

## **The Impact of Hurricane Harvey Survey 2, Summer 2018**

### **The Impact of Hurricane Harvey One Year Later**

Hurricane Harvey was a massive flood event, with devastating consequences for the greater Houston area. Despite the differential pattern of losses among respondents, it has become apparent that Hurricane Harvey has impacted Houstonians' attitudes across the board. This is reflected in the broad support for policies, regulations and higher taxation aimed at mitigating the impact of severe flood events as well as attitudes regarding governmental interventions unrelated to hurricane recovery relief.

The second wave of the five-year panel survey measuring the impact of Hurricane Harvey was conducted between June 25 and July 31, 2018, using both landline and cell phone numbers. The 1073 respondents in Harris, Fort Bend, Brazoria and Montgomery Counties included people who participated in the initial survey and first-time respondents. The sample of persons from the initial survey was chosen from areas that received two or more feet of rainwater during Harvey. The fresh sample of residential households was randomly selected. The margin of error for the entire sample is +/- 3 percent.

### **Experience and Recovery**

#### **Evacuation & Moving**

One-fourth of the survey respondents evacuated or attempted to evacuate when Hurricane Harvey hit Houston. Twenty-two percent of the respondents were forced to move from their residences on account of the hurricane. Slightly over two-thirds (67.5%) of those who left their residences are back in their homes while almost one-fourth relocated to a new residence. Eight percent of those who were forced to move from their homes remain in temporary housing.

#### **Volunteerism**

Sixty-one percent of individuals reported having volunteered during Hurricane Harvey and thirty-three reported having received help. Whites/Anglos (64%), African Americans (56%) and Asian Americans (83%) reported higher levels of help than Latinos (44%). Latinos were also less likely to report having received help (27%), followed by Whites/Anglos (32%).

#### **Damages**

One-third of the respondents reported damage to their residences, half of which had very serious or extremely serious damages. Fifty-three percent suffered economic losses, including lost wages

and unplanned expenses. One-fifth had damage to their cars and over twenty percent reported health problems.

### **Flooding**

When asked to evaluate whether new construction in flood prone areas will result in more severe flooding, 75.7 percent of those who suffered damage to their homes agreed with this statement. Very similarly, 74 percent of respondents who did not suffer damage agreed.

- Support for this statement was highest among Asian Americans (90.1%) and Whites/Anglos (83.9%). 73.5% of African Americans and 61.3 percent of Latinos agreed.
- Respondents who identified themselves with the two major political parties had similar levels of support: 77.5% among Republicans and 78.8% among Democrats. Independents agreed with the statement at a higher rate (84.8%) while 61.2% of those who identified with other parties expressed concern about new construction in flood prone areas.
- Millennials are less concerned with new construction in areas that flood frequently than older respondents: 62% and 80.5%, respectively. Large differences were also found between lifetime Houston residents, whose rate of agreement with this statement was below average (69.1%), and those who moved to Houston (81.3%).

Houstonians are quite familiar with severe climate events disrupting their lives: close to half of our sample (47.3%) reported having had at least one prior flooding experience since 2001 and over one in four respondents (28%) experienced two or more flooding events in the past two decades.

Thirty-eight percent of the respondents who had experienced prior flooding events reported damage to their residences during Hurricane Harvey; the number is much lower for those who had no prior flooding experience (28%). This difference is also reflected in the extent of the damage caused by Hurricane Harvey to respondents' residences: over one-fifth (20.5%) of those with prior flooding experience reported that the damages suffered in their homes were either very or extremely serious, compared to twelve percent among those whose residences flooded for the first-time during Hurricane Harvey.

### **Use of the Rainy-Day Fund**

Regardless of age, race/ethnicity or political affiliation, respondents were overwhelmingly supportive of the statement that the state of Texas should spend its Rainy-Day fund to support local communities recovering from Hurricane Harvey. The rate of support reached 83.8 percent with only 13 percent in opposition. The lower levels of support were found among African American (72.5%) and Republicans (80.4%). Those who suffered from Hurricane Harvey were five percentage points more likely to support the use of the Rainy-Day fund. Life-long Houstonians, with 88.4% support, were eight percentage points more likely to agree.

## Support for Flood Mitigation Policies

### Building Codes

Eighty-seven percent of the respondents favor new building codes forcing owners to raise their homes in flood prone areas. The lowest level of support for new building codes was among White/Anglo respondents (85%) while Asian Americans ranked highest on this response (95% support) followed by African Americans (91%) and Latinos (88%).

### Reservoir

Over 80 percent of the respondents supported construction of a new reservoir.

### Buyback Programs

A sizable majority (63%) would like authorities to use state and federal money for buyback programs in areas that flood frequently. There are large differences in support for a buyback program across ethnic/racial groups: it runs highest among African American respondents (75%) and lowest among Latinos (58%). Support among White/Anglos and Asian Americans runs at 63 percent and 60 percent, respectively.

### Widening Waterways

Eighty-four percent of the respondents support widening bayous and channels, with varying support among racial/ethnic lines. Latinos had the highest rate of support (88%) followed by Asian Americans at 84 percent and Whites/Anglos at 81 percent. African Americans had the lowest level of support for widening waterways at 64 percent.

### Property Taxes

More than one-third (38.4%) of the respondents are willing to pay 1.4% more in property taxes to implement infrastructure projects to reduce the risk of flood events, and slightly more than one-quarter (26.3%) of the respondents are willing to increase the property taxes by 5% or 10%. However, about one-quarter (26.7%) of the respondents are not willing to pay any more in property taxes for flood mitigation projects. Close to 9 percent (8.7%) of the respondents refused to respond to the question.

More than two-fifths of Democrats and Republicans (45.8% and 44%, respectively) are willing to pay extra property taxes of 1.4% for implementing the infrastructure projects. However, Democrats are willing to pay more than Republicans for the policies. More than one-quarter (28.1%) of Democrats express that they are willing to pay either 5% or 10% more property taxes, whereas one-fifth (20.9%) of Republicans are willing to pay either 5% or 10% more property taxes to fund the policies.

A sizeable majority (63.9%) of the lifetime Houstonians are willing to raise the property tax rates by at least 1.4% to implement infrastructure projects while 28.3 percent of lifetime Houstonians prefer not to increase property taxes at all. In contrast, the residents who moved to Houston from somewhere else are more supportive of paying extra property taxes: 68.5% are in support of it, whereas 24.2% are opposed to it.

Homeowners are slightly less supportive of raising property tax rates for infrastructure projects than renters (62.8% and 68.9%, respectively). A larger proportion of homeowners (30.3%) compared with that of renters (19%) are unwilling to increase property taxes to fund the projects. About 7 percent (6.9%) of homeowners and 12 percent of renters refused to answer the willingness to pay question in the survey.

Respondents who believe that they live in their residences with different levels of risk for future flooding have the same level of support regarding the willingness to pay. Close to two-thirds (64.9%) who believe their residences are located in an area where there is no risk or low risk for future flooding and 64.9 percent of those who believe they live in the location with some risk or high risk for future flooding are supportive of paying extra property taxes for funding the policies.

More than one-third of both White/Anglo (36.7%) and Latino respondents (38.5%) are willing to increase the property taxes by 1.4% to implement infrastructure projects aimed to reduce the risk of future flooding. More than two-fifths of African American (45.3%) and Asian American (41.2%) respondents are willing to increase property taxes by 1.4%. Furthermore, larger portions of White/Anglo respondents (28.9%) and Latino respondents (28.8%) are willing to increase the property taxes by either 5% or 10% for the flood-preventing policies while 17.8% of African American respondents and 5.3% of Asian American respondents are willing to pay at the 5% or 10% level. Slightly above one-fifth of the respondents who are African (21.3%) and Latino (22%) refuse to increase property taxes. In contrast, 29.2 percent of White/Anglo and 38.8 percent of Asian American respondents expressed that they are unwilling to raise property taxes to implement infrastructure projects.

The willingness to pay for flood mitigation projects varies across generations. Millennials and Post-Millennials, who are between the ages of 18 and 37, are more supportive than Generation X (ages 38-53) and Baby Boomers (ages 54-72). Close to 80 percent (78.3%) of Millennials and Post-Millennials are willing to raise the property tax rates by at least 1.4%, whereas seventy percent of Generation X and less than three-fifths of Boomers (58.4%) are willing to pay extra property taxes.

### **Sales Taxes**

Slightly more than 60 percent (60.5%) of the respondents who planned to vote for the August 2018 \$2.5 billion bond proposal are also willing to raise the sales tax rates to pay for any of the proposed policies. About 37 percent of those who planned to vote for the bond proposal are unwilling to raise the sales tax rates. On the other hand, for those respondents who planned to vote against the \$2.5 billion bond proposal, two-thirds (66.3%) of them are also against raising the sale tax rates to adopt any of the proposed policies. Only about one-third (33.1%) of those voting against the bond proposal are willing to increase the sale tax rate to 8.5% or higher to pay for any of the proposed policies.

## **Attitudes about Elected Officials' Ability to Reduce Future Flooding**

### **Confidence**

Slightly over half (51.2%) of the respondents are either very confident or somewhat confident about their elected county and city representatives' abilities to reduce the negative impact of future flooding in the Houston area. Among those, over half of African American (64%), White/Anglo (52%) and Asian American (51%) respondents expressed that they are very or somewhat confident of their elected representatives. Less than half (45%) of Latino respondents have confidence (either very confident or somewhat confident) in their elected county and city representatives' abilities to mitigate the negative impact of future flooding.

Over half (55%) of lifetime Houstonians and half (50%) of the respondents who moved to Houston from somewhere else have confidence in their elected representatives to be able to reduce the negative impacts of future flooding. Furthermore, renters (57%) are more confident than homeowners (48%) about their elected representatives' abilities to deal with future flooding.

More than half (56%) of the respondents who mentioned that they or their immediate family have NOT been directly affected by severe weather (personal injury, property damage, or evacuation) since 2001 have confidence in their elected representatives to be able to reduce the negative impacts of future flooding, whereas less than half of those (47%) who have been directly affected are confident about their elected representatives' abilities.

The survey also shows that the frequency of experiencing negative impacts in face of severe weather matters. More than half (51%) of the respondents who mentioned that they or their immediate family members have experienced a personal injury, property damage or had to evacuate from their homes in face of severe weather once or twice since 2001 have confidence in their elected representatives, but only 40 percent of those who and whose immediate family have been affected by severe weather more than twice since 2001 have confidence in their representatives.

Two-thirds (66.5%) of Millennials and Post-Millennials expressed that they have more confidence (either very confident or somewhat confident) in their elected county and city representatives' abilities to mitigate the negative impact of future flooding. This support drops to 55.6 percent among Generation X (55.6%) while Baby Boomers have the lowest level of support at 42.7 percent.

## **Attitudes about Governmental Interventions and Policies**

### **Raising Income Taxes to Balance the Budget**

Support for higher income taxes to balance the budget reflected a strong partisan divide: 58 percent of Democrats supported higher taxation to balance the budget in contrast to 35.4 percent of Republicans. Independents and third-party respondents were also less likely to support higher income taxes (37%).

Regarding the use of higher income taxes to balance the budget, there was no significant difference among those who evacuated and those who did not evacuate (42.2% and 40.1%,

respectively) and among those who suffered damage to their residences and those who did not (42.5% and 41.1%, respectively). However, renters were significantly more supportive of higher income taxes (50.8%) than home owners (38.2%).

Lifetime residents and newcomers to Houston (41.6% and 43.8%, respectively) share similar support for raising income taxes.

There are significant differences among racial/ethnic groups regarding the implementation of increased income taxes to balance the budget. Asian Americans (42.3%), Latinos (40.2%), and Whites/Anglos (38.9%) share similar levels of support for raising taxes to balance the budget. African Americans, on the other hand, were much more supportive: 55.8 percent. These response patterns are in sharp contrast with the results for questions about raising property taxes to finance mitigation projects, where support runs much higher for all groups: 65.6% of White respondents, 63.2% among African Americans and 67.3% among Latinos; among Asian Americans, support for raising taxes for mitigation remains in line with their responses to the balancing budget question (46.5%).<sup>1</sup>

A generational divide is also found regarding the use of higher income taxes to balance the budget. Millennial (48.2%) and Generation-X (45.8%) respondents are more supportive of raising income taxes than Baby Boomers (41.1%) or those aged 72+ (29.1%). A similar generational divide was found in support for raising property taxes for mitigation projects: while all age groups were supportive of raising property taxes, Millennials' support was 20 points higher than that of Baby Boomers.

### **Government Spending to Promote Economic Growth**

Support for government spending as a means of promoting growth reflects significant differences across racial/ethnic groups. While 69.4 percent of the respondents support government spending to spur the economy, Latinos (81%), African Americans (75%) and Asian Americans (72.6%) were above the average. Whites/Anglos, on the other hand, were considerably less supportive at 62 percent.

A generational divide regarding government spending is also found. Three quarters (74.7%) of Millennials were in favor of government spending for economic development while support among Baby Boomers was slightly below average (68.4%). Differences between lifetime residents of Houston and newcomers were small at 71.2 percent and 69.1 percent, respectively.

The partisan divide is also reflected in responses to this question: Democrats were overwhelmingly in favor (82.7%), followed by Republicans (67.5%). Independents and those who supported other parties were much less supportive (60.2%).

There were no differences between those who suffered damage to their residences during Hurricane Harvey (68.7% among those with damaged homes and 69.7% among those who suffered no damage). But those forced to move on account of the hurricane were more

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<sup>1</sup> It is worth noting that non-response rates for the tax for mitigation question was much higher for African Americans (15.5%), Asian Americans (14.7%) and Latinos (10.7%), than for White respondents (5.2%). For the balance budget question non-response rates were much lower for all groups, except for Asian Americans (11.2%).

supportive of government spending than those who did not move (73.6% and 68.1%, respectively).

### **Increasing the Minimum Wage**

Seventy-seven percent of the respondents were supportive of raising the minimum wage, with support highest among Generation-X respondents (81.4%), followed by Millennials (78.9%) and Baby Boomers (74.6%).

While a strong majority supports an increase in the minimum wage, there are significant differences among racial/ethnic groups. Ninety-seven percent (97.2%) of African Americans and ninety percent (89.7%) of Latinos support an increased minimum wage while support diminishes among Asian Americans (69.4%) and among Whites/Anglos (64.3%).

Only 3 percent of Democrats opposed raising the minimum wage while strong support was also found among independents (72.9%) and Republicans (61.6%).

The Hurricane Harvey experience did not seem to affect responses to this question.

### **Support for Financial Assistance to Homeowners Facing Foreclosure**

A plurality (47.7%) of the respondents supported a program aimed at providing financial assistance to homeowners facing foreclosure while 45.4 percent were in opposition. This is in sharp contrast with the high level of support at 63.3 percent for a buyback program for homes in areas that suffer repeated flooding.

The difference in responses to these two questions is larger among Whites/Anglos: while 63 percent support the buyback program in case of flooding, only 31.6 percent support financial assistance in case of foreclosure. African Americans are also more likely to support buybacks than foreclosure assistance: 75.3% to 53.1%. Differences among Latinos are much smaller and reversed: while 58.1 percent support the buyback program, two-thirds support foreclosure relief. These differences most likely reflect the different experiences faced by these groups with the two types of events.

Support for foreclosure assistance is strongest among Democrats (58.7%) while Republicans (31%) are much less supportive. Independents and those identifying with other parties fall in between the two major parties (43.6% and 46.3%, respectively).

Millennials' support for foreclosure assistance is 25 percentage points higher than that of Baby Boomers (62% to 38%, respectively). Yet Baby Boomers' support (67.6%) for buybacks for frequently flooded homes was higher than Millennials' support (63.3%).

There was no significant difference in support for foreclosure assistance as a function of the Hurricane Harvey experience.

## Environmental Concerns

Respondents were strongly in favor of government funding for the development of renewable energy (75.7%) and for regulation of greenhouse emissions (55.1%). Yet there were noteworthy differences across subsamples of respondents:

- **Age:** Seventy percent (69.9%) of the respondents aged 53 years and younger supported regulating greenhouse emissions and 84.1 percent supported government funding for developing renewable energy. Among those aged 55 years and older, support for such measures was considerably less: 43.7 percent supported government regulation of greenhouse emissions and support for government funding of renewable energy development was 66.7 percent.
- **Partisanship:** Ninety percent (90.2%) of Democrats supported government funding for renewable energy, whereas Republican support was substantially less at 55.8 percent. Support among Independents was also high: 77.1%. A large majority of Democrats (61.4%), Independents (64.1%) and those supporting other parties (66%) favored government regulation of greenhouse emissions while Republicans' support for regulating emissions was much lower at 37.6 percent.
- **Hurricane Harvey:** Those who were forced to move due to Hurricane Harvey were more likely to support government regulation of greenhouse emissions, but the differences are not substantially different than those who did not move: 58.9% and 53.9%, respectively.

The generational and partisan divides are notable in perceptions of global warming's effect on future severe flooding events in Houston:

- Close to eighty percent (79.3%) of Millennials were concerned about the impact of global warming in the Houston area, compared to 52.2 percent of Baby Boomers and 46.3 percent among those aged 73 or more.
- Thirty-five percent of Republicans expressed concern about the threat of global warming to flooding in Houston while 79.9 percent of Democrats, 63.7 percent of Independents and 59.9 percent of the respondents who did not identify with either party agreed that global warming poses a threat.
- Those who were forced to move during Hurricane Harvey were more concerned about global warming as a threat to flooding in the Houston area than those who stayed in their homes: 66.2% and 59.7%, respectively.