



## THE CHEMICAL SPILL OF ELK RIVER, WEST VIRGINIA

### COMMUNITY RESILIENCE AND SHORT-TERM RECOVERY

#### QUICK FACTS – CHARLESTON, WEST VIRGINIA

Founded in 1787; incorporated in 1794

32.64 square miles, located where the Elk River and Kanawha Rivers meet

Population around 48,864; over 77.9 percent white; 15.8 percent Black; 2.11 percent Asian

9,680 or 20.9 percent of families below the poverty level

25,579 housing units, over 60.1 percent owner-occupied

27 council members elected by ward including the mayor; 20 elected at large on a staggered basis from each ward, serving four-year terms and six members elected at large to four-year terms

#### COMMUNITY PROFILE

The commercial coal industry grew in the region as railroads expanded into coalfields in the mid 19th century. Once major rail lines were completed in 1833, production increased even more to approximately 3 million tons.<sup>1</sup> The area's economic profile is centered around natural resource extraction. The area has been able to diversify its economy to include sectors such as trade, utility, services, and administrative-oriented industries. Recently, the region has experienced a population decline of about 1.49 percent.

#### INTRODUCTION

On January 9, 2014, a chemical spill caused thousands of gallons of 4-methylcyclohexanemethanol

MCHM, a chemical often used to clean coal of impurities, drained into the Elk River. It left nine of the state's counties without clean water for several days to several weeks. This event challenged the economic resilience of the Charleston region, with the aftermath of the spill affecting many aspects of the local economy.<sup>2</sup>

#### CHALLENGES AND CONCERNS

Many service-oriented operations such as restaurants and hotels were directly affected by the five-day water ban following the chemical spill. The event also limited or shut down operations at many schools, daycare centers, and hospitals. According to an investigation conducted by the Center for Business and Economic Research at Marshall University, businesses lost an estimated \$19 million in revenue for each day the water ban was in place, and approximately 75,000 workers were affected. Furthermore, the primary water provider in the state, West Virginia American Water (WVAW), estimated the region lost about \$11 million in profit due to cleanup efforts and replacement costs for its contaminated carbon filters.<sup>3</sup> There were both short-term and long-term impacts on the potential for economic growth in the region. Historically, environmental disturbances of this scale significantly impact economic activity due to the destruction of infrastructure and the accompanying financial losses that contribute to lower growth in the long term.<sup>4</sup>

## APPROACH

Following the spill, the Office of the Governor swiftly declared a state of emergency. This resulted in the Stafford Act being invoked by the President, thereby establishing the flow of federal funds and emergency resources to the impacted region. The West Virginia Bureau for Public Health requested assistance from the Centers for Disease Control and Prevention (CDC) to better understand two aspects of the spill: symptoms experienced by residents in the aftermath and the effectiveness of the emergency response and how to improve it in the future.<sup>5</sup> The CDC found that most symptoms, including nausea, throat swelling, and abdominal pain, were mild and short lived.

## ONGOING TESTING

The National Guard continually tested water sources during the first 24 hours. Their results showed that contaminants were found in several waterways. They built trust by publicizing the testing results online for businesses and residents to check regularly.<sup>6</sup> Their efforts were joined by local first responders, FEMA officials, state agencies, and the Department of Transportation.<sup>7</sup> FEMA distributed over 2.5 million gallons, 9 million liters, and 19 million bottles of water to the affected businesses and persons.<sup>8</sup> With the help of local organizations and leaders, the supplies were distributed quickly to concerned citizens. The West Virginia Testing Assessment Project's (WVTAP) mission was to independently study the impact of the chemical spill and redetermine the appropriate ppm levels for specific contaminants, including MCHM. This helped to further ease the minds of citizens who were concerned for the safety of their water following the incident and to restore confidence in the safety of public water systems in the nine impacted counties.<sup>9</sup>

## INITIAL AND LONG-TERM RESPONSE

The Charleston region had two approaches when dealing with the economic disturbances caused by the chemical spill: short-term emergency response and long-term disaster recovery. In the short term, the community needed to find ways to address the immediate needs of its businesses and their customers. In the days following the spill, information sharing, centralized messaging, and overall safety were prioritized by local economic development organizations (EDOs), governments, and emergency responders.<sup>10</sup> EDOs in Charleston prioritized support for businesses directly impacted by the chemical spill, such as holding a local campaign to support the food and beverage industry. The "Turn Up the Tips" campaign was aimed at supporting hourly workers right after the spill by encouraging community members to tip more than usual at their local restaurants.<sup>11</sup> City councilman Andy Richardson coordinated the effort with several other local legislators, and TSG Consulting, a public relations and governmental affairs firm, assisted with outreach for the campaign.<sup>12</sup>

Once the immediate needs were met, additional needs to bring the community back to its baseline and to make it more resilient were addressed. This included finding ways to provide care for children and students whose daycares and schools had been shut down, as well as providing parents with solutions to compensate for lost wages. The state has worked to help ensure this doesn't happen again by proposing stricter regulations for larger businesses in the region in hopes of

helping the impacted businesses and households recover from the economic fallout from the spill. Furthermore, creating a business continuity planning council helped encourage small businesses in the region to prioritize business continuity plans following the spill. This included bringing in local experts to speak on safety and recovery in the region.

## FINANCIAL RESOURCES

Several organizations provided financial assistance to the community. WorkForce West Virginia, a state government agency funded through the U.S. Department of Labor, helped citizens file unemployment and low earnings claims during and after the spill.<sup>13</sup> Through public assistance grants, FEMA provided \$1.6 million in aid to the nine affected counties. Additionally, the U.S. Bankruptcy Court approved a \$2.9 million settlement for impacted communities, allocating funds toward public cleanup projects and health studies.<sup>14</sup>

## SUCCESS FACTORS

Immediate response and short-term recovery efforts promote simple tasks for various groups in the community. This case study illustrates the importance of coordination across all three levels of government when addressing a crisis. For example, the West Virginia Department of Environmental Protection's (DEP) response time to complaints of odor in the water was critical to finding the source of the contamination. The chemical spill and emergency response efforts helped highlight the importance of disaster preparedness and how it can improve economic resilience in the long run.

## TAKEAWAYS

The spill's long-term impact tarnished the image of the Charleston region. The disaster was in part due to the negligence of corporations in the area. Small business owners and residents struggled to trust the local government and EDOs in the wake of the disaster.<sup>15</sup> Local organizations, the state of West Virginia, and EDOs came together to build back the image of the region through promoting the natural resources and activities it had to offer.<sup>16</sup>

The disaster helped to highlight the importance of government regulation and how reform can promote long-term regional economic growth and sustainability. Communities look to the government to protect the best interests of its citizens through crafting and enforcing legislation that will hold offending businesses accountable.

## SUMMARY

There are many lessons from this case study. The efforts in Charleston, highlight the importance of cooperation and coordination between organizations working within a community following a disaster. Additionally, open lines of communication and transparency are crucial to regaining the trust of residents and business owners. This included posting the results of water testing as well as the findings of the CDC. The financial support to businesses also significantly helped the region recover. There were multiple donations from local, state, and federal actors that helped to restore the economy. Finally, the disaster exposed the need for economic diversity.

## ENDNOTES

- <sup>1</sup> Ibid.
- <sup>2</sup> Matt Ballard Interview, West Virginia Regional Technology Park May 6th 2022.
- <sup>3</sup> Ibid.
- <sup>4</sup> Ibid.
- <sup>5</sup> Centers for Disease Control and Prevention, and National Center for Environmental Health, Division of Environmental Hazards and Health Effects. "Disaster Response and Recovery Needs of Communities Affected by the Elk River Chemical Spill, West Virginia April 2014." *West Virginia Department of Health and Human Resources*, 6 April 2014, <https://dhr.wv.gov/News/2014/Documents/WVCASPERReport.pdf>. Accessed 23 May 2022.
- <sup>6</sup> Markham, P. (2015). *After Action Report*. West Virginia Emergency Management. Retrieved April 20, 2022, from <https://emd.wv.gov/West%20Virginia%20Public%20Water%20Supply%20Study%20Commission/Documents/After%20Action%20Review.PDF>
- <sup>7</sup> Ibid.
- <sup>8</sup> Ibid.
- <sup>9</sup> Ibid.
- <sup>10</sup> Ibid.
- <sup>11</sup> Ibid.
- <sup>12</sup> "Local Leaders Urge Patrons to "Turn Up the Tips" at Local Charleston Restaurants" January 13 2014
- <sup>13</sup> Ibid.
- <sup>14</sup> Mendoza, L. R. (2015, May 6). *The Elk River MCHM Spill; A Case Study On Managing Environmental Risks - InsuranceNewsNet*. *InsuranceNewsNet*. Retrieved April 20, 2022, from <https://insurancenewsnet.com/oarticle/The-Elk-River-MCHM-spill-A-case-study-on-managing-environmental-risks-a-618669>
- <sup>15</sup> Ibid.
- <sup>16</sup> Ibid.