1. When did the voluntary program start?

The voluntary buyout program started in 1985.

* 1. Did it start at the same time across different neighborhoods?

I cannot find a clear answer. I am guessing the answer is no, because flood map boundaries have changed over time. Since qualification and prioritization depend on flood depth I would think that as flood depth and risk have changed, the areas of the flood buyout program have changed as well.

* + 1. Has the voluntary map regions changed over time with updated/adjusted risk assessments?

Same answer as above.

* 1. If not, different start dates by neighborhood
  2. Have the program “rules” changed over time? (Not the mandatory bit)

From news reports it seems like the buyout location

1. Can any current or recent owners have purchased from someone who took a previous buyout? Answer: cannot, they turn it into an empty lot

I am not certain, but I think the answer is no. I don’t think they can because the properties are turned into empty lots after being bought out.

* 1. Acquisition??

Harris County's Post-Disaster Relocation and Buyout Program includes two components: the Mandatory Acquisition Program and the Mandatory Buyout Program. Properties that have changed ownership or undergone significant repairs since the 2017 flood will be acquired at current fair market value (FMV), while properties that remain unrepaired or vacant will be acquired at pre-flood appraised value (Harris County Community Services Department, n.d.).

* 1. Does empty space get turned into a neighborhood park or stay empty? (This might change people’s land value assessment…)

From the website about the voluntary buyout program:

After properties are purchased and cleared of structures, the land is turned over to HCFCD’s Facilities Maintenance Department for maintenance. Maintenance varies depending on proximity to occupied structures, type of land use in the immediate area, and plans for the lot. Limited development is allowed and is generally restricted to only those non-insurable facilities that would not impede stormwater during flood events (Harris County Flood Control District, n.d.).

From the website about the mandatory buyout program:

Once properties are acquired, structures are demolished, and the land is repurposed as natural floodplain, retention areas, or green space to mitigate future flood risks. Properties acquired through the program can only be used for green space, recreational or floodplain / wetlands management practices in the future (Harris County Community Services Department, n.d.).

1. Offers. How are the households being communicated with? Phone? Mail? House call?
   1. Who is doing the communicating with the household?

From the website about the voluntary buyout program:

If your property is identified as eligible and you have submitted a Notice of Voluntary Interest form, the Flood Control District Property Acquisition Team **will contact you directly**. If you are selected for the buyout, then owners are provided pre‑flood appraised values for their homes and relocation assistance (Harris County Flood Control District, n.d.).

From the website about the mandatory buyout program:

Property owners within the Buyout Areas will be provided an official General Information Notice informing them of inclusion in the program. Property owners will receive a **letter** requesting that you contact the case manager who has been assigned. Property owners will receive an **initial written purchase offer**, along with a copy of the appraisal and a written summary statement outlining the basis for the offer and the amount being offered for their property. Owners can also **submit a** **counteroffer in writing**, including any supporting documentation. If no agreement is reached, the case will go to **court**, and if no settlement is made, the property will be acquired through **eminent domain**. The process may include a Special Commissioner’s Hearing where the seller can present additional information regarding fair market value.

1. Voluntary can get multiple offers. How is the decision to return and make another offer made? Timing? Amounts? Updated risk assessment?
   1. Any implications for insurance if I am voluntary? If I reject an offer?

Property owners in high-risk flood areas who have received federal disaster aid (such as FEMA grants or SBA loans) must maintain flood insurance to be eligible for future assistance. Those who fail to obtain required flood insurance or are unlawfully present in the U.S. will only receive post-flood FMV and will not qualify for incentives.

1. Mandatory: Forces me to take my second offer. What if I had only had one offer first. Do I get a second offer with the mandatory or do I take the first?
   1. How long do I have to move out if mandatory?

If you accept the mandatory offer, you will have a minimum of 90 days to move out and close on the buyout property. You then have up to 12 months from the offer date of your buyout home to close on a replacement home. If you choose to rent while looking for a replacement home, that will be at your own expense.

1. What aid (monetary and non-monetary) do people get under mandatory and voluntary?
   1. Expedited processes? Bonus for staying in the county? Bonus for also buying out with neighbors (agglomeration bonus)? Target constraint on buyouts (need a minimum number)?

Voluntary: The mandatory incentives may be the same…

Mandatory:

1. Proceeds from the Sale of Your Home – Payment for your home based on its pre-storm fair market value.
2. Replacement Housing Assistance – Funds to help purchase a replacement home, based on the current market value of three comparable homes.
3. Locality Incentive ($19,875) – A lump-sum payment for homeowners who relocate within Harris County but outside the 100-year floodplain.
4. Down Payment Assistance (Up to $35,000) – Financial aid for LMI households and those up to 120% AMI who need help covering the lender-required down payment on a replacement home. The home must be outside the 100-year floodplain, within Harris County but outside Houston city limits.
5. URA Moving and Storage Expenses – Covers costs of moving and storing belongings for displaced residents under the Uniform Relocation Assistance (URA) program. No affordability period required.
6. URA Housing Replacement Payment – Financial assistance for purchasing or renting replacement housing under URA guidelines.
   1. Language/legal help for non-English speakers? Legal for anyone not just about language
   2. We want to know what differential incentives are between vol and mandatory
7. Can we get the data/indicator on who became mandatory?
   1. Did mandatory zones phase in or all at the same time? (Seems to have stayed the same)
8. Can we get data on people who received offers but have not yet taken it?
9. Can we build maps of properties? Also can we update these maps over time with bought out space?
   1. Are the observations we have complete in terms of spatial map of voluntary and mandatory areas?
   2. Measure of how many of one’s neighbors have moved prior to time t
10. We know some moves and this could be within county, within state, or beyond. Not knowing does not imply anything about where you go, necessarily.
    1. How many (percent) do we know where they go? (Maybe around 25%)
       1. We do not know why they stayed or moved far… (e.g., family)
       2. Can we find out if local stayers got a “local” bonus?

From the website about the mandatory buyout program:

You can move anywhere you choose. However, the program can only pay for moving costs within 50 miles of the buyout property. Any additional mileage above 50 would be covered by you. Harris County does hope you will stay and is offering a locality incentive of $19,875 to encourage you to do so. To qualify, you must purchase a home in Harris County, have income under a limit set by HUD, be a legal resident, be compliant with the requirements of any prior disaster recovery assistance received, and supply all necessary documentation for this Buyout program.  Funds can be used for any purpose, including as part of the payment for a replacement home.

1. County (or State?) level reports and other documentation related to the buyouts
2. Who is funding this? FEMA aid, funding from the state as well? Do we know how the funding arrangement is done and how the decision-making is done? (HMGP is FEMA hazard mitigation grant program aid source)

Over 75% of the District buyouts use FEMA funding. Federal-level grantors include the US Department of Housing and Urban Development and FEMA, which fund through community block development grants, the Hazard Mitigation Grant Program (HMGP), and Flood Mitigation Assistance Program (FMAP). State level grantees include the Texas General Land Office, the Texas Department of Public Safety, and the Texas Water Development Board. Local Level grantees include the City of Houston and the Harris County Flood Control District (HCFCD).

* 1. E.g., does FEMA get a say in this?
  2. Is this being done in other states? Mandatory programs are small in 3 other states (ND, IA,), but there are more voluntary programs.
     1. Any research on other programs from other states? Some stated preference papers, a lab experiment, some revealed preference papers, one uses Zillow data (NY program leads to increase in property value??), lots of papers saying there are savings from avoided disaster costs

Yes!

There have been two stated preference (SP) studies on buyouts. Landry et al. (2020) find homeowners are willing to pay $22 per household per year for a buyout in North Carolina. Ando and Reeser (2022) estimate homeowners are willing to pay $600 for a hypothetical contract for a pre flood buyout.

There have also been several revealed preference (RP) studies. Guo et al. (2023) use sales data from Zillow and find that buyout and acquisitions provide a 3.7-9% increase in property values from the mean in New York’s buyout program. Nelson & Camp (2020) estimate $2 billion in benefits from avoided structural and building damages using a FEMA method and property sales data from the Tennessee buyout program. They estimate that avoided relocation and volunteer labor costs are an additional $980 million using data from a household survey. They also estimate that buyouts generate over $670 thousand from reduced stormwater infrastructure costs.

Cost-benefit analyses (CBAs) that show benefits exceed costs are required for implementation of buyouts. A review of HMGP funded buyout between 1993 and 2003 found that the average BCA was about 5 to 1 (BenDor et al., 2020). BenDor et al. (2020) calculate the financial impacts of buyouts including avoided infrastructure costs, avoided response and recovery costs, net tax revenue loss, and buyout site maintenance costs. Carran-Groome et al. (2021) review CBAs of buyouts to attempt to calculate full cost of buyouts, the costs associated with the design, administrative, and implementation, and conclude that there is a lack of reporting of these government expenditures.

There is concern that flood mitigation policies encourage development on flood-prone areas. This is consistent with the fact that NFIP flood insurance payouts are mostly used for rebuilding flooded properties, rather than on reloation (Miao & Davlasheridze, 2021). Miao and Davlasheridze (2021) also find that counties with higher NFIP insurance rates are less likely to participate in buyouts because of reduced risk perception. They hypothesize that underpriced flood insurance reduces the true cost of living in risky areas that could lower incentive to relocate.

Table 1 summarizes the literature on the economic effects of flood buyout programs.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Paper | | | | Type of effects | | | |
| Authors | Program | Methods | Benefit type | Spatial | Temporal | Racial | Income |
| Guo et al., (2023) | Hurricane Sandy acquisition and buyout program | DID | Property values, enhanced resilience, and job creation | Y | Y | N | N |
| Nelson & Camp (2020) | Tennessee buyout | FEMA algorithm | Avoided structural damages plus relocation costs and volunteer labor | N | N | N | N |
| Ando & Reeser (2022) | Hypothetical pre-flood contract for post-flood buyout | CVM | WTP for hypothetical program | N | N | Y | Y |
| Jowers et al. (2023) | Various programs between 1989 and 2017 | Hedonic | Difference between FMV and buyout value for White, Black, and Hispanic owners | N | N | Y | N |
| Schoder (2024) | Various programs between 1989 and 2017 | Propensity score weighted DID | Property value increase | N | N | Y | Y |
| Holloway, BenDor (2023). | Mecklenburg County, NC buyout program | Hedonic | Property value increase | Y | Y | N | N |
| Hashida & Dundas (2023) | New York Rising Buyout and Acquisition Program | Hedonic repeat sales DID and event study | Property values | Y | Y | N | N |

1. Does any of the bought out land turn over to private ownership at some point down the line? Even if homes are not built…

Not sure

The following is more for us and not for the County officials…

1. What can we learn about neighborhood characteristics?

By Harris county block I can find Decennial Census Data

* 2000
  + H006 Race of Householder: White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Some other race, Two or more races
  + H007 Hispanic or Latino Householder by race: Total not Hispanic or Latino, Total not Hispanic or Latino & is White, Total not Hispanic or Latino & is Black or African American, Total not Hispanic or Latino & is American Indian and Alaska Native, Total not Hispanic or Latino & is Native Hawaiian and Other Pacific Islander, Total not Hispanic or Latino & is Some other race, Total not Hispanic or Latino & is Asian, Total not Hispanic or Latino & is Two or more races, Total Hispanic or Latino, Total Hispanic or Latino & is White, Total Hispanic or Latino & is Black or African American, Total Hispanic or Latino & is American Indian and Alaska Native, Total Hispanic or Latino & is Native Hawaiian and Other Pacific Islander, Total Hispanic or Latino & is Some other race, Total Hispanic or Latino & is Asian, Total Hispanic or Latino & is Two or more races
  + H004 Tenure: Total, Total Owner Occupied, Total Renter occupied.
  + H002 Urban and Rural: Total housing units, Total housing units in urban areas, Total housing units in rural areas
* 2010
  + P1 Race: More detailed version of H006 basically
  + H2 Urban and Rural
  + P2 Urban and Rural
  + H4 Tenure
  + H7 Hispanic or Latino Origin of Householder by Race of Householder
  + P5 Hispanic or Latino Origin by Race
  + P8 Race
  + P9 Hispanic or Latino and Not Hispanic or Latino by Race
* 2020
  + P1 Race
  + H10 Tenure by Race of Householder
  + H2 Urban and Rural
  + H4 Tenure
  + H7 Hispanic or Latino Origin of Householder by Race of Householder
  + P8 Race
  + P9 Hispanic or Latino and Not Hispanic or Latino by Race

By Harris County Block Groups I found ACS (5-year estimates)

* 2021
  + B02001 Race
    - Doesn’t include Hispanic
  + B01003 Total Population
  + B03002 Hispanic or Latino Origin by Race
  + B03003 Hispanic or Latino Origin
  + B070201 Geographic Mobility: Total in same house as 1 year ago, Total in different house than 1 year ago
  + B15003 Educational Attainment for 25 yo +
  + B19001 Household Income in Past 12 Months ($2021 adjusted)
  + B19013 Median Household Income in Past 12 Months ($2021 adjusted)
  + B25003 Tenure
  + B25006 Race of Householder
  + B25063 Gross Rent
  + B25075 House value (number of hh in each range)
  + B16004 Age by Language Spoken at Home
  1. US census block groups to get median HH income, other statistics? Ratio of whites to non-whites? Population density?
     1. Can we separate non-whites into black and Hispanic? Yes
     2. Can we figure out language spoken at home (primary)? Yes
     3. Concerns that the mandatory was targeting minority (Hispanic?) populations
     4. News articles about racial/ethnic disparities. Are they claiming unfair offers?
  2. Crime rates by block?
     1. Usually separated by violent and non-violent crime
     2. Houston data: <https://www.houstontx.gov/police/cs/Monthly_Crime_Data_by_Street_and_Police_Beat.htm> has Street, Latitude, and Longitude of crime data
     3. Harris County data: https://oca.harriscountytx.gov/Data
  3. Education data by block? If it is median, then in Census? Could be school district dummies
  4. Addresses can be used to compute distance to nearest park, city center, grocery store?

1. IPUMs or another dataset have information on neighborhood turnover? If so, what spatial level?

Descriptive statistic: do two-headed households behave different from (plausible) one-headed household?

* More likely to buyout? Which round of offer? Stay or move far?

Main hypothesis: did the switch to mandatory improve or exacerbate racial disparities in the voluntary program?

* Household level benefits/costs? Incentives?
* Community level effects after the buyouts (e.g., parks in nice neighborhoods, empty lots in other neighborhoods?)

*Map of active buyouts*: <https://www.hcfcd.org/Portals/62/Home-Buyout-Program/2025/Active%20Buyout%20Projects%20-%202025%20March.pdf?ver=2B71IuICOCwzyfccqmJ_fg%3d%3d>

