Flood buyouts

Voluntary floodplain property sales for flood risk mitigation

CLIMATEFIT International best practice factsheet

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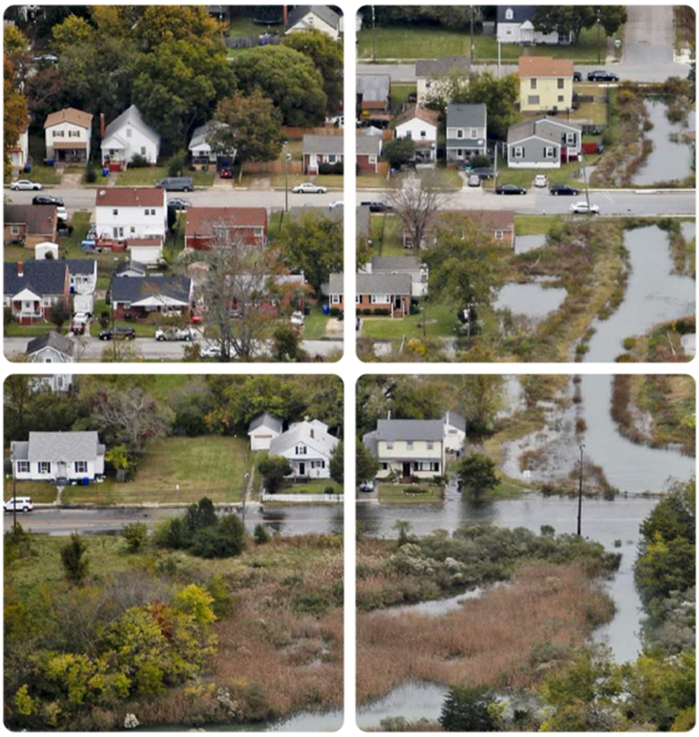

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Summary

The Flood Buyouts program in the United States aims to mitigate flood risk through property acquisition and transformation into green spaces. This initiative, funded primarily by the Federal Emergency Management Agency (FEMA) and the Department of Housing and Urban Development (HUD), along with local government contributions, strategically targets properties in flood-prone areas. Homeowners are offered fair market value for their properties, which they can choose to accept voluntarily.

The program effectively reduces flood risk and enhances community resilience against future flooding events by either converting the acquired properties into green spaces or demolishing any structures on them and leaving them undeveloped. This approach alleviates immediate flood threats by removing structures from high-risk areas. It also contributes to long-term environmental benefits by restoring natural floodplain functions.

The program relies on a mix of financial sources such as federal grants, local funds, and financial instruments like taxation and stormwater management fees, facilitating sustainable funding flows. The business case offers a value proposition of reduced long-term disaster recovery costs and improved public safety.

Keywords: flood buyouts, mitigation, households, local governments

Actor(s) interviewed: *Researcher with expertise on flood buyout program*

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Further reading: Property Buyouts can be an effective solution for Flood-Prone communities

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Best practice information card (1 separate page)

Table 1. Flood buyouts. Information card

Location	United States of America
Population size	335 million
Project area size	NA
Area type	Mixed
Climate challenge	Urban flooding, often intensified by the increased frequency and severity of climate change-driven disasters, causes significant harm to both life and property.
Key Community System(s)	Water management, critical infrastructure
Objectives	Flood buyouts is an active climate mitigation strategy used in the US. It aims to reduce flood risk and removes people and homes away from active flooding zones. Removing development from floodplains can make the surrounding areas less susceptible to flooding through increased green and undeveloped areas.
Climate challenge solution	After a disaster strikes, local governments approach identified properties and negotiate with homeowners to buy the properties. After the land has been acquired, the homes and any built infrastructure is demolished. The area is left to be a green space. Flood buyouts rely on a mix of funding sources. Federal grants, typically from FEMA and HUD are the most common. Local governments might contribute additional funds or run their own programs with separate budgets. Homeowners receive a buyout price for their property, but it's voluntary ie. they can choose to participate or not.
Key benefits	Communities see reduced flood risks and more green space. Homeowners get a financial escape route from flood zones and the stress of repeated damage. The program pays fair market value, and some areas even offer extra incentives to make relocation easier.
Implementation status	*1970s-present*
Investment volume (€)	NA
Key financing barriers	Limited local government budget for cost matching and cost sharing
Financial model	Flood buyout programs use federal grants and local funds to acquire flood-prone properties at fair market value, offering voluntary relocation for homeowners.
Financial sources	*Public- National level government entities- government agencies* *Public- local options sales tax* *Private- stormwater management fees* *Private- households (direct)*
Financial instruments	*Public Grants* *Fee/User charges- stormwater fees* *Taxations* *Private grants*

Overview and timeline

Floods are the most common and the most expensive disaster in the US. The number of homes that have experienced repeated flood damage has doubled in the last two decades. More than 1,100 counties in 49 states have implemented voluntary property acquisition programs, or "buyouts," to acquire and demolish homes at risk of flooding. According to estimates from the National Institute of Building Sciences, buyouts save $5 to $9 for every $1 invested.

A buyout occurs after a disaster. **The local government purchases private property from a willing seller, demolishes or moves existing structures, and preserves the area as open space. Buyouts differ from broader acquisitions because the purchased land is maintained as open space rather than being redeveloped.** Unlike eminent domain or condemnation proceedings, buyouts are voluntary processes. In some cases, flood buyout programs may be mandatory for specific geographic areas but remain voluntary for individual homeowners. For instance, the government may identify a neighborhood in a high-risk flood zone and decide to acquire all properties for public safety reasons. The program itself could be mandatory for the entire neighborhood, meaning the government will acquire all properties, but individual homeowners would still have the choice to accept the buyout offer or potentially contest it. Some buyout programs may offer incentives so compelling that participation feels almost obligatory for homeowners facing financial hardship or repeated flood damage.

Eminent domain is the legal power of a government to take private property for public use, while providing just compensation to the owner. This means the government can take any land or house, but they have to pay a fair price for it. Eminent domain is typically used for public purposes such as building roads, parks, schools, or public utilities. The government must provide "just compensation," which is the fair market value of the property. Property owners can challenge the government's use of eminent domain in court.

In contrast, buyouts are voluntary transactions initiated after a disaster. The homeowner retains the right to decline selling their property. The goal of a buyout is to convert the area into open space, while eminent domain aims to improve infrastructure.

The United States implements flood buyouts through a decentralized approach, using federal funding to empower states and localities in acquiring flood-prone properties from willing residents. **The primary funding sources for these programs are the Federal Emergency Management Agency (FEMA) and the Department of Housing and Urban Development (HUD).** Counties and local governments often supplement these funds with innovative approaches like stormwater fees and local taxes.

Buyouts were first initiated in the 1970s in Soldier's Grove, Wisconsin, due to frequent flooding, particularly in downtown areas, necessitating the relocation of residents and businesses. Unchecked urban sprawl has expanded development into floodplains, necessitating flood buyouts as a mitigation strategy. Limited understanding of flood risks in the past may have contributed to development in high-risk areas. Buyouts emerged as an alternative to traditional approaches like levees and channels.

States and local governments are responsible for managing flood buyout programs with the aid of FEMA or HUD funds. While federally funded, flood buyouts vary significantly in approach and implementation at the local level. Houston hosts the largest and longest-running federally funded buyout program in the US.

Residents in flood-prone areas may participate in buyout programs if available locally. Participation is voluntary, with homeowners deciding whether to sell their homes. While federally funded, flood buyouts are locally designed and implemented.

After acquiring a property, the government either leaves it undeveloped or converts it into green space such as a park, reducing urban flood risks. **By removing structures from floodplains, buyouts aim to reduce future disaster relief costs and restore natural floodplain functions.** However, the strong emphasis on property rights in the US can complicate buyout and relocation efforts, as some residents choose not to vacate their properties.

Flood buyout programs are often presented to residents as a recovery measure by local governments, highlighting long-term benefits such as risk reduction and improved flood management infrastructure like detention ponds and parks. However, the disconnect between this vision and the immediate needs of affected households can lead to mismatches in goals and timelines. On average, buyouts take about five years to complete, which may not meet the immediate recovery needs of residents facing financial hardship.

Beyond the recovery versus mitigation debate, flood buyouts are one of many tools used by local governments post-flood. Other options include channel widening, land regrading, and levee construction. Buyouts offer a way to relocate residents from high-risk areas and simplify future flood management but are not universally applicable solutions.

While the US government has the power of eminent domain, it is typically a last resort due to its complex and lengthy legal process. Buyout programs aim for a smoother and faster relocation process. Although most buyouts occur in urban areas, rural communities along rivers like the Mississippi have also utilized them (see Figure 1).

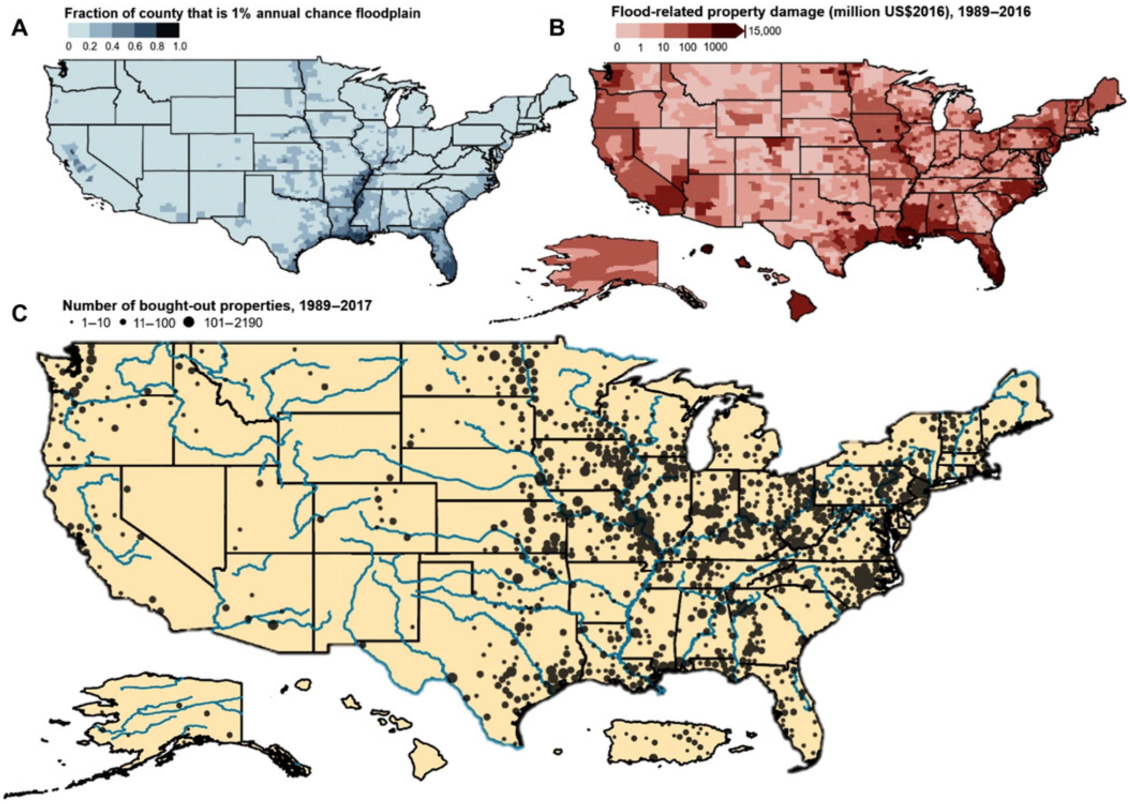

Figure 1: Flood risk and voluntary property buyouts across the United States. Image source: Mach et al. (2019)

(A) Exposure to riverine and rainfall-driven flood hazards. The fraction of each county's area that is 1% annual chance floodplain is shown.

(B) Flood-related property damage. For each county, cumulative damage over 1989–2016 is depicted (as million US$2016).

(C) Buyouts of flood-prone properties. The number of FEMA-funded voluntary property buyouts in each county is shown for program years 1989–2017 (as cumulative no. of bought-out properties). Major river systems are illustrated. Insets, not to scale, show available data for Alaska, Hawaii (no bought-out properties), and Puerto Rico.

The implementation of flood buyout programs in the US is complex due to the decentralized emergency management system. Local communities often drive decision-making for buyouts, although federal funding from FEMA and HUD plays a crucial role. Local entities must contribute 25% of the funding, with federal agencies imposing conditions based on cost-benefit analyses and mitigation gains (FEMA) or assisting low- to moderate-income households (HUD), influencing buyout strategies.

In summary, flood buyouts in the US lack a unified federal strategy and instead reflect diverse local approaches shaped by federal funding guidelines and local contexts. Responsibility for buyout management falls on local offices, such as planning departments, which may establish dedicated buyout offices after major disasters like Hurricane Sandy, only to dissolve them once immediate crises are resolved.

Governance and key stakeholders

Federal Funding agencies: Federal funding agencies like FEMA and HUD are the main providers of funding for the flood buyouts in the US. They approve the applications submitted to them by local and state governments and also set the frameworks and criteria for how the funding can be used. Federal funding agencies are not involved directly in the implementation of the buyouts in specific counties or local governments. They are only responsible for giving grant money to governments so that they can buy properties.

Local government: Local governments decide whether to participate in flood buyout programs offered by federal agencies. They assess local flood risks and needs to determine if buyouts are a suitable strategy. They also manage the day-to-day operations of the program. This includes:

- Identifying specific properties within designated flood zones for potential buyout.
- Conducting property appraisals.
- Negotiating buyout prices with individual homeowners.
- Acquiring properties through purchase agreements.

Local governments might contribute additional funds or have their own budget allocations for buyouts.

Local residents (homeowners): Homeowners within designated buyout areas decide whether to accept the buyout offer or decline.

Table 2. Flood buyouts. Key stakeholders and their responsibilities or roles

Stakeholder	Type	Role and responsibilities
Federal Funding Agencies (eg. FEMA)	Public	Provides financial resources through grants
Local governments	Public	Manage the program, initiate buyouts, identify properties, apply for funding, oversee the long term use of the acquired property
Homeowners	Private	Primary beneficiaries of the program, negotiate the buyout price with the local government

Business model & financial model

Business model

In most cases, buyouts are triggered by a disaster, which can range from major events like hurricanes, floods, or wildfires to recurring minor incidents like nuisance floods. The process varies across states and local governments. For instance, in New Jersey, the Blue Acres buyout program acquires properties damaged by Superstorm Sandy and those subject to chronic flooding from the Passaic River.

After a disaster occurs, a buyout can be initiated by:

- The local government
- A community organization or group of property owners
- An individual property owner wishing to relocate

Typically, it is the local government that identifies properties for buyout based on factors such as flood risk and available funding. Once identified, the government approaches affected residents to express interest in acquiring their homes (see Figure 2).

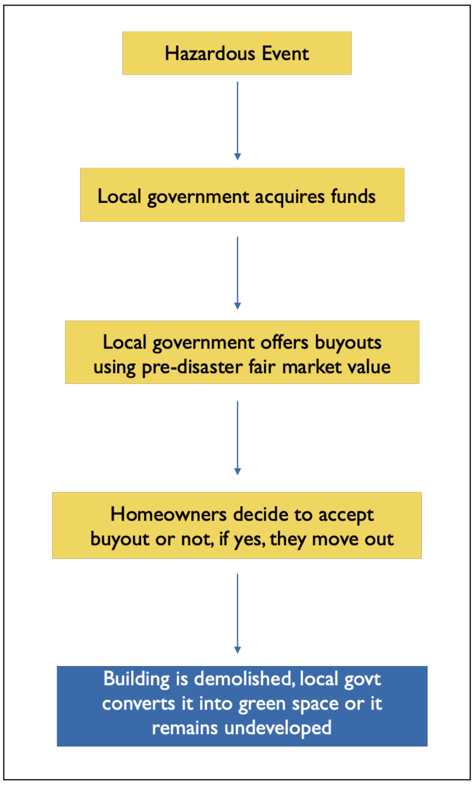

Figure 2: Typical Flood buyout process. Source: author

If a community or individual wishes to initiate a buyout, they must approach the local government to propose it. The local government has the authority to accept or reject the buyout proposal. In rare cases where a local government refuses, communities or individuals may seek buyout programs administered by the state (e.g., New York State's buyouts on Staten Island following initial rejection by New York City). However, such instances are uncommon, and if the local government declines, the buyout typically does not proceed.

It is important to note that no federal agencies give direct funding to homeowners. Even in federal and state level buyout programs, the money always goes through the local government.

When a local government applies for federal funding, the process involves extensive procedures such as cost-benefit analyses and environmental inspections, which can take several years. In contrast, funding from state and municipal sources tends to be quicker and less bureaucratic. Prompt funding is crucial as it alleviates psychological and financial stress on homeowners, who must continue to pay mortgages and flood insurance premiums on damaged properties throughout the buyout process, even if they need to purchase or rent alternative housing.

Once funding is secured, the local government extends buyout offers to property owners. When initiated by the government, criteria such as prioritizing severely damaged homes or adjacent properties to simplify land acquisition are often used to determine offers. However, these criteria are seldom disclosed publicly. Typically, only a small number of households receive buyout offers in each program. On average, 5 to 15 properties are acquired per buyout program following a disaster.

Table 3. Flood buyouts common timelines. Source: Disaster Research Centre

Action	Length	Explanation
Disaster Event and declaration	Pre-disaster to a few weeks after disaster	First the state declares a disaster and then the federal government
Notice of funding	Maximum 30 days after a disaster	Declaration sent from the state to the local governments
Notice of intent or pre-applications	1-2 months after disaster	Intent to signify interest in buyout
Formal application submission	6-8 months after disaster	From local to state government

State review	Can take 3-4 months after application submission	
Application submitted to federal agency	After local government application has been approved	Applications submitted by the state government authority to the federal agency
Federal agency review	6 months – 2 years after application submission by state government	
Federal agency approval and release of funds	30 days after approval	Funds sent to state government and then to local government
Home value appraisals	1-6 months (longer if dispute occurs)	Carried out by local governments
Environmental assessments / historical preservation assessments / asbestos abatement	1-3 months	May occur the same time as the home appraisals or can occur separately after
Offer made to homeowners	3-4 months after home appraisal	Can take upto 18 months if renters are involved (not applicable to all states, some states only give 90 day notice to renters to vacate)
Closing (if offer has been accepted)	1-3 months	
Demolition of house	Within 90 days after vacating of property	Can be done later than 90 days if an extension has been approved

Overall program lengths:

- **Only Federal funding: 2-10 years**
- **State/local funding: 3 months – 2 years (shortest time if homeowners are knowledgeable, on board and appraisals and assessments are done quickly)**

Determining the value of the home:

The local government hires an appraiser to determine the fair market value of the property, which is the price the home would have fetched on the private market before it was damaged. There is some debate and variation on how fair market value is calculated, including whether to use pre-disaster, post-disaster, or current values. An offer is then made by the local government based on the appraiser's consultation. If the homeowner disputes the offer, they have the right to hire an independent appraiser at their own expense. A third appraiser appointed by the state reviews the initial estimates and determines the fair market value of the home. Some local authorities have a rule that if the initial estimates are less than 15% apart, the higher value is offered to the homeowner. Once the fair market value is determined, the homeowner can only accept or reject the offer; there is no further negotiation.

Some buyout programs incentivize participation or assist participants in finding replacement housing. For example, New York offered bonuses such as a 10% increase for neighbors moving together to avoid checkerboarding, a 5% bonus for homeowners relocating within the city, and an additional 10% on top of fair market value for homes in extremely hazardous locations (though this incentive was later discontinued). In Harris County, Texas, the Flood Control District offers up to $35,000 in assistance to low- and moderate-income households looking to purchase new homes outside the floodplain and Houston, along with a lump sum payment of $19,875 as an incentive.

Homeowners retain the right to decline selling at any point during the process. If the property is rented, the landlord decides, and tenants receive relocation assistance under the Uniform Relocation Act. Concerns exist that this assistance may be insufficient; six months of rental aid may not adequately support residents seeking suitable housing outside floodplains. Relocation assistance is mandatory for both tenants and owners forcibly displaced by government action, not a disaster. Voluntary buyouts typically lack structured relocation aid.

Once finalized, homes acquired through buyouts are typically demolished or, in rare cases, deconstructed and relocated. The acquired land is often repurposed as open space for parks, gardens, wetlands, flood buffers, or wildlife habitats. In many cases, the land remains vacant due to limited funds for restoration or conservation by local governments. However, even undeveloped land provides flood mitigation benefits. Some federal programs require public accessibility for acquired land. In Charlotte, North Carolina, neighbors lease the land for use in exchange for maintaining it, reducing city maintenance costs.

The primary distinction between a typical "acquisition" and a "buyout" lies in redevelopment plans. In acquisitions, the land may be redeveloped, whereas buyouts prohibit redevelopment under HUD Community Development Block Grants - Disaster Recovery (CDBGDR) guidelines. Buyouts focus on reducing natural hazard risks, while acquisitions support economic development.

Experience of local governments and buyouts:

The experience of local governments with buyouts can vary significantly. Places like Harris County, Texas, have established teams and processes, while some smaller governments might not always have the necessary expertise. The example of Harris County is that of a proactive approach, identifying properties for buyout and then applying for funding. Many other locations only consider buyouts after a disaster and only after that assemble a team and apply for funding.

The following resources are typically needed from the local governments:

- **Staff Expertise:** Dedicated staff with knowledge of buyout procedures, property selection, and communication strategies
- **Technical Skills:** Technical skills like property appraisal and cost-benefit analysis
- **Communication Planning:** Developing clear communication channels with residents throughout the process to manage expectations and anxieties around relocation
- **Relocation Assistance:** The ability to assist residents in finding new homes
- **Property Pricing and Incentives:** Establishing fair pricing strategies and offering incentives to encourage participation
- **Long-Term Management:** A plan for managing acquired land, including ongoing maintenance costs needs. Securing funding for this purpose might be separate from the initial buyout funding.
- **Land Management Expertise:** Depending on the intended use of the acquired land (e.g., park development), additional expertise in land management might be required
- **Multilingual Support:** In areas with diverse populations, translators might be necessary to ensure clear communication with residents.
- **Community Trust:** Building trust with the community to ensure residents feel the buyout process is fair and transparent.
- **Additional Considerations:** Land rights and whether participation in the program is voluntary or mandatory will likely vary by location.

Financial model

Before the local government decides to apply for funding, it needs to make a crucial decision. Buyout administrators must decide whether to maximize the number of homes acquired or maximize the support provided to each participant. Funding for buyouts involves a mix of federal states and local funding resources.

Federal sources

The most commonly utilized sources of funding for buyouts include the **Federal Emergency Management Agency (FEMA), the Department of Housing and Urban Development (HUD), the U.S. Army Corps of Engineers (USACE), and the U.S. Department of Agriculture (USDA), with FEMA and HUD being the predominant sources**. Funding typically comes from FEMA grant programs such as the Hazard Mitigation Grant Program (HMGP), the Flood Mitigation Assistance Program (FMA), and Building Resilient Communities (BRIC). Undeveloped land may be purchased only if it borders a structure eligible for buyout and remains cost-effective to acquire both parcels. The cost-effectiveness assessment likely involves factors like buyout costs, flood mitigation benefits, and long-term maintenance expenses.

HUD and FEMA buyouts also apply to commercial properties, though FEMA grants do not cover properties containing hazardous materials. Properties acquired through FEMA must establish deed-restricted open spaces, limiting development to structures that promote ecosystem restoration or preservation. Conversely, properties purchased via HUD's Community Development Block Grants (CDBG) may be developed under specific conditions (standard program rules apply; CDBG-Disaster Recovery has separate regulations). Participating in FEMA, HUD, or USACE buyout programs requires applications to be made and managed by state or municipal governments; residents cannot apply directly.

There is typically a significant delay between disaster impact and buyout offers due to the allocation and distribution processes of federal funding programs like FEMA's HMGP or HUD's CDBG Disaster Recovery. Harris County, Texas, however, is an exception with its continuously funded buyout program, allowing quicker response after disasters. They also reallocate funds originally designated for prior events (e.g., Hurricane Ivan) to acquire properties affected by new disasters (e.g., Hurricane Harvey).

Non-federal funding sources and cost shares

Local governments often face challenges in funding municipal services like schools, roads, and emergency services, which can complicate financing for buyouts. State funding in addition to federal support can alleviate some of the financial burden. However, federal programs often require a local cost-share approach or matching funds, and local governments may need to invest in additional staff to manage buyouts, adding further strain. Consequently, buyouts tend to occur more frequently in wealthier, more densely populated counties in the U.S. These areas typically have greater financial resources and staffing levels to handle costs like participant incentives and cost-sharing requirements.

Navigating cost matching and sharing requirements can be complex and time-consuming. Local officials must often create separate applications for each funding source, doubling the administrative workload. Additionally, since FEMA and HUD programs have different application criteria and timelines, coordination between them can significantly extend the buyout process.

Government officials naturally gravitate towards familiar schemes due to resource constraints, making it challenging for less-experienced communities or local governments to secure federal funding. States and municipalities utilize various funding sources such as grants, their own budgets, taxes, levies, conservation trust funds, and private partnerships to meet federal matching criteria. Some jurisdictions have established financial mechanisms allowing them to manage buyouts independently of federal funds, which can streamline timelines (e.g., reducing from 2–5 years to 3–18 months) and enable innovative solutions like land swaps or leasebacks that federal regulations may not permit.

Allocations and grants

Some prominent examples of state government appropriations are: The Flood Damage Reduction (FDR) Grant Assistance Program in Minnesota, the Missouri Buyout Program, the Hurricane Floyd Reserve funds and Crisis Housing Assistance in North Carolina, and the Georgia Governor's Emergency Fund. These have helped (at least in part) to satisfy non-federal match requirements for FEMA-funded buyouts.

Grants at the state level, like the "Municipal Flood Control Grant" in Wisconsin, can be used by cities, villages, towns, or tribes to finance the purchase of land and the demolition of buildings in order to create permanent open space or store floodwater. Originally, this grant covered the entire federal cost-share; but, later, funding was cut to only account for 12.5% of the buyout.

In Ohio, a comparable program is in place. Some local governments believe that poor towns are unable to take advantage of federal monies because of the decreased assistance from state programs. Some states have implemented thresholds, similar to an insurance deductible, based on local population and median household income. In practice this means that once a community has contributed a certain amount of local match funds, the state fund will pay for any additional costs.

In Minnesota and Texas, buyouts and other hazard mitigation initiatives have also been financed by state and local bond funds. One benefit of these bond measures is that they provide for "flexibility of timing for buyouts" and "creation of an emergency fund". For example, **the Harris County Flood Control District in Texas was able to successfully reduce the buyout process from almost eighteen months to three or four months by using their local bond monies for buyouts**.

For more modest, stand-alone property purchases, local governments might be able to set aside money at the county level for a specific number of yearly purchases. For example, following discussions with the Department of Planning and Development, the Kenosha County Board in Wisconsin decided to put aside "enough funding for one acquisition per year".

Apart from the real cost of purchasing the properties, there are other expenses that must be paid for, like project management, employing appraisers, and building demolition. Some towns have capital reserves that might be used for these expenses and serve as cost-share matching funds. As long as local staff salaries are independent of federal funding sources, their time spent managing projects can be deemed an in-kind donation that qualifies for match funding.

Local Sales taxes

In response to the 1993 Mississippi River floods, the City of Davenport, Iowa, implemented a local sales tax to bolster its existing acquisition program. Similarly, Neosho, Kansas, utilized a 3/8th cent sales tax after initial funding for their buyout program ran dry, enabling them to acquire an additional 26 properties and incorporate the newly acquired land into the city park. Austin, Minnesota, enacted a 0.5 cent local option sales tax in 2004 to complement federal or state funding for buyouts in flood-prone areas.

The 2018 Garden State Preservation Trust Act in New Jersey introduced a constitutional amendment allocating revenue from sales taxes to fund buyouts aimed at conservation and flood risk reduction. This legislation provided crucial funding for New Jersey's Blue Acres buyout program. Similarly, the Preserve New Jersey Act of 2016 allocated a portion of corporate income tax revenue to purchase properties vulnerable to flooding. Blue Acres has successfully secured government funding to support ongoing buyouts and long-term initiatives, ensuring sustained efforts beyond one-time funding sources.

Stormwater Management Fees

Buyout programs in Tulsa, Oklahoma, and Charlotte-Mecklenburg County, North Carolina, have included stormwater management fees. The Charlotte-Mecklenburg Floodplain Buyout Program uses a "rainy day fund" established by Storm Water Services fees based on "square footage of impervious surface,". Tulsa's buyout program uses 20% of its stormwater utility fee. The Charlotte-Mecklenburg program is run completely on stormwater fees since 2020. This makes it possible for the program to respond faster (for example, by making buyout proposals in the days after a disaster instead of months or years later) and to look for innovative solutions for particular situations (for example, by renting back homes that have been acquired to give inhabitants time to locate other accommodations).

Environmental trust funds

The Nebraska Environmental Trust Fund is funded by the Nebraska Lottery and has been used as a non-federal match for buyout programs and offers cash for "environmental initiatives including those focused on water quality, lakes, and wildlife habitat". The Farmland Preservation Trust Fund for Open Space in Morris County, New Jersey, is meant to help partially finance the state's flood prevention initiative. Property taxes "equal to 7/8 cent per 100 USD of total county equalized real property valuation as of March 2017" are used to pay this trust fund.

Public-Private Partnerships

Some buyouts have been funded by "Floodplains by Design," an initiative supported by the National Fish and Wildlife Foundation, Boeing, the Washington State Department of Ecology, the U.S. EPA, Puget Sound Partnership, NOAA, and the Russell Family Foundation.

Other government agencies

Some counties have also used funds from water conservation boards and water quality programs for cost sharing and cost matching. The creation of open spaces adjacent to bodies of water is often in the interest of water conservation boards and water quality programs.

Departments which are responsible for roads and bridges can also fund buyouts if buyouts can enable them to expand their infrastructure. Similarly, funding sources can also include parks and recreation departments if the buyout allows them to build additional park space or expand an existing one.

Donating an acquired property to the local fire department, which can utilize the facility for a controlled burn exercise, is one innovative way to raise match funds. The fire department receives training, and their time and equipment use can subsequently be applied toward the cost share (with no additional charge for the building's demolition).

Homeowner contributions

Homeowner contributions to meet federal money matching requirements are a contentious issue. Homeowners have the option to accept a lower fair market value offer for their house, with the difference applied toward the cost-share requirement. They may also agree to cover additional expenses, such as closing costs, to reduce financial burden on local or state governments.

Homeowner contributions are considered inequitable, as they may not be feasible for most homeowners. Accepting a lower price can lead to financial hardships post-buyout. Some officials contend that this approach primarily benefits homeowners who might otherwise not qualify for buyouts, as their local governments might otherwise lack sufficient funds to implement buyouts at all. These homeowners might receive less than what they could obtain on the private market, considering potential costs for repairs, real estate agent fees, inspections, and closing expenses.

However, proponents argue that involving homeowners in the financial aspects of buyouts fosters a sense of participation and responsibility. This approach also mitigates perceptions of buyouts as undeserved handouts, which can deter community support. Requiring homeowners to contribute financially can align their interests with the broader goals of the buyout program.

Challenges of Local Funding: While local funding offers potential solutions, it has its limitations. Less affluent states and counties may rely solely on federal funds for their buyout programs, as many of the alternatives discussed are generally feasible only for wealthier municipalities. Moreover, acquiring a property entails not just its market value but also additional administrative and logistical costs, potentially inflating total expenses by up to 50%. While additional local funding can be advantageous, accumulating sufficient funds can be slow, particularly for smaller communities aiming to acquire multiple properties.

Enabling conditions

Some key enabling conditions that are required for the Flood buyouts are:

- Financial resources: Funding from FEMA or other federal agencies is a critical resource for many buyout programs. Local fundings might also contribute additional funds. Local governments also need to have enough resources for administrative costs, staff etc.
- Human resources: Qualified personnel are needed to manage program administration, property appraisals, negotiations with homeowners, and long-term planning for acquired land.
- Technical resources: Local governments also need technical resources to access flood risk and expertise in floodplain management is essential to identify eligible properties.

Outcomes

By removing buildings and structures from floodplains, buyouts do decrease flood risk and also create green spaces for recreation.

However, local governments often face the risk of losing some tax base due to relocations, particularly if property taxes constitute a significant portion of their revenue. Understanding the long-term social, economic, and environmental impacts of flood buyout programs remains challenging, as comprehensive data and systematic research on these broader impacts are lacking. Much of the knowledge stems from anecdotal evidence within the U.S. context. There is a notable gap in studies evaluating the effectiveness of buyouts in enhancing community resilience and whether residents experience genuine financial and social improvements post-relocation.

Environmental policies and disaster mitigation strategies in the U.S. involve a blend of federal, state, and local initiatives, resulting in varied implementation across counties and states. For instance, California's stringent environmental protections contrast with practices in other states, influencing how states execute their buyout programs.

While homeowners and renters subjected to forced relocation due to governmental actions receive relocation assistance, those participating in voluntary buyouts rarely qualify for similar support. Rental agencies often express reluctance to engage in buyouts of rental properties, citing concerns about increased workload and unintended harm to tenants. They recognize that without relocation assistance, tenants could be adversely affected, with some counties reporting instances where landlords exploit the process to forcibly evict tenants.

The Natural Resources Defence Council (NRDC) conducted a study revealing an average of five years between the grant closure of a buyout and a disaster, significantly longer than anticipated by most homeowners from initiation to completion. Delays can occur as buyouts often commence years after a disaster, with administrators sometimes delaying grant closure until all homes in the program are purchased and demolished. On average, buyouts financed by federal funds take two to three years longer than those funded by local or state sources.

Residents face numerous challenges even in expedited buyout programs (3-18 months), with relocation decisions posing a primary dilemma. In some cases, homeowners end up receiving financial assistance twice: first through the National Flood Insurance Program (NFIP) for home reconstruction and subsequently through participation in a buyout program.

Local governments also contend with issues related to duplication of benefits and payments received. The total assistance from all sources, including insurance, must not exceed the fair market value of the property. If an owner receives federal funding or insurance payments for repairs or alternative accommodation without providing receipts, the amount may be deducted from the buyout offer. Documented expenditures are exempt from this deduction.

Nevertheless, homeowners are still obligated to pay mortgages on damaged properties and NFIP premiums while buyouts are processed, potentially necessitating years of double payments if they relocate. Some individuals withdraw from buyout programs after initial interest due to financial constraints, posing challenges for administrators and potentially leading to incomplete acquisitions and less effective buyout outcomes.

When properties are identified, local governments typically inform residents about potential buyout programs and advise against rebuilding, creating uncertainty due to the lengthy funding approval process. This uncertainty can discourage homeowners from rebuilding while they await clarity on program timelines and details. Therefore, establishing clear communication channels to keep residents informed about buyout processes and potential timelines is crucial.

Lessons learned

Successes and limitations

Properties acquired can be converted into parks and community areas with proper management. Flood mitigation strategies on this land can also be used for drainage basins and give access to river channels which can also reduce flood risks.

A study by University of Delaware's Disaster Research Centre (2021) highlights the successful example of Wapello, Iowa, where the USACE was able to cease maintenance on a local levee and local property trusts to convert the once flood-prone farmland into a wildlife preserve. On top of a buyout, they also participated in a land swap. Most buyouts focus on individual properties, but there are also some cases of community relocations, in which a town, village, or community relocates. These have been used to control shrinkage and, in certain situations and have helped towns boost their economies and population.

The interviewee emphasised that proving long term benefits of buyout programs is challenging. Most communities and governments prioritise short term goals. It is difficult to persuade communities to participate in buyout programs if they cannot see any immediate benefits. Even successful buyout programs can have unintended consequences. There have been examples where people who relocated from Harris County just ended up moving into other flood prone areas.

The interviewee also stated that the U.S. is also known for its emphasis on individualism and strong property rights, which can make collective action challenging. Property rights and land-use regulations are often complex. Homeowners do not always respond positively to restrictions in how much they can develop in flood prone areas and do not want to sell their properties. This emphasis on individualism makes it difficult to implement policies that require collective action, like selling your home for the greater good of flood mitigation.

According to a study done by Rice Institute (2018) and another one by Disaster Research Centre (2021), residents who live beside acquired properties can also see a decrease in their property values over the years after a buyout program. This is a big reason why governments like to buy adjacent properties and avoid checkerboarding.

Buyouts are meant to address the climate issue of flooding in urban areas. While buyouts do remove residents away from the flooded area, they don't necessarily tackle the root causes of urban flooding, which often is a result of poor urban planning decisions. Sometimes buyouts are used to correct past mistakes in land use planning that allowed for overdevelopment in floodplains. The interviewee also stated that some of the literature they studied also highlights the need for a shift in responsibility from homeowners to governments. Governments are the ones that give the permits to build in floodplains, so the burden of relocations should not fall completely on the homeowners. These ethical complexities need to be acknowledged since many homeowners feel that they are being punished for mistakes that were not fully theirs by being relocated.

The study by the Disaster research Centre (2021) also shows that homeowners often lack complete information about flood risks. Some homeowners prefer to move into floodplains because they are quite fertile. However, many homeowners lack access to crucial details about past flooding or potential geological hazards. They might prioritize factors like schools and affordability, leaving flood risks as a secondary concern. This lack of knowledge raises questions about responsibility. Homeowners bear the full burden of relocation after a buyout, even if they were not fully aware of the risks when they purchased their property. The bigger issue might be the inadequacy of current policies. The rate of new construction in floodplains is much higher than the number of properties acquired through buyouts. This suggests that flood buyouts often are a reactionary phenomenon.

Cost analysis of buyouts is also complex. The interviewee also stated that studies portray the buyouts as financially stable due to favourable cost-benefit ratios. However, these studies are criticized because they fail to consider the cost-effectiveness of alternative solutions like levee construction or channel dredging.

Another criticism of flood buyouts according to the interviewee is that there are significant human consequences that they do not always consider. Many residents who accept buyouts experience regret later. Studies have shown that many homeowners have said yes to buyouts under emotional distress that can lead to rushed decisions. Some buyout recipients report a decline in well-being after relocation. The long-term impact on individuals remains largely unexplored and under researched.

In locations where property values are exceptionally high, buyouts can be extremely expensive if homeowners are paid their true market worth. That is why buyouts mostly take place near rivers, and not on beachfront properties. To make sure that buyouts do not favour wealthy residents, most governments have restrictions on the maximum amount they can pay to property owner in a buyout.

Transferability conditions and potential

Buyout programs require long-term planning and cannot be effectively initiated as a response to a single flood event. The most successful buyout programs involve ongoing conversations with the community to ensure their needs and concerns are addressed. This includes defining community boundaries and ensuring an inclusive process.

The flood buyout programs of the US illustrate how larger federal level policies are implemented in a decentralised manner, and how alternative funding mechanisms can be utilised alongside top-down approaches to climate adaptation. Flood buyouts are already being used by some local governments as part of their climate adaptation plans like Harris County, Charlotte-Mecklenburg County and New York City. Territories can utilise many similar mechanisms that counties and local governments have used to fund their buyouts.

A key factor in making buyouts successful is having knowledgeable staff. Federal authorities do not always have the time or skills to advise local governments, so it is necessary that they have expertise to run these programs.

Funding needs to be readily available, especially after a flood event, to avoid delays that can cause hardship. Buyout offers should consider not just pre-storm property value but also moving costs and the cost of securing a comparable replacement home. Programs offering additional incentives beyond just the base buyout price can encourage participation. For example, Austin, Texas, provides financial assistance for securing a replacement home.

There is also a need for a long-term vision. Some buyout programs include stipulations that prevent any construction in frequently flooded areas. Programs can be made stronger by offering additional support services like pairing participants with real estate agents to navigate the relocation process.

The U.S. approach to buyouts revolves around federal funding programs like FEMA's Hazard Mitigation Grant Program (HMGP) and HUD's Community Development Block Grant Program for Disaster Recovery. These programs have eligibility criteria and project requirements, but buyouts are just one mitigation option among many. There's no single, overarching national policy specifically for flood buyouts in the U.S. Buyouts are a tool within broader disaster mitigation policies.

Related factsheets

Since the flood buyouts are locally implemented, they have a variety of financial sources and instruments. The following factsheets share similarities:

- **Grants:** Seychelles debt-for-nature-swap (ID15), Wetland Mitigation Banking Program (ID17), Greater Cape Town Water Fund (ID01), Resilient Hampton (08). Sheffield Lower Don Valley Flood Defence project (ID11),
- **Fee/user charges:** Clean Water Partnership (ID02), Copenhagen Cloudburst Management Plan (ID03), Washington Stormwater Retention Credit Trading program (07), Sheffield Lower Don Valley Flood Defence project (ID11), Project Finance for Permanence (ID13), Viveracqua Hydrobond (ID16), Wetland Mitigation Banking Program (ID17),
- **Taxation/public sources:** Greater Cape Town Water Fund (ID01), Clean Water Partnership (ID02), Copenhagen Cloudburst Management Plan (ID03), Groenfonds Midden-Delfland (ID06), Washington SRC (06), Resilient Hampton (ID08), Paris Climate Bond (ID09), Project Finance for Permanence (ID13), RPPNM Curitiba (ID14), Viveracqua Hydrobond (ID16), Wetland Mitigation Banking Program (ID17), Edwards Aquifer Protection Program (ID20)
- **Homeowner/private/developer contribution:** Clean Water Partnership (ID02), Copenhagen Cloudburst Management Plan (ID03), NICE GREEN Nagoya (ID05), Groenfonds Midden-Delfland (ID06), Washington Stormwater Retention Credit Trading program (ID07), Resilient Hampton (ID08), Paris Climate Bond (ID09), Dorset Heathlands (ID12), Project Finance for Permanence (ID13), RPPNM Curitiba (ID14), Viveracqua Hydrobond (ID16), Wetland Mitigation Banking Program (ID17), Gothenburg Green Bonds (ID18), Edwards Aquifer Protection Program (ID20)
- **Public-Private Partnerships:** Zorrotzaurre flood district Bilbao (ID19), Greater Cape Town Water Fund (ID01),

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