

Evaluation of Resiliency of US EPA Superfund Remedies in the 2017 Hurricane Season

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Background/Objectives. Following a very active hurricane season in 2017, EPA sought to gather information on the performance of remedies in areas recently impacted by Hurricanes Harvey, Irma and Maria. This effort was a “desktop analysis”, gathering information from existing sources, such as the Superfund Enterprise Management System, media, site reports, etc., and where needed by contacting remedial project managers (RPMs). The analysis sought program level insights on remedy resilience at sites affected by severe weather, and the findings serve to continue to inform the Superfund remedial program’s climate change adaptation efforts, including training RPMs, providing adaptation tools, and capturing and sharing best practices. The analysis centers on impacts on the resilience of existing remedies, and does not focus on non-remedy-related impacts from the severe weather events at Superfund National Priority List (NPL) and Superfund Alternative Approach (SAA) sites.

Approach/Activities. The analysis has three main components, evaluating which sites were affected by severe weather, damage at those sites (if any), and whether resilience measures were present. The team established a baseline map of NPL and SAA sites in EPA regions affected by the hurricanes, Regions 2, 4, 6, relative to floodplains, and the nature of weather and flooding impacts. We then used National Oceanic and Atmospheric Administration (NOAA) and Federal Emergency Management Agency (FEMA) sources to identify sites that were impacted by wind (tropical force or greater, or inundation). For the damage assessment we reviewed regional reports and sought input from regional points of contact to determine whether sites were damaged. Finally, for the assessment of resiliency measures we sought to identify impacted sites that have remedies of higher interest (risk of contaminant mobilization or high replacement cost), and that are in the remedial action phase or have a recent Five Year Review (FYR). We then read the corresponding Records of Decision and, if they existed, FYRs.

Results/Lessons Learned. The data gathered, although not comprehensive, provide some general observations as well as some insight regarding the design measures that can help remedies remain protective during extreme wind and flooding. More than 50% of the sites located in the path of the hurricanes were affected by tropical force winds or higher, and/or inundation. However, damage was generally minor, such as power outages, downed fences, or damage to storm drainage systems. The analysis completed for this study indicates that resilience measures are being implemented at Superfund NPL and SAA sites where remedies are in place, and that they are contributing to ensure continued remedy protectiveness.