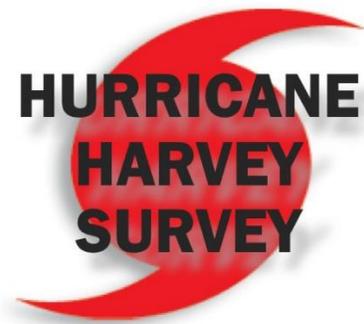


## The Impact of Hurricane Harvey

The Hobby School of Public Affairs at the University of Houston conducted a telephone survey in November and December 2017 to understand the experiences of people impacted by Hurricane Harvey and to gauge their support for flood mitigation policies. A total of 2,002 respondents living in Harris, Fort Bend, Brazoria and Montgomery Counties participated in the initial survey. The panel survey will follow respondents over five years.



Specifically, the survey aims to address several important issues regarding a catastrophic event:

1. What was the experience of Houston region residents before, during and after Hurricane Harvey?
2. How did people act and coordinate with others in response to Hurricane Harvey?
3. Where did people obtain their information during Hurricane Harvey?
4. What are the policy preferences of Houston area residents for different flooding abatement proposals?

The next survey to be conducted in the spring of 2018 will include additional questions, including inquiries about social networks, specific flood abatement proposals and funding mechanisms.

Highlights of the initial survey results includes the following:

### **Income & Property Losses**

1. The most widespread (57.2%) and severe (23.9%) consequence of Hurricane Harvey was economic damages to property and lost wages.
2. Loss of income hit some groups more than others:
  - Latino (74%)
  - Asian American (62.5%)
  - African American (56.41%)
  - Anglo/White (50.4%)
3. A generational difference regarding income loss was found: 73.9% of millennials reported lost wages and income compared to 52.3% of the respondents over 40 years of age.
4. Lost wages and other economic losses were more severe for non-Anglos, renters and persons with annual household incomes below \$50,000.
5. Respondents experienced the following damages as a result of Hurricane Harvey:
  - Home broken into/looted (13.8%)
  - Injury to themselves or their family members (16.6%)
  - Water loss (25.3%)
  - Flood damage to car (31.5%)
  - Roof damage to residence (33.7%)
  - Flood damage to residence (39.8%)
  - Downed trees or branches (46.5%)
  - Power loss (46.7%)

6. Nearly forty percent (39.8%) of respondents reported some flood damage to their residence. Specifically, 10.2% reported this damage was extremely serious, whereas another 7.6% reported this damage was serious.
7. Less than half (46%) of the respondents who reported property damage from previous severe weather (i.e., Tropical Storm Allison, Hurricanes Rita and Ike or flooding in 2015 and 2016) reported any flood damage from Hurricane Harvey.
8. Thirty-three percent of the respondents who did not report experiencing flood damage from previous severe weather reported flood damage to their residence from Hurricane Harvey.
9. The respondents who reported property damage from previous severe weather were more likely to report flood damage to their homes was either extremely or very serious (22%) than those who did not experienced property damage from previous severe weather (14%).
10. Renters (45%) were more likely to report flood damage to their homes than homeowners (37%). Renters (19%) were also more likely to report serious flood damage to their homes than homeowners (17%).

### **Preparedness**

1. Respondents prepared for the storm by stocking food (71.3%), water (79%) or filling their vehicles with gas (74.6%). Forty percent (40.2%) removed items from areas that might flood to mitigate the impact of the storm.
2. Roughly 80% of survey takers reported having been negatively impacted by Harvey, including damages to buildings, vehicles and property, loss of power and other utilities, foregone income or looting.
3. Nearly 23 percent (22.7%) of the respondents evacuated or attempted to evacuate their homes. A majority (53.3%) of those who evacuated left their homes after the storm hit the Houston area.
4. Thirty percent of the respondents believed there was high risk of power loss in their residence areas before Hurricane Harvey made landfall, whereas 19.7% perceived to be at high risk of rainfall flooding.
5. Twenty-two percent of the respondents evacuated or attempted to evacuate their homes. A majority of those who evacuated left their homes after Hurricane Harvey hit the Houston region.

### **Coordination & Volunteerism**

1. Nearly half (49.6%) of the respondents coordinated plans with others before Hurricane Harvey reached the Houston region.
2. Almost two thirds (65%) of the respondents reported knowing at least one person who volunteered. The mode response was 10.
3. Sixty-one percent (60.8%) of the respondents provided assistance to family members, friends or other people before or after Hurricane Harvey while 33.2% of the respondents received help.
4. Over one-in-five respondents (22%) both volunteered and received help during Hurricane Harvey.

## Information sources

1. Nearly ninety-seven percent (96.6%) reported using at least one of the sources of information listed in the survey (including both traditional and social media); 91.9% reported having relied on at least one of the information sources somewhat or a great deal; and 76.6% used at least one of the information sources a great deal.
2. Respondents relied heavily on traditional outlets for information on how to prepare and respond to the storm:
  - a. Neighbors and relatives (65.6%)
  - b. Radio news reports (65.1%)
  - c. The Weather Channel (75.9%)
  - d. TV stations and their websites (74.7%)
  - e. Houston Chronicle (23.6%)
3. Individual social media and official websites were less used:
  - a. Twitter (11.8%),
  - b. Facebook (38.2%)
  - c. Nextdoor (37.4%)
  - d. City of Houston and county websites (47.7%)
4. There is a big generational divide among respondents. Millennials relied more heavily on social media than those aged over 40:

Compared to those aged over 40, millennials were more likely to resort to Twitter (21.9% to 8.5%) and Facebook (61.7% to 31.3%), and more likely to consult county websites (59.6% to 44.8%).

## Support for proposals to protect against future severe weather in Harris County

1. Level of support for different policy proposals varies considerably among Harris County respondents:
  - Require sellers of homes to fully disclose prior flood damage to their homes and prior flooding in the surrounding neighborhood (89%).
  - Establish new building codes that require homes built in flood prone areas be elevated/raised to avoid flooding (86%).
  - Construct a new reservoir to protect west Houston (85%).
  - Place greater restrictions on construction in flood plains (83%).
  - Require government compensation for homes that are flooded due to the release of water from local reservoirs (77%).
  - Prevent development/construction on native prairies and wetlands in western and northwestern portions of Harris County (67%).
  - Establish a regional flood agency with taxing authority to plan for the prevention of regional flooding (67%).
  - Institute a program to buy homes in areas that have repeatedly flooded with local, state and federal moneys (63%).
  - Disallow homes that have flooded three or more times since 2001 to be rebuilt by buying out these homeowners with local and federal moneys (62%).

- Deny federally financed flood insurance to homeowners whose homes flooded three or more times since 2001 (42%).
2. Partisan preferences differentiate public support in Harris County for several proposals:
    - Democrats are more likely (82%) to support the establishment of a regional flood authority with taxing authority than Republicans (70%).
    - Republicans are more likely (55%) to support denying federal flood insurance to homes that have flooded three or more times than Democrats (42%).
    - Democrats are more likely (80%) to support preventing construction in native prairies and wetlands than Republicans (74%).
    - Republicans are less likely (78%) to require government compensation for homes flooded due to the release of water from local reservoirs than Democrats (88%).
  3. Forty-six percent of the Harris County respondents are unwilling to pay any more in property taxes to implement any protection related proposal, a proportion of opposition that rose slightly higher when they were asked about a sales tax increase (50%).
  4. Forty-six percent of the Harris County respondents were willing to pay more in property taxes to aid the adoption of flood prevention proposals, ranging from 19% willing to pay \$12 more a year to 15% willing to pay \$50 more a year.
  5. Among the 45% of the Harris County respondents who supported some type of sales tax increase (up from the current 8.25% rate), 26% supported an increase to 8.5%, 12% to 9.0%, and 8% to 9.5%.
  6. Opposition to the property and sales tax increases varied considerably across the Harris County population based primarily on a combination of a person's partisan and ethnic/racial identification.
    - a. More than half of African American Democrats (54%) and Independents (55%) opposed an increase in property taxes while almost half of Anglo Republicans (46%) opposed such an increase. In contrast, only 35% of Latino Democrats and 20% of Anglo Democrats opposed increased property taxes.
    - b. More than half of African American Democrats (56%), Independents (60%) and Anglo Republicans (51%) were opposed to a sales tax increase. In contrast, only 42% of Latino Democrats and 30% of Anglo Democrats opposed increased sales taxes.