Using Geospatial Data to Help People Prepare for Disasters

CHALLENGE: Create digital tools that use data to help individuals and community leaders gain a better understanding of national and community hazards and threats and enable the public to take appropriate preparedness actions. Digital tools could leverage geospatial data to:
  • help identify barriers to preparedness within communities;
  • create innovative engagement platforms such as games that allow people to experiment and explore hazards and threats unique to their communities in a "low-risk" environment; and
  • integrate with current preparedness messaging to help people, especially younger cohorts, better understand risks and encourage preparedness actions.

PROBLEM: A significant number of young Americans are not aware of the risks they face and are not taking meaningful preparedness actions to improve their chance of successfully weathering a disaster. Personal and family preparedness can greatly impact individuals' and communities' ability to successfully and rapidly recover should disaster strike. However, in the 2016 National Household Preparedness Survey, only 45% of respondents reported having a household emergency plan. Additionally, people who consider preparedness part of every life tend to be 65 years of age or older, white and male, while people who intend to prepare but have yet to get started tend to be 45 years of age or younger, black or Hispanic, and have children at home. Furthermore, a 2014 study found that the 46% of the US population who fall into the "Not On Their Radar" Preparedness Profile are more likely to be 18-34 and less likely to own a home. This group of people tend to perceive barriers to preparedness like cost, time, and access to information. They are also less likely to take significant steps to prepare.

WHY THIS PROBLEM IS IMPORTANT: Current research suggests that exposure to preparedness messaging shows a significant relationship to taking preparedness action—almost doubling the percentage of individuals with an emergency plan (58%) compared to those not exposed to preparedness messaging (34%). A major objective of FEMA's strategic effort to build a culture of preparedness across the nation is helping people to prepare for disasters. As demonstrated on September 11, 2001, the preparedness level of private citizens can weigh heavily on the outcome of an incident, especially a no-notice event. On that day, only 5.36% of building occupants who perished in the World Trade Center collapse worked below the impact zones. This low mortality rate is attributed to the preparedness advancements set in place prior to September 11, 2001, and led the 9-11 commission to conclude that citizens across the nation need to be prepared to maximize their odds of survival should disaster strike. Changing attitudes and achieving a true culture of preparedness across the nation will require a paradigm shift in how we deliver information, particularly to younger Americans.

VISION: Through access to data and user friendly digital tools, more Americans are aware of the hazards they face and what they can do to protect themselves and their families, and take action to get prepared.

TARGET AUDIENCE: Individuals ages 18-34 and influencers within communities, to include faith leaders, emergency managers, and leaders of civic organizations.

POTENTIAL DATASETS:

  • US Census Bureau American Community Survey – population data
  • USGS earthquake data
  • FEMA 2016 National Household Survey - preparedness perceptions

  • US Fire Administration – wildfire data
  • Ready Campaign (validated protective actions)
  • Data sets on terrorist and other man-made threats

- NOAA National Centers for Environmental Information – data on floodplains/stormwater

- US Fire Administration – wildfire data
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