**Assessing the Economic Outcomes and Equity Implications in Transitioning to Mandatory Flood Buyouts**

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Flood buyout programs are an effective way to protect homeowners from flood risk. These programs involve government agencies purchasing homes from voluntary participants that live in flood prone locations and relocating them out of harms way. With flooding being the most expensive natural disaster in the US and risk increasing due to climate change, several mandatory programs have been implemented (Siders & Gerber-Chavez, 2021). While relocating people from their homes and communities is controversial, the benefits of such programs should not be overlooked. With projections of sea level rise, mandatory buyouts appear to be inevitable in some areas, making it crucial to study their welfare and distributional impacts.

I propose estimating the economic effects of the transition of the Harris County flood buyout program from voluntary to mandatory using a residential sorting model. I will use data on where people live and where they move after participating in a buyout program. Following Bakkensen and Ma (2020), I estimate a utility function with equation (1) that describes household ’s utility from choosing to move to house at time

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Let and represent observable house and neighborhood characteristics, respectively, and captures unobservable attributes. is a dummy variable equal to 1 if property *j* is part of a mandatory buyout at time is the mean utility, which is broken down further in equation (2). The parameter on house price is the marginal utility of income. The parameter can be interpreted as the marginal willingness to pay for participation in the mandatory buyout program. I hypothesize that residents benefit from participation in the mandatory buyout program, as it moves them out of harms way. Furthermore, I can decompose this by race, tenure, income, and primary language spoken to examine distributional effects of the program. Primary language spoken is of primary interest in this study, as there is a large Spanish speaking population in Harris County.

Despite the increase in buyout programs there is a lack of research on the environmental justice implications of buyouts. While prior research shows the economic benefits of flood buyout programs using hedonic analysis or contingent valuation methods (Guo et al., 2023; Nelson & Camp, 2020; Ando & Reeser, 2022; Jowers et al., 2023; Schoder; 2024; Holloway & BenDor 2023; Hashida & Dundas, 2023), this is the first study I know of to apply a residential sorting model to examine distributional consequences of a buyout program. Furthermore, there is no empirical analysis of the effects of mandatory buyouts. Mandatory buyouts have the potential to reduce the “checkerboard effect,” which is when some residents partake in voluntary buyouts and others do not, causing a checkerboard of vacant and occupied parcels which may cause “blight, community fragmentation, difficulty with providing municipal services, and inability to restore full floodplain functionality” (Congressional Research Service, 2024). Public opinion shows a lack of support for mandatory buyouts (Raikes, et al., 2020), and there is concern with social injustice and transparency in the selection procedure of buyouts leading to mistrust in buyouts as a viable flood risk reduction strategy. Minority groups often receive fewer benefits from environmental amenities compared to high income, white residents, due to historical housing discrimination. The mandatory program in Harris County targets neighborhoods with residents who are primarily Hispanic or Latino, have low or moderate income, and many have no or mixed citizenship status (Bonnyman, 2024).

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