Analytics for Equitable Disaster Recovery

SP Group leveraged data and analytics to target disaster response to vulnerable populations impacted by Hurricane Harvey.

Challenge

Hurricane Harvey was a Category 4 storm that struck the Texas Gulf Coast on August 25, 2017. While many neighborhoods faced severe destruction, the impact to property damage varied across neighborhoods and some experienced more significant destruction than others.

Lessons learned from previous disasters found that while most areas that suffered property damage will need assistance for repair and rehab costs, it is important for disaster recovery programs to provide targeted aid to those areas that exhibited limited resources prior to the disaster to ensure an equitable recovery.

Solution

SP Group utilized Experian data combined with Hurricane Harvey damage data from the Federal Emergency Management Agency to identify the neighborhoods that are most vulnerable to the negative impact of property damage due to their underlying economic conditions exhibiting high distress – the greatest need neighborhoods. These neighborhoods represent the greatest need for assistance from disaster recovery programs such as HUD's Community Development Block Grant for Disaster Recovery (CDBG-DR).

About SP Group

SP Group, LLC is a management consulting services firm located in the DC metro area, specializing in data analytics and housing market research.

SP Group provides professional consulting services, including business intelligence and data analytics, program evaluation and due diligence, as well as technology consulting and IT support. SP Group has been serving public sector clients since 2010. Our mission is to deliver simple, actionable solutions that are supported with data and research. SP Group brings the talent and technology to empower our clients with untapped insights.

**To learn more about SP Group visit their website at www.spgroupusa.com**

To learn more about Experian Marketing Services solutions, call (877) 902-4849 or email experianmarketingsolutions@experian.com.

Results

Part 1 - Damage

The first step in identifying the greatest need neighborhoods was to find the neighborhoods with the highest concentration of damaged buildings. SP Group utilized Experian ConsumerView℠ data and additional sources to identify total structures within a Census Tract. We then combined with total buildings impacted data from FEMA's Preliminary Damage Assessments to estimate Census Tract percent concentration of damage. As shown by Figure 1, the damage was concentrated to a small number of tracts, colored in red. About 10% of all impacted tracts included 70% of the total damaged buildings.

Figure 1 Concentration of Damage in Harvey Hit Areas
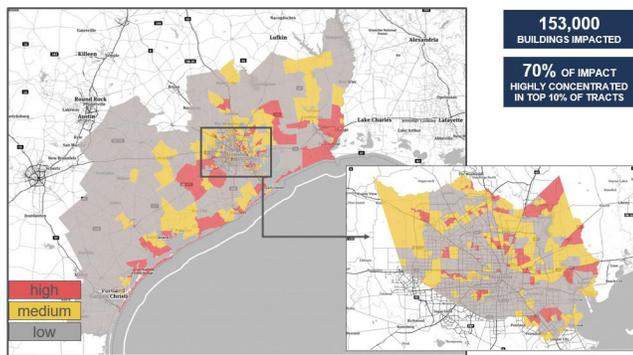
Part 2 - Distress

SP Group maintains a Neighborhood Distress Index (NDI) that is developed using Experian CAPE data to assess neighborhood-level distress. The NDI is computed bi-annually and includes the economic variables such as unemployment, poverty rate, median income, and educational attainment. SP Group computed the Q2 2017 NDI for all tracts impacted by Hurricane Harvey. As shown in Figure 2, the most significantly distressed neighborhoods are colored in red and mainly concentrated to Harris County. The high distress neighborhoods tend to have an average household income of about $25,000 in comparison to the low distress neighborhoods where average incomes are around $66,000.

Figure 2 Socioeconomic Distress in Harvey Hit Areas
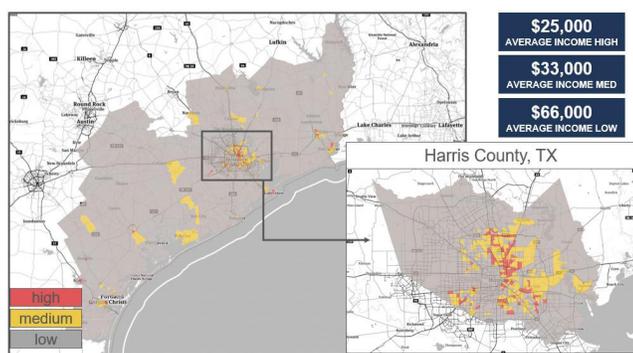
Part 3 - Damage & Distress

To identify the greatest need neighborhoods, SP Group found the Census Tracts with both high concentration of damage (red in Figure 1) and high socioeconomic distress (red in Figure 2). Utilizing Experian CAPE data, they aggregated the characteristics of the high damage- high distress areas. For example, by multiplying the total single-family dwelling units with the median home value, SP Group identified over $372 million in housing value at risk.

Figure 3 Greatest Need Neighborhoods (Damaged and Distressed)
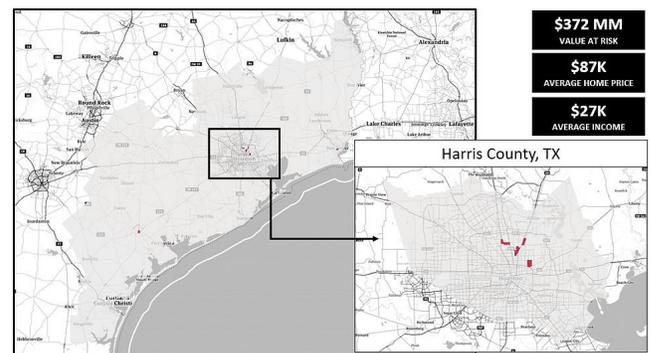
Overall results

The outcome of the SP Group analysis enabled a more targeted relief approach, specifically based on the level of damage and the socio-economic vulnerability of neighborhoods. The disaster recovery methodology and analysis results were also presented to policy makers at the Home Preservation Exchange Forum and a Disaster Housing Recovery Coalition meeting hosted by National Low-Income Housing Coalition to demonstrate the benefit of using data and analytics to more effectively identify and target services following natural disasters.

Summary

Since 2016, SP Group has been using Experian Marketing Services data to supplement its public and administrative data. Using Experian's CAPE (Census Area Projection Estimates) solution, and leveraging Experian's ConsumerView database through Alteryx, SP Group was able to supplement publicly available data with granular and detailed analyses. This allowed them to provide actionable insights to its clients who are often involved in affordable housing related policies.

SP Group's analysis identifying the greatest need neighborhoods on similar research has been featured on National Mortgage News, the CBS local Houston affiliate and Data.World. SP Group has also presented their targeted disaster recovery methodology and results to policy makers at the Financial Services Roundtable / HOPE NOW, Home Preservation Exchange Forum and a Disaster Housing Recovery Coalition meeting hosted by National Low-Income Housing Coalition.

To learn more about SP Group visit their website at
www.spgroupusa.com

To learn more about Experian Marketing Services solutions, call
(877) 902-4849 or email experianmarketingsolutions@experian.com.