectory as other Rust Belt towns in the wake of deindustrialization. Columbiana County, in which East Palestine is located, was home to a thriving agricultural industry throughout the 1800s.<sup>40</sup> Extensive railroad construction across the manufacturing belt ushered in a host of new industries, including the ceramics industry.<sup>41</sup> Ceramics played a significant role in spurring economic development in the East Palestine area: Columbiana County once produced half of all ceramics in North America,<sup>42</sup> and W.S. George Pottery Company began operating a large pottery facility out of East Palestine in the early 1900s.<sup>43</sup> However, W.S. George sold its East Palestine facility in 1955 after declaring bankruptcy,<sup>44</sup> and the plant ceased operations around 1960.<sup>45</sup> Since then, East Palestine has seen a stark population decline: while the country's population has more than doubled since 1950,<sup>46</sup> East Palestine's population has shrunk by 8%.<sup>47</sup> Today, the town's median household income is almost 30% less than the state of Ohio's,<sup>48</sup> but in 1950, East Palestine's median family income was on par with the state's.<sup>49</sup>

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40. *Historical Sketch of Columbiana County*, COLUMBIANA CNTY., <http://www.columbianacounty.org/history> (last visited May 1, 2023) [hereinafter *Historical Sketch*].

41. *Id.*

42. Jeremy H. Beardmore, *Get to Know the Staffordshire of America and How It All Started*, THE COLLECTOR (Jan. 30, 2020), <https://www.thecollector.com/get-to-know-the-staffordshire-of-america-and-how-it-all-started/>.

43. *East Palestine*, EAST PALESTINE AREA CHAMBER OF COM., <https://www.eastpalestinechamber.com/east-palestine> (hover over top right photo in array) (last visited May 1, 2023). East Palestine was also home to a notable tire and rubber factory, but there appears to be limited information on it, indicating it was not as prominent or long-lasting as the pottery, *id.*

44. *Town History*, EAST PALESTINE, OHIO, <http://eastpalestine-oh.gov/town-history/> (last visited May 1, 2023); Harry Rinker, *W. S. George Pottery*, WORTHPOINT, <https://www.worthpoint.com/dictionary/p/ceramics/na--united-states/wsgeorge-pottery> (last visited May 1, 2023).

45. *Object Record*, MCLEOD CNTY. HIST. SOC'Y & MUSEUM, <https://mcleodhistory.pastperfectonline.com/webobject/721A59F1-BEFB-4C1A-8FD4-248024118536> (last visited May 30, 2023).

46. *Historical National Population Estimates: July 1, 1900 to July 1, 1999*, U.S. CENSUS BUREAU, <https://www2.census.gov/programs-surveys/popest/tables/1900-1980/national/totals/popclockest.txt> (last visited May 30, 2023); *U.S. and World Population Clock*, U.S. CENSUS BUREAU, <https://www.census.gov/popclock/> (last visited May 30, 2023).

47. 1 HOWARD G. BRUNSMAN, U.S. BUREAU OF THE CENSUS, U.S. CENSUS OF POPULATION: 1950, NUMBER OF INHABITANTS 1-58 (1952), <https://www2.census.gov/library/publications/decennial/1950/population-volume-2/21983999v2p1ch2.pdf>; *East Palestine Village, Ohio*, U.S. CENSUS BUREAU, <https://data.census.gov/profile?g=160XX00US3923940> (last visited May 30, 2023).

48. U.S. CENSUS BUREAU, *supra* note 47.

49. 2 HOWARD G. BRUNSMAN, U.S. BUREAU OF THE CENSUS, U.S. CENSUS OF POPULATION: 1950, CHARACTERISTICS OF THE POPULATION, PART 35, OHIO 35-51 (1952), <https://www2.census.gov/library/publications/decennial/1950/population-volume-2/37783896v2p35ch3.pdf>.



Rust Belt communities have also gravitated towards a conservative brand of populism in the wake of deindustrialization.<sup>50</sup> Politicians like former President Donald Trump and Ohio Senator J.D. Vance, who often preach anti-globalization, won handily in rural Ohio counties like Columbiana County.<sup>51</sup> Urban planning scholar and Ohioan Jason Hackworth attributes these conservative successes to a powerful “narrative of loss” that appeals to white residents of deindustrialized areas.<sup>52</sup> This narrative speaks to residents’ “perceived loss of privilege—the notion that one’s individual or group position has been undermined by social change,” such as more supportive social policies and racial justice.<sup>53</sup> Politicians also exploited the stark differences between the rural and urban Rust Belt—the racial divide between the regions’ urban and rural areas is greater than any other area in the country—to bolster support in rural Rust Belt areas.<sup>54</sup> This brand of politics exacerbates the pre-existing disadvantages of Rust Belt residents. Not only has previous disinvestment left residents with inadequate support, but their current political representation means that they are less likely to have social safety nets or strong environmental protections, policies which would help better protect residents.

Because of the vicious, post-industrial feedback loop in which East Palestine and other Rust Belt towns are stuck, their residents are often disproportionately vulnerable and ill-prepared to respond to emergencies.

### *B. Freight Trains and Railside Communities*

The Rust Belt is also the hub of America’s rail infrastructure. The concentrated networks of tracks through northern Midwest and mid-Atlantic states are remnants of a bygone era in which both people and goods were primarily transported by rail.<sup>55</sup> Chicago, Illinois, located in the Rust Belt, is the nation’s largest rail hub,<sup>56</sup> and mid-Atlantic Rust Belt state Pennsylvania

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50. Leonard Baccini & Stephen Weymouth, *Gone for Good: Deindustrialization, White Voter Backlash, and US Presidential Voting*, 115 AM. POL. SCI. REV. 550, 553 (2021).

51. *Ohio President Results 2020*, CNN POLITICS, <https://www.cnn.com/election/2020/results/state/ohio/president> (Nov. 27, 2020, 4:42 PM).

52. HACKWORTH, *supra* note 32, at 23.

53. *Id.*

54. *Id.* at 29.

55. Jason Shvili, *Rust Belt States*, WORLDATLAS (July 7, 2021), <https://www.worldatlas.com/geography/rust-belt-united-states.html>.

56. *Recommendation: Maintain the Region’s Status as North America’s Freight Hub*, CHI. METRO. AGENCY FOR PLAN., <https://www.cmap.illinois.gov/2050/mobility/freight> (last visited May 1, 2023); *Freight Rail Facts & Figures*, ASS’N OF AM. R.R.S., <https://www.aar.org/facts-figures> (Oct. 3, 2023).

hosts more operating railroads than any other U.S. state.<sup>57</sup> The state of Ohio is home to the fourth-most extensive rail network in the country.<sup>58</sup> This fact is even more impressive considering how much smaller Ohio is than other, higher-ranked states such as Illinois and Texas.<sup>59</sup>

In addition to being concentrated in the country's Rust Belt, American rail infrastructure is disproportionately concentrated in rural areas. Of the 140,000 total freight train miles in the country, 104,315 of these—just about three-quarters—run through rural areas.<sup>60</sup> Thus, freight trains disproportionately run through rural Rust Belt communities like East Palestine, the same towns most likely facing disinvestment and the erosion of social safety nets. The sociopolitical context of these towns means that, when rail emergencies like derailments of trains carrying hazardous materials do occur, the surrounding communities are particularly ill-equipped to respond.

To better understand the East Palestine incident, it is also necessary to examine the phenomenon of freight trains carrying hazardous materials. Trains transporting hazardous materials, also known as “hazmat trains,” are common—freight trains move more than two million carloads of hazardous chemicals every year.<sup>61</sup> However, this fact would not be obvious to a layperson, even someone who lived right next to the tracks. Rail operators are not required to report what they are transporting to either the public or authorities at any level of government.<sup>62</sup> Even cargo information provided to the rail crews operating the trains may not be accurate; one inspection of

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57. *Rail Freight & Ports*, PA. DEP'T OF TRANSP., <https://www.penndot.pa.gov/Doing-Business/RailFreightAndPorts/Pages/default.aspx> (last visited May 4, 2023); *Freight Rail in Your State*, ASS'N OF AM. R.R.S., <https://www.aar.org/wp-content/uploads/2023/03/AAR-State-Rankings-2021.pdf> (click on “State Rankings 2021”) (last visited Oct. 11, 2023).

58. ASS'N OF AM. R.R.S., *supra* note 57.

59. *Id.*

60. *Improving Rail in Rural Communities*, U.S. DEP'T OF TRANSP.: FED. R.R. ADMIN., <https://railroads.dot.gov/rural> (June 26, 2023).

61. *Freight Rail & Chemicals: Making Modern Life Possible*, ASS'N OF AM. R.R.S., <https://www.aar.org/wp-content/uploads/2020/07/AAR-Chemicals-Fact-Sheet.pdf> (July 2023) (click on “Download Fact Sheet”).

62. See Branden Stitt, *What Are Trains Hauling Near You? Questions Raised After Hazardous Derailment in Ohio*, KWCH 12 (Feb. 17, 2023, 11:31 PM), <https://www.kwch.com/2023/02/18/what-are-trains-hauling-near-you-questions-raised-after-hazardous-derailment-ohio/> (reporting that “train companies don't have to report what they're hauling to state or local authorities”); Ted Daniel & Marina Villeneuve, “*Relying on Luck Rather Than the Law*”: *Transport of Hazmat by Rail Still Big, Risky Secret in Mass.*, BOSTON 25 NEWS (May 3, 2023, 6:09 AM), <https://www.boston25news.com/news/local/relying-luck-rather-than-law-transport-hazmat-by-rail-still-big-risky-secret-mass/W72W7GRPMNFHZKV77PP6AXCOZ4>.

Minnesota railroads noted that, over a three-year period, one in five hazardous material train manifests were inaccurate.<sup>63</sup>

Towns like East Palestine that host freight railways also face unique risks because of their status as raiiside communities. I use the term “raiiiside communities” as the freight rail equivalent of “fenceline communities,” which are towns that abut stationary polluting facilities such as manufacturing plants and other industrial projects.<sup>64</sup> Fenceline communities face day-to-day nuisances and health threats from nearby facilities, as well as heightened risk in instances of chemical releases or other emergencies due to their proximity to the source.<sup>65</sup> While raiiside communities likely face lower levels of ongoing, baseline nuisances and health effects, they are significantly more vulnerable than fenceline communities in the event of chemical releases. Unlike fenceline communities, which face constant dangers from known threats, raiiside communities do not know where or when an emergency may occur or what substances may be involved. The unpredictable nature of these threats leaves raiiside communities at a major disadvantage in emergency planning and response compared to fenceline communities.<sup>66</sup>

Thus, towns like East Palestine have multiple intersecting vulnerabilities rooted in their history, politics, and locations. These communities are uniquely vulnerable to poor risk communication and inadequate crisis response in the event of transportation-related chemical releases. Because of these disadvantages, clear public risk communication standards are critical to raiiside communities like East Palestine. Strong risk communication policies have the power to mitigate the disadvantages faced by Rust Belt and raiiside communities, empowering them with the information needed to respond to emergencies appropriately and keep themselves safe.

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63. Dan Gunderson, *Mystery Trains: Crews, Communities in the Dark on Chemical Cargo*, MINN. PUB. RADIO (Sept. 23, 2014, 9:00 PM), <https://www.mprnews.org/story/2014/09/23/trains-haul-undocumented-hazardous-chemicals>. These inaccuracies are largely due to computer glitches that allow undocumented train cars to travel for miles before the manifest is corrected, *id.*

64. *E.g.*, Dara O'Rourke & Gregg P. Macey, *Community Environmental Policing: Assessing New Strategies of Public Participation in Environmental Regulation*, 22 J. POL'Y ANALYSIS & MGMT. 383, 392 (2003); Ciprian N. Radavoi, *Fenceline Communities and Environmentally Damaging Projects: An Asymptotically Evolving Right to Veto*, TUL. ENV'T L.J., Winter 2015, at 1, 21; *Frontline and Fenceline Communities*, CLIMATE REALITY PROJ., <https://www.climaterealityproject.org/frontline-fenceline-communities> (last visited May 3, 2023) (describing characteristics of fenceline communities).

65. O'Rourke & Macey, *supra* note 64.

66. I do not aim to minimize the risks that fenceline communities are subjected to on a daily basis. The threats to both fenceline communities and raiiside communities are serious, and one is not inherently less significant or urgent than the other. And, of course, fenceline communities and raiiside communities are not mutually exclusive and often overlap; many communities face intersecting threats from both stationary and mobile sources. However, the labels of “fenceline” and “raiiiside” refer to threats of inherently different natures with their own unique impacts.

## II. RISK COMMUNICATION REQUIREMENTS

*A. Federal Emergency Planning and Community Right-to-Know Act*

Perhaps the best-known and most expansive risk communication statute is the Emergency Planning and Community Right-to-Know Act (EPCRA).<sup>67</sup> Congress enacted EPCRA largely in response to the 1984 Bhopal disaster, in which 600,000 people were exposed to poisonous gases released from a pesticide plant in Bhopal, India.<sup>68</sup> Lack of knowledge and preparation among residents, first responders, and medical staff intensified the tragedy.<sup>69</sup> EPCRA requires sweeping disclosure and planning measures intended to help communities plan for and adequately respond to emergencies.<sup>70</sup> The statute establishes and specifies the composition of state emergency planning commissions (SERCs), planning districts, and local committees;<sup>71</sup> mandates that local emergency planning committees (LEPCs) prepare publicly available emergency response plans in line with statutory requirements;<sup>72</sup> and outlines emergency notification requirements.<sup>73</sup> Crucially, EPCRA ensures that emergency information is transmitted to the public.<sup>74</sup> LEPCs are the primary emergency planning entity responsible for risk communication to the public. The law requires that emergency plans formulated by LEPCs include “[p]rocedures providing reliable, effective, and timely notification” to the public that a release has occurred.<sup>75</sup>

While EPCRA is a powerful planning tool that ensures swift communication to affected residents in most emergency circumstances, it fails to help railside communities. Most of the statute’s emergency planning and community right-to-know provisions apply only to releases of substances

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67. 42 U.S.C. §§ 11001-11050.

68. 132 Cong. Rec. 28,418 (Oct. 3, 1986) (statement of Thomas Jorling, Minority Couns., U.S. Senate Comm. on Pub. Works); Alan Taylor, *Bhopal: The World's Worst Industrial Disaster, 30 Years Later*, THE ATLANTIC (Dec. 2, 2014), <https://www.theatlantic.com/photo/2014/12/bhopal-the-worlds-worst-industrial-disaster-30-years-later/100864/>. The effects of the Bhopal disaster were profoundly devastating: the release led to as many as 16,000 deaths and an increased prevalence of physical and mental disabilities in children, Taylor, *supra*.

69. See Sarah Lamdan & Rebecca Bratspies, *Taking a Page from the FDA's Prescription Medicine Information Rules: Reimagining Environmental Information for Climate Change*, 40 U. ARK. LITTLE ROCK L. REV. 573, 589 (2018) (detailing how various risk factors and a lack of communication compounded tragedy in the Bhopal incident).

70. *EPCRA Requirements*, U.S. DEP'T OF HEALTH & HUM. SERVS. (Feb. 25, 2000), <https://www.hhs.gov/about/hhs-manuals/gam-part-30/306000/index.html#30-60-20>.

71. 42 U.S.C. § 11001.

72. *Id.* §§ 11003, 11044(a).

73. *Id.* § 11004.

74. *Id.* § 11003(c)(4).

75. *Id.*

from stationary “facilities,” not mobile “rolling stock.”<sup>76</sup> Only for the purposes of § 11004, the emergency notification section, does the term “facility” include “rolling stock.”<sup>77</sup> Indeed, one of the final sections of EPCRA, § 11047, provides an explicit exemption for transportation: “Except as provided in [§] 11004 of this title, this chapter does not apply to the transportation . . . of any substance or chemical subject to the requirements of this chapter. . . .”<sup>78</sup> In other words, EPCRA’s only effect on rail carriers is its mandate of emergency notifications under § 11004.

For stationary sources, EPCRA outlines a comprehensive emergency notification scheme: both the community emergency coordinator for the affected LEPCs and the relevant SERCs should receive notice “immediately after the release” of a covered substance.<sup>79</sup> EPCRA § 11004 provides a long list of requirements for the content of the notification. These requirements include the chemical names or identities of substances involved, the amount and duration of the release, associated health risks, and proper precautions.<sup>80</sup> EPCRA also provides additional requirements should the release impact source waters of a community water system.<sup>81</sup> Finally, this section mandates written follow-up after the initial notification describing response measures taken, known or anticipated health risks, and medical advice for individuals exposed to the substance.<sup>82</sup>

For mobile sources, though, these notification requirements are significantly reduced. When reporting a release from a mobile source, like a freight train, an owner or operator of a mobile source may achieve full compliance with EPCRA by simply dialing 911.<sup>83</sup> This requirement erases the direct chain of information from the train operator through the LEPC to the community; unlike their obligations with respect to stationary sources, 911 operators are under no mandate to share information about mobile source releases with a community coordinator. Furthermore, the written follow-up required after releases from stationary sources under § 11004(c) does not

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76. *Id.* § 11049(4) (defining “facility” as “all buildings, equipment, structures, and other *stationary items* which are located on a single site or on contiguous or adjacent sites”) (emphasis added).

77. *Id.*

78. *Id.* § 11047.

79. *Id.* § 11004(b)(1).

80. *Id.* § 11004(b)(2).

81. *Id.* § 11004(e).

82. *Id.* § 11004(c).

83. *See id.* § 11004(b)(2) (“With respect to transportation of a substance subject to the requirements of this section, or storage incident to such transportation, the notice requirements of this section with respect to a release shall be satisfied by dialing 911 or, in the absence of a 911 emergency telephone number, calling the operator.”).

apply to releases from sources in transit; rather, one initial 911 call satisfies all EPCRA reporting requirements.<sup>84</sup>

To see how significantly this exception impacts communities, contrast the East Palestine derailment with what would happen if vinyl chloride were released from a stationary source. Vinyl chloride is a hazardous chemical.<sup>85</sup> Release of more than one pound of this chemical triggers notice requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund), the primary statute governing response to releases of hazardous substances.<sup>86</sup> Therefore, under EPCRA § 11004(a)(3), if the same amount of vinyl chloride (1.1 million pounds<sup>87</sup>) were released from a stationary source, the owner or operator of the facility would be required to notify (1) the area's local emergency coordinator, and (2) the SERC for any areas and states likely to be affected by the release.<sup>88</sup> As previously explained, the information about this release would be disseminated to the public via the local emergency coordinator and the LEPC.<sup>89</sup> Further, the facility's owner or operator would be required to provide a written follow-up emergency notice containing information on response and containment measures, health risks, and medical advice.<sup>90</sup> However, in the case of the East Palestine derailment, the train crew was required only to make one initial 911 call.<sup>91</sup> That call is the extent of the obligations of any person or entity under EPCRA in the case of that derailment.

Because EPCRA largely does not apply to mobile sources, including hazmat trains, and provides very few release disclosure requirements for releases from those sources, railside communities that host freight railways are in a uniquely precarious position.

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84. *Id.*; *Follow-Up Notification Requirements for Release Occurring in Transportation*, U.S. EPA, <https://www.epa.gov/epcra/follow-notification-requirements-release-occurring-transportation> (May 1, 2023).

85. 40 C.F.R. § 302.4 tbl. 302.4 (2022) (listing reportable quantities of hazardous chemicals).

86. *See infra* Section II(B).

87. Benjamin Duer, *Norfolk Southern Released 1.1M Pounds of Vinyl Chloride After Derailment, Lawsuit Alleges*, USA TODAY, <https://www.usatoday.com/story/news/nation/2023/02/16/train-derailment-norfolk-southern-vinyl-chloride-ohio/11274194002/> (Feb. 16, 2023, 4:26 PM).

88. 42 U.S.C. § 11004(b)(1).

89. *Id.* § 11003(c)(4).

90. *Id.* § 11004(c).

91. While § 11004(2) does ostensibly provide requirements for information that must be provided in this call, the regulations clarify that this information is just to be provided "to the extent known" and so long as providing it will not cause a delay in response.

*B. The National Contingency Plan and Comprehensive Environmental Response, Compensation, and Liability Act*

Another provision relevant to releases of hazardous materials is the National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan or NCP), which implements CERCLA.<sup>92</sup> The NCP “provide[s] the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants” as required by CERCLA.<sup>93</sup> These laws and regulations together carefully outline preparation and response procedures for responding to releases of hazardous substances. However, neither the NCP nor CERCLA adequately fill the gaps left by EPCRA.

First, while the NCP contains a section on “public information and community relations,” this section is largely aspirational and has very little in the way of binding requirements.<sup>94</sup> The only community relations requirements are contained in sections on “removal action,”<sup>95</sup> “remedial investigation/feasibility study and selection of remedy,”<sup>96</sup> and “remedial design/remedial action, operation[,] and maintenance.”<sup>97</sup> As the titles of these sections indicate, these regulations prescribe community relations procedures to be taken during the investigation of a chemical release and removal or remedial actions to be taken in response to a chemical release. Additionally, under the NCP, “community relations” refers to the “EPA’s program to inform and encourage public participation in the Superfund process and to respond to community concerns.”<sup>98</sup> In other words, the NCP only regulates communication to the public undertaken in the course of the Superfund process, during the investigation and cleanup of a polluted site. The regulations do not contemplate public communications in the immediate aftermath of a release before a formal investigation begins.

CERCLA is similar to the NCP in its focus. Like its implementing regulations, CERCLA legislates the actual cleanup of hazardous waste sites and hazardous substance releases.<sup>99</sup> Its notification section requires any

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92. 40 C.F.R. §§ 300.1, 300.2 (1994).

93. *Id.*

94. *See id.* § 300.155.

95. *Id.* § 300.415.

96. *Id.* § 300.430.

97. *Id.* § 300.435. Other sections—§ 300.815 (“Administrative record file for a remedial action”), § 300.820 (“Administrative record file for a removal action”), and § 300.425(e) (“Deletion from the NPL”)—describe notice and comment requirements for such actions; however, these sections are not relevant to the issue of proactive risk communications from the government in the immediate aftermath of a release.

98. *Id.* § 300.5.

99. *Summary of the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)*, U.S. EPA, <https://www.epa.gov/laws-regulations/summary-comprehensive-environmental-response-compensation-and-liability-act> (Sept. 12, 2022).

person in charge of a vessel or facility to immediately notify the National Response Center (NRC) of a release of a hazardous substance covered by CERCLA as soon as they have knowledge of such a release.<sup>100</sup> Unlike EPCRA, “facility” as used in CERCLA includes mobile facilities, such as rolling stock,<sup>101</sup> so this section applies to freight rail operators.

As discussed above, any release of more than one pound of vinyl chloride is reportable under CERCLA.<sup>102</sup> The East Palestine derailment released 1.1 million pounds of vinyl chloride.<sup>103</sup> Therefore, in addition to calling 911 to satisfy EPCRA reporting requirements, Norfolk Southern or the train’s crew were required to—and did—immediately call the NRC to satisfy CERCLA requirements.<sup>104</sup>

While notifying the NRC of a release is a critical step in responding to chemical emergencies, it does little to inform the public of risks they may face. Once notified, the NRC’s duty is to notify the area’s designated On-Scene Coordinator (OSC),<sup>105</sup> who plays a central role in coordinating, directing, and reviewing release response efforts.<sup>106</sup> Consistent with CERCLA and the NCP’s focus on responding to and cleaning up chemical releases, regulation of OSCs primarily governs their roles as first responder coordinators. Unlike EPCRA’s community emergency coordinators, OSCs are not liaisons to the community. Only one vague communication requirement applies to OSCs: “OSCs . . . should ensure that all appropriate public and private interests are kept informed and that their concerns are considered throughout a response, to the extent practicable. . . .”<sup>107</sup> The regulation continues that OSCs should aim to keep interested parties informed in accordance with § 300.155 of the NCP, the same section of aspirational, non-binding communications recommendations discussed earlier in this section.<sup>108</sup> Thus, while CERCLA does impose further

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100. 42 U.S.C. § 9603(a); *see* 40 C.F.R. § 302.6 (implementing regulations for the same section).

101. 42 U.S.C. § 9601(9).

102. 40 C.F.R. § 302.4 tbl. 302.4.

103. Duer, *supra* note 87.

104. Investigation of public U.S. Coast Guard records of NRC calls indicates that, as required by CERCLA, the East Palestine derailment was reported soon after it occurred. The NRC log shows the relevant call coming in at 8:55 PM, just one minute after the derailment occurred. U.S. COAST GUARD: NAT’L RESPONSE CTR., <https://nrc.uscg.mil/Default.aspx> (last visited May 4, 2023) (click “2023 Reports” to download call log; open the spreadsheet and click on the “INCIDENT\_COMMONS” sheet; navigate to call number 1359227 in row 2085). However, the caller did not have critical information about the amount and type of hazardous materials released that would have guided the response: the log states, “Because of this incident there is a potential for an unknown hazardous material to release onto the ground. The amount of material that has the potential to release is unknown at this time,” *id.* (capitalization removed).

105. *National Response Center*, U.S. EPA (Oct. 31, 2022), <https://www.epa.gov/emergency-response/national-response-center>.

106. 40 C.F.R. § 300.120(a), (e).

107. *Id.* § 300.135(n).

108. *Id.*; *see id.* § 300.155.



notification requirements on the government, there is no provision within existing law that provides a direct pathway for the public to receive this communication promptly.

### *C. Hazardous Materials Transportation Act*

The United States Department of Transportation (DOT) estimates that about one million shipments of hazardous materials are made by land, water, and air every day.<sup>109</sup> With such a high number of harmful substances moving throughout the country on a daily basis, an entirely different, comprehensive statutory and regulatory scheme governs. When transporting hazardous materials, as opposed to storing them in stationary facilities, the Hazardous Materials Transportation Act (HMTA) governs safety and emergency response.<sup>110</sup> Congress passed this law in 1974 in response to the previous patchwork of state and federal statutes, as well as regulations spread across multiple agencies, that inadequately addressed the risks inherent to transporting hazardous materials.<sup>111</sup> The HMTA's stated purpose is "to protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material."<sup>112</sup>

The HMTA contains some statutory requirements, though its "bite" is in the regulations promulgated in response to the enactment of the HMTA by the Secretary of Transportation.<sup>113</sup> The HMTA authorizes the Secretary to issue "regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce."<sup>114</sup> Because the statute focuses more on the transportation of goods and less on

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109. U.S. DEP'T OF TRANSP., TRANSPORTATION STATISTICS ANNUAL REPORT 167 (2022), [https://rosap.ntl.bts.gov/view/dot/65841/dot\\_65841\\_DS1.pdf](https://rosap.ntl.bts.gov/view/dot/65841/dot_65841_DS1.pdf) (link downloads PDF).

110. 49 U.S.C. §§ 5101–128. The HMTA was also significantly amended and standardized in 1990. See Hazardous Materials Transportation Uniform Safety Act of 1990, Pub. L. No. 101-615, 104 Stat. 3244.

111. Stuart C. Thompson, *The Hazardous Materials Transportation Act: Chemicals at Uncertain Crossroads*, 15 TRANSP. L.J. 411, 413 (1987); Caroline J. Hogue, *Regulating the Transportation of Hazardous Materials over the Nation's Roadways*, 15 TRANSP. L.J. 149, 151 (1986).

112. 49 U.S.C. § 5101.

113. See John Levin, *The Transportation of Hazardous Materials by Rail: A Recommendation for Reform*, 22 TRANSP. L.J. 41, 44 (1994) ("While HMTA contains a number of specific provisions . . . the emphasis in the Act is on the promulgation of regulations.") (citations omitted).

114. 49 U.S.C. § 5103(b)(1).

communication with the public,<sup>115</sup> providing for emergency communication is arguably outside the HMTA's scope.<sup>116</sup>

The regulations implementing the HMTA do include one requirement for communicating incidents involving hazardous materials in transit.<sup>117</sup> However, this requirement is extremely minimal and limited to one sentence: "When an incident involving hazardous material being transported in commerce occurs, the person transporting the material, immediately on request of appropriate emergency response authorities, shall disclose to the authorities information about the material."<sup>118</sup> In other words, the HMTA does not fill the gap left by EPCRA. A rail carrier could fulfill all federal communication requirements simply by making two calls, one to 911 and one to the NRC, and by providing information to authorities about the materials being transported if asked. None of the laws and regulations discussed, including the HMTA, ensure that information communicated by an owner or operator of a mobile source is passed on to the community.

Finally, the regulations also require that "emergency response information"—including immediate health hazards, precautions to be taken, and response methods for fires and spills—be included on shipping papers or similar documents that are immediately accessible to train crews.<sup>119</sup> However, as discussed previously, shipping papers may not always be accurate for a given train, even one carrying hazardous materials. Therefore, while this regulation could be a strong requirement that increases safety and emergency response capacity, it may be limited in practice.

#### D. Ohio Emergency Planning Laws

At first glance, Ohio's emergency planning laws may seem more protective than federal law. The Ohio statute's definition of "facility" mirrors that of EPCRA: for the purpose of notice requirements only, the Ohio statute, like EPCRA, defines "facility" to include rolling stock and other mobile

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115. Others have noted that the HMTA is also lacking in communication requirements for the workers transporting hazardous materials. See, e.g., Alan E. Seneczko, *The Right-to-Know and the Trucking Industry: Regulating Regulations*, 14 *TRANSP. L.J.* 347, 369–70 (1986) ("Clearly, the DOT has exercised its regulative authority as applied to the transportation of hazardous materials and the regulations it has promulgated in this regard have numerous 'communicative' aspects. . . . [However, q]uestions also arise whether [hazmat] drivers themselves are entitled to additional information about the materials they transport.").

116. See *id.* ("[The HMTA's] original intent was not that of hazardous communication to employees, but rather, ensuring the safe passage of hazardous materials through commerce.").

117. 49 U.S.C. § 5110(e).

118. *Id.*

119. 49 C.F.R. § 172.602.

sources.<sup>120</sup> However, the Ohio statute requires owners or operators of facilities from which a release occurs to immediately notify any relevant community emergency coordinator, fire department, and environmental protection officials.<sup>121</sup> This standard appears more protective than EPCRA because it requires immediate notification not only to 911, but also directly to the community emergency coordinator and environmental protection officials.

Upon further investigation, though, the responsibilities of transportation operators are significantly less than they appear. The state regulations require notification only to the Ohio Environmental Protection Agency's (Ohio EPA) emergency response unit and 911.<sup>122</sup> Like the NRC, which receives notification under CERCLA if a reportable hazardous chemical is released, Ohio EPA's emergency response unit will contact its own state-level OSC if an immediate response is necessary.<sup>123</sup> Like federal OSCs, state-level OSCs are "available to help first responders address" events like chemical spills and do not serve a public communications role.<sup>124</sup> While operators "may" immediately notify the relevant community emergency coordinator, they are not in fact required to.<sup>125</sup> Therefore, the same massive gap plagues Ohio risk communication regulations and federal regulations: no requirement exists to ensure that information about an emergency is promptly communicated to the public.

It is also unlikely that this difference in state law is, as a practical matter, any more protective than the federal regulations. Given the interstate nature of freight trains, train crews may not necessarily be familiar with each state's emergency management laws. As Ohio EPA's own manual states, "[t]ransportation accidents (rail, commercial vehicle, barge, etc.) frequently involve operators who may not be familiar with Ohio's spill reporting requirements or may be incapacitated."<sup>126</sup> Because of state-to-state differences in emergency notification laws, having a more protective state law only does so much. Once the federal government raises the bar for risk

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120. Compare OHIO REV. CODE ANN. § 3750.01(D) (including rolling stock under the definition of "facility" only for the purpose of § 3750.06, "Notice of release of hazardous substance"), with 42 U.S.C. § 11049(4) (including rolling stock under the definition of "facility" only for the purpose of § 11004, "Emergency notification").

121. OHIO REV. CODE ANN. § 3750.06(C).

122. OHIO ADMIN. CODE 3750-25-25(A)(1)(c).

123. OHIO ENV'T PROT. AGENCY, EMERGENCY RESPONSE PROGRAM 1 (2019), <https://epa.ohio.gov/static/Portals/33/documents/ERProgram.pdf>.

124. *Emergency Response*, OHIO ENV'T PROT. AGENCY, <https://epa.ohio.gov/divisions-and-offices/emergency-response> (last visited May 4, 2023).

125. *Id.*; cf. 2004 Op. Ohio Att'y Gen. No. 2004-039, at 2-356 (explaining that an owner or operator of a motor vehicle or airplane that has an accident resulting in the release of a hazardous substance "is not required to provide immediate verbal notice directly to the local emergency planning district").

126. Ohio Env't Prot. Agency, *supra* note 123.

communications, however, owners and operators may be more likely to consistently comply.

Still, the slightly higher degree of communication required under Ohio's state regulations is a positive step. Ohio's notice provision requires spills to be reported to Ohio EPA's 24-hour emergency response office,<sup>127</sup> which may increase first responders' efficiency and effectiveness. Furthermore, the Ohio statutes and regulations significantly depart from EPCRA in follow-up requirements. While EPCRA does not require owners or operators of mobile sources to submit written follow-up after releases, Ohio's regulations do. The state regulations require written follow-up to both Ohio EPA and the relevant LEPC district's community emergency coordinator.<sup>128</sup> Providing this report to the community emergency coordinator creates a direct pipeline for information to flow from a mobile source's owner or operator to residents of the affected community. However, the requirement does not address the issue of providing risk communications in the immediate aftermath of a release. Instead, it requires follow-up "[a]s soon as practicable but no later than thirty days after the release."<sup>129</sup> Therefore, there is still a great need for stronger risk communication regulations to better protect railside communities immediately following a release.

Even if every person, corporation, and agency abided fully by every state and federal risk communication protocol, the residents of East Palestine and its surrounding areas would still not have been adequately informed. Major gaps in current risk communication law require a variety of solutions to better protect the public.

### III. PROPOSED SOLUTIONS

This Part discusses three varied solutions that would help remedy this communication gap and increase railside communities' capacity to prepare for and respond to chemical releases. These solutions address a range of issues, including corporate transparency, labor and infrastructure, and testing frameworks, recognizing that there is no one entity that failed East Palestine. A multiplicity of problems compounded to create the disaster; therefore, to

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127. OHIO ADMIN. CODE 3750-25-25(A)(1)(a).

128. OHIO ADMIN. CODE 3750-25-25(A)(2)(a); *see* OHIO REV. CODE ANN. § 3750.06(D); *cf.* 2004 Op. Ohio Att'y Gen. No. 2004-039, at 2-356 (explaining that an owner or operator of a motor vehicle or airplane that has an accident resulting in the release of a hazardous substance is still required to "provide both Ohio EPA and the committee of the local emergency planning district with a written follow-up emergency notice").

129. OHIO ADMIN. CODE 3750-25-25(A)(2)(a); *see* OHIO REV. CODE ANN. § 3750.06(D) (mandating that the owner or operator of a facility or vessel from which a statutory release occurred shall submit follow-up emergency notice of the release within 30 days).

address the communications issues in East Palestine and other raiiside communities, it is necessary to implement a multiplicity of solutions.

*A. Increasing Corporate Transparency and Accountability*

Governments on all levels should be doing more to provide proactive risk communications to the communities they serve. At the same time, though, governments themselves can suffer from communication gaps with rail companies due to the lack of mandatory reporting requirements. Although stronger public risk communication regulations are needed to serve raiiside communities, so too are stronger industry regulations needed to ensure transparency and proactive communications from railroad corporations like Norfolk Southern.

While this Article focuses on risk communication and response from public entities, Norfolk Southern played a large role in the bungled immediate response, according to Ohio EPA Director Anne Vogel and Beaver County, Pennsylvania Emergency Management Director Eric Brewer.<sup>130</sup> Even in the face of its own faults, the company has not committed to supporting more stringent railroad safety standards or providing long-term restitution and assistance to residents affected by the derailment.<sup>131</sup> Clearly, public pressure is insufficient to compel railroad companies like Norfolk Southern to take the steps necessary to prevent similar disasters and improve response going forward. Therefore, government intervention is necessary.

One bill has already been introduced in the United States Senate to demand greater communication from railroad companies. The Railway Safety Act of 2023, introduced on March 1, 2023 by a bipartisan alliance of conservative and progressive senators,<sup>132</sup> seeks to “enhance safety requirements for trains transporting hazardous materials.”<sup>133</sup> At the time of

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130. *Committee Hearing*, *supra* note 10 (statements of Anne Vogel, Director, Ohio Env’t Prot. Agency, and Eric Brewer, Director and Chief of Hazardous Materials Response, Beaver County Department of Emergency Services).

131. Stephen Groves & Josh Funk, *Railroad CEO “Sorry,” but Avoids Specifics at Senate Hearing*, ASSOCIATED PRESS (Mar. 9, 2023, 5:32 PM), <https://apnews.com/article/ohio-train-derailment-ceo-norfolk-southern-railroad-e709db3c9945a35c8b92b99e2ba82b2e>; *see Committee Hearing*, *supra* note 10 (statement of Alan Shaw, President and CEO, Norfolk Southern Corporation) (failing to commit to better safety standards or long-term restitution for residents).

132. *S.576 - Railway Safety Act of 2023: Cosponsors*, CONGRESS.GOV, <https://www.congress.gov/bill/118th-congress/senate-bill/576/cosponsors?s=1&r=16> (last visited Sept. 22, 2023) (demonstrating that sponsors and cosponsors include Republicans J.D. Vance of Ohio, Marco Rubio of Florida, and Josh Hawley of Missouri to Democrats Sherrod Brown of Ohio, John Fetterman of Pennsylvania, and Bob Casey of Pennsylvania).

133. *Railway Safety Act of 2023*, S. 576, 118th Cong. (2023). Importantly, the DOT has also taken action in the wake of the derailment. In June 2023, it published a Notice of Proposed Rulemaking proposing to “require all railroads to generate in electronic form, maintain, and provide to first responders,

writing, an amended version of the Railway Safety Act has passed the Senate's Committee on Commerce, Science, and Transportation and is awaiting a Senate floor vote before moving on to the House of Representatives, where a companion bill has been filed.<sup>134</sup> The Senate Bill remains stalled due in no small part to the rail industry's lobbying efforts.<sup>135</sup>

The Railway Safety Act aims to address the exact communications gap experienced in East Palestine. It would require rail carriers to "generate accurate, real-time, and electronic train consist information" and provide "commodity flow reports" for hazardous materials to each state's SERC, reporting, among other facts, a weekly estimate of the number of hazmat trains traveling through each county, the type of hazardous materials transported, and applicable emergency response information.<sup>136</sup> These provisions together could help mitigate the risk created by EPCRA's transportation exemption by requiring communication between hazmat train operators and the emergency officials designated under EPCRA.

Whether the SERC must pass this information to the relevant LEPC or to the public would depend on the exact rules promulgated by the Secretary of Transportation under this Act. Nevertheless, requiring rail carriers to ensure the availability of train consist information and to provide SERCs with advance notice and information about the hazardous materials moving through their states has the power to make a significant difference in the level of emergency preparedness. Specifically, in the event of an emergency, these provisions would significantly improve the effectiveness and safety of local first responders and the broader community.

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emergency response officials, and law enforcement personnel, certain information regarding hazardous materials in rail transportation to enhance emergency response and investigative efforts." Hazardous Materials: FAST Act Requirements for Real-Time Train Consist Information, 88 Fed. Reg. 41541 (June 27, 2023). At the time of this writing, the public comment period has closed, and the DOT has yet to promulgate a final rule.

134. Press Release, U.S. Senate Comm. on Com., Sci., & Transp., Bipartisan Railway Safety Act Heads to Senate Floor (May 10, 2023), <https://www.commerce.senate.gov/2023/5/bipartisan-railway-safety-act-heads-to-senate-floor>; *Railway Safety Act Advances Out of Committee (Second Update)*, TRAINS (May 10, 2023), <https://www.trains.com/trn/news-reviews/news-wire/railway-safety-act-advances-out-of-committee/>; see Railway Safety Act of 2023, H.R. 1674, 118th Cong. (2023). United States representatives from Ohio also introduced a similar bill in the House that largely reproduces the text of the Railway Safety Act, minus several provisions, including the two-person crew requirement, discussed *infra*, Section III.B. See Reducing Accidents in Locomotives (RAIL) Act, H.R. 1633, 118th Cong. (2023).

135. Prem Thakker, *Norfolk Southern Spent \$1.9 Million in Washington as Congress Weakened Rail Safety Bill*, THE INTERCEPT (Aug. 18, 2023), <https://theintercept.com/2023/08/18/norfolk-southern-rail-safety-lobby-congress/>; Abigail Bottar, *Railway Safety Act Is Slowed Not Stalled, Sen. Sherrod Brown Says*, IDEASTREAM PUB. MEDIA (Sept. 20, 2023, 5:05 PM), <https://www.ideastream.org/government-politics/2023-09-20/railway-safety-act-is-slowed-not-stalled-sen-sherrod-brown-says>.

136. S. 576 § 102 (as approved by S. Comm. on Com., Sci., & Transp., May 10, 2023); see William C. Vantuano, *S.576 Out of Committee. What Next?*, RAILWAY AGE (May 10, 2023), <https://www.railwayage.com/regulatory/s-576-out-of-committee-what-next/>.

Still, the Act could create even stronger emergency preparedness if it required additional, proactive notification to the impacted LEPCs. To ensure communities are as well-equipped with information as possible, the Secretary should explicitly require the information to be passed directly to the relevant LEPCs in any rule they put forth. As discussed, EPCRA requires releases from stationary facilities to be immediately reported to all relevant SERCs and LEPCs, and mobile sources should be treated no differently. LEPCs are responsible for communication with the public. Promptly providing information to both SERCs and LEPCs, rather than solely SERCs, will ensure that LEPCs have the information needed to respond promptly and effectively to chemical emergencies and communicate risks to the public.

### *B. Fixing Rail Infrastructure and Labor Issues*

The NTSB has zeroed in on a mechanical issue—an overheated wheel bearing—as the ultimate cause of the train’s derailment.<sup>137</sup> Among trains that derail while moving faster than 25 miles per hour, bearing failures are the second most common cause of derailment.<sup>138</sup> Other infrastructure issues, including broken rails and wheels, rank first and third, respectively.<sup>139</sup> Clearly, rail infrastructure improvements would go a long way to prevent hazmat trains from derailling in the first place. But these mechanical failures are also inextricably tied to the labor issues in the railway industry.

With the introduction of Precision-Scheduled Railroading (PSR) among U.S.-based rail carriers in the late 2010s, railroads are running longer trains with significantly fewer staff.<sup>140</sup> These personnel cuts include a 26.7% reduction in train operating crews and an astonishing 39.8% reduction in equipment maintenance workers across Class I rail carriers, including Norfolk Southern.<sup>141</sup> These cuts have a direct impact on railway safety: decreased numbers of maintenance employees, combined with a PSR-driven “focus on moving trains out of yards as quickly as possible,” have led to deferred maintenance.<sup>142</sup> PSR has also led to rushed train inspections. Clyde

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137. NAT’L TRANSP. SAFETY BD., NORFOLK SOUTHERN RAILWAY TRAIN DERAILMENT WITH SUBSEQUENT HAZARDOUS MATERIAL RELEASE AND FIRES, PRELIMINARY REPORT NO. RRD23MR005 2–3 (Feb. 23, 2023), <https://www.nts.gov/investigations/Documents/RRD23MR005%20East%20Palestine%20OH%20Prelim.pdf> [hereinafter NTSB REPORT].

138. See Xiang Liu et al., *Analysis of Causes of Major Train Derailment and Their Effect on Accident Rates*, 2289 TRANSP. RSCH. REC. 154, 160–61 (2012) (describing the results of a scientific study conducted to determine the likelihood of train derailment and showing the results in a bar graph).

139. *Id.*

140. U.S. GOV’T ACCOUNTABILITY OFF., GAO-23-105420, FREIGHT RAIL: INFORMATION ON PRECISION-SCHEDULED RAILROADING 13, 15 (2022).

141. *Id.* at 15.

142. *Id.* at 23.

Whittaker, Ohio State Legislative Director of the Transportation Division of the union SMART, covering sheet metal, air, rail, and transportation workers, explains, “[Brotherhood of Railway] Carmen were inspecting cars about three minutes per car. That’s always been the industry standard. Now it’s ninety seconds per car.”<sup>143</sup> It is not difficult to imagine how deferred maintenance and shorter inspections can lead to more prevalent mechanical failures similar to the one that derailed the train in East Palestine.

The Railway Safety Act also aims to address these labor and maintenance concerns. The bill mandates that “[n]o railroad may limit the time required for an employee to complete a railcar, locomotive, or brake inspection,”<sup>144</sup> an addition that aims to directly remedy the issue of rushed inspections. Additionally, § 107 of the bill—known as the Safe Freight Act of 2023—would require a minimum crew size of two (one certified conductor and one certified engineer).<sup>145</sup> While the East Palestine train had three crew members,<sup>146</sup> many Class I trains operate with only one crew member.<sup>147</sup> While some studies have noted that there is no evidence indicating that operating trains with two-person crews as opposed to one-person crews inherently increases safety,<sup>148</sup> mandating two-person crews “ensur[es] that sufficient, well-trained railroad staff are available for safe operation and response in the aftermath of any derailment,” bolstering “safety margins and redundancies.”<sup>149</sup>

One other significant issue exacerbated by PSR is increasingly long freight trains. Longer trains can increase stress on car couplings and tracks, aggravating pre-existing deficiencies and potentially leading to

143. John Russell, *Railroaded. The Norfolk Southern Disaster in East Palestine, Ohio. Part One.*, HOLLER (Feb. 11, 2023), <https://www.theholler.co/p/railroaded-the-norfolk-southern-disaster>.

144. S. 576 § 105(a)(1) (as passed by S. Comm. on Com., Sci., & Transp., May 10, 2023).

145. *Id.* § 107(b). Notably, less than two months after the derailment, Ohio state legislators passed a bill mandating two-person crews, among other measures. Samantha Hendrickson, *Ohio Governor Signs Rail Safety Measures into Law*, ASSOCIATED PRESS (Mar. 31, 2023, 4:16 PM) <https://apnews.com/article/ohio-transportation-budget-rail-safety-derailment-bc3e97140763a5accd8bc40cfa664611>. However, a railroad industry group sued to block the law, which remains in limbo while the case is pending. Julie Carr Smyth, *Railroad Industry Sues to Block Limit on Crew Sizes That Ohio Imposed After E. Palestine Derailment*, ASSOCIATED PRESS (July 6, 2023, 4:50 PM), <https://apnews.com/article/rail-safety-ohio-crew-size-derailment-lawsuit-429df55468cc112d7057d4dd1def5322>; Compl., *Ass’n of Am. R.Rs. v. Yost*, No. 2:23CV02096 (S.D. Ohio, June 29, 2023).

146. Chris Isidore, *Despite Toxic Disaster, Railroads Still Want Single-Person Crews*, CNN, <https://www.cnn.com/2023/03/04/business/east-palestine-derailment-single-person-rr-crew-rule/index.html> (Mar. 4, 2023, 1:53 PM).

147. See OLIVER WYMAN, CREW-RELATED SAFETY AND CHARACTERISTIC COMPARISON OF EUROPEAN AND US RAILWAYS 3 (2021), <https://raillaborfacts.org/wp-content/uploads/2022/09/Carriers-Exhibit-11-Report-of-Oliver-Wyman-Comparison-of-European-and-US-Railways.pdf> (discussing American versus European railway crew requirements).

148. *Id.* at 67.

149. SHERROD BROWN ET AL., THE RAILWAY SAFETY ACT OF 2023 1, 2 (2023), [https://www.brown.senate.gov/imo/media/doc/one-pager\\_for\\_railway\\_safety\\_act\\_of\\_2023.pdf](https://www.brown.senate.gov/imo/media/doc/one-pager_for_railway_safety_act_of_2023.pdf).



derailments.<sup>150</sup> Longer trains also take longer to stop because each individual railcar receives braking signals sequentially.<sup>151</sup> Therefore, brake signals take longer to travel from the lead locomotive to the last car, a delay that rail workers say could also lead to derailments.<sup>152</sup>

In East Palestine, there is no official evidence or statement regarding the impact of the train's length—almost two miles<sup>153</sup>—on its derailment; however, some believe that the effects of the derailment could have been mitigated by running a shorter or lighter train.<sup>154</sup> Reports show that crews began decelerating the train as soon as a defect detector known as a “hotbox detector” (also known as a “hot bearing detector” or HBD) transmitted a “critical audible alarm message” due to the overheated bearing on the train.<sup>155</sup> However, by the time the train came to a full stop, it had already partially derailed.<sup>156</sup> The train had been traveling below the maximum allowable speed,<sup>157</sup> indicating that another factor, such as its length or weight, prevented the train from being able to stop before derailing.

Finally, while infrastructure breakdowns such as bearing failures continue to be the leading cause of derailments in freight trains traveling over 25 miles per hour,<sup>158</sup> increasing the frequency of HBDs on tracks and standardizing the temperatures at which action is required may help prevent derailments. HBDs are placed on rail tracks at differing intervals and are designed to measure the temperature of a train's bearings as it passes through, sending alarms to the train crew only if a bearing's temperature reads over a certain pre-designated threshold.<sup>159</sup> Currently, the DOT does not regulate HBDs; instead, each individual railroad company creates its own standards for how often they should be placed and at what temperatures crews must slow or stop the train for inspection.<sup>160</sup> On Norfolk Southern's lines, the

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150. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 140, at 23.

151. U.S. GOV'T ACCOUNTABILITY OFF., GAO-19-443, RAIL SAFETY: FREIGHT TRAINS ARE GETTING LONGER, AND ADDITIONAL INFORMATION IS NEEDED TO ASSESS THEIR IMPACT 7 (2019), <https://www.gao.gov/assets/gao-19-443.pdf>.

152. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 140, at 24–25.

153. Michael Kaplan, *Excess Size Caused Train to Break Down in Days Before It Derailed in Ohio, Employees Say*, CBS NEWS, <https://www.cbsnews.com/news/ohio-train-derailment-east-palestine-norfolk-southern-excess-size/> (Feb. 15, 2023, 7:12 PM).

154. *Id.*

155. See NTSB REPORT, *supra* note 137, at 2–3.

156. *Id.* at 3.

157. *Id.* at 2.

158. Xiang Liu et al., *Analysis of Causes of Major Train Derailment and Their Effect on Accident Rates*, 2289 TRANSP. RSCH. REC. 154, 161 (2012).

159. ASS'N OF AM. R.R.S., FREIGHT RAIL TECHNOLOGY (2023), <https://www.aar.org/wp-content/uploads/2022/06/AAR-Technology-Fact-Sheet.pdf>.

160. Safety Advisory 2023-03; Accident Mitigation and Train Length, 88 Fed. Reg. 13,494, 13,496 (Mar. 3, 2023).

average distance between HBDs is 13.9 miles,<sup>161</sup> and the company requires that crews stop and inspect cars when bearings are between 170°F and 200°F above ambient temperature—temperatures that are designated “non-critical.”<sup>162</sup>

The National Transportation Safety Board (NTSB) notes that the East Palestine train passed three HBDs before derailing. The first recorded the defective bearing at 38°F above ambient.<sup>163</sup> The second, about 10 miles later, recorded the bearing’s temperature at 103°F above ambient.<sup>164</sup> The third, almost 20 miles later, recorded the bearing’s temperature at 253°F above ambient, significantly hotter than the top of the non-critical temperature range and enough to trigger an alarm instructing the crew to stop.<sup>165</sup> In the 20-mile gap between the second and third HBDs, the bearing temperature skyrocketed 150°F from a safe temperature to a “critical” temperature.<sup>166</sup> Had there been more frequent HBDs, the crew could have received warning with enough time to stop the train before the derailment.

This lack of HBDs is yet another issue that the Railway Safety Act aims to address. The Act would require Class I rail carriers to develop and submit wayside defect detector network plans.<sup>167</sup> The original version of the bill would have mandated HBDs every 10 miles,<sup>168</sup> a safety measure that may have prevented the East Palestine derailment. In its current form, the bill would require HBDs at intervals ranging from 10 to 20 miles, depending on the presence of other types of detectors and whether the train is traveling into an urban area.<sup>169</sup> This standard is not as protective as the one originally proposed, and may in practice make little difference given the average distance between HBDs on Norfolk Southern’s tracks, for example. Nevertheless, a willingness to regulate HBDs at all represents a step forward that could help address the root cause of derailments and prevent them from occurring in the first place.

### *C. Implementing Community-Informed Risk Communications*

One final strategy that risk communicators can immediately implement to improve ongoing risk communication in East Palestine is the framework

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161. Press Release, Norfolk Southern, Norfolk Southern Announces Six-Point Safety Plan (Mar. 6, 2023), <https://nscorp.mediaroom.com/2023-03-06-Norfolk-Southern-announces-six-point-safety-plan>.

162. NTSB REPORT, *supra* note 137, at 3. Norfolk Southern also has an established alarm threshold for temperature differences between bearings on the same axle, *id.*

163. *Id.*

164. *Id.*

165. *Id.*

166. *Id.*

167. S. 576 § 106(a) (as passed by S. Comm. on Com., Sci., & Transp., May 10, 2023).

168. *Id.* § 5(b)(1) (as introduced in Senate, Mar. 1, 2023).

169. *Id.* § 106(a) (as passed by S. Comm. on Com., Sci., & Transp., May 10, 2023).

of community-based participatory research (CBPR). CBPR's aim is to incorporate community members in the research process, making them "equal partner[s]" with scientists.<sup>170</sup> The growing interest in CBPR was borne out of a response to traditional, extractive scientific research in which outsider scientists enter a community, collect data without community direction, and use the data solely for their own purposes.<sup>171</sup> The CBPR framework recognizes that community members should be research participants and partners, rather than mere subjects, and that members have a valuable "store of first-hand experience and knowledge that is important, relevant, and can challenge scientific expertise."<sup>172</sup> Community members bring valuable perspectives as the people "whose health, lives, livelihood, and culture are affected" by the consequences of risk communication.<sup>173</sup> It is essential that the residents of East Palestine and surrounding towns are partners in risk assessment and communication.

CBPR has great potential to increase trust between government officials and the public. If community members do not trust the research behind health knowledge, "they question the validity" of that knowledge.<sup>174</sup> By allowing community members to help guide the research process, government officials can "overcome a history of community distrust."<sup>175</sup> Additionally, residents can "gain confidence and a greater sense of legitimacy by seeing their experiences and views embedded in a scientific process in which they participated."<sup>176</sup>

In East Palestine, there is clearly distrust that needs to be mended and trust that needs to be earned. Many residents feel that their legitimate health concerns and observations are being ignored, and that they cannot trust the repeated assertions from all levels of government that the air and water are safe.<sup>177</sup> Simply listening to and respecting the lived experiences of these community members is an essential first step towards effective risk

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170. *Community-Based Participatory Research Program (CBPR)*, NAT'L INST. ON MINORITY HEALTH & HEALTH DISPARITIES, <https://www.nimhd.nih.gov/programs/extramural/community-based-participatory.html> (Oct. 2, 2018); see also *What is CBPR?*, DETROIT URB. RSCH. CTR., <https://detroiturc.org/about-cbpr/what-is-cbpr> (last visited May 4, 2023) (describing the model of community-based participatory research programs).

171. Steve Wing et al., *Integrating Epidemiology, Education, and Organizing for Environmental Justice: Community Health Effects of Industrial Hog Operations*, 98 AM. J. PUB. HEALTH 1390, 1396 (2008).

172. Crystal Adams et al., *Disentangling the Exposure Experience: The Roles of Community Context and Report-Back of Environmental Exposure Data*, 52 J. HEALTH & SOC. BEHAV. 180, reprinted at NAT. LIBRARY MED.: PUBMED CENTRAL 1, 4 (2011), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3175404/pdf/nihms316097.pdf>.

173. Joanna Burger, *Trust and Consequences: Role of Community Science, Perceptions, Values, and Environmental Justice in Risk Communication*, 42 RISK ANALYSIS 2362, 2363 (2022).

174. Adams et al., *supra* note 172, at 15.

175. *Id.*

176. Wing et al., *supra* note 171.

177. See, e.g., Jones, *supra* note 18.

communication.<sup>178</sup> Officials should of course produce research that responds to governmental concerns, such as whether levels of individual hazardous chemicals in the atmosphere violate existing environmental regulations. But officials should also conduct research that “respond[s] most directly to the concerns of exposed communities,”<sup>179</sup> such as the symptoms residents have experienced since the derailment and the lingering chemical stench. This kind of fluid risk assessment and communication may take longer than traditional frameworks, but it will ultimately produce better results for and relationships with communities.<sup>180</sup>

#### CONCLUSION

In this Article, I have outlined how Rust Belt, railyard communities like East Palestine, Ohio are uniquely vulnerable to crises like the East Palestine train derailment. Due to gaps in risk communication laws and regulations, these communities are also at a greater risk of being under- or uninformed when emergencies occur. We must hold railroad companies accountable by requiring hazardous materials transportation disclosure and instituting regulations that ensure existing communication gaps are filled. Doing so will increase the safety of both hazmat trains and railyard communities and prevent similar communication failures in the future. Further, by instituting common-sense labor and infrastructure improvements in the rail industry, particularly through enactment of the Railway Safety Act of 2023, lawmakers and regulators can prevent these kinds of derailments from occurring in the first place. Finally, officials can foster public trust by responding to the concerns and lived experiences of community members like East Palestine residents, thereby making them partners in risk assessment and research. These measures can ensure effective risk communications and mitigate ongoing environmental injustices.

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178. Burger, *supra* note 173, at 2367.

179. Wing et al., *supra* note 171; Burger, *supra* note 178, at 2371 (“Community responses to risk communication directed at only one stressor (e.g., mercury, cesium, or some other chemical) will likely be unsuccessful because the message does not address the community questions or needs.”). In response to the East Palestine derailment, some experts have recommended the use of nontargeted mobile air sampling. See Oladayo Oladeji et al., *Air Pollutant Patterns and Human Health Risk Following the East Palestine, Ohio Train Derailment*, 10 ENV'T SCI. & TECH. LETTERS 680, 684 (2023). While targeted analyses measure only levels of specified stressors, nontargeted analyses allow researchers to identify abnormal concentrations of chemicals beyond the scope of targeted testing. When researchers deployed nontargeted mobile air sampling to East Palestine, for example, they found “numerous other chemicals with increased levels in East Palestine compared to the local rural background,” chemicals which had not been previously identified or sampled by the EPA, *id.*

180. Burger, *supra* note 173, at 2367.