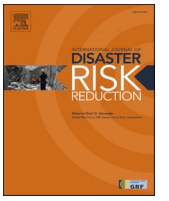
International Journal of Disaster Risk Reduction 104 (2024) 104354

Contents lists available at ScienceDirect

International Journal of Disaster Risk Reduction

journal homepage: www.elsevier.com/locate/ijdrr



"Not enough": A qualitative analysis of community perceptions of neighborhood government flood management plans using the case of Houston, Texas

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ARTICLE INFO

Keywords:
Environment
Flooding
Disaster
Community engagement
Urban inequality
Flood infrastructure

ABSTRACT

Disasters, including floods, have increased in intensity over recent decades due to climate change and urbanization. Some local governments have attempted to engage communities in resilience efforts, referred to as Community-Based Disaster Resilience Management (CBDRM). However, it is unclear to what extent governments can effectively involve local communities in flood management plans, and how much flood management is perceived to be a "shared responsibility," especially in low-income and minority areas. One city attempting to engage low-income and minority communities is Houston, Texas, which provides an opportunity to study how these efforts play out in the community in real time. Specifically, in this study, we examine Kashmere Gardens, a target neighborhood of the Houston initiative. We used a purposive and snowball sampling method and a grounded theory methodological approach to conduct qualitative in-depth interviews with 22 Kashmere Gardens residents. From this process, we found several themes, including affordability and convenience, neglect and distrust toward government, a lack of awareness concerning government flood management plans, and a sense of personal efficacy in the face of feelings of government neglect. The results of this study suggest that clearer communication from the city and more direct engagement with the community through on the ground programming may be necessary to develop better community trust and partnership in high flood risk areas. In terms of policy, utilizing funds to organize transportation or place meetings physically in the neighborhood, and employing more community organizers from within the community who have local knowledge, may foster better engagement to develop trust.

1. Introduction

Disasters, including flooding, are significant catastrophic events that can cause physical, emotional, and economic damage like negative physical health outcomes, psychological disorders, and the destruction of property and infrastructure [1–6]. Major flood events have been increasing in both frequency and amplitude over time due to various factors like increased urbanization and global warming. This means that there is greater potential for catastrophic flood events to affect urban communities, and many local governments in high flood risk communities have begun to explore new, community-centric methods for disaster risk management. However, to more effectively accomplish this, we need a deeper understanding of how approaches to flood risk assessment and

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https://doi.org/10.1016/j.ijdrr.2024.104354
Received 7 September 2023; Received in revised form 21 February 2024; Accepted 22 February 2024
Available online 23 February 2024

management affect the lived experiences of individuals within these communities [1,7,8]. When local governments implement programs to engage flood prone minority and low-income communities in flood management strategies, we need to examine the experiences of the affected residents, which is the goal of the present study.

A now large body of work has shown that the effects of disasters are not felt evenly across the population [8–10]. Though nature does not discriminate, the ways that we have sorted ourselves socially across the natural and built environment, and the ways that mitigating infrastructure projects have been prioritized, have often meant that certain populations are more susceptible to devastation by disasters and experience greater difficulty in rebuilding and recovery [11–16]. One of the central trends in this body of work has been government neglect or differential government priorities in infrastructure planning [2,16,17]. This can affect the resilience process across communities, especially communities that are more vulnerable and have been more affected by flooding in the past [12]. In this study, we examine how flooding and flood infrastructure planning are experienced through one low-income minority community in Houston, Texas: Kashmere Gardens. This neighborhood was recently made the target of city planning efforts to address flooding and its devastating consequences.

We chose this site because Houston, Texas is the largest city in the United States that combats flooding on a regular basis [2,8]. The combination of Houston's geographic location on the Gulf of Mexico and the low elevation at which the city sits makes Houston a prime location for experiencing severe flooding [18]. Furthermore, the rapid population growth and low-density expansion of the city into the Western prairielands has created a secondary problem for the whole region as the built environment prevents the proper absorption of water, leading to an increase in the intensity of weather events in the last several decades [19]. For example, Harris County (the core county of Houston, Texas) has over 4.7 million residents as of the 2020 Census, which was an increase of 13.5% since the 2010 Census. However, this growth has been even greater in the Western prairielands, where the population grew by 36% over this same time frame. The growth in this area has also been low density suburban growth in particular, which previous work has linked to increased impervious surfaces [2,3,14]. This was underscored in 2017 during the Hurricane Harvey disaster, in which much of Houston experienced catastrophic flooding, and many of the Westen local retention basins overflowed and had to engage in controlled water releases [8,18,20–22]. Moreover, Hurricane Harvey also revealed that Houston experiences significant social inequalities by race and class in flood planning and infrastructure [8,20–22]. Specifically, neighborhoods with higher Black and Latino populations, like our research site Kashmere Gardens, were disproportionately exposed to flooding during the hurricane [2,8,23,24].

To combat historical neglect in minority and low-income neighborhoods, in 2017, the City of Houston created the Complete Communities Initiative. Complete Communities is designed to promote equity across neighborhoods with a specific plan to target flooding. This program promotes a "shared responsibility" between government and community members in which both make an effort to mitigate flood consequences [7,25,26]. Government programs across the U.S. have begun to try to combat the consequences of disasters through the engagement of communities, and the literature recognizes the importance of community involvement in the success of flood mitigation strategies [7,27,28]. However, there is limited research on how community flood management programs affect the lived experience of those involved. Further, there are gaps in the literature related to qualitative studies on government action plans [7,29]. Therefore, the questions that drive this exploratory qualitative study are 1) What are the lived experiences of individuals who reside in a high-risk flood area? and 2) How do community members understand and make sense of government engagement on flooding in their community? We attempt to answer these questions through qualitative in-depth interviews of residents of Kashmere Gardens in Houston, Texas. First, we review the relevant extant literature and describe our methodological approach.

1.1. Literature review and theoretical framework

1.1.1. Community-based disaster risk management

Critical infrastructure to solve important environmental problems, including flooding, pollution, and environmental services, is often proposed without a comprehensive understanding of the social landscape and communities in which these proposals are proffered. Moreover, mitigation strategies are often fraught with political battles, limited budgets, appeals to local industry, and resistance from the local community [30]. However, infrastructure projects require community understanding and buy-in to make the implementation and reception of the proposed infrastructure more successful. Some recent work suggests that perceptions and public understandings of environmental interventions often differ from the perspectives in the planning community [31]. Research on public participation in environmental planning shows that such efforts often fail to engage much of the public, typically relying on poorly advertised formal meetings that result in limited understandings of public perception [32,33]. Such work also demonstrates that failure to engage the public sufficiently can often lead to ineffective projects [31,34]. For decision-makers to integrate community input into improving infrastructure projects, there has to be an understanding of community perceptions of their built environment and how it relates to their quality of life [31,35,36].

Recent work in this area has highlighted a paradigmatic shift in how we understand flood disaster management specifically. This new framework, commonly referred to as Community-Based Disaster Risk Management (CBDRM) has made several key advances in how we can properly manage disasters [37]. First, the primary tenet of this perspective is to shift the focus away from top-down management styles that hold technocrats, specifically flood engineers and city planners, as the primary voices and stakeholders in flood management projects [37,38]. These are the traditional managers of flood projects due to their technical expertise and knowledge of infrastructure planning [39]. However, many have pushed back against the idea of technocrats being the sole or primary drivers of risk management. Instead, the idea is to employ more proactive community-grounded approaches to risk management and disaster planning [39]. Traditionally, communities are the primary source of aid and typically the first to respond in the middle of a disaster [39]. This approach to management embraces this role of the community and seeks to leverage the power of the community to manage risks and create emergency plans.

Similarly, a second tenet of this approach is to draw on local knowledge when implementing planning and management designs [38,40]. Since the community members know their area best and have the greatest stake in seeing it managed properly, this approach prioritizes that expertise [38,39]. Residents learn from their personal experiences with disaster and develop resilience and coping mechanisms [41]. Other related work sees this resilience process as a dialogue between communities and their local governments whereby local institutions can facilitate social learning arenas that can be used to both educate the public about disasters, as well as engage the public in disaster management directly [41,42]. Since many communities, especially those that are socially marginalized, may lack the material resources to realize their disaster management priorities, the idea is have government in partnership with the community to leverage the knowledge and experience of local communities with the resources and power of government.

Finally, another aspect of this approach is to employ proactive disaster risk prevention rather than reactive management of disasters after they occur [37]. Thus, the goal is to engage the community to develop proactive preparedness protocols and active risk management, so that communities can more effectively prevent the devastating effects of disaster and exhibit greater resilience when events occur [39]. The CBDRM is the theoretical framework that this study will employ in an in-depth qualitative study of flood risk management in the Houston area. A recent initiative in the City of Houston, the Complete Communities Initiative, has shifted their approach to provide for more community engagement in flood management efforts. We use this paradigm to understand and contextualize how one particular low socio-economic status community in the Houston area understands and makes sense of local flood management efforts. We first review some of the empirical work on this topic.

1.1.2. Perceptions of government response to flood and disaster management

Government actions preluding and following disasters have been found to be unequal across different communities [43–45]. Marginalized areas typically have more impervious surfaces and fewer green spaces that do not allow flood waters to soak into the ground [43]. Moreover, government efforts to control the growth of impervious surfaces and regulate construction has been unequally implemented over time [2]. Other work has shown that government interventions in the aftermath of a disaster have not been equally distributed or felt. For example, a study conducted by the Pew Research Center determined that following Hurricane Katrina, only 19% of Black people in New Orleans received some type of government aid compared to 41% of White people [44]. More importantly, this could have affected perceptions of government strategies, with 31% of White people believing that both state and local government were doing what they could to disburse disaster relief [44]. Further, government response can affect how communities perceive government efforts toward resilience following a disaster [44]. In another example, after Hurricane Harvey in 2017, Black and low-income Houston residents were less likely to say they were getting adequate aid from the government [46].

Perceptions of government neglect could lead to or compound already existing feelings of distrust toward the government, particularly their flood mitigation strategies. The literature acknowledges political trust as conceptually different from generalized trust [47,48]. Cook and Gronke [49] posit that individuals 1) actively trust 2) withhold judgment or 3) actively distrust government entities, which should be acknowledged when understanding political trust and distrust. Public trust in government institutions relies on public perceptions of institutions' reliability [50–52]. Because the power between government and the public is asymmetrical, the public has to implement a sort of "blind trust" in which they cannot fully monitor what the government is doing [51]. With this in mind, governments that interact more with their communities could provide more widespread and effective communication regarding disasters [51,53].

Previous studies provide evidence that trust in government bodies is different across distinct social groups [44,46,47]. Distrust in government can affect flood mitigation strategies, including evacuation practices and the dissemination of correct information equally across communities [51,52,54,55]. Racial and ethnic minorities are less likely to accept a risk or warning message as credible without confirmation of the message from others, typically people in their social networks [54]. For example, Cordasco, Eisenman, Glik, Golden and Asch [56] interviewed evacuees of Hurricane Katrina and found that Black and low-income respondents felt that information was being withheld from them particularly because of their race and SES. A lack of faith in government practices may lead communities to develop their own flood management systems.

1.1.3. Community engagement in flood management

The concept of community engagement in mitigating the consequences of disasters is widespread in the empirical literature, especially with the recent shift to CBDRM approaches [27,28,57,58]. Communities are best described as aggregations of individuals in a localized area [57]. They typically share common interests, values, and norms, which may or may not follow the larger society [57]. Though they cannot make government decisions, communities are autonomous bodies that can create their own flood management practices [57,59]. Community engagement in flood management practices can be effective because communities usually share a "common good" and local knowledge [57]. Examples of community engagement for disaster preparedness, including flooding, are rooted in community-agency partnerships and community-led approaches [28]. Community based approaches typically stem from community participation and a mindset of shared responsibility [7,26,28]. However, one caveat to this approach is that shared responsibility implies that people in these communities have complete and accurate information to contend with risk and adequately engage in flood management [7,26]. Thus, shared responsibility implies that local governments are equipping community members to take on these roles to substantively take part in building resilience in their communities [25]. However, the literature to date has been unclear about the success of many local governments to actually perform that work of informing and training [7,25]. Some work demonstrates that community-based networks are associated with quicker recovery and greater resilience following a disaster [28]. A key factor in creating strong communities with tangible networks that can assist in preparing for disaster events is creating relationships with local government. This better facilitates management practices [27]. Community networks will share information concerning flooded roads and what other people in the area might be doing to prepare for impeding disasters [28].

Following from this work on shared responsibility, when both communities and local government attempt to mitigate flood consequences, local self-reliance and cross-agency coordination improve [7,25]. For example, studies have documented several communities participating in a shared flood risk management program to attempt to conserve wetlands and open space through grass-roots efforts [60]. Shared responsibility can be especially important when affected communities do not have the social or economic resources to prepare for impending disasters [25,26]. However, problems can arise when communities and local government do not engage in a true co-committed shared responsibility regarding flood management. For example, some research has shown that marginalized communities tend to be isolated from public flood management and instead rely on internal networks within the community [59,61]. These communities have largely used their own devices to reduce disaster consequences by offering free individual labor [62]. Moreover, government agencies may not understand the specific needs of marginalized communities because of a lack of communication, which can put minority and low-income communities at even greater risk, making shared responsibility even more important [7,59,61].

Though the literature recognizes the importance of both community and government engagement in disaster management, there are often difficulties in recruiting communities for civic engagement in flood management efforts [7,59,63]. There is limited engagement in minority and low-income communities [59]. Many efforts for community engagement rely on White and majority spaces, such as predominantly White neighborhood organizations and community centers, or within systems like homeowner's associations and membership clubs that can perpetuate racial and economic inequality [63]. This can create problems when recruiting minority and low-income community members for engagement in the process of shared responsibility. Thus, when government entities attempt to engage minority and low-income communities in flood management strategies, it is important to explore the implications and experiences of the affected residents, which is what motivates the present study.

1.1.4. Flood related disasters in Houston

For this analysis, we specifically examine government engagement in disaster planning in one community in the Houston area. According to the 2020 Census figures, Houston, Texas is the fourth largest city in the United States and is the most racially diverse. Houston is also historically and contemporarily a city of great racial/ethnic and economic inequality. Moreover, in the Houston area, climate disasters are perennial problems and have been shown to be unequal in terms of their effects on the population [8,20–22]. This was punctuated in the Hurricane Harvey disaster, in which much of Houston experienced catastrophic flooding, and since 2015 alone, the Houston area has experienced five other major flooding events, in addition to Harvey.

1.1.5. Kashmere Gardens and the Complete Communities Initiative

The site of this study is specifically Kashmere Gardens, a neighborhood in Houston, Texas northeast of downtown. See Fig. 1 for a map of the catchment area. From the 2017–2021 American Community Survey (ACS), Kashmere Gardens is a predominantly Black (shown in the map) and low-income neighborhood. Currently, the neighborhood is 49.7% Black, 45.4% Latino, and 2.4% non-Latino White. It also has a median household income of $31,744 (compared to Houston's median household income of $56,019) and a poverty rate of 32%. Beyond the social circumstances of the neighborhood, Kashmere Gardens has been subject to frequent catastrophic flood events that affect large portions of the neighborhood. For example, nearly 44% of homes in Kashmere Gardens flooded during Hurricane Harvey, and some homes still remain damaged [64,65]. Moreover, Kashmere Gardens has typically been under-resourced with regard to infrastructure that could help mitigate these effects [65].

In order to combat flood consequences, as well as other social and economic problems in the neighborhood, the City of Houston included Kashmere Gardens in its Complete Communities initiative, which is a prime example of strong government community

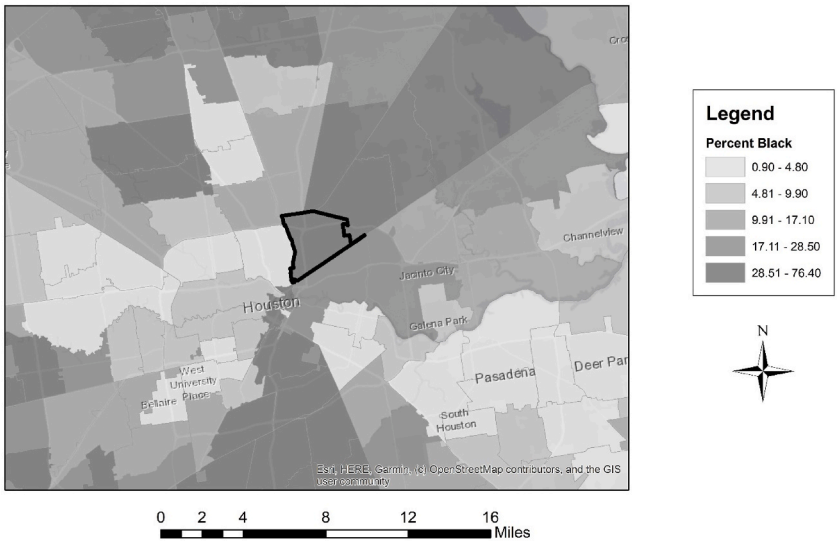

Fig. 1. Map of study area presented in ZIP code tabulation areas with percent black and Kashmere Gardens outlined.

engagement efforts in a marginalized area [65]. This program was created in April 2017 by former Houston Mayor Sylvester Turner and is designed to service under-resourced neighborhoods in the area. The goal of the program is to "bridge the gap between equity and opportunity" to ensure all neighborhoods are receiving the same services, and targets neighborhoods that have been historically under-resourced [65]. Complete Communities is currently comprised of 10 neighborhoods around the City of Houston, with each neighborhood having its own unique plan to target social and economic problems that are specific to each community.

The action plan for Kashmere Gardens specifically is comprised of several items that impact the neighborhood, like education, housing, and flood resilience. For this study, we focused solely on the flood resilience portion of the plan, and our interview guide was centered around the disaster risk reduction portion of this project (see Appendix A for the complete interview guide). The action plan consists of both community and government-driven action plans. For instance, on the government side of this effort, the Harris County Flood Control District created Project Hunting, a $165 million flood damage reduction project that is expected to significantly reduce the depth of flooding in the neighborhood by widening and deepening up to 5 miles of Hunting Bayou, which overflowed during Hurricane Harvey [65]. Further, Complete Communities conducted drainage studies to target areas that assess the current conditions of storm drainage systems and develop plans to improve street drainage on key streets in the neighborhood [65]. However, beyond these government efforts, these plans took the task of community-based disaster risk management seriously and included several community engagement items. For example, a critical community-driven project outlined in the action plan is the Adopt-A-Ditch program. Adopt-A-Ditch includes the creation of a community partnership and outreach campaign to engage residents in the program by cleaning drainage ditches and reporting illegal dumping to improve water flow through the city's flood drainage systems.

Furthermore, to develop these plans, the program included community outreach. Initiative leaders held five public meetings in Kashmere Gardens from September 2019 to July 2020 to encourage community members to participate in the development of the action plan. The initiative also engages with civic leaders in the Kashmere Gardens area who can better assist in connecting with the community, and concurrently developed a community organizing branch of the project with regular meetings. Thus, this effort represents a strong attempt on the part of local government to engage in community-based disaster risk management to include bottom-up approaches and to break with traditional top-down methods of flood management. Further, this is a largely minority, low-income community, which provides an example to the limited literature concerning how local governments encourage involvement in marginalized communities. Exploring how Complete Communities impacts the lived experience of residents in Kashmere Gardens will help gain understanding of how targeted action plans for communities interact with community members and the efficacy of CRDRM. Moreover, the lessons learned from this effort can help future policy makers in their decision making.

1.2. Materials and methods

1.2.1. Data collection and analyses

The data for this study was collected through 22 in-depth interviews with residents of the Kashmere Gardens neighborhood in Houston, Texas. We used purposive and snowball sampling as we were only interviewing residents of this specific neighborhood, making participant recruitment more difficult, especially in open city-wide information venues. Participants were recruited through

Table 1
Participant demographics ($N = 22$).

Variable	*n*	%
Race and Ethnicity		
Black	12	55
White	2	9
Latino	8	36
Sex		
Male	8	36
Female	14	64
Marital Status		
Married	2	9
Separated	3	14
Divorced	3	14
Living with a partner	1	5
Never Married	13	59
Educational Level		
Less than high school	7	32
High school/GED	13	59
College degree	2	9
Employment Status		
Full-Time	10	45
Part-Time	1	5
Unemployed	4	18
Self-Employed	3	14
Retired	3	14
Disability	1	5
Income		
Under 50,000	18	82
Above 50,000	4	18

physical flyers posted throughout the neighborhood, as well as on websites, such as Craigslist, Nextdoor, and Facebook. The study utilized snowball sampling as well, with each interviewee being asked if they knew of anyone that would be interested in participating in the interview process.

The interviews were a mix of in-person and virtual or phone interviews, with in-person interviews taking place in public locations. Although in-person interviews were preferred as the literature has shown this to be a more effective interviewing method, especially for building rapport in an interview setting, we allowed phone or virtual interviews following our participants' preferences given the post-COVID-19 time period, in which many of our participants did not feel comfortable meeting face to face. Many of our respondents also lacked personal transportation, so we also did not want to place an undue burden on them to meet in a public place, even if located in their neighborhood. In total, of these 22 interviews, 9 were in-person, 6 were over the phone, and 7 were virtual and completed over Zoom specifically. Interviews took place over the course of one year from July 2022 to June 2023. Each participant was given a $30 Walmart gift card as compensation for their time. All of the interviews were conducted by the first author, and our interview guide is provided in its entirety for reference in Appendix A.

Table 1 provides the general social demographic characteristics of our final sample. More women participated in interviews than men, but that is typical with both qualitative interviewing and survey research, in which women generally express greater willingness to participate [66]. Most of our interviewees are also low-income, which is reflective of the area. This gives more opportunity for lower income individuals to provide their insight, as it is generally difficult to recruit low-income subjects [66]. 81% of respondents reported that an income of under $50,000, which is typical for the neighborhood. The neighborhood is also largely Black (49.7%) and Latino (45.4%), with only 2.4% of residents being non-Latino White, which is reflected in our sample with only two White participants. Our sample, with slightly more Black respondents (54%) than Latino, closely reflects overall neighborhood statistics. Most residents of the neighborhood (66.7%) have a high school diploma, but few have a four-year college degree (8.5%), which is also mirrored in the sample, with 59% of participants having at least a high school diploma, and only two with a college degree (9%). For relationship demographics, we focused on legal marriage and cohabitation. 9% of our sample was married at the time of the interview and 59% was never married. Respondents who chose "never married" could be in a relationship but not married to their partner nor living with them, as we included a "living with partner" category. The neighborhood also has a high level of disability at 21.2% (where the average in the City of Houston is only 6.8%), which was reflected in the discussions we had with many participants. This pattern is likely highly correlated with the high rate of poverty in the neighborhood.

1.2.2. *Methodological approach*

With each of our interviewees, we used a semi-structured interview guide, which is included as Appendix A. However, this was a guide for discussion, and many times the interviews deviated from the exact wording of the script as participants brought up new items for discussion. Each interview lasted anywhere from 30 min to 1 h, and we used two audio recorders for each interview. Each interview was transcribed verbatim from the audio recording to prepare for analysis. In order to transcribe the interviews, we used Express Scribe, which is designed to control audio files for more accurate transcriptions. The transcriptions were subsequently analyzed and coded to identify themes. Given the exploratory nature of the study, we use constructivist grounded theory for the purposes of inductive qualitative theory building in a three-step process conducted by both the first and second authors [67–69]. The primary goal of constructivist grounded theory is to understand a process, which is fitting for the exploratory analysis we propose here [68]. First, our coding process entailed an initial coding period in which we coded the transcripts incident by incident [69]. We then engaged in a second round of focused coding, which was more directed and conceptual than the initial pass for the purposes of developing themes [68]. Both the first and second co-authors engaged in these first two steps separately to identify inductive themes from the data. We then came together for a final round of axial coding in which we compared coding schemes and developed themes related to consistencies found in the data and across our two separate rounds of focused coding [68]. From these axial coding themes, we each wrote informal analytic notes, or memos that form the basis of the results presented here [68]. The dominant themes that are subsequently discussed were identified as the issues that were repeated most frequently during interviews [68,70].

1.2.3. *Ethical considerations*

This study was approved by the institutional review board (IRB) at the University of Houston on May 4, 2022. Explicit permission to participate in interviews was given through consent forms and entailed the scope of the interview schedule. The confidentiality of participants was maintained through all data collection and analyses by giving a code name to each participant. All data collected are

Table 2
Summary of interview responses.

Flood and Project/Plan Awareness $N = 22$		
Project/Plan	Yes	No
Complete Communities	6	16
Project Hunting	3	19
Improve Drainage Systems	6	16
Adopt-A-Ditch	3	19
Experienced Flooding	20	2
Distress over Flooding	20	2
Prepared for Flooding	10	12
Flood Insurance	1	21

kept on password protected computers and only shared with the researchers involved in the study. All participant names presented here in the study have been changed to pseudonyms to protect their confidentiality.

1.3. Results

From this process, we identify four primary themes across our interviews. Each of these relates to how residents perceived their neighborhood, their flood risk, and their interactions with the city's efforts to reduce flood risk in their area. These include: *neighborhood affordability and convenience, perceived government neglect, lack of community engagement,* and *personal efficacy*. We will discuss each of these in turn. We also provide a summary of responses to our questions in Table 2 for those responses that could be quantified in that they reflect a yes/no response for having experienced some event or knowledge of the Complete Communities Initiative.

1.3.1. *"I can't afford nowhere else"*

One of the central themes across our respondents was a general sense of community neglect and social problems, including flood risk, but that many residents still chose to live there due to a lack of viable alternatives. Specifically, many participants expressed concerns with the state of the neighborhood, including crime, physical disorder, and flood risk. Many of our respondents expressed deep concerns over the potential for flooding and difficult past experiences with both extreme weather and flooding in particular. 91% of our participants said that flooding in the neighborhood had at one point affected their home, vehicle, or ability to work. Furthermore, many of them described Houston's weather events as being traumatic or a source of anxiety for them:

> **Interviewer:** Do you feel any particular anxiety or anything like that when it rains?
> **Malcolm:** Yes, especially my two girls. They took it hard when Hurricane Harvey happened. Most of the time, they come into our room in the middle of the night, especially when they hear rain. They're traumatized from the hurricane incident.
>
> **Heather:** The constant flooding. Whenever it rains too hard, or it's just … it's just bad. I just don't like it, it's too much.
>
> **Terrance:** Um, 'cause it gets really flooded over here really bad, and um, I don't know. The lights go out really, like, instantly when the weather gets really bad here. And you can be without electricity for, like, hours and hours, but I been in a better neighborhood before, so I kinda have experience with what's a little good and, like, the way I'm living now.

Despite these known problems, many of our respondents felt as though they did not have many options, and that these problems were outweighed by the affordability of the neighborhood. Many of our participants cited affordability and convenience as their primary reason for either living there or remaining there. Specifically, 12 of our participants explicitly said that affordability and/or convenience was a reason for them not leaving the neighborhood despite negative feelings toward the neighborhood. "I had to look at things that were good for my advantage" seemed to be a prominent theme among participants (Jane).

Though most participants expressed some form of psychological distress related to living in their neighborhood, the idea of affordability and convenience outweighed any physical or psychological danger from flooding they might incur. Also, despite rent being "more affordable," nearly all participants said no when asked whether they had flood insurance. Some participants were hoping to move out of the area but had to wait on fiscal opportunities, such as "filing taxes" or "getting things in order" (Vanessa, Emily). This could affect participants' eagerness to have social cohesion in the neighborhood as well. Participants who viewed their time there as "transitional" were less likely to have emotional ties to the neighborhood.

Abby was living in the neighborhood because of "an emergency" and did not intend on staying in the area long. When asked whether she felt it was important for her neighborhood to have green space, she responded, "Well, here, it wouldn't matter, really." She also did not have any type of relationship with her neighbors. Emily, who wanted to leave the neighborhood but was waiting to "file taxes" also did not have a relationship with her neighbors. However, residents like Nathaniel and Beatrice, who lived in the area longer and had a desire to take care of their neighborhood, wanted more green space in their neighborhood and had good relationships with their neighbors. A feeling of "stuck" seemed to arise from many participants who believed that the rent in this neighborhood was at least "$500 cheaper" than in other parts of Houston (Shayla). When asked whether he had thought about leaving this neighborhood, Nathaniel responded, "Yeah, but I can't afford nowhere else … I ain't making enough money to deal with the high raise of rent." Despite an awareness of neglect permeating the neighborhood, participants still felt that affordability and convenience outweighed those negative perceptions.

1.3.2. *"Not enough"*

Many of our participants saw some of their local problems as stemming from perceived neglect from the city with regard to flooding. This theme that emerged from the interviews is a general distrust and lack of confidence regarding government efforts toward flood management. These sentiments ranged from complete neglect to a feeling that even when the government tries to intervene, their efforts are typically not sufficient, underfunded, not done correctly, not done in a timely fashion, or addressing some concern that they do not perceive to be the primary problem. A few participants lived in this neighborhood for decades and said that the neighborhood had not improved much. Alyssa said, "The neighborhood is still the same. It's, like, not good." Vanessa said, "They don't fix nothing." Beatrice said, "I don't think he [the mayor] cares about the area."

In particular, many of our respondents expressed displeasure with the timing of government interventions. The general sentiment among many of them is that the interventions were too little and too late.

> **Emily:** I don't think he [the mayor] has prepared us enough for it. I think he's been trying but I don't think he's put a full, um, force effort into it. I think he waits until, like, the last minute to start trying to do it when it's too late. I would say that I think he

has done some things, but in order to save, you know, in money, they only do so much. You know, I don't think that they're putting the full potential in it.

They also perceived the interventions to be reactionary to problems when they arise, that the city would intervene only when an acute problem emerged in the area. Many of our participants saw proactive management and prevention as the way forward, instead of solutions applied after the fact:

Beatrice: Because they don't do anything. Only time they'll do something is if something, like something bust or open, and then it takes them a while, after everything done got flooded and stinky and messed up. Then they come. It's like they come slowly, and when they do try to fix the stuff, it sits for days and days and days … You could just roll over it, and the kids can't play on the sidewalk. It's just like they don't care. And when they do finally fix it, they do a half job and leave.

There was also a pervasive opinion that even when things were done by the city, that they were not done correctly, or even potentially made the problems worse than they were in the first place. Several of our respondents expressed this sentiment, that the city sometimes actually exacerbates problems in an attempt to fix them:

Nathaniel: Because they're just doing work here work there and stuff and every time you look up, when it rains hard that same spot where they supposed to have worked on already is flooded again. So, they really do nothing. To me, it's like they're doing nothing. Tell him [the mayor] to get the right people to do the job and do it right, not just come out there and do a quickie job or put tar down and pave the street over right quick. Doing that, you done messed up all over again.

Many of the respondents also attributed this to either a lack of adequate funding or a sense that the neighborhood was simply not a priority for the city's officials. Instead, they saw the city's interventions as quick and cheap solutions to complex and expensive problems:

Susan: I doubt it because I don't know where they'd put any of that in the inner-city. And I think it would cost too much money, so they won't ever do it.

Thomas: I mean, I feel they could do better. I feel there's a lot more that can be done. But, you know, government officials like to put money elsewhere rather than where it needs to be.

Thus, the ubiquitous sentiment among our respondents was that their neighborhood was simply not a priority for the city. They saw this through a lack of government engagement, and simple, quick solutions to complex problems. Many of these respondents expected to see longer-term and more comprehensive flood solutions, but did not perceive these to be occurring in their neighborhood, despite the efforts of the Complete Communities Initiative.

1.3.3. "Doing too much of nothing"

Related to this, another theme was that the government was not engaging their community at all. Most participants were not aware that their neighborhood was a target for the Complete Communities Initiative, nor were they aware of many upcoming flood management plans for the neighborhood. Despite this, they almost always felt that the government should be doing more to help manage flooding in the neighborhood. Most residents, although they were worried about flooding, did not know who to contact in local government about flood management issues. Some participants had seen evidence of construction but were not aware of what it was for and did not know who to ask. This lack of awareness can add to the general feeling of distrust and neglect residents feel toward local government entities. Participants often felt that nothing was being done for the neighborhood despite it being a target for the Complete Communities Initiative. "I don't see where he (the mayor) doing too much of nothing" was a general consensus among participants (Vanessa). These feelings of distrust and unawareness can add to the feeling of neglect by local government, which can affect residents' lived experience in this neighborhood on top of being in a high-risk flood area.

Despite efforts like the Complete Communities Initiative, residents still felt like their neighborhood is not being assisted. Jane said, "Get busy and see what they can get going for those people instead of having to just … try and do it themselves because sometimes you can't do things by yourself." A substantial portion of the interview schedule asked respondents about several specific upcoming or underway flood mitigation plans from the city. When asked about specific initiatives outlined in the program, most, if not all, respondents were not aware of them (see Table 2 for the exact numerical breakdown across each question). Only 27% of respondents had heard of Complete Communities in any capacity. Project Hunting includes substantial construction to the local bayou drainage system that is highlighted in the Complete Communities Initiative. However, when asked about Project Hunting, only three respondents knew what it was or had a sense of what the project entailed. Despite knowing of the project, when pressed for details, none of these three respondents could provide any details about what all was included in the project agenda. Two respondents witnessed some type of construction being done in their neighborhood prior to the interview but did not know if it was for flood management or part of this particular initiative. Six respondents were aware of drainage systems being repaired or installed throughout the neighborhood. However, none of the respondents were certain that the construction being done was actually for flooding. They hedged ("I guess" "I assume") but could not say for sure whether the city was implementing the plans of the Complete Communities Initiative. Furthermore, no one from the initiative asked any of our participants for their input on any plans for flood management. Instead, many of these respondents were only aware of these projects because they had seen the construction happening in the street rather than because they had been informed or engaged specifically by the city on the project. This can be detrimental when members of the community have substantial thoughts on the subject and express a clear sense of shared responsibility:

> [When asked whose responsibility it is to clean drainage ditches, the city or the community] **Beatrice**: I think it's both. I know, I know it's the people's responsibility, but they don't, some of them just don't care. So, when they don't care, then if there's still, even if like after-school projects where kids can go around picking up trash, or something, keep them busy during the summertime to clean up the area. I think that would put money in the kids' pocket and keep them busy and off the street.

Respondents with ideas of how to keep the neighborhood clean but who feel as though they do not have the ability to voice their opinions to people in power may experience greater feelings of neglect and distrust. Overall, respondents' general unawareness of government plans for flood management in the neighborhood is clear and present throughout the interviews.

1.3.4. "We just pick it up ourselves"

As a result of these doubts about government engagement and efficacy with regard to flood management, one of the prominent themes found from the interviews was self-efficacy in the face of government neglect. All 22 participants answered "yes" when asked if they felt that their neighborhood was historically neglected by local government. A neighborhood resident, Susan, responded when asked, "I don't think they've done anything to help this neighborhood." When asked why, she believed it is because it is a "generally all Black, brown neighborhood." Another participant, Heather, said that the neighborhood is "definitely behind on some renovations." A resident of the neighborhood, Abby, had particularly negative attitudes toward the state of the neighborhood. "This is, like, the worst neighborhood I've ever lived in. Like, like, it's just terrible." For many residents, the perception of neglect affected their emotions toward their neighborhood. When they were asked about feelings of neglect, they often spoke about the dilapidated state of their neighborhood, with verbiage such as "trashy," "falling apart," and "ignored" (Shayla, Corinne, and Vanessa).

Furthermore, several of our participants expressed a sense of relative neglect with flooding especially when compared to other parts of the City of Houston, which they perceived to loom larger on the City of Houston's list of priorities. A participant named Beatrice responded when asked if she felt like the area is neglected compared to other areas of Houston, "Very. Exactly." They perceived other parts of the city to have benefited positively from the city interventions and felt like by comparison, their neighborhood did not receive these treatments. Thus, it was not a general sense of government incompetence, but government neglect of them/their neighborhood specifically:

> **Shayla:** They don't, they help everybody else. You see it on the news all the time, helping people that don't need to be helped. They don't come over here and help with the, uh, community. They're too busy trying to help other people that don't need to be helped. Well, they probably need to be helped. I can't judge and say that, but they don't ever come over here and help. I'll put it like that.

> **Terrance:** Because, um, because this neighborhood, where we are in 5th Ward and Garden City, um, it's like, when you go into a different neighborhood or side of town, you can see everything looks good in the community, uh, the, uh, the stores, the places … more places that we haven't seen on this side of town, in this area. Um … it's like, they don't care about this side of town, I don't know, pretty much, because it's more for lower class people, and, um, I'm thinking the City of Houston really, uh, not care for all … the whole city, not just part of the city, and, uh, I think that's unfair.

In the face of this perceived neglect, many of our participants expressed a need to pick up the slack of the local government. A particular problem in the neighborhood is dumping and trash that can prevent flood management systems like drainage systems running properly. Many of our respondents recognized that illegal dumping and trash created a problem for proper drainage from flood waters, especially in open street drainage ditches that are common in Houston. It is such a significant problem that the Complete Communities Initiative created a program called Adopt-A-Ditch, which gives residents, local businesses, and community groups an opportunity to "adopt" a ditch to personally clean up and physically care after with the hope of improving street drainage. When asked about the Adopt-A-Ditch program, 86% of residents had not heard of it, and if they had, none had not been officially asked to participate in the program.

Despite the fact that 31% of residents felt that it was the responsibility of the government to protect neighborhood drainage systems from trash and dumping, they admitted that they typically did it themselves or at least had seen others in the community doing it without any government assistance. Only one participant, Susan, felt it was solely the city's responsibility to clean drainage ditches in order to prevent exacerbating flood problems. The 31% of respondents who felt that it was the government's responsibility also felt that the community members should take part in cleaning drainage ditches to prevent clogged drains and further flooding problems. Moreover, many of our respondents were fairly positive about community involvement in such initiatives. 50% of participants answered affirmatively when asked whether they were willing to participate or had seen people in their neighborhood cleaning up drainage ditches. This idea of shared responsibility was a common theme surrounding the Adopt-A-Ditch question in particular:

> **Jane**: Yes, if they work together. I clean mine; you clean yours, he cleans his. But now, if I just clean mine, see we got to get together there. We all keep our ditches clean.

> **Nathaniel:** We always clean around them (ditches), and I'll sweep them when I cut the yards and stuff over there … Keep the grass from going down and covering it up so the water won't flow to the drain.

> **Interviewer:** Do you see other people in your neighborhood doing the same thing, or does it look like it's just you?

> **Nathaniel:** It's … me and certain people … you know, keep they yard, and they keep it good, and they clean the gutter just like I do.

Interview participants felt a sense of responsibility in taking care of their neighborhood and proactively improving flood conditions. Though they felt they were neglected by local government, residents still felt pride about both their neighborhood and taking care of it. Several of our older participants even expressed a desire to pitch in with their neighborhood, despite the physically difficulty for them in doing so:

> **Cheryl:** If I was able to get down there in the ditches to help keep the ditches clean, I would definitely do it. I would definitely be in the program. But I can't hardly walk or get down there in the ditch or anything like that.
>
> **Heather**: I wouldn't be able to. Um, for one my kids are two and three years old, and nobody will babysit them. Like, they are just bad. I can't get a babysitter, and I can't even pay for a babysitter.

Overall, there was a sense of neglect by local government among participants, and it had some effect on their overall feelings toward their neighborhood. However, it did not stop some residents from feeling the need to take care of their flood management systems themselves, as well as a need to keep up their neighborhood. Instead, residents saw this neglect as creating a necessity to take care of their own spaces.

1.4. Discussion

This study provides an in-depth examination of the experience of individuals residing in a high flood risk neighborhood. Moreover, studying this community can provide insight on how individuals perceive assistance from government officials as the target of new flood-related government interventions. The recent theoretical work on this topic has emphasized a paradigmatic shift in approaches to disaster relief and prevention through Community-Based Disaster Risk Management (CBDRM) approach [37]. This work emphasizes how local governments can work in conjunction with local communities to create more resilient communities [39,40,71]. Despite this shift in focus in the literature, few qualitative studies have attempted to understand how these programs play out in real time, and how the residents of such communities perceive and make sense of such initiatives [42]. This study attempts to better understand those lived realities, using the case of one community that has attempted to implement such a program in one low-income area with a large minority population. These interviews also give insight into a community that is currently being engaged in flood preventative programs by local government and suggest that greater attention should be paid to developing plans that account for the unique circumstances of the community. They also suggest that clearer communication from the city and more direct engagement with the community may be necessary to develop better community trust and partnership.

Several findings emerge from these interviews. Most participants' lives have been affected by flooding in some type of way. However, when asked whether they were prepared for flooding through insurance or some type of preventative plan, most residents said no, despite expressing feelings of worry and anxiety over flood events. Interviewees were more worried about their day-to-day lives, such as dealing with trash and clogged drainage systems. Prominent themes permeating the interviews provide insight into the lived experience of individuals who live in a flood-affected neighborhood that is also being targeted by local government for flood management practices.

First, all participants felt some sense of neglect by local government officials. They felt as if the problems of the neighborhood were ignored, which they felt resulted in a dilapidated neighborhood that is behind on renovations and overall upkeep. Though some participants either felt or knew someone who felt a responsibility to take care of the neighborhoods through several activities like mowing lawns, cleaning ditches, and physically upkeeping individual property, they did not feel government was holding up their end of shared responsibility. Many felt like they were on their own and required to take care of their neighborhood with no government assistance, despite being one of the poorest neighborhoods in Houston.

These perceptions of neglect could come as a shock after reading the Complete Communities Initiative for the neighborhood, which entails detailed plans including extensive flood infrastructure plans. Most importantly for the focus of this study, the flood management portion of the initiative incorporates a substantial community engagement component following recent trends in disaster management that make more deliberate efforts to involve the community [37,39]. This initiative created several programs with the idea of engaging communities in flood preventative measures. These plans specifically include dumping management and litter cleanup. However, when asked about the initiative and the plans entailed, most respondents had not heard of it. Respondents who had witnessed construction in the neighborhood assumed it was for flood management but could not say for sure. We know from the literature that this confusion and unawareness of government projects can exacerbate distrust in government efforts [7,12,16].

One of the programs outlined in the initiative, Adopt-A-Ditch, specifically attempts to designate certain ditches for individuals to clean. While the idea may be ludicrous to some to physically get down in ditches and clean up trash, many participants welcomed the idea or were already ostensibly doing that work. Some participants knew of others who cleaned ditches, and a few even participated in the activity themselves. A problem for many participants, however, were physical, social, and economic limitations to cleaning ditches. The neighborhood has a large elderly population compared to Houston (14% versus 10%), and 56% of elderly residents reported a disability in 2018 [65]. Several of our participants cited old age or physical disability as a limiting factor for them to be able to participate in such a program. Many younger participants also had work or children that prevented them from participating in this kind of activity. This could imply that the neighborhood could use more direct assistance from the government to create a greater sense of shared responsibility of flood management. Rather than using the Adopt-A-Ditch program as a mechanism to merge ongoing community efforts with local government partnerships, Complete Communities uses the program as an "innovative" approach to disaster preparedness despite its previous existence in an informal capacity. This idea of shared responsibility between local government and community members could be important when creating future plans to engage communities, as well as accommodating particular neighborhoods with certain programs tailored to the neighborhood's physical, social, and economic resources [72].

Another theme we found in the interviews surrounded the idea of affordability and convenience. Nearly all participants affirmed that the neighborhoods' affordability and convenience were the most important reasons for them staying in the area. By convenience, participants meant that it was close to public transportation as well as their jobs. Affordability and convenience are critical factors for nearly everyone when deciding what area to live in, but these participants had to forgo feelings of safety, both physically and psychologically, to reside in this neighborhood. Almost as importantly, many participants expressed negative attitudes about living in their neighborhood despite its affordability, which can cause individuals to perceive their situation to be in a state of "stuck in place" [73]. In essence, residents are caught between feeling economically secure or being stuck [74]. Feeling stuck or not being able to leave can negatively affect residents' lived experiences.

Some residents did not particularly like the neighborhood but felt they had to stay because they could not afford anywhere else. This sense of feeling stuck can be debilitating for people, especially people who have to deal with flooding at record rates. Some participants had plans to leave but were waiting on plans to come to fruition before leaving. For many of these individuals, the participants who desired to leave but could not typically did not have relationships with their neighbors. Participants who did not have a desire to leave had more relationships with neighbors and pride in taking care of their neighborhood. The literature regards social cohesion as significant in overall neighborhood stability, especially in marginalized neighborhoods [75,76]. From these results, it can be suggested that perceptions of affordability and convenience are not always beneficial for social cohesion in the neighborhood, which can negatively impact the lived experiences of its residents and limit community-based disaster management efforts that require community buy-in for their success. Respondents who felt that their place in the neighborhood was more transient or that they had poor ties with their neighborhood may be less likely to want to engage with their government leaders or local community organizers.

Finally, the theme of distrust and unawareness of local government practices regarding flood management emerged from the interviews. For these participants, lack of awareness and distrust were related. Though their neighborhood is a part of the Complete Communities Initiative, most participants were not aware of the initiative or its programs. Respondents who had witnessed construction in their neighborhood assumed it was for flood management but were not certain. Those individuals who had seen construction in their neighborhood had not been asked by representatives of the initiative for any input regarding upcoming flood management plans. Many of them were unaware of any approaching plans to improve flood management systems in the neighborhood. This lack of awareness seemed to have an effect on distrust and the earlier theme of neglect by local government among participants, which broadly correlates to the literature [44,46]. Once they heard about forthcoming flood management plans during the interviews, participants were doubtful if they would be implemented. Meetings and examinations of initiative representatives showed that they held council meetings regularly, met with residents at activities such as neighborhood food markets or school drives, and seemed to have some idea of the neighborhood required for better flood management practices. However, that seemed to not be the case among the interview sample. Of course, the limited number of participants makes it impossible to know how effective representatives were in engaging the community, but the participants can provide an example of how the larger neighborhood has been involved with the Complete Communities Initiative.

1.5. Conclusion

Overall, this study provides an in-depth examination of a community that is being heavily assisted with flood management by the local government. We give insight as to how communities feel about government initiatives, particularly in marginalized areas, which is not fully developed in the literature at present. Few studies provide a qualitative, exploratory view of government plans that are in the process of being executed, despite a shift in the literature to focus on community-based approaches to disaster management [37,39]. Also, this qualitative examination gives insight to how a low-income, largely minority community copes with residing in a high flood-risk area, which is necessary when floods are evermore increasing and are known to disproportionately affect marginalized areas [1,2,8,59,64]. Our study also provides an example of community engagement with many respondents being willing to clean ditches or participate in general neighborhood upkeep. This can be an important contribution to the discussion within the literature concerning to what extent and under what conditions communities will engage in flood mitigation strategies.

This study is, of course, not without limitations. A major limitation in this study is the small number and non-random sample of individuals interviewed for this study, which cannot address in a quantitative or probability-based fashion how residents of this neighborhood evaluate the local government's engagement efforts. Thus, we cannot speak to broader issues of program evaluation. However, the goal of this study is to understand, in an in-depth fashion, how these residents make sense of their government's engagement efforts and plans within the community, which is well-suited for a qualitative research design. Another limitation is that the interviews only occurred in Houston, rather than across different areas, or the Gulf Coast region, which is frequently affected by flooding. However, Houston presents a good test case for this type of analysis. In the Houston area, flooding and flood mitigation are persistent problems, and is the largest metropolitan urban area that deals with regular flooding. Despite this, this study provides a micro-level examination of people's lived experience of being engaged by government initiatives while living in a high flood risk area, which is a critical gap in the literature.

This study utilizes qualitative in-depth interviews of residents of one Houston neighborhood to better understand the lived experience of individuals residing in a high flood risk area. The goal of this exploratory study is to gather a better understanding of the lives of people who live in high flood risk neighborhoods. These interviews also give insight into a community that is currently being engaged in flood preventative programs by local government through the Complete Communities Initiative. The findings of this exploratory study broadly reveal patterns found in the literature. We found that neglect was prominent among respondents despite efforts from local government like Complete Communities. In the future, local government should take disability and lack of resources into consideration when coordinating meetings and disseminating information. Individuals without resources, such as reliable transportation and physical ability, might find it more difficult to attend meetings but still would like to be informed. Policy

implications stemming from this study concern greater attention to the policies put in place to engage certain communities in resilience efforts rather than utilizing general plans that do not fit the uniqueness of the problems of the community. The results of this study suggest that clearer communication from the city and more direct engagement with the community through on the ground programming may be necessary to develop better community trust and partnership in high flood risk areas. For future government efforts, utilizing funds to organize transportation or place physical meetings in the neighborhood rather than a facility within driving distance could make a difference in communities that are largely home bound rather than focusing on community members who are more likely to get involved. Further, local governments should employ more community organizers from the neighborhood that can understand the specific problems of the neighborhood rather than making their problems generalizable. We also found that lack of awareness and distrust were associated among respondents. Future research should quantitatively investigate the extent of which unawareness and distrust have among flood mitigation strategies. This study can provide both researchers and policymakers a deeper understanding of how people perceive government initiatives as well as the lived experience of people living in high flood risk areas to create future research and policy plans with these unique experiences in mind.

CRediT authorship contribution statement

Nicole Hart: Writing – review & editing, Writing – original draft, Formal analysis, Data curation, Conceptualization. **Kathryn Freeman Anderson:** Writing – review & editing, Writing – original draft, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Hanadi Rifai:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that have been used are confidential.

Acknowledgments

Support for this study was provided through the Strengthening American Infrastructure program of the National Science Foundation (BCS-2121931), Project Title: EAGER: SAI: Community Perceptions of Flood Mitigation Strategies; PI: Kathryn Freeman Anderson.

Appendix A. Interview Guide

Kashmere Gardens Experiences with Flooding.
Interview Schedule.
Personal Experiences:

1. First, tell me a little bit about yourself. How long have you been living in Houston?
2. How long have you lived in this particular neighborhood?
3. What is the best thing about living in Houston? What is the worst? What about this particular neighborhood?
4. Is Houston's weather, particularly problems with flooding, something you think about a lot or worry about? Why or why not?
5. How do you feel when it rains?
6. Next, I want to ask you some questions about your past experiences with flooding, but first I have some general questions about flooding and your home. Could you first tell me, do you own or rent your home? What type of home is it (house, townhome, apartment, etc.)? Do you have home-owners insurance? Do you have flood insurance on top of that?
7. In what level of floodplain is your current home located, if you know?
   100-year.
   500-year.
   Not in a floodplain.
8. Do you happen to know to which bayou or reservoir water in your neighborhood drains? Which bayou or reservoir is that? (Interviewer: Do not read list)
   - Addicks Reservoir
   - Armand Bayou
   - Barker Reservoir
   - Brays Bayou
   - Buffalo Bayou
   - Carpenters Bayou
   - Cedar Bayou
   - Clear Creek

- Cypress Creek
- Greens Bayou
- Halls Bayou
- Hunting Bayou
- Jackson Bayou
- Little Cypress Creek
- Luce Bayou
- San Jacinto & Galveston Bay
- San Jacinto River
- Sims Bayou
- Spring Creek
- Spring Gully & Goose Creek
- Vince Bayou
- White Oak Bayou
- Willow Creek

9. Do you happen to know who manages flooding in your particular neighborhood? Who is that? (Interviewer: Do not read response options.)
   - City of Houston
   - Harris County
   - Harris County Flood Control District
   - Municipal Utility District (MUD)
   - Army Corps of Engineers
   - Other city (not Houston)
   - Neighborhood Association or Home Owner's Association
   - Other, please specify:
10. Has flooding ever seriously affected your home, life, and/or work? If so, how? Tell me about those experiences.
11. If serious flooding were to happen (again) in your area, do you have a plan in place? If so, what is it? What would you do?
12. Where do you typically get information about what to do in the event of a disaster, such as hurricanes or flooding?
13. Now I'm going to show you a street map of your neighborhood, Kashmere Gardens. Circle on this map where you think the areas of flood concern are greatest in your neighborhood. It does not have to be exact, just what you know to be bad areas for flooding in your experience.
14. Are you close to those areas? Do you worry about being too close to those areas?
15. Have you ever thought about leaving this neighborhood?
16. (If yes) what has stopped you? (If no) what's keeping you here? Or, why haven't you left?
17. How do you feel about your neighbors? Do you have any type of relationship with any of your neighbors? Do you speak with any of them on a regular basis, or do favors for each other? Why or why not?

Flooding Solutions/Projects:

1. Now, I would like to ask you about the city and their response to flooding problems. How do you think the city (mayor, current and former county judges, etc.) has handled flood problems?
2. The mayor recently designated Kashmere Gardens as one of their target neighborhoods for their "Complete Communities" initiative. Have you heard of this program?
3. The stated goal of the program is to improve development and infrastructure in neighborhoods that have been historically neglected by the city. Do you think that's the case for Kashmere Gardens? Why or why not?
4. One of the initiatives under this program is to improve drainage for flooding in the neighborhood. Have you heard about these plans?
5. If yes, did anyone from the city ever ask for your input on these plans as a local resident?
6. If you could propose a plan to the mayor to either prevent flooding in the first place or to help people when it floods, what would you suggest?
7. One of the specific plans for the neighborhood is called "Project Hunting" to make some changes to the Hunting Bayou. This is being done by the Harris County Flood Control District. Have you heard of this?
8. (If no), Let me tell you a little bit about Project Hunting. The plans for the project include: excavating a stormwater detention basin near the northeast corner of Homestead Road and Loop 610; widening and deepening about 4 miles of Hunting Bayou; 9 bridge replacements; and the removal of structures from the neighborhood to allow for better drainage. What do you think about these plans? Do you think they will work? Is it enough?
9. Another plan is to improve city storm drainage systems across the neighborhood. Have you heard of this?
10. (If no) The plan is to focus on several key streets to improve street drainage (If they ask: N Cavalcade St, Collingsworth St, Crane St, Dabney St, George St, Hirsch Rd, Homestead Rd, Legion St, Linn St, Lockwood Dr, Lufkin St, Minden St, Pardee St, Pickfair St, Rand St, Reid St, and Ryan St). What do you think about these plans? Do you think they will work? Is it enough?

11. Another plan is to create a community outreach campaign to encourage residents to keep ditches clean, and to participate in the "Adopt-A-Ditch" program. Have you heard of this program?
12. What do you think about the ditch cleaning plans? Do you think they will work?
13 This plan in particular would require participation from residents in the neighborhood to help clean up drainage ditches? Do you see yourself participating in a program like this?
14. Or, has anyone asked you already to participate in a program like this? Why or why not?
15. Have you ever heard the term "green space?" What does that mean to you?
16. Does your neighborhood have green space? How important is that to you?
17. Have you ever heard the term "green infrastructure?" What does that mean to you?
18. Do you think green infrastructure could help with flooding in Kashmere Gardens? Why or why not?
19. Do you have anything else you want to add either about your neighborhood or the flood plans underway?

Demographic Closed-Ended Questions:

Finally, I would like to ask you some basic demographic questions. These will be short and quick, like a survey.

1. Which of the following best describe(s) your gender?
1. Man
2. Woman
3. Something else (please specify): ___
4. Prefer not to say
2. Are you of Hispanic, Latino, or Spanish ethnic origin?
1. Yes, Hispanic or Latino
2. No, Not Hispanic or Latino
3 .Which racial category best describes you? (Can select more than one)
1. White or Caucasian
2. Black or African American
3. Asian
4. Native American or Alaskan Native
5. Native Hawaiian or other Pacific Islander
6. Some other race (please specify):___
4. Are you currently … ?
1. Married
2. Living with Partner
3. Divorced
4. Separated
5. Widowed
6. Never married
5. How many children under the age of 18 live with you currently?
6. Including yourself, how many people are currently living in your household?
7. What is the highest level of education you have completed?
1. Less than high school
2. High school diploma or GED
3. Some college or trade school
4. Associate's degree
5. Bachelor's degree
6. Graduate or Professional degree (e.g., MA, MS, MBA, CPA, JD, MD, PhD)
8. What is your employment status today?
1. Not working, not seeking employment
2. Employed full-time
3. Employed part-time
4. Unemployed, seeking employment
5. Retired
6. Disabled
7. Self-employed
8. Something else (please specify): ___

IF 2, 3, or 7:

9. If you are currently employed, what is your job title?
10. Which of the following best describes your household income?
1. <$15,000
2. $15,000–$25,000
3. $25,000–$35,000

4. $35,000–$50,000
5. $50,000–$75,000
6. $75,000 or more

11. How many functioning vehicles do you have in your household?
12. Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or what? (Interviewer note: Indicate strong or not strong after the respondent identifies a party affiliation)

1. Strong Democrat
2. Not strong Democrat
3. Independent, near Democrat
4. Independent
5. Independent, near Republican
6. Not strong Republican
7. Strong Republican
8. Other party

13. Were you born in the United States? Please include US territories.

1. Yes
2. No

IF 2:

13A. In what country were you born?
13B. About how many years have you lived in the United States?

14. Was your mother born in the United States, your father born in the United States, both, or neither?

1. Yes, my mother only was born in the US
2. Yes, my father only was born in the US
3. Yes, both my mother and my father were born in the US
4. No, neither of my parents were born in the United States

IF 2 or 4:

14A. In what country was your mother born?

IF 1 or 4:

14B. In what country was your father born?

15. Are you a citizen of the United States?

1. Yes
2. No
3. (IF VOLUNTEERED) Citizenship application pending

IF 2 or 3:

16. Do you have any of the following?

1. Green card
2. Temporary work or student visa (for example: U, M, F, J, L, E, H1b)
3. Refugee status
4. Some other type of visa
5. Or none of the above

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