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Taking a Page from the FDA's Prescription Medicine Information Rules: Reimagining Environmental Information for Climate Change

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TAKING A PAGE FROM THE FDA'S PRESCRIPTION MEDICINE INFORMATION RULES: REIMAGINING ENVIRONMENTAL INFORMATION FOR CLIMATE CHANGE

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I. INTRODUCTION

In August 2017, Hurricanes Harvey and Irma hit the southern United States in rapid succession. These massive hurricanes wrought widespread devastation—destroying buildings, flooding neighborhoods, and taking lives.[1] Harvey shattered the national rainfall record for a single storm, dropping more than fifty inches of rain in thirty-six hours.[2] The rest of the country watched in shock as stranded Houstonians waded through chest-deep floodwaters. Those residents were not merely wading through water; they were wading through a toxic stew. Those same floodwaters that filled the streets inundated scores of industrial facilities and at least thirteen of Houston's forty-one Superfund sites.[3] Floodwater carried contaminants and fugitive chemicals from those deluged Superfund sites into densely populated areas of the city. Indeed, hurricane floodwaters notoriously carry all manner of contaminants, from pesticides and landfill waste to the contents of inundated chemical waste storage containers.[4] The problem is particularly severe in industry-heavy cities such as Houston, where floodwater travels from industrial stockyards and production plants through

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1. Hurricanes Harvey, Irma, and Maria were especially intense and long-lasting due to climate change. Warm seas brought extraordinary amounts of rain that stalled over major municipalities in the Gulf of Mexico and Caribbean. Emily Schuckburgh et al., *Hurricanes Harvey, Irma and Maria: How Natural Were These 'Natural Disasters'?*, 72 WEATHER 353, 353 (2017) ("So in conclusion, it is clear that human activities have raised the risks of various aspects of hurricane damage.").

2. Brian Resnick, *Harvey Broke a National Rainfall Record for a Single Tropical Storm*, VOX (Aug. 29, 2017, 5:33 PM), https://www.vox.com/science-and-health/2017/8/29/16221542/hurricane-harvey-rainfall-record-houston.

3. *Status of Superfund Sites in Areas Affected by Harvey*, U.S. ENVTL. PROTECTION AGENCY (Sept. 2, 2017), https://www.epa.gov/newsreleases/status-superfund-sites-areas-affected-harvey (describing sites designated for cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a federal law that tasks polluters with paying to clean up the sites they pollute).

4. Alexandra Sifferlin, *Here's How Dirty Flood Water Really Is*, TIME (Aug. 29, 2017, 10:14 AM), http://time.com/4919355/can-flood-water-make-you-sick/ (describing the network of waterways that exacerbate Houston's floods).

the bayous, channels, and temporary waterways, leaving toxic water and other chemical hazards in its wake.[5]

The Texan first responders dispatched to the flooded Arkema chemical plant in Crosby, Texas found this out first-hand. The Arkema plant manufactures organic peroxides used in plastics and rubbers.[6] During Hurricane Harvey, water flooded the plant's backup generators, cutting off power to the refrigeration system that kept the plant's chemicals at a safe, non-flammable temperature.[7] Without refrigeration, the chemicals exploded, sending forty-foot plumes of toxic chemicals into the air and floodwaters.[8] First responders rushing to deal with the crisis faced thick, toxic fumes.[9] Unfortunately, those first responders were not armed with critical knowledge about the likely composition of those fumes.[10] Many collapsed.[11] Police officers and medical personnel were "doubled over vomiting, unable to breathe."[12]

Deliberate choices to hide chemical hazard data sent these first responders into harm's way unprepared.[13] In 2014, flouting national disaster preparedness laws Texas's then-Attorney General, Greg Abbott,[14] restricted access to Arkema's chemical records citing potential "terroristic activities."[15] This decision made the records detailing the toxic chemicals

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5. Tom Dart, *'The Bayou's Alive': Ignoring It Could Kill Houston*, GUARDIAN (Dec. 20, 2017, 2:00 AM), https://www.theguardian.com/cities/2017/dec/20/bayou-houston-flood-hurricane-harvey-texas-resilience; Darryl Fears & Brady Dennis, *Harvey's Flooding Spurs Concerns About Houston's Toxic Waste Sites*, TEX. TRIB. (Aug. 29, 2017, 4:00 PM), https://www.texastribune.org/2017/08/29/houstons-flood-threatens-turn-polluted-superfund-sites-toxic-gumbo/.

6. Shelby Lin Erdman, *What Is the Arkema Plant and What Do They Make?*, ATLANTA J. CONST. (Aug. 30, 2017), https://www.ajc.com/weather/hurricanes/what-the-arkema-plant-and-what-they-make/M28F4CrhRY9hk0JdRffuhJ/.

7. Ari Natter & Laura Brubaker Calkins, *Harvey Responders Say They Were Sickened by Chemical Plant Blaze*, WINSTON-SALEM J. (Sept. 7, 2017), https://www.journalnow.com/news/nation_world/harvey-responders-say-they-were-sickened-by-chemical-plant-blaze/article_e28bc1aa-33dc-5e30-ba58-026545104cb3.html.

8. *Id.*

9. *Id.*

10. *Id.*

11. *Id.*

12. *Id.*

13. Natter & Calkins, *supra* note 7.

14. Greg Abbott was elected governor of Texas in 2014, and he was overwhelmingly re-elected in November 2018. Brett Samuels, *Texas Governor Greg Abbott Wins Reelection*, HILL (Nov. 6, 2018, 9:10 PM), https://thehill.com/homenews/campaign/414274-texas-governor-wins-re-election.

15. Emma Platoff & Jim Malewitz, *Crosby Plant Explosion Highlights State Efforts to Block Access to Chemical Information*, TEX. TRIB. (Sept. 1, 2017, 4:00 PM), https://www.texastribune.org/2017/09/01/crosby-plant-explosion-highlights-state-efforts-limit-access-informati/.

stored and used in the Arkema plant almost impossible to access. As a result, the Arkema first responders were hampered by a lack of knowledge about the hazards they faced as they struggled to contain dangerous chemical fires.[16]

The Arkema disaster highlights the importance of access to chemical data when natural disasters strike. Lack of information put the Arkema first responders in jeopardy.[17] Unfortunately, this is not an isolated incident.[18] Hazardous chemical releases have injured thousands of people across the country.[19] An explosion at the Bayer Crop Science plant in Institute, West Virginia killed two employees and injured eight others,[20] and a pipe failure at a Chevron Refinery in Richmond, California sent 15,000 people to the hospital.[21] Overall, the U.S. Chemical Safety and Hazard Investigation Board (CSB), which investigates chemical accidents to protect workers, has responded to more than 800 chemical release incidents since 1998.[22] As climate change-supercharged natural disasters threaten industrial infrastructure with high winds, flood waters, intense heat, wildfire, and mudslides, chemical hazards are far more likely.[23] Ordinary safety mechanisms often fail in extraordinary weather conditions.[24] Temperature and pressure controls that prevent chemical explosions, as well as structures

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16. Natter & Calkins, *supra* note 7.

17. *See, e.g., id.*

18. U.S. CHEM. SAFETY & HAZARD INVESTIGATION BD., INVESTIGATION REPORT: PESTICIDE CHEMICAL RUNAWAY REACTION PRESSURE VESSEL EXPLOSION 1 (2011), https://www.csb.gov/bayer-cropscience-pesticide-waste-tank-explosion/ (follow "FINAL REPORT: Bayer CropScience" hyperlink).

19. *Id.*

20. *Id.*

21. OFFICE OF THE GOVERNOR OF CAL., IMPROVING PUBLIC AND WORKER SAFETY AT OIL REFINERIES 4 (2014), http://www.caloes.ca.gov/FireRescueSite/Documents/Refinery%20Rpt%20Feb%202014.pdf.

22. U.S. CHEM. SAFETY & HAZARD INVESTIGATION BD., https://www.csb.gov/ (last visited Nov. 12, 2018).

23. Adam B. Smith, *2017 U.S. Billion-Dollar Weather and Climate Disasters: A Historic Year in Context*, CLIMATE (Jan. 8, 2018), https://www.climate.gov/news-features/blogs /beyond-data/2017-us-billion-dollar-weather-and-climate-disasters-historic-year (discussing and providing statistics demonstrating the increasing climate and weather events).

24. The Arkema plant is a prime example of this issue. Upon investigation, the CSB found that there were no design flaws in the plant that caused the chemical breakdown and explosions, but the site's hurricane plan only prepared for up to two feet of flooding, rather than the four feet that flooded the plant during Hurricane Harvey. Jen Para, *Report: Arkema Crosby Plant Warned of Flood Risk Before Harvey*, HOUS. BUS. J. (May 24, 2018, 2:10 PM), https://www.bizjournals.com/houston/news/2018/05/24/report-arkema-crosby-plant-warned-of-flood-risk.html.

such as retaining walls and containers, are often not built to withstand extreme weather.[25]

One clear lesson that emerged from the post-mortem analysis of emergency response during Hurricane Katrina was that arming the public and first responders with adequate risk information is an imperative of effective emergency preparation and response.[26] Indeed, information access is a cornerstone of effective chemical disaster preparation.[27] When hurricanes, mudslides, and wildfires rip through cities and towns, information about the chemical hazards lurking in water-inundated storage facilities, broken refrigeration units, and plants with crippled infrastructures becomes critical to protecting human health and safety.[28] The more people know about the risks at hand, the more efficiently localities and individuals can react to chemical hazards. For this reason, disaster preparation laws, such as the Emergency Planning and Community Right-to-Know Act (EPCRA) and the Clean Air Act's Risk Management Program (RMP), contain information access provisions designed to prepare first responders and communities for chemical catastrophes.[29]

Yet, federal, state, and local governments too often fail to ensure that first responders, localities, and individuals have the information they need to prepare for chemical disasters. Policies designed to protect trade secrets and react to national security issues sometimes curb information access.[30] Since September 11, 2001, information about chemical hazards in the U.S. has been increasingly difficult to access.[31] Commercial and national security interests have undercut information access requirements enshrined in EPCRA and the RMP.[32] What's more, those information access requirements have not been properly maintained and enforced.[33]

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25. *Id.*

26. FRANCES FRAGOS TOWNSEND, THE FEDERAL RESPONSE TO HURRICANE KATRINA: LESSONS LEARNED 61–62 (2006) (discussing the more than 2,000 cases of pollution reported in the wake of the hurricane and concluding that better information access would have led to better preparation and response to the environmental threats caused by the hurricane), https://georgewbush-whitehouse.archives.gov/reports/katrina-lessons-learned/.

27. Nitesh Bharosa et al., *Challenges and Obstacles in Sharing and Coordinating Information During Multi-Agency Disaster Response: Propositions from Field Exercises*, 12 INFO. SYSTEMS FRONTIERS 49, 49–50 (2010) ("Access to core information enhances the efficiency and effectiveness of [disaster] responses as well as coordination throughout the network of responding organizations.").

28. *Id.*

29. Emergency Planning and Community Right-to-Know Act of 1986 § 301, 42 U.S.C. §§ 11001–50 (2014); Clean Air Act Risk Management Program, 42 U.S.C. § 7412(r) (2018).

30. *See infra* Part III.

31. *See infra* Part III.

32. *See infra* Part III.

33. *See infra* Part III.

As we contend with natural disasters exacerbated by climate change, we will need to redesign critical infrastructure to protect vulnerable communities. We must also ensure that those communities have access to the critical information they need for emergency preparedness and emergency response. That means redesigning our intangible information infrastructure as well.

This article proposes a partial solution to this information access crisis. It begins with an analysis of the increased chemical disaster risks posed by climate change-related extreme weather.[34] After laying this foundation about the relationship between chemical disaster risk and climate change, Part III provides an overview of the current state of federal law governing disclosure of chemical disaster risks.[35] Part IV identifies the key concerns that have been deployed by those bent on thwarting or reducing public access to chemical risk information: national security and confidential business information.[36] This section makes the case that EPCRA and the RMP, even if fully enforced, fail to equip communities adequately for the unique challenges posed by disaster-related chemical releases.[37] Part V of the paper suggests using the Food and Drug Administration's (FDA) information access model to inform the public about chemical hazards that pose risks in extreme weather events.[38] The FDA has successfully created a system to notify the public about drug safety issues while protecting trade secrets. A chemical hazard notification system modeled on the FDA paradigm could similarly inform the public while preserving sensitive trade and national security information.[39]

To prevent jeopardizing health and safety in the wake of a natural disaster, people need quick and easy access to information about potential chemical risks.[40] In regulating drug and medical device risks, the FDA has perfected modes for streamlined, easy-to-understand risk communication, using tools such as labels and inserts.[41] This article proposes it as a model

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34. *See infra* Part II.
35. *See infra* Part III.
36. *See infra* Part IV.
37. *See infra* Part IV.
38. *See infra* Part V.
39. *See infra* Part VI.
40. *See infra* Part III.
41. 21 C.F.R. § 201.56 (2018) (describing how prescription drug labels must be formatted, and what they must contain). FDA administrators identify several synonyms used for drug labels that also include several different forms of labeling, including: prescribing information, package insert, professional labeling, direction circular, and package circular. Mary E. Kremzner & Steven F. Osborne, *An Introduction to the Improved FDA Prescription Drug Labeling*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/downloads/training/forhealth professionals/ucm090796.pdf (last visited Nov. 12, 2018).

that could fruitfully be adapted to more effectively communicate chemical risk information.[42]

II. THE INCREASED RISKS OF EXTREME WEATHER POSED BY CLIMATE CHANGE

The 2017 hurricane season was intense and relentless. Seventeen named storms and ten hurricanes, six of them major,[43] formed in the seventh most active hurricane season in the historical record dating to 1851.[44] Seven storms hit the United States, and three of them caused devastating damage.[45] The National Oceanic and Atmospheric Administration (NOAA) called the 2017 hurricane season "Extremely Active" and the NOAA administrator called it "a hurricane season that wouldn't quit."[46] These storms made the 2017 hurricane season the most expensive in U.S. history, causing more than $200 billion of damage across the nation.[47] The devastation caused by the hurricanes was greater than in past storms because of the especially powerful winds and intense rainfall, which scientists blamed on warmer ocean waters.[48] While the number of weather disasters in 2017 was extreme, it was part of a trend. The frequency of weather-related disasters has increased forty-six percent since 2000.[49] Between 2005 and 2014, climate-related disasters cost $309 billion in G-20 countries alone.[50]

Scientists predict that, as climate change progresses, weather events once thought of as extreme, such as Hurricanes Katrina, Sandy, Harvey, and

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42. *See infra* Part VI.

43. National Oceanic and Atmospheric Administration (NOAA) defines a "major hurricane" as one that reaches maximum sustained 1-minute surface winds of at least 50 m/s (96 kt, 111 mph). Thus, a major hurricane would rank as a 3, 4, or 5 on the Saffir-Simpson scale. *Frequently Asked Questions, What is a major hurricane?*, NOAA, HURRICANE RES. DIVISION, http://www.aoml.noaa.gov/hrd/tcfaq/A3.html (last visited Sept. 23, 2018).

44. *Extremely Active 2017 Atlantic Hurricane Season Finally Ends*, NOAA (Nov. 30, 2017), http://www.noaa.gov/media-release/extremely-active-2017-atlantic-hurricane-season-finally-ends.

45. *Id.*

46. *Id.*

47. Willie Drye, *2017 Hurricane Season Was the Most Expensive in U.S. History*, NAT'L GEOGRAPHIC (Nov. 30, 2017), https://news.nationalgeographic.com/2017/11/2017-hurricane-season-most-expensive-us-history-spd/.

48. *Frequently Asked Questions, How might global warming change hurricane intensity, frequency, and rainfall?*, NOAA, HURRICANE RES. DIVISION, http://www.aoml.noaa.gov/hrd/tcfaq/G3.html (last visited Nov. 12, 2018).

49. Nick Watts et al., *The Lancet Countdown on Health and Climate Change: From 25 Years of Inaction to a Global Transformation for Public Health*, 391 LANCET 581, 581 (2017).

50. Elena Holodny, *Extreme Weather Events Are on the Rise*, BUS. INSIDER (Mar. 23, 2016, 10:03 AM), https://www.businessinsider.com/extreme-weather-events-increasing-2016-3.

Maria, will become more common.[51] Houston, for example, has weathered three 500-year storms in the past three years.[52] This trend is expected to continue.[53] All evidence suggests that as the climate changes, severe storms will be larger and longer-lasting, forest fires will be more frequent, and high-impact weather-related events such as droughts and heat waves will be more common and severer.[54]

Because extreme weather events dramatically increase the chances of structural or operational failures at industrial sites, they make chemical disasters far more likely.[55] The chemical disasters sparked by Hurricane Harvey are a foretaste of what we can expect going forward.[56] More than forty industrial sites, including refineries and plastics plants, released dangerous amounts of hazardous pollutants into the air after Hurricane Harvey.[57] Air emissions exceeded state limits while at least fourteen toxic waste sites experienced flooding or damage, releasing hazardous chemicals.[58] The flooded sites included the San Jacinto River Waste Pits, a Superfund site that contains carcinogenic paper mill waste.[59] The deluge of rain from Harvey damaged the Waste Pits protective cap designed to contain the waste, spreading dioxins and other toxic chemicals far and wide.[60] After

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51. *See generally* James P. Kossin et al., *Extreme Storms*, in CLIMATE SCIENCE SPECIAL REPORT: A SUSTAINED ASSESSMENT ACTIVITY OF THE U.S. GLOBAL CHANGE RESEARCH PROGRAM, 375 (Donald J. Wuebbles et al. eds., 2017), https://assets.documentcloud.org/documents/3920195/Final-Draft-of-the-Climate-Science-Special-Report.pdf.

52. Christopher Ingraham, *Houston Is Experiencing Its Third '500 Year' Flood in Three Years. How Is That Possible*?, WASH. POST: WONKBLOG (Aug. 29, 2017), https://www.washingtonpost.com/news/wonk/wp/2017/08/29/houston-is-experiencing-its-third-500-year-flood-in-3-years-how-is-that-possible/?noredirect=on&utm_term=.64 aaba2522a1.

53. *See* Kossin et al., *supra* note 51.

54. *Id.*

55. Nushin Huq, *Chemical Plants Face New Reality in Natural Disaster Preparation*, BLOOMBERG ENV'T (Nov. 15, 2017, 1:25 PM), https://bnanews.bna.com/environment-and-energy/chemical-plants-face-new-reality-in-natural-disaster-preparation.

56. Hiroko Tabuchi et al., *Floods Are Getting Worse, and 2,500 Chemical Sites Lie in the Water's Path*, N.Y. TIMES (Feb. 6, 2018), https://www.nytimes.com/interactive/2018/02/06/climate/flood-toxic-chemicals.html.

57. Troy Griggs et al., *More Than 40 Sites Released Hazardous Pollutants Because of Hurricane Harvey*, N.Y. TIMES (Sept. 8, 2017), https://www.nytimes.com/interactive/2017/09/08/us/houston-hurricane-harvey-harzardous-chemicals.html.

58. *Id.*

59. Lise Olsen & Brooke A. Lewis, *EPA: Dioxin Leaking from Waste Pits*, HOUS. CHRON. (Sept. 29, 2017), https://www.houstonchronicle.com/news/houston-texas/Houston/article/EPA-Dioxin-leaking-from-Waste-Pits-12242409.php.

60. Jack Healy & Sheila Kaplan, *Harvey Swept Hazardous Mercury Ashore. The Mystery: Its Source*, N.Y. TIMES (Sept. 6, 2017), https://www.nytimes.com/2017/09/06/science /harvey-superfund-mercury.html?rref=collection%2Fsectioncollection%2Fscience; *San Jacinto River Waste Pits Superfund Site*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/tx/sjrwp (last visited Sept. 23, 2018).

experiencing damage from the hurricane, Houston's Valero Energy refinery released dangerous levels of the carcinogen benzene into the air.[61]

The problem of toxic chemical releases in the wake of natural disasters is not unique to Hurricane Harvey. For instance, in 2012, Hurricane Sandy hit 247 Superfund sites, and one of them, the Gowanus Canal, overflowed into people's homes.[62] Similarly, scientists found toxic chemicals in the soil and groundwater affected by Hurricane Katrina in 2005.[63]

Adequate preparation for a future of extreme weather events requires more and better preparation for industrial disasters. This need is compounded as the nation's infrastructure ages, and repairs and upgrades are repeatedly postponed.[64] First responders and the public at large must be able to anticipate the health and safety hazards posed by local industrial sites associated with natural disasters.[65] Laws such as EPCRA and the RMP are meant to generate information about potential air emission risks posed by local industries and make that information available to first responders and the public.[66] However, these laws are designed to aggregate general information about industrial plants, and are not specifically tailored to the enhanced risks created by extreme weather risks associated with climate change.[67] Both laws suffer procedural and logistical deficiencies that leave

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61. Hiroko Tabuchi, *High Levels of Carcinogen Found in Houston Area After Harvey*, N.Y. TIMES (Sept. 6, 2017), https://www.nytimes.com/2017/09/06/us/harvey-houston-valero-benzene.html?smid=tw-share&_r=0.

62. Emily Atkin, *America Has a Toxic Waste Hurricane Problem*, NEW REPUBLIC (Sept. 8, 2017), https://newrepublic.com/article/144737/america-toxic-waste-hurricane-problem.

63. *Id.*

64. Eric Jaffe, *America's Infrastructure Crisis Is Really a Maintenance Crisis*, CITYLAB (Feb. 12, 2015), https://www.citylab.com/solutions/2015/02/americas-infrastructure-crisis-is-really-a-maintenance-crisis/385452/.

65. Looking at collections of CSB's incident reports reveals that many chemical disasters in the U.S. are caused in whole or in part by outdated, outmoded, and overburdened industrial infrastructure. *See CSB Issues Case Study of Formosa Plastics Point Comfort, Texas, Fire and Explosions: Unprotected Piping, Non-Fire-proofed Structures, Lack of Automatic Shutoff Valves Noted as Causes; Flame-Resistant Clothing Recommend*, U.S. CHEM. SAFETY & HAZARD INVESTIGATION BD. (July 20, 2006), http://www.csb.gov/csb-issues-case-study-of-formosa-plastics-point-comfort-texas-fire-and-explosions-unprotected-piping-non-fireproofed-structures-lack-of-automatic-shutoff-valves-noted-as-causes-flame-resistant-clothing-recommended/; U.S. CHEM. SAFETY & HAZARD INVESTIGATION BD., INVESTIGATION REPORT: REFINERY FIRE AND EXPLOSION (2007), https://www.csb.gov/bp-america-refinery-explosion/ (follow "FINAL REPORT: Final Investigation Report" hyperlink); *see also* Griggs et al., *supra* note 57 (noting that many of the plants overcome by Hurricane Harvey have spotty safety records and noted safety issues).

66. U.S. DEP'T OF HOMELAND SEC., RESOURCES FOR LAW ENFORCEMENT AND FIRST RESPONDERS (2018), https://www.dhs.gov/sites/default/files/publications/epa-cfats-law-enforcement-first-responder-resources-fs-508.pdf.

67. Congress enacted EPCRA in 1986 in order to increase public knowledge and access to information on the chemicals at individual facilities, as well as to inform the public about chemical uses and potential releases into the environment. U.S. ENVTL.

the public and first responders ill-equipped to respond to post-natural disaster chemical catastrophes.

III. EPCRA & RMP: THE CURRENT CHEMICAL RISK INFORMATION REGIME

Information access provisions are codified in most environmental laws and programs as well as other federal and state health and safety provisions. Provisions such as the Environmental Protection Agency's (EPA) oil pollution prevention regulations,[68] the U.S. Department of Transportation's Pipeline Response Plan regulation,[69] and the Department of Homeland Security's (DHS) chemical facility anti-terrorism standards,[70] regulate the collection of chemical hazard data. However, only two major provisions, EPCRA and RMP, are specifically designed to prepare the public for chemical disasters.[71] Just as housing codes are "written in blood"[72] these emergency disaster laws were reactions to past emergency preparedness failures. Specifically, EPCRA and RMP emerged in response to two Union Carbide chemical disasters: one in Bhopal, India and another in Institute, West Virginia.[73] In 1984, faulty operations at a Union Carbide pesticide

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PROTECTION AGENCY, THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT 1 (2017), https://www.epa.gov/sites/production/files/2017-08/documents/epcra_fact_sheet_overview_8-2-17.pdf . See *infra* notes 57−61 and accompanying text, for a discussion of the catastrophe that prompted this law.

68. EPA Oil Pollution Prevention, 40 C.F.R. § 112.7 (2016).

69. Department of Transportation Pipeline and Hazardous Materials Safety Administration Pipeline Safety, 49 C.F.R. §§ 190–99 (2017).

70. DHS Chemical Facility Anti-Terrorism Standards, 6 C.F.R. § 27 (2007).

71. Although both the Clean Air Act's RMP and EPCRA have information reporting and dissemination requirements, EPCRA's are distinct from those in the Clean Air Act. The hazardous chemical reporting requirements under EPCRA differ from the Clean Air Act. *Compare* 40 C.F.R. § 370 (2018), *with id.* § 68. EPCRA hazardous chemical inventory reporting (on Program 1 or Program 2 forms) applies to all hazardous chemicals, as defined by Occupational Safety and Health Administration (OSHA), with certain exemptions. *Id.* § 370.13. Information reported under the hazardous chemical inventory regulations includes the types and amounts of hazardous chemicals, location and storage information, and facility contact information. The Clean Air Act's RMP applies to a distinct set of regulated substances. *Id.* § 68.130. The RMP requirements go beyond emergency planning and reporting; they require a holistic approach to accident prevention and mitigation. Elements required under the RMP regulations vary for individual stationary sources, but generally include a hazard assessment, a prevention program, an emergency response program, and a management system. *Id.* § 68. There is also the OSHA Process Safety Management Standard (PSM), but it focuses on providing information for accident prevention to workers, not the general public, so it will not be a focus in this article. *Id.* § 68(D).

72. *See, e.g.*, Daniel Byrne, *After 100 Years: The Lessons to Be Learned from Triangle Shirtwaist,* FIREHOUSE (Mar. 18, 2011), https://www.firehouse.com/prevention-investigation/article/10463244/triangle-shirtwaist-fire-lessons-in-fire-codes-and-prevention.

73. *See supra* text accompanying note 71.

manufacturing plant in Bhopal, India led to a massive explosion.[74] More than half a million people were exposed to toxic airborne chemicals, tens of thousands died or suffered severe injuries.[75] Less than a year later, a storage tank exploded at another Union Carbide plant, this one in Institute, West Virginia.[76] The resulting toxic cloud injured scores of nearby residents.[77]

Residents in both Bhopal and Institute were caught unaware and unprepared.[78] First responders faced added dangers because they lacked knowledge about the chemical substances at issue, and thus could not take appropriate protective measures.[79] Doctors treating the injured had no idea what symptoms to expect, or what treatments would be effective.[80] These chemical disasters became human disasters, and lack of information magnified the harms.[81]

In November 1986, less than two years after the Bhopal disaster, Congress enacted EPCRA to respond to the need for accurate, timely information about chemical risks.[82] The RMP Rule was promulgated to implement 112(r) of the Clean Air Act several years later, in 1990.[83] Both statutes included sweeping public information access provisions. Through these provisions, EPCRA and RMP sought to transform industrial chemical practices "from a secretive alchemy to a publicly posted overload of papers, training materials and neighborhood emergency maps."[84] The resulting statutory and regulatory schemes provided for information disclosure to make public the chemical hazard data needed to improve awareness, planning, and preparation for potential disasters.

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74. Tim Edwards, *What Happened*, THE BHOPAL MED. APPEAL, http://bhopal.org/what-happened/ (last visited May 9, 2017).

75. *Id.*

76. Ben A. Franklin, *Toxic Cloud Leaks at Carbide Plant in West Virginia*, N.Y. TIMES (Aug. 12, 1985), http://www.nytimes.com/1985/08/12/us/toxic-cloud-leaks-at-carbide-plant-in-west-virginia.html.

77. *Id.*

78. *Id.*; Edwards, *supra* note 74.

79. Edwards, *supra* note 74.

80. *Id.*

81. *Id.*

82. Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99–499, 100 Stat. 1613 (codified as amended in scattered sections of 42 U.S.C.); *see also,* H.R. REP. NO. 99–962, at 280–81 (1986) (Conf. Rep.), *as reprinted in* 1986 U.S.C.C.A.N. 3276, 3374.

83. Accidental Release Prevention Requirements: Risk Management Programs Under Clean Air Act Section 112(r)(7), 61 Fed. Reg. 31668 (June 20, 1996) (codified at 40 C.F.R. pt. 68).

84. James T. O'Reilly, *"Access to Records" Versus "Access to Evil:" Should Disclosure Laws Consider Motives as a Barrier to Records Release?*, 12 KAN. J.L. & PUB. POL'Y 559, 563 (2002).

A. EPCRA

EPCRA was a 1986 amendment to the Comprehensive Response, Compensation, and Liability Act (commonly known as "Superfund").[85] It was introduced as part of the Superfund Amendments and Reauthorization Act (SARA).[86] EPCRA governs local and state emergency planning for potential disasters involving hazardous chemicals, the right of the public to access information on chemical hazards in their community, and the reporting responsibilities for facilities that use, store, and release hazardous chemicals.[87] The law has four major provisions: emergency planning obligations;[88] emergency release notifications;[89] reporting requirements for hazardous chemical storage;[90] and the creation of a toxic chemical release inventory.[91]

These provisions are markedly different from more traditional "command and control", "end of pipe" governance that limit hazardous discharge. Instead, EPCRA uses regulation to proactively promote chemical disaster awareness and preparation.[92] The theory behind EPCRA is that public access to data helps communities make informed decisions about the chemical hazards in their midst. The law prioritizes public participation (hence the "right-to-know" language in its title).[93] Indeed, EPCRA is the only U.S. environmental law that arguably creates a stand-alone right of environmental information access.[94]

EPCRA mandates the public availability of two major types of information: (1) emergency plans and (2) information about toxic releases.[95] While that sweep might be broad, the law's focus is fairly narrow. EPCRA

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85. Superfund Amendments and Reauthorization Act, Pub. L. No. 99–499.

86. *Id.*

87. Kevin J. Finto, *Regulation by Information Through EPCRA*, 4 NAT. RESOURCES & ENV'T 13 (1990).

88. Superfund Amendments and Reauthorization Act §§ 301–303.

89. *Id.* § 304.

90. *Id.* §§ 311–312.

91. *Id.* § 313.

92. Matthew J. Smith, *"Thou Shalt Not Violate!": Emergency Planning and Community Right-to-Know Act Authorizes Citizen Suits for Wholly Past Violations – Atlantic States Legal Foundation v. Whiting Roll Up Door Manufacturing Corp.*, 10 PACE ENVTL. L. REV. 1051, 1075 (1993).

93. At the state and local levels, stakeholders help make EPCRA-required chemical emergency plans. *Local Emergency Planning Committees*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/epcra/local-emergency-planning-committees (last visited Nov. 12, 2018).

94. Emergency Planning and Community Right-to-Know Act of 1986 § 301, 42 U.S.C. §§ 11001–50 (2014).

95. SARAH LAMDAN, ENVIRONMENTAL INFORMATION: RESEARCH, ACCESS, & ENVIRONMENTAL DECISIONMAKING 88 (2017).

mandates access to information that is likely to help reduce acute health effects from short-term exposure to chemical releases. In other words, EPCRA covers precisely the type of information that is key to ensuring the safety of civilians and first responders facing hurricanes, wildfires, flooding and other climate change-related weather events.

The most well-known information access provision in EPCRA is the one that requires the EPA to create and maintain an inventory of toxic chemicals, or Toxics Release Inventory (TRI).[96] The TRI has been credited with reducing chemical emissions in the United States by twenty-one percent since 2006.[97] While these reductions are highly significant, the TRI has also produced a less concrete but equally important outcome in the context of information policy, "serv[ing] as a constant example of the vital role information plays in a democracy, and the importance of the public's right to know."[98]

Beyond the TRI, which reports on past releases, EPCRA also helps communities plan for future emissions by providing information to the public through Local Emergency Planning Committees (LEPCs).[99] LEPCs are composed of local participants including elected officials; police, fire, civil defense, and public health professionals; environmental, transportation, and hospital officials; facility representatives; members of the media; and community groups who develop and review local emergency response plans and disseminate disaster preparation information to the public.[100] LEPC emergency response plans generally contain information such as: identification of facilities and transportation routes for extremely hazardous substances; description of on-site and off-site emergency response procedures; emergency notification procedures; predictions about areas and populations that may be affected by a hazardous substances event and evacuation plans; description of local emergency equipment and facilities and the persons responsible for them; training programs for emergency responders; and methods and schedules for exercising emergency response plans.[101] Ideally, LEPCs are hubs for chemical hazard information. If properly maintained and operated, LEPCs provide information about local

96. 42 U.S.C. § 11023.

97. U.S. ENVTL. PROT. AGENCY, TOXIC RELEASE INVENTORY (TRI) NATIONAL ANALYSIS EXECUTIVE SUMMARY (2016), https://www.epa.gov/sites/production/files/2018-01/documents/2016_tri_national_analysis_execsumm.pdf.

98. OMB WATCH, DISMANTLING THE PUBLIC'S RIGHT TO KNOW: THE ENVIRONMENTAL PROTECTION AGENCY'S SYSTEMATIC WEAKENING OF THE TOXIC RELEASE INVENTORY (2005), research.policyarchive.org/5087.pdf.

99. *Local Emergency Planning Committees*, *supra* note 93.

100. 42 U.S.C. § 11001(a).

101. *Local Emergency Planning Committees*, *supra* note 93.

chemical hazards for people wanting to learn more about how they can prepare for chemical disasters nearby.

State Emergency Response Commissions (SERCs) oversee LEPCs.[102] SERC members are designated by state governors, and SERCs coordinate LEPC activities, including establishing procedures for how LEPCs receive and process public requests for information collected and created under EPCRA.[103] SERC members usually include emergency management experts and administrators, as well as firefighting and water quality experts.[104]

B. Clean Air Act's Risk Management Plans

EPCRA is not the only federal statute dealing with public access to environmental information. Section 7412(r) of the Clean Air Act required the EPA to draft regulations and guidance to prevent chemical accidents at facilities that use, distribute, and process hazardous chemicals that pose the greatest risk of harm in accidental airborne releases of toxic or flammable gas.[105] These statutory requirements were added to the Clean Air Act in 1990.[106] It took the EPA nearly a decade to create a risk management plan program and to finalize the implementing regulations. In 1999, the EPA finally published the Risk Management Plan regulations under Section 112(r).[107] The RMP was designed to help local citizens and emergency response personnel plan for chemical accidents.[108]

The EPA created three RMP programs for RMP reporting facilities.[109] These tiers "progressively gain granularity and rigor" to address the particular scales of risks and needs at different facilities.[110] Program 1 applies a limited set of requirements to facilities perceived to pose less risk (typically those facilities with processes unlikely to affect the public even in the worst case chemical release scenario, and that have not had a major accident in the last five years).[111] On the other end of the spectrum, Program

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102. 42 U.S.C. § 11044.

103. *Id.*

104. *State Emergency Response Commissions Contacts*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/epcra/state-emergency-response-commissions-contacts (last visited Jan. 19, 2017).

105. 42 U.S.C. § 7412(r) (2014).

106. *Id.*

107. U.S. ENVTL. PROT. AGENCY, CLEAN AIR ACT SECTION 112(r): ACCIDENTAL RELEASE PREVENTION / RISK MANAGEMENT PLAN RULE (2009), https://www.epa.gov/sites/production/files/2013-10/documents/caa112_rmp_factsheet.pdf.

108. *Id.*

109. *Id.*

110. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 82 Fed. Reg. 4595 (proposed Jan. 13, 2017) (to be codified at 40 C.F.R. pt. 68).

111. 40 C.F.R. § 68.10(b); *id.* § 68.12.

3 applies to facilities that are subject to the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM) standard or classified in an especially hazardous North American Industrial Classification System code.[112] These facilities pose a greater risk to the public in chemical emergencies. Program 3 requirements include more extensive procedures and reviews for operating equipment, management, employees, and contractors.[113] Program 2 facilities are in the middle—neither eligible for Program 1 status nor falling under one of the Program 3 categories. These facilities are subject to more robust requirements than Program 1, but less than those applied to Program 3.[114]

Under the finalized RMP regulations, 15,000 facilities were subject to RMP requirements, which include the creation of hazard assessments that detail the potential effects of accidental releases, accident summaries, and evaluations of worst-case and alternative accidental release scenarios called "offsite consequence analysis" (OCA).[115] By 2008, the EPA collected risk management plans from about 14,000 facilities.[116]

These plans are supposed to be accessible to the public.[117] They are held at federal reading rooms located throughout the fifty states, and may also be available through local LEPC offices.[118] The EPA website also suggests that interested individuals may file Freedom of Information Act (FOIA) requests to see RMP materials.[119] As another access point, the EPA

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112. *Id.* § 68(D).

113. *Id.* Processes that are subject to OSHA's Process Safety Management standards or that fall under certain NAICS codes. These processes include especially hazardous industries such as petroleum refineries, petrochemical and chlorine manufacturing, and pesticide manufacturing. U.S. ENVTL. PROT. AGENCY, GENERAL RISK MANAGEMENT PROGRAM GUIDANCE 13 (2009), https://www.epa.gov/sites/production/files/2013-10/documents/chap-02-final.pdf.

114. 40 C.F.R. § 68(C).

115. *Id.* § 68.25–.33.

116. U.S. ENVTL. PROT. AGENCY, *supra* note 107.

117. 42 U.S.C. § 7414(c).

118. However, after 9/11, this access was curbed in the interest of national security. Jessica Barkas, *Nuking Freedom of Information and Community Right to Know: How Post-9/11 Secrecy Could Make America Less Safe*, 28 ENVIRONS ENVTL. L. & POLICY J. 199, 207 (2005). Now, OCAs are generally only available in state reading rooms. 40 C.F.R. § 1400.3. The EPA was creating a system to balance national security interests with public access that would require facility owners and operators to notify the public that certain information is available upon request. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 82 Fed. Reg. 4594 (proposed Mar. 14, 2016). However, this measure has been put on hold by the Trump administration. 82 Fed. Reg. 27133 (June 14, 2017).

119. *Using the Freedom of Information Act (FOIA) Request Process to Get Information About Risk Management Plans*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/rmp/using-freedom-information-act-foia-request-process-get-information-about-risk-management-plans (last visited Aug. 16, 2018).

has also created an e-mail system for seeing whether someone is in a "vulnerable zone" that could be affected by a chemical accident, according to an RMP submitted to the agency.[120] However, this e-mail system does not seem significantly different than the general FOIA process, requiring requesters to fill out an online form and then wait for an e-mail response containing the applicable records, with no guarantee on the timing or completeness of the agency's response.[121]

Although these laws were drafted to prevent chemical disaster-related injuries, natural disasters pose a specialized type of chemical disaster threat. After major storms and natural disasters, communities must deal with a laundry list of competing health and safety issues. Rapid access to information about chemical storage and use during this period is vital for protecting the health and safety of entire communities. Comprehensive and effective disclosure is vital to keep the public and first responders informed during disaster-related emergencies. Chemical hazard disclosure laws need to adapt to meet the reality that climate-related disasters are on the rise.

IV. INFORMATION ACCESS BREAKDOWNS: PROBLEMS IN THE CURRENT ACCESS SYSTEMS

Despite their gaps and flaws, EPCRA and the RMP could form the foundation of a well-crafted information disclosure system. Unfortunately, both programs are plagued with implementation issues on local, state, and federal levels. EPCRA and RMP-mandated programs are typically low priorities, thinly staffed with small budgets.[122] Violations often go

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120. *Vulnerable Zone Indicator System*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/rmp/forms/vulnerable-zone-indicator-system (last visited Jan. 19, 2017) (accessible plans based on specific site locations).

121. *Id.*

122. FED. EMERGENCY MGMT. AGENCY, U.S. DEP'T OF HOMELAND SEC., SPECIAL REPORT: RISK MANAGEMENT PLANNING FOR HAZARDOUS MATERIALS: WHAT IT MEANS FOR FIRE SERVICE PLANNING 10−11 (2003), https://www.usfa.fema.gov/downloads/pdf/publications/tr-124.pdf (describing LEPCs and first responder organizations as generally understaffed and underfunded, with many volunteers doing the bulk of the work). Many state LEPCs are underfunded and understaffed, comprised of mostly volunteers. *See, e.g.*, Erica M. Matheny, *A Survey of the Structural Determinants of Local Emergency Planning Committee Compliance and Proactivity; Toward an Applied Theory of Precaution in Emergency Management*, ETD ARCHIVE 88−90, 112−113 (2012), https://engagedscholarship.csuohio.edu/cgi/viewcontent.cgi?article=1194&context=etdarchive (documenting this phenomenon in Ohio); Rosemary O'Leary, *The Emergency Planning and Community Right-to-Know Act: Ten Public Management Challenges for State and Local Governments*, PUB. PRODUCTIVITY & MGMT. REV. 293, 300−01 (1995) (identifying funding as a key hurdle for implementation); Danielle M. Purifoy, *EPCRA: A Retrospective on the Environmental Right-to-Know Act*, 13 YALE J. HEALTH POL'Y, L. & ETHICS 375, 399, 410 (2013) (documenting lack of funding in West Virginia).

unchecked, and fines for noncompliance are light and sparsely enforced. Worse, many states actively restrict access to the chemical data that EPCRA was designed to make public, citing fears about unintended uses of the information to promote terrorism or interfere with trade secrets.[123]

The Harvey first responders sickened at Arkema were put in jeopardy by precisely these failures in the information infrastructure.[124] Texas's then-Attorney General, Greg Abbott used national security concerns as a justification for limiting the availability of EPCRA Program 2 inventories.[125] This failure to properly implement EPCRA and RMP provisions left first responders unprepared for the toxic chemical exposure they faced. This unfortunate situation recurs with some regularity.[126] Reports issued by the CSB in the wake of disasters are replete with instances of first responders suffering illnesses and burns while responding to industrial accidents because they did not have the necessary information to adequately prepare for chemical hazards.[127] Similarly, 9/11 first responders also suffered from exposure to a toxic dust filled with thousands of contaminants including cement dust, lead, and mercury.[128] A significant percentage of those responders have fallen ill or died.[129]

It is not just first responders who are at risk. Despite the information access provisions in EPCRA and the Clean Air Act, residents often do not know about impending chemical disasters until they see chemical clouds or

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123. Section 322 of EPCRA allows a facility to withhold the specific chemical identity information of an extremely hazardous substance from its EPRCA reporting if the facility asserts a trade secret for that chemical identity. 40 Emergency Planning and Community Right-to-Know Act of 1986 § 322, 42 U.S.C. §§ 11001–50 (2018).

124. Natter & Calkins, *supra* note 7.

125. Lauren McGaughy, *State Blocks Release of Chemical Facility Information*, HOUS. CHRON. (June 13, 2014, 8:05 PM), https://www.houstonchronicle.com/news/politics/texas/article/State-blocks-release-of-chemical-facility-5551690.php (describing Abbott's decision to treat Tier II reports as classified).

126. *Settlement Reached in West, Texas, Fertilizer Plant Explosion,* INS. J. (Jan. 17, 2018), https://www.insurancejournal.com/news/southcentral/2018/01/17/477424.htm.

127. *Id.*

128. Morton Lippmann et al., *Health Effects of World Trade Center (WTC) Dust: An Unprecedented Disaster with Inadequate Risk Management*, 45 CRITICAL REVS. IN TOXICOLOGY 492 (2015); Julian Gavaghan, *Still Dying from 9/11: Toxic Legacy of World Trade Center Attack Revealed as Dust Increases Risk of Cancer by a Fifth,* DAILY MAIL (Sept. 2, 2011, 8:45 AM), https://www.dailymail.co.uk/news/article-2032893/Firefighters-attended-9-11-scene-19-likely-develop-cancer.html; Leah McGrath Goodman, *9/11's Second Wave: Cancer and Other Diseases Linked to the 2001 Attacks Are Surging*, NEWSWEEK, (Sept. 7, 2016, 6:40 AM) https://www.newsweek.com/2016/09/16/9-11-death-toll-rising-496214.html.

129. NEVER FORGET PROJECT, STATISTICS FROM 9/11 AND 15 YEARS LATER, http://neverforgetproject.com/statistics/ (last visited Aug. 16, 2018).

smell chemical odors after leaks and spills have already occurred.[130] By then, it is often too late to adequately prepare for chemical exposure risks. In its chemical incident reviews, the CSB has documented communities unaware of chemical hazards or what to do when chemical leaks occur, despite the presence of RMPs.[131] For instance, when there was a chemical explosion at a Chevron refinery in Richmond, California in 2012, people in surrounding communities saw black clouds, but they did not know what to do when they heard sirens.[132] Unaware that they were supposed to shelter-in-place, citizens panicked as a thick plume of black smoke blacked out the sun.[133] A lack of chemical disaster preparation left the public unprepared, and media sources did not have the information they needed to warn the public or publicize appropriate precautions.[134] These types of failures demonstrate the ways that EPCRA and the RMP program fail to adequately prepare the public for chemical disasters. As one of its last acts, the Obama EPA took measures to close some of these chemical disaster preparedness gaps in the RMP.[135] The new rules would have strengthened incidence reporting,[136] expanded disaster planning,[137] required third-party audits,[138] imposed more stringent hazard definitions,[139] and improved transparency.[140] Unfortunately, the Trump administration suspended these measures,[141] probably indefinitely, at the behest of chemical manufacturers.[142]

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130. Anndee Hochman, *Union Carbide Has Leak at 2nd Plant*, WASH. POST (Aug. 14, 1985), https://www.washingtonpost.com/archive/politics/1985/08/14/union-carbide-has-leak-at-2nd-plant/386a6c54-f2d4-4b23-928e-84f0f50a4fbb/?noredirect=on&utm_term=.96fd334b733a.

131. In the Arkema explosion, the plant submitted a risk management plan containing worst-case scenarios, but the plan did not account for the events that occurred on August 31, 2017, in the wake of Hurricane Harvey. Emma Platoff, *As Lawsuits Over Texas Chemical Disaster Add Up, Advocates Blame Arkema and Rules Regulating It*, TEX. TRIB. (Mar. 30, 2018, 12:00 AM), https://www.texastribune.org/2018/03/30/arkema-disaster-harvey-regulations-texas-crosby/.

132. *See generally* Michael Brune, *Shelter in Place*, SIERRA CLUB: COMING CLEAN BLOG (Aug. 9, 2012) http://sierraclub.typepad.com/michaelbrune/2012/08/richmond-oil-refinery-fire.html.

133. *Id.*

134. OFFICE OF THE GOVERNOR OF CAL., *supra* note 21, at 22.

135. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 82 Fed. Reg. 4595 (proposed Jan. 13, 2017) (to be codified at 40 C.F.R. pt. 68).

136. *Id.* at 4609.

137. *Id.* at 4608.

138. *Id.* at 4609–18.

139. *Id.* at 4696.

140. *Id.* at 4596.

141. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 82 Fed. Reg. 27133 (proposed June 14, 2017) (to be codified at 40 C.F.R. pt. 68) (delaying the effective date for 20 months, until February 19, 2019, to provide time to

Easy access to information about toxic chemical sites is especially important in the aftermath of hurricanes, floods, wildfires, and other natural disasters. In weather disasters, people are often left to make health and safety decisions on their own, without the ability to coordinate with neighbors and emergency responders when the normal routes of communication such as internet access and electric-powered devices fail.[143] History has shown that when people do not know about nearby chemical hazards, they are far more likely to be injured by chemical releases.[144] Even as climate change increases the number and severity of severe weather events, local, state, and federal authorities continue to weaken EPCRA and RMP provisions because of concerns about unintended use and practical failures. The impending challenges of climate change and supercharged natural disasters require local, state, and federal governments to overcome regulatory and practical obstacles to create a better system for chemical hazard information access and dissemination.

A. Regulatory Obstacles: Overreaction to the Threat of Unintended Use

A common concern about sharing chemical risk information is that the information will be misused.[145] Unintended use is the main rationale for curbing access to EPCRA and RMP chemical safety and disaster preparation information. There are two main types of unintended use: terrorism and corporate spying.[146] This section will examine each of these concerns in turn.

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conduct reconsideration proceedings and to consider objections to the rule raised by affected industries).

142. Petition for Reconsideration and Stay for the Chemical Safety Advocacy Group, *In re* Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, Final Rule, 82 Fed. Reg. 4595, No. EPA-HQ-OEM-2015-0725 (E.A.D. filed Mar. 13, 2017), https://www.regulations.gov/document?D=EPA-HQ-OEM-2015-0725-0766 (follow "View document:" hyperlink).

143. Christina Richards, *When Communications Infrastructure Fails During a Disaster,* Disaster Recovery J. (Nov.12, 2015). For example, Superstorm Sandy knocked out communications across the east coast. Jim McKay, *Sandy Created a Black Hole of Communication,* Emergency Management (Jan. 28, 2013).

144. *See, supra* notes 74 & 76; Tex. Att'y Gen. Op. No. OR2012-10821 (2012), https://www2.texasattorneygeneral.gov/opinions/openrecords/50abbott/orl/2012/htm/or201210821.htm; *see also* Edgar Walters, *Transcript: Abbott's Remarks on Hazardous Chemical Storage*, TEX. TRIB. (July 3, 2014, 11:00 AM), https://www.texastribune.org/2014/07/03/abbott-pivots-access-information-about-chemicals/. The Bhopal, Institute, and West, Texas chemical disasters were exacerbated by a dearth of information among plant employees, first responders, and citizens near the disaster sites.

145. Thomas C. Beierle, *The Benefits and Costs of Disclosing Information About Risks: What Do We Know About Right To Know?,* 24 RISK ANALYSIS 335, 336 (2004).

146. *Id.*

1. *Terrorism and National Security Risks*

After the September 11, 2001 terrorist attacks, there was a backlash to information access provisions in environmental laws, and especially those laws that required reports of hazardous chemical locations.[147] Federal, state, and local governments began to doubt the prudence of supplying public access to information mapping out massive stores of dangerous chemicals.[148] This fear was amplified as investigators gathered evidence that terrorists may have relied on information downloaded from U.S. government sources online to plan their attacks.[149] The federal government restricted access to federal records, tightening the language of FOIA to exempt records whenever there was a "sound legal basis,"[150] rather than the prior more transparency-friendly standard of only exempting records that would cause "foreseeable harm."[151] This change in language marked a shift from a default of disclosure to one of secrecy.[152]

Provisions in environmental regulations were similarly reexamined through a national security lens, and there was a push to restrict information access by excluding certain data from public records and to allow federal preemption of state transparency laws in certain instances.[153] Legislators and regulators focused on EPCRA and RMP provisions as prime targets for restricting access. For instance, the RMP OCAs that modeled plumes of airborne hazardous chemicals which could endanger the health and welfare of more than one million people were seen as natural security risks.[154] OCAs had originally been conceived under broad disclosure goals to maximize

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147. Trang T. Tran, *Emergency Planning and Community Right-to-Know Act and National Security: Restricting Public Access to Location Information of Hazardous Chemicals*, 8 ENVTL. L. 369, 370 (2002).

148. *Id.*

149. O'Reilly, *supra* note 84, at 559–60.

150. Memorandum from John Ashcroft, Attorney Gen., to the Heads of Executive Departments and Agencies (Oct. 12, 2001), https://nsarchive2.gwu.edu//NSAEBB/NSAEBB84/Ashcroft%20Memorandum.pdf (discussing FOIA).

151. Memorandum from Janet Reno, Attorney Gen., to the Heads of Executive Departments and Agencies (Oct. 4, 1993), https://nsarchive2.gwu.edu/NSAEBB/NSAEBB84/Reno%20Memo.pdf (discussing FOIA); *see also* U.S. GEN. ACCOUNTING OFFICE, GAO-03-981, FREEDOM OF INFORMATION ACT: AGENCY VIEWS ON CHANGES RESULTING FROM NEW ADMINISTRATION POLICY (2003), https://www.gao.gov/products/GAO-03-981.

152. A study followed agencies' reactions to the Ashcroft FOIA memo, noting that some agencies adopted significant changes to their FOIA practices, amending their FOIA practices, and disclosing fewer records after the memo was issued. *The Ashcroft Memo: "Drastic" Change or "More Thunder Than Lightning"?*, NAT'L SEC. ARCHIVE (Mar. 14, 2003), https://nsarchive2.gwu.edu/NSAEBB/NSAEBB84/findingsag.htm.

153. Tran, *supra* note 146, at 369.

154. Beierle, *supra* note 144, at 338.

disaster preparation and to reduce chemical hazard risk.[155] However, in a post-9/11 world, releasing information to the entire world on how to make toxic plumes fan out over populous areas seemed even riskier than thwarting disaster preparation as people were concerned OCAs might be a treasure map for terrorism.[156]

Even before 9/11, there were concerns about internet availability of worst-case scenario information.[157] Responding to this concern, Congress passed Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (CSISSFRRA),[158] a law that limited the release of OCA information on the Internet.[159] CSISSFRRA ensured that OCAs would only be available in paper format in a very limited number of federal reading rooms, severely curtailing access to the worst-case scenario disclosures.[160] The federal government began labeling information that could assist in the development or use of weapons of mass destruction as classified and shielded information about infrastructure from disclosure.[161] Information about industrial plant inspections, chemical production, and water supplies quietly disappeared from public access websites,[162] as did the online RMP portal.[163] Anything that the government feared could provide targeting information for terrorists hoping to use chemical plants as weapons of mass destruction went offline and out of access for most people.

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155. *Id.*

156. *Id.* at 339.

157. LINCOLN CHAFEE, FUELS REGULATORY RELIEF ACT, S. REP. NO. 106-70 (1999) ("Since the promulgation of the rule establishing the risk management program, the Federal Government has sought a means to address concerns regarding the potential terrorist threat posed by Internet access to off-site consequence analysis information collected under the RMP. Because section 112(r)(7) requires that risk management plans be available to the public, the EPA planned to post the information collected under this program on an Internet web site. Due to concerns about how terrorists might use this information if it were available on the Internet, the EPA revised that plan and has joined with the Department of Justice in seeking to limit Internet access to the off-site consequence analysis information.").

158. 42 U.S.C. § 7401 (1999).

159. U.S. ENVTL. PROT. AGENCY, CHEMICAL SAFETY INFORMATION, SITE SECURITY AND FUELS REGULATORY RELIEF ACT: PUBLIC DISTRIBUTION OF OFF-SITE CONSEQUENCE ANALYSIS INFORMATION (2000), https://www.epa.gov/sites/production/files/2013-11/documents/ocafactsheet.pdf.

160. Chemical Safety Information, Site Security and Fuels Regulatory Relief Act, Pub. L. No. 106–40, 113 Stat. 207 (1990).

161. Memorandum from Andrew Card, Assistant to the President and Chief of Staff, to the Heads of Executive Departments and Agencies (Mar. 19, 2002), https://fas.org/sgp/bush/wh031902.html (discussing actions to safeguard information regarding weapons of mass destruction and other sensitive documents related to homeland security).

162. O'Reilly, *supra* note 84, at 569.

163. Beierle, *supra* note 144.

Under CSISSFRRA, anyone wanting to view an OCA must travel to a federal reading room.[164] After presenting identification, the interested individual is allowed to view a hard copy of the plan.[165] To further limit access to OCAs, the documents can neither be copied nor removed from the reading room sites.[166] These new OCA access requirements not only make it harder for people to see OCAs, but they also prevent non-governmental organizations (NGOs) and the media, the main conduits of chemical risk information, from sharing the chemical disaster information with the public.

These OCA limitations run counter to the purpose of the RMP program to "inform members of the public and allow them to participate in decisions that affect their lives and communities."[167] Further, an open OCA disclosure model benefits public safety by reducing the number and severity of accidental chemical releases.[168] In the post-9/11 RMP scheme, people without the time and ability to visit a reading room do not get the chemical hazard information they need to make informed choices. Few people sought out OCAs in federal reading rooms after CSISSFRRA.[169] This may be because there are so few reading rooms—most states only have one reading room in the entire state. For instance, in New York, regardless of whether one lives in Albany, Buffalo, or Syracuse, he or she must travel to the reading room in Brooklyn, New York to view OCA materials.[170] Because it is so hard to get the reports, very few news organizations or NGOs report on the chemical risks, and the lack of transparency reduced pressure on industrial plants to increase safety.[171]

States made similar moves to limit access to chemical hazard materials. In Texas, Attorney General Abbott's decision to restrict access to EPCRA Program 2 inventories in the wake of an explosion at the West Fertilizer Company's storage and distribution plant in West, Texas purportedly stemmed from his fears about terrorism.[172] Prior to this decision, Texas made RMP and Program 2 inventories available to homeowners, the media,

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164. 42 U.S.C. § 7401 (1999).

165. 42 U.S.C. § 7412(r)(7)(H)(vii)(II); 40 C.F.R. § 1400.6; Security Notice, 65 Fed. Reg. 48108, 48119 (Aug. 4, 2000).

166. *Id.*

167. Beierle, *supra* note 144, at 339.

168. U.S. ENVTL. PROT. AGENCY, ASSESSMENT OF THE INCENTIVES CREATED BY PUBLIC DISCLOSURE OF OFF-SITE CONSEQUENCE ANALYSIS INFORMATION FOR REDUCTION IN THE RISK OF ACCIDENTAL RELEASES 2 (2000), https://www.epa.gov/sites/production/files/2014-01/documents/assessment_of_the_incentives_0.pdf.

169. Beierle, *supra* note 144, at 339.

170. *Federal Reading Rooms for Risk Management Plans*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/rmp/federal-reading-rooms-risk-management-plans-rmp (last visited Sept. 17, 2018).

171. Beierle, *supra* note 144, at 339.

172. Texas Attorney General, *supra* note 143.

and anyone else who wanted to know where dangerous chemicals were stored.[173] Yet, in 2014, Abbott seized on the West Fertilizer Company explosion to change that policy under the guise of promoting security.[174] Never mind that the West Fertilizer Texas explosion was most likely due to poor safety practices at the facility and not terrorism.[175] That fact did not stop Attorney General Abbott from using the incident to achieve information secrecy ends.[176] Indeed, he invoked terrorism as a pretext for his order allowing state agencies to withhold the information "because evildoers could use it to gain access to the chemicals and terrorize communities."[177] Attorney General Abbott opined that any homeowners concerned that they may live near stores of dangerous chemicals should "simply ask the companies near their homes what substances are kept on site."[178] Attorney General Abbott replaced a comprehensive plan for providing local communities access to necessary information about chemical hazards with something akin to a treasure hunt—tasking individual citizens with cobbling together their own understanding of the risks created by industrial facilities in their vicinity.[179]

Since the 2014 decree, people seeking RMP information in Texas have gotten "mixed results" from asking individual companies for their Program 2 reports.[180] Although the law still requires companies to produce RMPs within ten days of a request, it is unclear whether the EPA enforces that deadline.[181] Conflicting statements from EPCRA administrators about access

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173. Platoff & Malewitz, *supra* note 15.

174. Texas Attorney General, *supra* note 143.

175. The Bureau of Alcohol, Tobacco, Firearms, and Explosives investigations ruled out terrorism, but questions remain about how the fire that caused the explosion started. The investigations cited lack of community awareness and disaster preparedness as issues that led to the explosion and its deadly aftermath. Dan Zak, *After the Blast*, WASH. POST (Oct. 10, 2017), https://www.washingtonpost.com/graphics/2017/lifestyle/west-texas-after-the-blast/?utm_term=.356d5f3cdfc2 ("West registered only briefly on the national radar. Donations poured in and cable news crews camped for a while outside the cattle-auction building, but it soon became clear that there was no link to terrorism.").

176. Texas Attorney General, *supra* note 143.

177. Jay Root, *Abbott: Ask Chemical Plants What's Inside*, TEX. TRIB. (July 1, 2014, 12:00 PM), https://www.texastribune.org/2014/07/01/abbott-ask-chemical-plants-whats-inside/.

178. *Id.* One Dallas news station decided to test Abbott's proposal. They were unceremoniously escorted from multiple properties and received none of the information they requested. *Editorial: Abbott Steps in It on Chemicals Issue*, DALL. MORNING NEWS (July 2014), https://www.dallasnews.com/opinion/editorials/2014/07/04/editorial-abbott-steps-in-it-on-chemicals-issue.

179. Root, *supra* note 176.

180. Lauren McGaughy, *Abbott Says Companies Must Release Chemical Info but State Does Not*, HOUS. CHRON. (July 2, 2014, 10:13 PM), http://www.houstonchronicle.com/news/politics/texas/article/Abbott-says-companies-must-release-chemical-info-5596872.php.

181. *Id.*

to hazard information sow confusion in local offices that provide EPCRA records to the public. For example, even though Attorney General Abbott's office eventually walked back its instructions to withhold Program 2 reports from the public, LEPC chairs such as Harold Lovejoy in Bexar County continued to withhold the records, believing that Program 2 submissions are confidential despite the federal law's explicit disclosure requirements.[182]

The 2000 CSSISFRA overview states: "Chemical accidents take a significant toll on life, property, and the environment each year. However, a single, successful terrorist attack on a chemical facility could take a greater toll than would many accidental chemical releases."[183]

Almost two decades later, the federal government should reconsider national security concerns and instead weigh natural disaster concerns against the failure to disseminate chemical hazard information to the public as climate change promises to bring even more punishing weather to U.S. localities. While national security is a legitimate rationale for withholding certain types of government records, the government should also recognize that failing to inform the public about chemical hazards can be life threatening, especially in extreme weather events. Restricting access to chemical storage data creates its own safety risks, and it can be a matter of life or death for citizens in a hurricane's path.[184]

2. *Safeguarding Corporate Information from Competitive Use*

Along with national security fears, people worry that industry competitors might take advantage of chemical data by stealing chemical recipes for their own corporate gain.[185] Indeed, the "secret recipes" of chemical compositions are quite valuable, and so are details about how competitors run their industrial plants. That kind of information can be worth top dollar in competitive industrial fields, and federal, state, and local governments often restrict transparency provisions to protect industrial and commercial interests and to entice industries to develop in its jurisdiction.

The protection of chemical information is especially pervasive in the hydraulic fracturing industry, where states thwart traditional transparency laws to protect fracking fluid formulae.[186] While many states require fracking companies to disclose the contents of fracking fluids used in wells within their borders to state regulators, all states exempt proprietary information, or information considered by the mining companies to be

182. *Id.*
183. U.S. ENVTL. PROT. AGENCY, *supra* note 158.
184. Platoff & Malewitz, *supra* note 15.
185. *Id.*
186. *See* Keith B. Hall, *Hydraulic Fracturing: Trade Secrets and the Mandatory Disclosure of Fracturing Water Composition,* 49 IDAHO L. REV. 399, 400 (2013).

"trade secrets" from public disclosure requirements.[187] Across the country, when fracking chemicals are labeled trade secret, information about them becomes unavailable to the public, including first responders and emergency workers.[188] Some states go even further, exempting trade secret-labeled fracking fluids not only from public disclosure but also from disclosure to regulators. In Texas, Louisiana, and Colorado, the agencies charged with protecting human health and welfare have no idea what fracking fluids contain.[189] Pennsylvania requires that fracking companies turn over this information to health professionals who request the information to treat a patient exposed to the chemicals.[190] However, until recently, Pennsylvania law also required doctors using this provision to sign a confidentiality agreement that prevented any disclosure of the information—even to the exposed patient.[191] After years of litigation,[192] a plurality of the Pennsylvania Supreme Court finally found those confidentiality agreements unconstitutional, along with many other secrecy provisions in Pennsylvania's Oil and Gas Law.[193]

While protecting proprietary information is important, the industry has used trade secret claims to avoid disclosing vital public health information. There is ample evidence that fracking fluids are contaminating drinking water.[194] This contamination creates an urgent public need to know the composition of those fluids. The industry should not have the power to deny access to that information under the guise of trade secrets.

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187. *Id.* at 411.

188. *Id.* at 411–16.

189. *Id.*; *see, e.g.*, 2 COLO. CODE REGS. § 404-1:205A(b)(2)(A) (LexisNexis 2018); LA. ADMIN. CODE tit. 43, pt. XIX, § 118(C)(2) (2018); 16 TEX. ADMIN. CODE § 3.29(d)(4) (2018).

190. 58 PA. STAT. AND CONS. STAT. ANN. § 3222.1(b)(11) (West 2018).

191. Kate Sheppard, *For Pennsylvania's Doctors, a Gag Order on Fracking Chemicals*, MOTHER JONES (Mar. 23, 2012, 10:00 AM), https://www.motherjones.com/environment/2012/03/fracking-doctors-gag-pennsylvania/.

192. *Doctors Fight "Gag Orders" over Fracking Chemicals*, AM. MED. NEWS (Aug. 27, 2012), http://www.amednews.com/article/20120827/government/308279957/1/; Susan Phillips, *Leading Public Health Official Says Impact Fee Law Violates Medical Ethics*, ST. IMPACT PA. (Feb. 16, 2012, 12:02 PM), https://stateimpact.npr.org/Pennsylvania/2012/02/16/leading-public-health-official-says-impact-fee-law-violates-medical-ethics/.

193. Robinson Township v. Commonwealth, 623 Pa. 564, 83 A.3d 910 (2013) (plurality opinion); *see also* Sam Stecklow, *Pennsylvania Supreme Court Overturns Doctor Gag Order on Disclosing Fracking Information*, SPLINTER (Oct. 2, 2016, 1:33 PM), https://splinternews.com/pennsylvania-supreme-court-overturns-doctor-gag-order-o-1793862362.

194. TINA FORRESTER ET AL., U.S. DEP'T OF HEALTH & HUMAN SERVICES, CONSULTATION REPORTS: DIMOCK GROUNDWATER SITE (2016), https://www.atsdr.cdc.gov/hac/pha/DimockGroundwaterSite/Dimock_Groundwater_Site_HC_05-24-2016_508.pdf.

B. Political and Practical Obstacles to Information Access

Beyond regulatory barriers designed to prevent unintended use, procedural obstacles also make chemical data inaccessible. One major practical issue is administrative failure to update information access laws.[195] The RMP needs some information access improvements.[196] Even after the RMP's implementation, regulated entities were the site of more than 1,500 reportable accidents, and approximately 500 of those accidents had off-site impacts. RMP facility accidents have killed 60 people, injured approximately 17,000 more, and forced evacuations or shelter-in-place orders affecting approximately 500,000 others and costing more than $2 billion.[197]

After the West Fertilizer Company explosion in 2016, President Obama issued an Executive Order to improve the RMP.[198] The Order sought to improve operational coordination with states, tribes, and local partners, to enhance agency coordination and information sharing, to modernize policies and guidance, and to identify best practices for preventing chemical release disasters.[199] The EPA proposed changes to the RMP rule in 2016,[200] and it published a final rule on January 13, 2017, mere days before the Trump administration entered their executive offices.[201] The new rule would have modernized and improved the RMP program, requiring additional information collection and increasing access to chemical hazard information.[202] Before any of these improvements to the RMP were

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195. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 83 Fed. Reg. 24853 (proposed May 30, 2018) (to be codified at 40 C.F.R. pt. 68); Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 81 Fed. Reg. 13641 (proposed Mar. 14, 2016) (to be codified at 40 C.F.R. pt. 68).

196. *Id.*

197. U.S. ENVTL. PROT. AGENCY, EPA ACTIVITIES UNDER EO 13650: PROPOSED CHANGES TO THE RISK MANAGEMENT PROGRAM (RMP) RULE QUESTIONS & ANSWERS 2 (2016), https://www.epa.gov/sites/production/files/2016-02/documents/rmp_proposed_rule_qs_and_as_2-26-16_removed_pub_number_fixed_date.pdf.

198. Exec. Order No. 13650, 78 Fed. Reg. 48029 (Aug. 1, 2013).

199. *Id.*

200. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 81 Fed. Reg. 13638 (proposed Mar. 14, 2016) (to be codified at 40 C.F.R. pt. 68); s*ee also Final Amendments to the Risk Management Program (RMP) Rule*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/rmp/final-amendments-risk-management-program-rmp-rule (last visited Sept. 29, 2018) (containing full list of activities).

201. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 82 Fed. Reg. 4594 (proposed Mar. 14, 2016) (to be codified at 40 C.F.R. pt. 68).

202. *Id.*

implemented, the new administration withdrew the final rule[203] in response to a petition filed by the so-called "RMP Coalition," a group of industry corporations including the American Petroleum Institute and the American Fuel and Petrochemical Manufacturers.[204] Ironically, the petitioners that killed the new RMP rule included both the state of Texas[205] and Arkema.[206]

Lax enforcement also prevents public access to accurate disaster preparation information. For example, companies cut and paste information from one reporting form into other forms, without regard to relevance.[207] These companies are banking on regulators not reading the documents—converting a substantive process into merely a series of hoops to jump through.[208] The most famous such example was BP's oil spill response plan for the drilling operation in the Gulf of Mexico.[209] After the Deepwater Horizon disaster dumped more than 200 million gallons of crude oil into the Gulf of Mexico, it became clear that BP's spill action plan was chock full of data it had copied and pasted from a plan designed for another project.[210] For example, BP's Gulf of Mexico planning form listed walruses, sea otters, sea lions and seals as the "sensitive biological resources" at risk in the event of an oil spill in the Gulf of Mexico, even though none of those animals live in the Gulf of Mexico ecosystem.[211] Despite this obvious misinformation, the

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203. Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, 82 Fed. Reg. 16146 (proposed Apr. 3, 2017) (to be codified at 40 C.F.R. pt. 68).

204. Petition for Reconsideration and Stay for the RMP Coalition, *In re* Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, Final Rule 82 Fed. Reg. 4594, No. EPA-HQ-OEM-2015-0725 (E.A.D. filed Feb. 28, 2017), https://www.epa.gov/sites/production/files/2017-03/documents/rpm_coalition_-_cover_letter_and_petition_for_reconsideration_and_stay_508_3-13-17.pdf.

205. Petition for Reconsideration and Stay for the States of Louisiana et al., *In re* Accidental Release Prevention Requirements: A Risk Management Programs Under the Clean Air Act, Final Rule 82 Fed. Reg. 4594, No. EPA-HQ-OEM-2015-0725 (E.A.D. filed Mar. 14, 2017), https://www.regulations.gov/document?D=EPA-HQ-OEM-2015-0725-0762 (follow "View document:" hyperlink).

206. Comment Letter for Arkema, *In re* Accidental Release Prevention Requirements: A Risk Management Programs Under the Clean Air Act, Final Rule 82 Fed. Reg. 4594, No. EPA-HQ-OEM-2015-0725 (E.A.D. filed May 13, 2016), https://www.regulations.gov/document?D=EPA-HQ-OEM-2015-0725-0526 (follow "View attachment:" hyperlink).

207. Rebecca M. Bratspies, *A Regulatory Wakeup Call: Lessons from BP's Deepwater Horizon Disaster*, 5 GOLDEN GATE U. ENVTL. L.J. 7 (2011).

208. *Id.*

209. *Id.*

210. *Id. See also,* Alyson Flournoy, et al., *Regulatory Blowout: How Regulatory Failures Made the BP Disaster Possible, and How the System Can be Fixed to Avoid a Recurrence* 16-18 (2010)

211. *Id.*

plan was approved and was the only resource available to the public and first responders as a reliable source of emergency response information.[212]

EPCRA and RMP rules are also under-enforced by SERCs and LEPCs. These state and local entities often lack the resources and staff to monitor industry reporting practices or file lawsuits when regulated entities fail to properly report their data.[213] SERC and LEPC programs lack uniformity as each state and locality has its own financial and staffing limitations.[214] The limitations of local enforcement are clear: on a local level, studies show that LEPCs often fail to provide public notice about their activities and meetings, and they do not receive public inquiries, as most of the public does not even know that LEPCs exist.[215] There is often little or no LEPC oversight, as LEPC compliance is usually enforced through citizen suits, placing the onus on monitoring and ensuring public access to chemical data on the public itself.[216] The citizen suit model for ensuring that LEPCs are doing their jobs is especially ineffective in natural disasters, where weather forecasts do not give people facing catastrophic weather enough time for filing lawsuits to get data from LEPCs.

Even when an LEPC is operating at its best, chemical hazard data is difficult to access. For one, LEPCs provide paper records in physical reading rooms, with little or no online availability.[217] Reading rooms can

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212. THE RESPONSE GROUP, BP GULF OF MEXICO REGIONAL OIL SPILL RESPONSE PLAN (2009), http://housedocs.house.gov/energycommerce/Docs_06152010/BP.Oil.Spill.Response.Plan.pdf.

213. Purifoy, *supra* note 122, at 418 ("[LEPCs] vast responsibilities are immensely under-supported by the state and federal governments, reducing community incentive to invest precious time and personal resources in an arduous task . . . "); Rebecca S. Weeks, *The Bumpy Road to Community Preparedness: The Emergency Planning and Community Right-to-Know Act*, 4 ENVTL. L. 827, 858 (1998) (citing insufficient funding as an issue in SERCs and LEPCs). A 2008 EPA survey of LEPCs found that lack of funding and consistent membership are obstacles to success. OFFICE OF EMERGENCY MGMT., U.S. ENVTL. PROT. AGENCY, NATIONWIDE SURVEY OF LOCAL EMERGENCY PLANNING COMMITTEES FINAL REPORT (2008), https://www.epa.gov/sites/production/files/2013-08/documents/2008_lepcsurv.pdf.

214. *See, e.g.*, OFFICE OF EMERGENCY MGMT., *supra* note 212, at 15 (describing the vast differences among various LEPC operations, which are affected by factors including funding, access to technology, leadership, population, and prior exposure to chemical disaster).

215. *See, e.g.*, Weeks, *supra* note 212, at 879; Joe Partridge, "*We Don't Do That Here"—The Failure to Implement the Emergency Planning and Community Right to Know Act in Oregon—Part 3*, LINKEDIN (June 25, 2014) https://www.linkedin.com/pulse/20140625142702-37985903--we-don-t-do-that-here-the-failure-to-implement-the-emergency-planning-and-community-right-to-know-act-in-oregon-part-3/.

216. Citizens for a Better Env't v. Steel Co., 90 F.3d 1237 (7th Cir. 1996); Trepanier v. Ryan, No. 00 C 2393, 2003 WL 21209832 (N.D. Ill. May 20, 2003).

217. In 2008, less than one-quarter (23.6%) of LEPCs that responded to the EPA's survey had a website. OFFICE OF EMERGENCY MGMT., *supra* note 212, at 15. There is little incentive to create an online presence for LEPCs, and even less incentive to do the intensive work required to build an online records archive— LEPCs are not legally required to have online

often only be visited by appointment, during business hours.[218] Although Program 2 EPCRA inventories must be provided to LEPCs within ten days of a formal request, there are no clear penalties for companies that refuse these requests.[219] While delayed access to information may be less of an issue for general awareness in low-danger situations, such an approach is wholly insufficient for preparing people who are facing natural disasters.

State and local recordkeeping are also inefficient, because data centers similar to LEPCs are under-resourced. Even the federal government is stretched thin in managing large information collections.[220] States and localities, with significantly fewer resources, struggle to maintain the necessary records.[221] Further, state agency recordkeeping practices tend to be rather slipshod. State environmental records are often incomplete, and when states reorganize their files, people may no longer be able to access them.[222] Lack of staff, technology, and funding can leave LEPCs with little ability to create a truly accessible collection of records, and in 2019, online access remains a distant hope.[223] Instead, of easily accessible digital formats, paper copies of information are stored on dusty filing shelves.[224] Even states that manage to publish chemical hazard data online cannot afford high-quality database systems. For example, Massachusetts and New Jersey adopted online systems that made it hard for people to use the underlying data.[225]

Finally, chemical hazard information is often difficult for laypersons to understand. Most first responders and community members are not chemists or science experts, so the jargon and formulae of chemical hazard reports are

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archives, and most are underfunded and understaffed. FED. EMERGENCY MGMT. AGENCY, *supra* note 122.

218. *Id.*

219. Platoff & Malewitz, *supra* note 15.

220. The National Archives, the central entity for processing government records and overseeing agency records management, is chronically understaffed and underfunded. *See* Richard Immerman et al., *A National Treasure at the Brink: Survey Highlights Historians' Love of, and Frustration With, the National Archives*, PERSP. ON HIST. (Apr. 1, 2014), https://www.historians.org/publications-and-directories/perspectives-on-history/april-2014/a-national-treasure-at-the-brink.

221. Without online archives, and with only a volunteer staff of local first responders and officials, LEPCs lack the resources to create optimal archiving and access systems for their records.

222. Barry Boyer & D. Errol Meidinger, *Privatizing Regulatory Enforcement: A Preliminary Assessment of Citizen Suits Under Federal Environmental Laws,* 34 BUFF. L. REV. 833, 918 (1985).

223. *Id.*

224. Immerman et al., *supra* note 219.

225. Beierle, *supra* note 144, at 341.

difficult to interpret.[226] EPCRA's TRI can seem like an impenetrable data dump to a layperson. Similarly, RMP plans need to be interpreted by science experts. In the short span of time between natural disaster warnings and natural disasters striking, first responders and the public need informational materials that are streamlined and easy to digest.[227] For this reason, we propose a new framework for risk disclosure, one based on a model that has already been proven effective in another context—FDA's product labeling system.

V. ADAPTING FDA'S FRAMEWORK FOR TRANSMITTING RISK INFORMATION

The FDA's successful methods for explaining and communicating about risks to the public can inform solutions to problems with chemical hazard information access. Effective disaster preparation and reaction usually requires quick thinking and streamlined processes. People must know three basic things: (1) whether there is a danger, (2) what the danger is, and (3) how best to prepare for it. Is there a chance that a nearby plant will release a toxic plume into the air? Is the plume going to be filled with toxins that will hurt people's throats or eyes? Is there a danger that the emission may ignite or cause an explosion? These types of information should be clearly and efficiently communicated to people at risk.

The FDA has successfully employed an effective risk communication system, providing plain language circulars and messages to consumers about medication risks.[228] The FDA's solution for transmitting risk information to the public can be found in labeling laws and FDA regulations.[229] Our proposed model offers a simple, accessible way to reach the public, and it preserves the balance of providing information access while safeguarding information from unintended uses.

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226. One compilation of chemical disaster preparedness materials explains that "[t]he RMPs are typically full of the technical jargon" including regulatory terminology RQ (reportable quantity) and scientific chemical names and compounds. U.S. ENVTL. PROT. AGENCY, CHEMICAL EMERGENCY PREPAREDNESS AND PREVENTION DOCUMENTS 108 (2015), https://deq.mt.gov/Portals/112/DEQAdmin/DIR/Documents/EPCRA/Chemical%20Emergency%20Preparedness%20and%20Prevention%20Documents%20--%20Compilation.pdf.

227. OFFICE OF THE SCI. ADVISOR, U.S. ENVTL. PROT. AGENCY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S STRATEGIC PLAN FOR EVALUATING THE TOXICITY OF CHEMICALS (2009), https://nepis.epa.gov/Exe/ZyPDF.cgi/P1003351.PDF?Dockey=P1003351.PDF.

228. *See,* U.S. FOOD & DRUG ADMIN., U.S. DEP'T OF HEALTH & HUMAN SERVS., COMMUNICATING RISKS AND BENEFITS: AN EVIDENCE-BASED USER'S GUIDE (Baruch Fischhoff et al. eds., 2011), https://www.fda.gov/downloads/AboutFDA/ReportsManualsForms/Reports/UCM268069.pdf.

229. 21 U.S.C. § 321(m) (2018); 21 C.F.R. § 201.56 (2018).

FDA labeling and packaging provides just enough accurate information to help people make sound choices.[230] The labeling laws require package inserts, direction circulars, and package circulars that list potential risks and side effects.[231] The laws provide relevant warnings, specifying what could occur when using the medication and what to do when a negative side effect occurs.[232] These labeling requirements are designed not for consumers, but to help healthcare practitioners easily find, read, and convey information important for the safe and effective use of prescription drugs.[233] The result, however, is more useful, easy to understand information for both consumers and professionals.

The information in FDA circulars need not be complex nor technical, in fact, streamlined summaries highlight the important details necessary to ensure that healthcare professionals and the public understand drug risks.[234] The disclosures necessary for effective natural disaster safety are not in-depth or technical. They need not reveal information at the heart of the unintended use concerns; people do not need to know precise trade secret chemical "recipes," nor do they need the precise address or location descriptors directing people to the chemicals themselves. Rather, citizens simply need to know what the risks are and whether they are in a location that is at risk.

Streamlined, plain language communication would help people prepare for chemical disasters. In fact, EPCRA already requires facilities to submit OSHA Hazard Communication Standard required material safety data sheets (MSDS), which are similar to FDA circulars, to SERCs, LEPCs, and local fire departments.[235] MSDS provide data on the health and physical hazards of chemicals and list protective measures.[236] Adopting an FDA model could help disseminate the information in the MSDS beyond workplaces, to the public, in an efficient, easy-to-access manner.

Further, experience shows that local laws providing chemical disaster information to the public do not inevitably create a slippery slope to

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230. *See* COMMUNICATING RISKS AND BENEFITS, *supra* note 227.

231. 21 C.F.R. § 201.100(d)(1) (2018).

232. *Id.*

233. *The FDA Announces New Prescription Drug Information Format*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/LawsActsandRules/ucm188665.htm (last updated Dec. 4, 2015) (describing how the labeling scheme is intended to help health care professionals have immediate access to up-to-date drug information).

234. Renu Lal & Mary Kremzer, *Introduction to the New Prescription Drug Labeling by the Food and Drug Administration,* 64 AM. J. HEALTH-SYS. PHARMACY 2488 (2007).

235. Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99–499, § 311 (a)(1), 100 Stat. 1613 (codified as amended in scattered sections of 42 U.S.C.).

236. *Id.* at § 311(a)(2).

unintended use.[237] Some state laws provide limited chemical information to promote safe mining and community preparedness in case of a chemical disaster. For example, in Louisiana, fracking companies must identify the trade name and supplier of fracking fluid additives, as well as the function or purpose of the fluid "such as acid, biocide, breaker, corrosion inhibitor" without providing the specific formulae for fracking fluids.[238] There are ways to balance the benefits of disclosure with the risks of unintended use by providing "information that is of little use to those seeking to do harm while at the same time useful to a public concerned about risks."[239] One benefit of narrower disclosure is that these less-specific chemical disclosures simplify disclosure for regulated entities, making disclosure less burdensome.[240]

FDA-styled disclosures would certainly have helped the community surrounding the Arkema plant. If Arkema had disseminated circulars letting people know that its plant contained chemicals that would combust if the refrigeration system failed, and had supplied information about how to prevent injuries from chemical plumes, then first responders would have been adequately prepared for the risks. Because no such requirements existed, Arkema's CEO refused to describe the substances that would be released when the plant exploded, leaving one exasperated reporter to write, "[t]hey could be hoarding nerve gas in that place, and be perfectly within the law not to tell anybody about it."[241] This level of corporate secrecy thwarts the "community right to know" enshrined in federal law and makes comprehensive emergency planning impossible.

VI. CONCLUSION

Climate change makes natural disasters more likely and more intense. New weather trends require communities to be ready for chemical disasters caused by flood waters, high winds, fires, mudslides, and other weather events. The information access infrastructure is critical for effective disaster response and hazard management. Disaster response collaboration is an unpredictable, dynamic, and complex interplay between multiple groups of professionals and stakeholders in the best of cases.[242] Arming the public and first responders with information about potential chemical hazards will

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237. *Id*.

238. LA. ADMIN. CODE tit. 43, pt. XIX, § 118 C.1(b) (2017).

239. Beierle, *supra* note 144, at 344.

240. Hall, *supra* note 185, at 420–21.

241. Charles P. Pierce, *The Chemical Plant Explosion in Texas Is Not an Accident. It's the Result of Specific Choices*, ESQUIRE (Aug. 31, 2017), http://www.esquire.com/news-politics/politics/news/a57290/texas-deregulation-harvey-chemical-plants/.

242. Bharosa et al., *supra* note 27, at 49.

improve disaster response communication and organization. If first responders know that an industrial plant is likely to explode, they can plan for the explosion and its risks, and even try to prevent it. Instead, the Arkema first responders find themselves suing to recover for the injuries they suffered because the plant failed to disclose chemical data.[243]

Optimal risk communication requires broad information disclosure to people directly impacted by risk, and also to NGOs and media that may communicate the risk to communities.[244] State officials, including Greg Abbott, whose information infrastructure plans center around driving around and asking facilities "whether or not they have chemicals"[245] fail to keep the public safe in natural disaster situations. As extreme weather increases, proactive, streamlined, and wide-ranging information distribution is necessary to ensure that first responders and communities are prepared for potential chemical disasters. Adopting the FDA's disclosure model will achieve both of those goals: improving emergency response and arming the public with the knowledge they need to take appropriate precautions in the face of this growing threat.

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243. The first lawsuit was filed in early September. Pls.' Orig. Pet. and Appl. for TRO and Temp. Inj. and Req. for Disclosure, Graves v. Arkema Inc., No. 4:17-cv-03068 (Tex. S.D. Ct. Sept. 7, 2017). By 2018, there were multiple lawsuits with hundreds of plaintiffs. Platoff, *supra* note 131.

244. Beierle, *supra* note 144, at 342–45.

245. Platoff & Malewitz, *supra* note 15.