Floodplain Buyouts:

An Action Guide for Local Governments on How to Maximize Community Benefits, Habitat Connectivity, and Resilience

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Introduction

Since 1993, FEMA's Hazard Mitigation Grant Program has funded the acquisition of over 37,000 flood-damaged properties. Under FEMA's acquisition programs, once properties are purchased following a disaster, existing structures must be removed and the land must be dedicated to open space, recreational, or wetland management uses. Communities can restore and permanently protect these properties to provide natural habitats and help conserve biodiversity, while also providing community amenities and improving resilience.

Local governments usually oversee these floodplain buyouts, and ultimately take on the ownership of these sites with little or no funding for restoration or management, or guidance on maximizing long-term benefits. This Action Guide highlights communities across the country that have established programmatic and management structures for floodplain buyouts to make the most of acquired properties. We offer practical, implementable recommendations for communities on how to optimize use and management of buyout properties to provide habitat and improve community resilience. Finally, we provide opportunities for organizations or agencies interested in conservation or wetland restoration to be valuable partners for local governments in the floodplain buyout process.

The Action Guide

This Action Guide does not necessarily provide an exhaustive checklist of steps that should be taken to successfully complete a habitat restoration project on acquired flood-prone properties. Rather, it is a guide for thinking through various available management options that maximize the benefits of floodplain acquisition programs and for considering challenges before they arise in order to promote successful completion of projects. Readers will gain a clearer understanding of the floodplain acquisition process, the benefits of managing floodplain acquisitions to improve habitats, and how to plan and address the challenges that come with undertaking such projects. Additional resources are introduced throughout the guide, and should be used to complement the information presented in the following sections as projects are planned and executed.

Section I, *Acquiring Property in the Floodplain: Buyout Programs*, explains how FEMA's Hazard Mitigation Grant Program (HMGP) works in relation to voluntary property acquisitions, or floodplain buyouts. This section introduces the concept of leveraging multiple (non-federal) funding sources for different parts of the acquisition and post-buyout project.

Section II, *Managing Floodplain Acquisitions to Maximize Habitat and Resilience Benefits,* introduces various considerations for determining the best-fit post-buyout project. Readers are presented with habitat- and community-friendly options based on

factors ranging from open space requirements to the geographical layout of the acquired properties.

Section III, *Making it Happen: Challenges and Issues to Consider When Determining What Can Be Done with a Property,* addresses the practical questions that must be asked when planning, presenting, and executing post-buyout projects. Topics range from funding and maintenance responsibility to ensuring community buy-in and successful partnerships. This final section aims to help readers preempt the challenges that are often confronted by communities interested in implementing projects relating to the restoration of habitats on floodplain acquisitions.

Background

The expected impacts of climate change will increasingly put communities at risk from flooding, intense storms, and other hazards and conditions. For example, according to a recent Federal Emergency Management Agency (FEMA) study on climate change impacts, the nation's flood-prone area is likely to increase by 40-45 percent over the next 90 years.[1] Hazard mitigation attempts to "break the cycle of disaster damage, reconstruction, and repeated damage" in anticipation of such events.[2] Historically, flood hazard mitigation strategies have primarily focused on building flood control works, such as dams, seawalls, and levees, and designing and applying building construction practices for residential, commercial, and industrial structures. While this approach surely reduced the severity of many impacts, the failure of such engineered solutions in the Great Mississippi River Flood of 1993 prompted the recognition of the importance of the natural hazard mitigation functions of wetlands and natural habitats. More recently, more emphasis has been placed on non-structural hazard mitigation solutions, including the restoration of natural habitats, as cost-effective alternatives for flood hazard mitigation that also help achieve conservation goals like maintaining biodiversity.

One such solution is to fully leverage the potential value of properties acquired under federal hazard mitigation grant programs and other grant programs that fund voluntary acquisitions of flood prone properties. Since 1993, FEMA has funded the acquisition of over 37,000 properties to prevent future natural disaster-related damages – mostly resulting from flooding.[3] This number will continue to grow as extreme weather events become more common and more costly. For example, following Superstorm Sandy, many properties in the affected region have been, or will be, acquired under the hazard mitigation grant and other federal programs (e.g., HUD Community Development Block Grant). Under the FEMA acquisition program, once properties are acquired and existing structures removed, the land must be dedicated to open space, recreational, or wetland management uses.[4] Thus, these properties can offer opportunities to restore and permanently protect natural habitats and help conserve biodiversity, while also improving community resilience and providing other community benefits.

Local governments typically oversee these floodplain buyouts, using primary funding from one or more state-administered federal grant programs and matching funds provided by state and local governments for the acquisitions. However, local governments often take ownership of these sites with little or no funding for, or guidance on, post-acquisition restoration, long-term management, and maximization of community benefits. Although some buyout properties have been converted to parks or restored to natural habitats, many of these properties remain unimproved empty lots. In such cases, there is an untapped opportunity for communities to leverage the potential benefits of these properties. These benefits may be especially important for the residents of vulnerable and disadvantaged communities who remain in these locales.

Properties acquired under voluntary hazard mitigation programs can be small and dispersed across the landscape, but the restoration of these lands to natural habitats can increase the quality and functionality of natural habitats and help preserve native biodiversity -- in addition to providing various resiliency benefits. Biological connectivity can be restored, human community amenities improved, and multiple benefits achieved, especially where hazard planners work together with habitat managers, soil and water conservation districts, watershed groups, and others to prioritize property acquisitions in areas that line up with existing conservation and other watershed priorities. In this way, buyout properties could provide valuable environmental health, recreation, education, and community engagement benefits to local residents.

Foundations for This Action Guide

The Environmental Law Institute (ELI) and the University of North Carolina's Institute for the Environment (UNC-IE) examined approaches and best practices for leveraging floodplain acquisition programs for community and environmental benefits. The *Natural Hazards and Opportunity: Community Resilience and Habitat Connectivity* project aims to help communities understand and fully leverage the potential ecological and social value of properties acquired under federal hazard mitigation and other programs that fund voluntary acquisitions of flood prone properties.

This action guide is designed to help local governments across the country leverage hazard mitigation buyouts to protect, restore, and connect habitats in local communities. Within the guide, information gathered through research, case studies, and supporting literature reviews has been used to consider, design, and present management approaches that will be useful and practical for the local officials and managers who have the ability to target their acquisitions to provide habitat and community amenities, improve resilience, and reducing future flood damage. With guidance from the project's Advisory Committee, ELI and UNC-IE have identified a number of representative communities across four states and in various regions to serve as case studies (see p. 4).

To develop these in-depth local case studies, ELI and UNC-IE visited communities in North Carolina, New Jersey, Minnesota, and Wisconsin. ELI and UNC-IE representatives visited buyout properties in person and conducted interviews with local officials (e.g., emergency planners and wetland managers), in addition to working with state hazard mitigation offices to better understand how each state's hazard mitigation grant program is administered and how acquired properties typically are managed. We also created geospatial maps of the buyouts by compiling parcel information and/or tables containing details of the buyouts. To complement the case study research, ELI and UNC-IE conducted an additional study focused on the target states' local governments that have been involved in a voluntary floodplain buyout program.[5] The study revealed trends and diverse experiences in various topics, including: the size of acquisitions; funding; current management; selection criteria; incentives to encourage willing sellers; social costs and benefits; and administration.

Case Studies Conducted by ELI and UNC-IE

ELI and UNC-IE conducted case studies on the following communities:

- Austin, Minnesota
- East Grand Forks, Minnesota
- Montevideo, Minnesota
- Moorhead, Minnesota
- Clyde, North Carolina
- Kinston, North Carolina
- Rocky Mount, North Carolina
- Pequannock, New Jersey
- Sayreville, New Jersey
- Wayne, New Jersey
- Jefferson County, Wisconsin
- Kenosha County, Wisconsin
- Pierce County, Wisconsin

The case studies are available at: https://www.eli.org/sustainable-use-land/floodplain-buyout-case-studies.

SECTION I. Acquiring Property in the Floodplain: Buyout Programs

St. Louis, Missouri after flooding in 1993

In 1993, floodwaters from the Mississippi and Missouri Rivers covered 30,000 square miles of the upper Midwest.[6] By most measures the largest flood in U.S. history since 1927, the Great Flood of 1993 killed dozens of people and caused $15-20 billion dollars in property damages and recovery costs.[7] The flooding damaged tens of thousands of homes, inundated millions of acres of farmland, and induced entire towns to relocate to higher ground.[8] In response, Congress amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act).[9] The 1993 legislation authorized increased federal funding for long-term hazard mitigation measures, including the acquisition of flood-prone properties, incentivizing communities to undertake hazard mitigation planning and activities in advance of future disasters.[10] Under new provisions in Section 404, the Federal Emergency Management Agency (FEMA) implemented the innovative and ambitious Hazard Mitigation Grant Program (HMGP).[11]

The HMGP has provided funding assistance for thousands of damaged properties since 1993 - over 10,000 voluntary property acquisitions were closed from 2004-2015 alone.[12] The hazard mitigation benefits of these acquisitions range from reductions in property damage to reductions in societal losses including deaths, injuries and homelessness.[13] In addition to mitigating numerous risks, many communities have found creative uses for acquired properties that provide additional benefits. For a town like East Grand Forks, Minnesota, where the town budget was $4 million in a year that saw a flood with damages over $400 million, FEMA's HMGP was a critical funding source for the acquisition of 507 properties that were devastated by repetitive flooding.[14] Acquired property now makes up a portion of the Red River State Recreation Area campground, which generates revenue through tourism, and an expanded greenway developed with input from a range of public and private entities.[15]

Hazard Mitigation Assistance Grant Programs

FEMA administers three separate Hazard Mitigation Assistance (HMA) grant programs: the Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation (PDM) Program, and the Flood Mitigation Assistance Grant Program (FMA).[16] All three HMA initiatives are intended to reduce and eliminate, where possible, the long-term flood risk of structures including those insured by the federal National Flood Insurance Program (NFIP). The ultimate goal of the program is to reduce the number of claims paid by the

NFIP.[17] The three HMA programs were authorized by separate legislative actions, and each is slightly different in purpose and scope.[18]

Box A

Box A: **Benefit-Cost Analysis**

The Stafford Act requires every project funded by HMGP to be cost effective, as demonstrated by a Benefit-Cost Analysis (BCA). BCA involves estimating and comparing the expected costs and future benefits of a project; dividing a project's total net benefits by its total cost results in the benefit-cost ratio (BCR). A project is considered cost-effective when its BCR is greater or equal to 1.0.

Mitigation project "benefits" typically include avoided damage to structures, avoided deaths or injuries, and other quantifiable losses. Historically, ecosystem-wide environmental benefits were not included in the scope of BCA. However, in 2013, FEMA changed its BCA methodology for acquisition projects to facilitate and promote ecosystem-based management. Under the new methodology, environmental benefits can be added to a project's total net benefits if (and only if) the project in question already has a BCR of 0.75 or greater using traditional benefits. In other words, environmental benefits currently may be considered to "tip the scale" in favor of approval.

The environmental benefits of open space are estimated according to rates based on land area: green space is valued at $2.57/ft2/year; and riparian open space is valued at $12.29/ft2/year.

Sources: 44 C.F.R. 206.434(c)(5); FEMA, *Benefit-Cost Analysis*, http://www.fema.gov/benefit-cost-analysis (March 16, 2015); FEMA, Mitigation Policy FP-108-024-01, Consideration of Environmental Benefits in the Evaluation of Acquisition Projects under the Hazard Mitigation Assistance (HMA) Programs (June 18, 2013), available at: https://www.fema.gov/media-library-data/20130726-1920-25045-4319/environmental_benefits_policy_june_18_2013_mitigation_policy_fp_108_024_01.pdf

Hazard Mitigation Grant Program: This grant program helps states, tribes, and local communities reduce the loss of life and property from natural disasters and enables the implementation of mitigation measures following a Presidential disaster declaration.[19] The HMGP funds voluntary actions that protect either public or private property in accordance with priorities set out in state, tribal, or local hazard mitigation plans. Although hazard mitigation is defined broadly as "any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards," many HMGP activities are related specifically to flood hazards. In general, HMGP funds make up 15 – 20 percent of the total amount of federal aid provided to a state, territory, or tribe after a major disaster.[20] Under federal cost-sharing rules, when mitigation measures are approved for HMGP funding, FEMA may contribute up to 75 percent of the cost of the project.[21] The remaining non-federal share is the responsibility of the property owner,

the state and/or local government, or other funding sources and may be valued in cash, in-kind services, or materials.[22]

HMGP grants support a variety of mitigation measures, including flood-proofing, elevation, reconstruction, retrofitting projects, and voluntary acquisitions, or "buyouts."[23] Acquisition projects involve the purchase of flood-prone properties from willing sellers and the subsequent demolition or relocation of related structures. As a result, people are moved out of the floodplain and the risk of future structural damage in the flood-prone area is reduced.[24] In the aftermath of the 1993 floods, the program facilitated the acquisition of thousands of vulnerable properties.[25] In the decades since, HMGP has continued to prioritize property acquisitions, which have accounted for 38% of total HMA grants through 2013.[26] Between April 2000 and January 2016, over $649 million of HMGP funds were used to acquire 10,248 properties in 42 states and territories, with a median payout of $50,293.[27]

The HMGP application process is fairly lengthy (it can often take as long as 18 months and could be longer) and several steps are required before HMGP funds are released for the acquisition of a specific flood-prone property (see Figure 1). First, the President of the United States must declare a "major disaster" within the jurisdiction of a state, territory, or tribal government, activating federal funds held in reserve for disaster assistance.[28] Once a disaster has been declared, individual disaster victims – for example, homeowners within the affected area – can begin working with a point of contact in their local government (e.g., the local emergency management department), referred to in the law and regulations as the "sub-applicant" entity, to decide whether to apply for HMGP assistance. (A state agency or certain private non-profit organization also may be the sub-applicant under the HMGP; however, typically and for purposes of this guide, local governments are the sub-applicants that interact directly with individual victims).[29] Governments may advertise buyout opportunities in the community, through town hall meetings, local media, and/or the Internet, or it may be that homeowners approach the government to initiate the process. Regardless, participation in the buyout program is strictly voluntary, and individual property owners must actively support the application.[30]

The local government then develops an HMGP application for the property and submits it to the state, territory, or tribal government, who administers the program and will work directly with FEMA on local governments' and individuals' behalf. Since total mitigation funds are limited, the state agency must evaluate how a proposed acquisition project aligns with priorities described in their pre-approved hazard mitigation plan and decide whether to forward each application to FEMA.[31] In almost all cases, FEMA is responsible for final review and approval of buyout applications.[32]

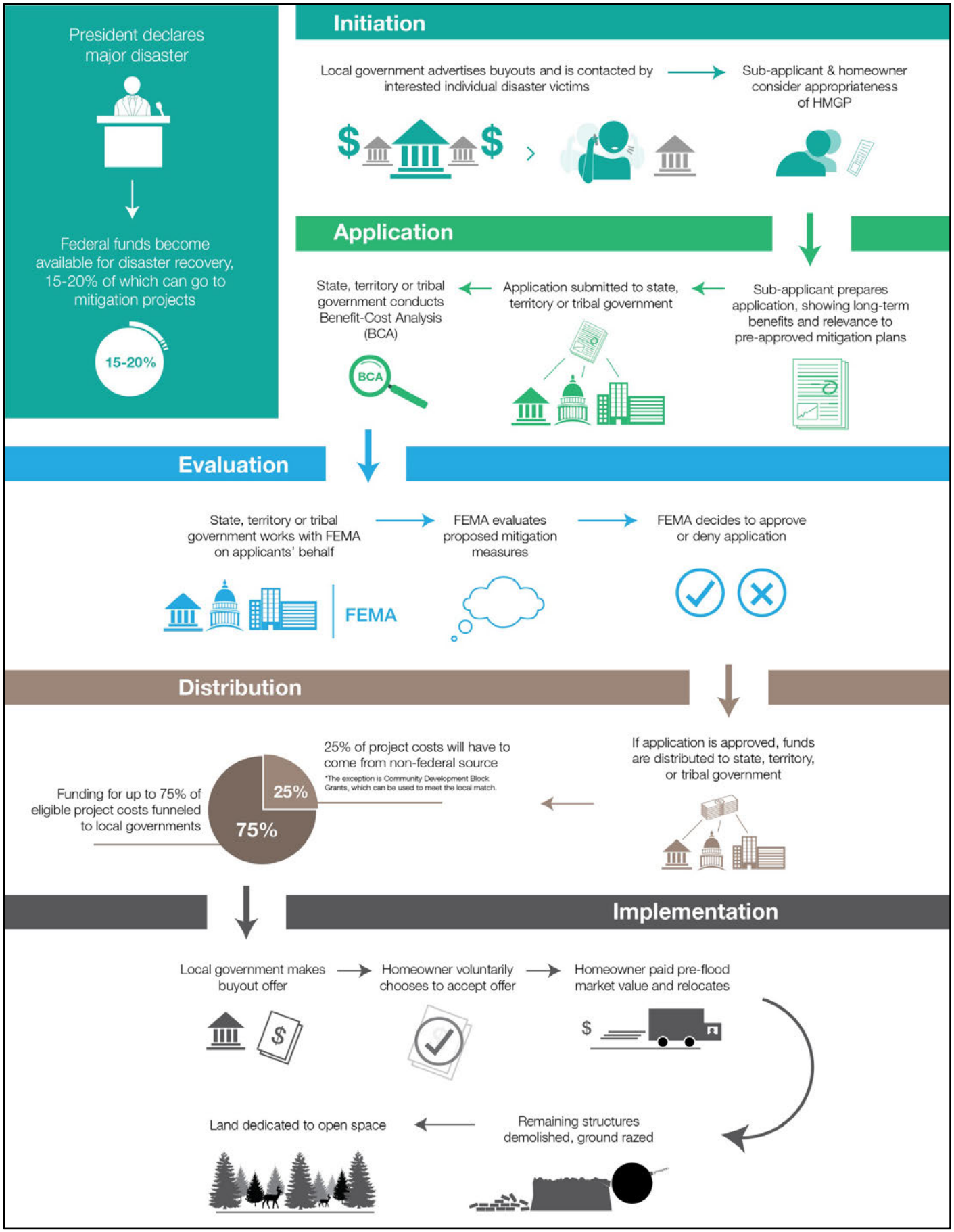
To be approved, an acquisition project must provide a long-term solution to a problem and result in greater future savings than costs.[33] State (or territory) applicants are required to conduct a formal benefit-cost analysis as part of the HMGP application in order to demonstrate eligibility and cost-effectiveness (i.e., benefits must outweigh

costs; see Box A on the benefit-cost analysis).[34] Once approved by FEMA, an HMGP grant is awarded to the state, territory, or tribal agency, which channels funds back through the local government to pay up to 75% of the project's eligible costs.[35] Eligible costs include compensation for the value of structures, for their relocation or demolition, for associated land, and associated costs.[36] A review of HMGP grants awarded between 1993 and 2003 found that the average Benefit-Cost Ratio for FEMA floodplain acquisition grants was about 5.1.[37]

After a property is acquired and the previous owners have relocated, all remaining buildings, structures and pavements or impervious surfaces on the property are demolished or moved and the land is graded. A set of deed restrictions must be attached to the property title, which is held by a public entity, such as a local government, or by a conservation organization, to ensure no further development occurs and the property is maintained in perpetuity for uses compatible with open space, recreation, or wetlands management practices.[38] In general, permissible "open space" uses include nature preserves, outdoor recreation, cultivation, grazing, buffer zones, and camping (where there is adequate warning time to allow evacuation).[39] To ensure the natural values[40] of floodplains and/or wetlands are maintained, only unpaved parking lots can be used, and any structures other than a public restroom must be open on all sides and related to the open space use.[41] After HMGP funds have been approved to acquire a property, that property becomes ineligible for most additional and/or future federal benefits for flood assistance, including insurance under NFIP. If the property is not maintained in compliance with the deed restrictions, the federal government may terminate the project agreement and demand immediate repayment of HMGP funds used for the project.[42]

In addition to avoided future costs, property acquisition for flood-risk mitigation can also provide positive benefits for the community, including habitat and biodiversity, food production, water supply, recreation opportunities, nutrient regulation, soil and sediment regulation, disturbance and natural hazard regulation, and aesthetic cultural values.[43] As FEMA recognized in its revised BCA methodology (see Box A), the creation of open green space and wetlands represents considerable, lasting value.[44] Figure I, below, indicates the key steps in the HMGP property acquisition process described in detail above.

Figure 1: Key Steps in the HMGP Buyout Process



Other Relevant Funding Programs

Pre-Disaster Mitigation Program. In addition to HMGP, FEMA administers two additional HMA programs: the Pre-Disaster Mitigation (PDM) Program and the Flood Mitigation Assistance Grant Program (FMA). Like HMGP, applications to PDM and FMA are made by states, tribes, or territories on behalf of the sub-applicant, a local or state agency;[45] grants may cover up to 75% of eligible project costs with a 25% non-federal match;[46] and a state or community must have a FEMA-approved flood risk mitigation plan in place to be eligible to receive grants.[47] Both PDM and FMA grants may be used for property acquisition and structure demolition/relocation projects.[48]

Section 203 of the Stafford Act authorizes grants under the Pre-Disaster Mitigation program, which may be used for mitigation projects and mitigation planning activities.[49] Like HMGP, PDM grants assist states, territories, tribes, and local communities with implementing cost-effective pre-disaster hazard mitigation projects. Unlike the HMGP, availability of PDM grants is not triggered by a specific disaster event; the total amount of PDM funds is determined each year by Congress through appropriations to the National Pre-Disaster Mitigation Fund ($90 million in FY 2016).[50]

PDM grantees can use funds to reduce disaster losses through property acquisition and other activities before disasters strike as well as to raise risk awareness.[51] Also, when PDM sub-applicants apply for funds for an eligible mitigation activity, they may specifically request funds (up to 10% of total sub-application cost) to be used for information dissemination activities, including public awareness and education, that are directly related to the proposed project.[52]

Proposals are reviewed according to a set of criteria including, but not limited to, the extent and degree of the hazards, the degree of commitment of the state or local government to reduce damages from future natural disasters, and the degree of commitment by the State or local government to ongoing non-federal support for the hazard mitigation measures to be carried out.[53] Eligible projects may include structure elevation, floodproofing, minor flood reduction projects, retrofitting projects, and property acquisition, among other projects.[54] The same FEMA regulations for Property Acquisition and Relocation for Open Space (CFR Title 44, Part 80) govern all property acquisition projects carried out under all FEMA hazard mitigation assistance programs; as such, requirements (e.g., open space restrictions, allowable costs) for PDM grants are the same as those described previously for HMGP projects.

Flood Mitigation Assistance Program. The FMA program, authorized by Section 1366 of the National Flood Insurance Act, funds projects that reduce or eliminate the risk of flood damage to buildings insured under NFIP.[55] FMA funds two types of activities: planning and projects. Planning grants may be used to assess flood risks and prepare flood mitigation plans. Project grants may be used to implement measures to reduce or prevent flood losses, including acquisition, demolition/relocation, or elevation of NFIP-

insured structures. Like PDM funds, FMA funds are not contingent on a disaster declaration; the total amount of FMA funds is determined each year by Congress through the appropriations process ($199 million in FY 2016).[56]

Properties eligible for acquisition by states and communities with FMA funds are properties (including public properties) located in areas having special flood hazards or other areas of flood risk and properties substantially damaged by flood. In order to be eligible for an FMA grant, the property must be acquired "for public use, as [FEMA] determines is consistent with sound land management and use in such area."[57] The FMA program specifically gives priority to projects that reduce the number of repetitive loss structures.[58]

Other Federal Programs. Grants provided under all three of the HMA programs administered by FEMA are subject to restrictions on receipt of similar benefits under other federally funded programs. In general, the non-federal cost-share requirement for HMA grants may not be met with funds from other federal agencies. Exceptions are explicitly stated in authorizing statutes; any federal funds that meet these criteria must still meet the purpose and eligibility requirements of both the federal source program and the HMA grant program.

An example of federal funding that may be used to supplement HMA grants is the Community Development Block Grant for Disaster Recovery (CDBG-DR) program. CDBG-DR funds may supplement, but cannot duplicate, funding available from FEMA or other federal agencies.[59] CDBG funds must be approved by Congress. These flexible grants, administered by the U.S. Department of Housing and Urban Development (HUD), can be used to assist disaster recovery and resilience efforts by local governments, states, or tribes.[60] CDBG funds can be received by states, which determine the amount set aside for emergency assistance, but are also given directly to entities with populations of 50,000 or more. CDBG may be used to fund a broad range of activities so long as they meet at least one of three national objectives: 1) benefit low- and moderate- income persons, 2) help prevent or eliminate slums or blight, or 3) address urgent risks that pose a serious and immediate threat to the health and wealth of the community where other financial resources are unavailable. The acquisition of properties damaged by disaster and relocation of residents to safer areas is an example of addressing urgent risks in resource-scarce communities.[61] CDBG funds can also be used to construct or rehabilitate public facilities – which include neighborhood centers and infrastructure such as water, sewer and drainage systems – after disasters.[62] The U.S. Department of Housing and Urban Development's *HUD Exchange* website further details eligible grantees, activities and beneficiaries, and provides resources for identifying local CDBG-DR administrators and Specialists (*available at* www.hudexchange.info/programs/cdbg-dr/).[63]

State and Local Programs. While most floodplain buyouts are carried out under the HMGP, several state and local grant programs also provide funding for voluntary

acquisition of flood-prone properties. The acquisition and management criteria for these programs can differ in timing or focus from those of the HMGP. Box B illustrates how some state grant programs work. Box C describes several local programs that provide funds for voluntary acquisitions.

Box B

Box B: **State Grant Programs**

Many **states** have established and administer floodplain buyout programs. These programs may provide the non-federal match for federal buyout projects or fund acquisitions outright. The following examples exhibit a range of state programs:

New Jersey, Green Acres/Blue Acres: New Jersey's Green Acres Program serves as the real estate agent for the New Jersey Department of Environmental Protection, working with public and nonprofit partners to acquire land, mostly from private property owners, for recreation and conservation purposes. Green Acres administers the Blue Acres Floodplain Acquisitions program, which acquires properties in the floodways of the Delaware, Passaic, and Raritan Rivers that 1) have been damaged by or are at risk of damage by storms or storm-related flooding or 2) may buffer or protect other lands from such damage. Following Superstorm Sandy in 2012, the Blue Acres program was authorized to acquire up to 1300 private properties using funds principally derived from HMGP and CDBG-DR, as well as the State of New Jersey's Blue Acres Program and Natural Resources Conservation Service. Properties will be permanently preserved as open space now that structures have been demolished. Priority was given to voluntary property acquisitions that would maximize long-term community benefits, including cost savings. See the New Jersey DEP website (at http://www.nj.gov/dep/greenacres/blue_flood_ac.html) for more information. For more information about the post-Sandy buyout, see the New Jersey DEP handout (at http://www.nj.gov/dep/greenacres/pdf/faqs-blueacres.pdf).

Wisconsin, Municipal Flood Control Grants: The Wisconsin Department of Natural Resources' (DNR) Municipal Flood Control Grant Program offers funding on a biennial basis to cities, villages, towns, tribes, and metropolitan sewerage districts within the state of Wisconsin to assist with flood control management. Eligible projects include the acquisition of property and vacant land, structure removal, flood proofing, and administrative support. Funding may cover up to 50% of eligible project costs; grantees must provide at least a 50% local cost match. See the Wisconsin DNR website (at http://dnr.wi.gov/Aid/MunFloodControl.html) and Municipal Flood Control Grants Program Guide and Application Guide (at http://dnr.wi.gov/Aid/documents/flood/municfloodguide.pdf) for more information.

New York, NY Rising Buyout and Acquisition Programs: New York State used CDBG-DR and HMGP funds to establish the NY Rising Buyout and Acquisition programs, which targeted one- and two-unit homes substantially (at least 50% of fair market value)

damaged by Superstorm Sandy (2012), Hurricane Irene (2011), and Tropical Storm Lee (2011). Highest-risk areas were identified as "enhanced buyout areas," within which the state purchased substantially damaged homes at 100% of the property's pre-storm fair market value (in addition to a 5-15% incentive). These buyouts are maintained in perpetuity as coastal buffer zones. Properties purchased outside of the enhanced buyout area are characterized as "acquisitions," for which homeowners were offered post-storm fair market value for their property with an additional incentive to resettle in a safer area within the same county. Properties acquired with U.S. HUD's CDBGs were eligible for subsequent disaster-resilient redevelopment, such as rehabilitating homes and buildings or constructing public facilities, which is typically not an option for projects that receive a majority of funds from FEMA's HMGP. See the NY Governor's Office of Storm Recovery website (at https://stormrecovery.ny.gov/housing/buyout-acquisition-programs and http://stormrecovery.ny.gov/sites/default/files/uploads/nys-buyout-program-fmv-dob-faq-2014-01-23-0.pdf) for more information.

Box C

Box C: **Local Grant Programs**

Local funding may be available for floodplain acquisitions. Local programs may be administered at the city, town, county, district, or other jurisdictional level. The following examples exhibit a range of local programs:

Pima County, Arizona, Floodprone Land Acquisition Program: The goal of the Pima County Regional Flood Control District's Floodprone Land Acquisition Program (FLAP) is to purchase properties located in flood zones in order to minimize flood damages. Applicants are scored and rated according to the type of use, flood potential, and potential for riparian habitat. With occupied, residentially-zoned land in floodplains with high flood and riparian potential being the highest priority, FLAP is an example of a local program that uses floodplain acquisition projects to leverage riparian habitat benefits where possible, as well. See Pima County's website (at http://webcms.pima.gov/cms/one.aspx?page*Id*=64919) and a report on the Program (at http://www.pima.gov/cmo/admin/Reports/ConservationReport/PDF/Chapters/Floodprone/Floodprone%20Land%20Acquisition%20Program%20Property%20Highlights.pdf) for more information.

Austin, Minnesota, Local Option Sales Tax: Austin, Minnesota adopted a local option sales tax to pay for flood mitigation efforts, including floodplain acquisitions. In addition, the city auctioned off the acquired structures for relocation outside the floodplains—and then used the proceeds to acquire more flood-damaged homes. The city also received state grants to supplement the funds it raised locally. In some cases, these local funds were supplemented by state funds and used to provide incentives to property owners beyond the incentives provided by HMGP grants. More information is

available from the City of Austin website (at http://www.ci.austin.mn.us/Administration/5%20Year%20CIP%20-%202014%20Table%20of%20Contents.pdf). For a case study about Austin, Minnesota's floodplain acquisitions, see ELI's Floodplain Buyouts site (at https://www.eli.org/research-report/floodplain-buyout-case-study-austin-mn).

SECTION II. Managing Floodplain Acquisitions to Maximize Habitat and Resilience Benefits

A federally-funded acquisition project is considered complete upon post-demolition grading, at which time the acquired parcels typically become the responsibility of the local government (i.e., sub-applicant). In many cases, the newly-vacant land is left as an empty lot for which local officials and managers have no specific post-acquisition use plan in place. However, by working together, local and state natural hazard planners and habitat managers can align property acquisition priorities with existing conservation priorities in their watersheds. Buyouts can improve wildlife habitat, enhance ecosystem services, and provide much-needed open space and recreational facilities to a community, as described below (also see Box D).

Habitat Benefits. By restoring or enhancing habitat, local land and water conservation projects (including projects carried out on parcels acquired through buyouts) can provide important plant and wildlife benefits, even in urban landscapes. Properties acquired under voluntary hazard mitigation programs may be small and/or dispersed across the landscape, but the restoration of these lands to natural habitats still can increase the quality and functionality of natural habitats and help preserve native biodiversity, in addition to providing resilience benefits. Urban habitats support habitat connectivity within ecological landscapes and serve as a refuge for species impacted by urbanization.[64] Research shows that even disperse habitats can help preserve native species.[65]

Ecosystem Services Benefits. FEMA's recent recognition of ecosystem services' value for purposes of Benefit Cost Analysis[66] is part of a larger, emerging emphasis by governments and citizens on restoring ecological processes, functions, and services in developed areas. "Ecosystem services" are the benefits that people derive from nature,[67] and recent studies suggest the importance of the urban ecosystem services provided by both "green spaces" (e.g., parks, urban forests and trails, gardens, yards, open space) and "blue spaces" (e.g., streams, ponds, artificial swales, stormwater retention ponds) in densely populated areas.[68] These ecosystem services translate into tangible benefits including public health benefits, climate resilience benefits, and lower costs for energy, wastewater treatment, and other community needs.[69]

Community Benefits. Restoration and conservation projects can connect our growing urban and suburban populations with nature, and even small projects can provide valuable green space to neighborhoods where it is lacking. The range of community benefits (e.g., increased property values, recreation space, community gathering space, neighborhood beautification) provided by such spaces can enhance the physical, mental, emotional, and financial well-being of not only individual neighbors and users, but also the community as a whole. [70]

Box D

Box D: **Potential for Multiple Benefits**

Coordinating efforts to meet flood mitigation needs with conservation objectives when planning projects can produce a variety of benefits, including the improvement and increase of habitat spaces, the provision of ecosystem services, and the creation of various opportunities for communities.

Habitat Benefits:

- Habitat for native species
- Biodiversity benefits
- Habitat for rare or endangered species
- Green corridors between urban natural areas
- Habitat corridors – functional connectivity between fragmented habitats
- Stopover sites for migratory birds
- Pollinator habitat

Ecosystem Services Benefits:

- Flood control
- Stormwater absorption
- Air temperature regulation
- Air quality improvement
- Improved water quality
- Carbon absorption
- Environmental education opportunities

Community Benefits:

- Increased property values near open space
- Money from recreation/tourism – and jobs created (education centers, etc.)
- Better quality of life (e.g., control pollution, provide recreation, improve population's physical and mental health)
- Neighborhood beautification
- Stronger sense of place

- Green space in underserved neighborhoods
- Crime reduction
- Noise reduction
- Temporary art installation space
- Recreation space
- Community garden space
- Social gathering space
- Sense of well-being

Compatible Land Uses

The laws and regulations establishing HMGP and other federal buyout programs mandate that after properties are acquired and existing structures are removed, the land must be dedicated in perpetuity to open space, recreation, or wetland management uses.[71] These use restrictions are important for local governments or non-profit organizations to consider when planning and prioritizing projects that can benefit both ecosystems and the community.

To ensure that flood hazard mitigation benefits are achieved (e.g., avoiding future flood damage to structures), virtually no new development is permitted on acquired sites. Development is prohibited if it alters the area's natural appearance, impedes the area's ability to convey flood flows, reduces the area's capacity to store floodwaters, increases downstream velocities, or restricts access into and out of the area.[72] Commercial inventory storage (e.g., automobiles) and cemeteries are not allowed. Other uses and activities that are generally prohibited include walled buildings, levees, dikes, floodwalls, paved roads, highways, bridges, landfills, storage of hazardous or toxic materials, above or below ground pumping or switching stations, above or below ground storage tanks, paved parking, off-site fill or other uses that obstruct the natural and beneficial functions of the floodplain.[73]

Even given those restrictions, the "compatible uses" which *are* allowed on the property present a wide range of opportunities to leverage multiple benefits for the community. Some examples of how buyout properties can be used include, but are not limited to:

- Wetland management;
- Nature reserves;
- Managed habitat;
- Parks;
- Community gardens (or residential gardens);
- Grazing;
- Buffers;
- Greenway/urban trails;

- Outdoor recreation;
- Camping;
- Wildlife habitat;
- Pollinator habitat;
- Educational centers or outdoor classrooms.[74]

Communities also can find ways to maximize community benefits by combining any of the above uses. For example, in Kinston, North Carolina, the community turned frequently-flooded land purchased with federal funds into the multi-use Neuseway Nature Center – a nature park that features nature trails, educational exhibits and programs, community ponds for fishing and kayaking, a playground, a campground, and a climbing wall.[75] In Rocky Mount, North Carolina (pictured below), the Parks and Recreation Department has turned buyout parcels into parks that feature dog-friendly areas and athletic fields.

In Rocky Mount, North Carolina, some of the properties acquired after Hurricane Floyd now have multiple uses, including but not limited to a dog park and recreation area.

To facilitate these uses, FEMA does allow construction of public restrooms, as well as certain other public structures that are "functionally related" to one of the designated uses, provided they are wet proofed and open on all sides.[76] For example, picnic shelters that are open pavilions would likely be allowed in a park, and docks and boat launches have been permitted to facilitate water recreation. The regional FEMA director has the authority to grant additional exceptions, but only if they are compatible with open space and conserve the natural function of the floodplain, and any other structure must be approved by the regional director in writing prior to construction.[77]

The open space deed restrictions required under federal regulations are minimum restrictions on use of the land. In some cases, communities may use additional land protection instruments in the form of deed restriction or easements to further limit the ways the land can be used. For example, a community might grant a conservation easement over the property to a land trust or other conservation organization that prohibits one or more of the uses allowed under HMGP regulations. See page 60 for more information on transferring titles or other property rights.

Management and Maintenance Responsibility

The acquisition phase is complete once structures are demolished and the land is cleared and graded. At that point, since federal grants for acquisition projects do not include funding for any subsequent costs, the sub-applicant (local government) becomes responsible for all costs incurred in connection with use (or non-use) of the land. [78] The community's responsibilities including maintaining the property consistent with open space uses. This maintenance responsibility includes periodic monitoring to make sure there are no violations of deed restrictions (or other protective easements).[79]

Responsibility for long-term maintenance and management requires planning and consideration of available funding sources and capacity to carry out these tasks. Some communities have found various creative solutions for funding these requisite activities that can serve as models for others (see section on funding at p. 46). Other communities have chosen to transfer responsibility for long-term management by transferring title or leasing the property (keeping deed restrictions intact) to another government entity or conservation organization (see section on transfers at p. 60). In these cases, the parties should pay careful attention to how future responsibilities and liabilities are allocated under the terms of any real estate documents.

Management Options after the Buyout

Post-buyout management options will vary by site, depending on the location, adjacent land uses, funding available, and capacity of local governments and/or organizations to restore and maintain the property. And perhaps most importantly, a community's post-buyout opportunities will be determined to a large extent by the "completeness" of the buyout.

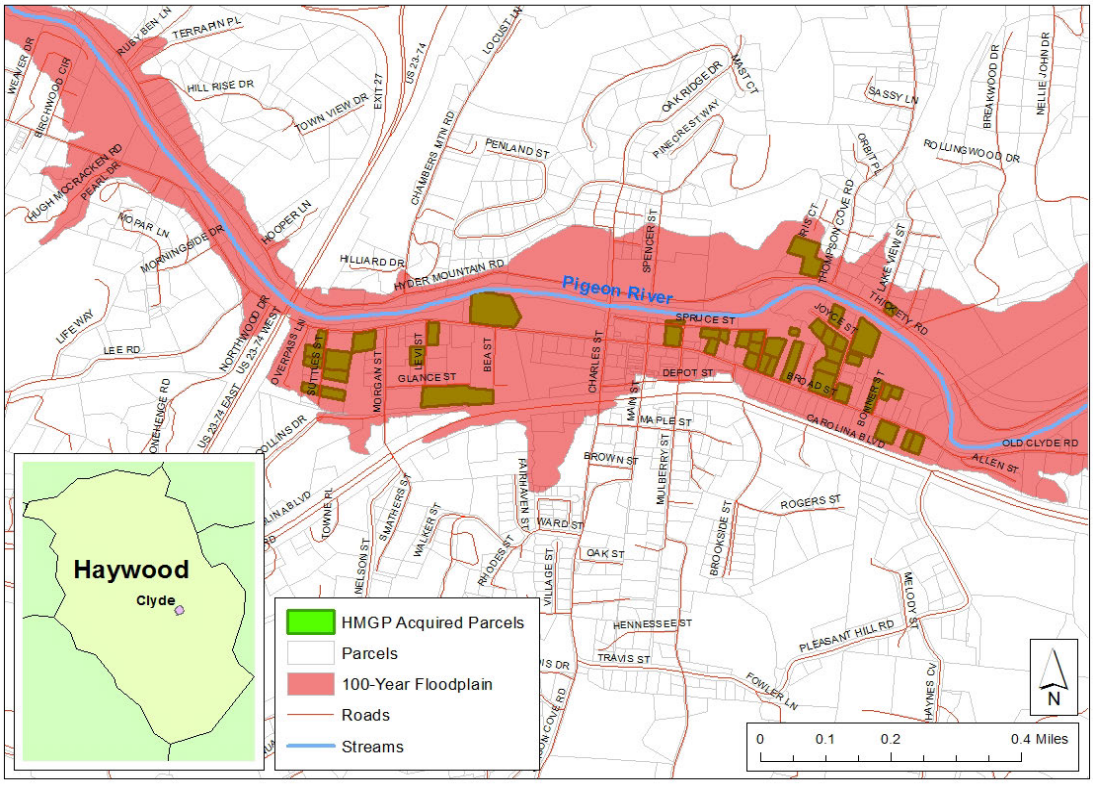
The individual properties that are acquired using a voluntary hazard mitigation grant might be:

- dispersed across the landscape (patchwork);
- moderately connected with a few remaining homes and infrastructure (holdouts); or
- contiguous but removed from other buildings and infrastructure (comprehensive).

While there are no hardline distinctions between these categories, they are presented here as a helpful starting point for considering which types of post-acquisition projects are possible, appropriate, and likely to succeed in achieving multiple benefits. The restoration of any site or sites to natural habitat has the potential to increase the quality and functionality of total habitats and help preserve native biodiversity, in addition to providing hazard mitigation and resilience benefits, regardless of which category the buyout may fall into.

Patchwork Distribution: Making the Most of Small Parcels

Sometimes buyout properties will be unevenly distributed across a neighborhood. Following a disaster, one property owner may decide to accept a voluntary buyout while surrounding property owners decide to stay. In these cases, the community finds itself facing a patchwork distribution of acquired parcels – one acquired property sandwiched between two remaining homes, a few adjacent acquired properties in a neighborhood where most homes and infrastructure remain, or several clusters of properties at various points along a waterway.



Map illustrating a patchwork distribution in Clyde, North Carolina.
Source: *Clyde Case Study.*

A patchwork distribution of buyouts is fairly common, given the voluntary nature of floodplain buyout programs, the complex nature of individual decisions about whether to sell, the limited amount of funding to purchase properties, the time it takes for funding to come through, and the small proportion of communities that have prioritized possible acquisitions in advance of disasters. Nonetheless, in patchwork situations, the non-contiguous nature of the buyout parcels poses some challenge to restoring floodplains and habitat area and improving connectivity of habitats on a larger scale. In urban environments, patchwork distributions are likely to be particularly challenging. In many cases, the buyout parcels in patchwork neighborhoods are either 1) mowed by neighbors or city landscapers, or 2) passively managed and left fallow, letting pre-existing and surrounding vegetation return. In both cases, the resulting outcome is likely to derive only some associated benefits from, or otherwise minimally resemble, the land's historic ecology.

However, there are opportunities for projects that improve wildlife habitat, provide ecosystem services, and offer community benefits—or a combination thereof— even at this smaller scale. There is a growing literature on the habitat potential of vacant land, particularly vacant lots in urban environments,[80] and many of the lessons can be applied analogously to non-contiguous buyout parcels. This section identifies four examples of management opportunities involving small-scale projects for the patchwork context: gardens, pollinator habitats, small-scale green infrastructure, and pocket parks. Many of these examples derive from other patchwork acquisition programs, but apply as well to HMGP buyout lands.

Community Gardens. Community gardens, where neighbors gather to grow vegetables, fruit, flowers, or other plants, present excellent opportunities to use a small piece of land to provide multiple benefits to community residents and the ecosystem (See Box E). Montevideo, MN, also found having less acreage to mow to be an incentive to encouraging a community garden. A growing body of research shows that community gardens promote healthier eating, physical activity, and community engagement in the neighborhoods where they're located.[81] Community gardens have been linked to increased property values, reduced crime, and better air quality.[82] Additionally, even a garden intended for growing produce can provide habitat benefits for birds, beneficial insects, and other pollinators.

Happy Hill Community Garden in Rocky Mount, NC

An example of acquired property being used for these purposes is the Happy Hill Community Garden in Rocky Mount, North Carolina. The garden is located on land purchased in a buyout program following Hurricane Floyd.[83] The garden aims to improve the sense of community and is accessible to citizens of Rocky Mount. The City of Rocky Mount maintenance staff provides the initial tools and mulch for garden tenants. For more information, see Rocky Mount's website (at http://rockymountnc.gov/departments___services/parks___recreation/parks/community_garden/).

Box E

Box E: **Basic Elements of a Community Garden**

- Minimum of 15 plots, assigned to members
- Raised beds (no wider than 4 feet and between 8 and 12 feet long)
- In-ground plots (can be 10 x 10 feet up to 20 x 20 feet and should have walkways between that are at least 3 to 4 feet wide)
- Soil should be amended with aged compost or manure to improve fertility
- Including picnic tables and benches will encourage community members to enjoy the garden for other uses, like leisure and socializing

*Source:*http://ucanr.edu/sites/MarinMG/Community_Service_Projects/Marin_Community_Gardens/How_to_Start_A_Community_Garden/.

For these reasons and more, community gardens can be a good choice for buyout properties in the patchwork context. However, there are important questions to consider that may influence a particular lot's chance of success:

- Is there enough interest among neighborhood residents to create and sustain a community garden in that location?
- Who will be responsible for maintaining its use as a community garden? Does it make sense for these parties to enter a formal agreement (e.g., lease)? Is liability insurance required?
- Does the property get enough sunlight for the types of plants being considered?
- Is there access to water at the site? Is permission to use the water required (e.g., from a water utility, another property owner, or the state water resources agency)?
- Does someone involved in planning and/or managing the garden have knowledge of appropriate irrigation methods?

It is also important to keep in mind that in the case of buyout properties, the open space deed restrictions may limit the use of garden infrastructure such as raised beds, fences, and storage sheds, since all infrastructure must be compatible with conserving the natural functions of the floodplain, must conform with any applicable floodplain management policies and plans, and may require approval from a floodplain manager. When communities have decided it makes sense to create a community garden on a particular property, the process might start with forming a committee to make decisions and allocate responsibilities.

Another related management option is to lease the parcel to an individual neighbor or business for use as a residential garden (See Box F). Similar to community gardens, residential gardens help beautify empty lots while also providing environmental services to residents. Unlike community gardens, residential gardens are taken care of by the specific resident(s) that decided to "adopt" the vacant lot. Residential gardens are typically easier to manage because there are fewer people involved in the decision-making process and overall maintenance.

Box F

Box F: **Leasing Acquisitions for Use as Gardens**

Communities can coordinate efforts to better utilize their non-contiguous vacant lots.

Genesee County, Michigan: Many vacant lots existed in and around the City of Flint, so the local Land Bank Authority implemented various programs (e.g., adopt-a-lot, vacant land leasing, vacant land leasing with option to purchase, side lot transfer program) to facilitate greening the lots through residential use, including for gardens. These programs were a way for the community to derive benefits from new green spaces while transferring maintenance responsibility for the lots to local residents (without requiring them to incur property taxes). According to a report published through the NatLab project, as of 2011 the land bank had transferred 555 vacant lots to adjacent homeowners and 770 vacant lots to local residents. See NRDC's "Greening Vacant Lots:

Planning and Implementation Strategies" for more information (available at http://docs.nrdc.org/water/files/wat_13022701a.pdf).

Pollinator or Multi-Use Habitats. Parcels can be used to provide habitat for fauna that can provide several benefits to humans. For example, humans rely on the ecosystem service of pollination to survive: approximately 1,000 plant species that we currently use for food, medicine, textiles and other products require pollination by bees, bats, butterflies, moths, beetles, birds, or other animals.[84] In the U.S. alone, pollination by bees and other native insects is responsible for billions of dollars in human products annually. [85] Bees, which are generally the most efficient, versatile, ubiquitous, and economically valuable pollinators, are also among the most reliant on near-natural and semi-natural habitats, and fragmentation and degradation of natural habitat has had significant impacts on bee populations.[86] As bees' and other pollinators' populations decline in North America and around the world, managing open space to establish or restore pollinator habitat and bolster pollinator populations can provide easily-perceived economic and societal benefits, in addition to habitat, biodiversity, and aesthetic benefits.

Restoration or establishment of near-natural pollinator habitat increases the availability of the natural resources (pollen and nectar) pollinators need, adds potential nest locations, and provides refuge from pesticides.[87] The exact composition of plants in a pollinator habitat will vary based on factors like an area's native flora, climate, and surrounding land uses, but in general pollinator habitats are composed of native plants and are flower-rich.[88] Different types of flowering plants may attract different pollinators – for example, hummingbirds prefer tubular flowers, while bats and moths are attracted to flowers with an intense fragrance – but in general, an area with a concentration of flowering plants will provide habitat for some type of pollinator. Bees, the pollinators on which humans are most reliant, are versatile pollinators that use flowers of most shapes, sizes, and colors.[89]

A great example of turning unused land into pollinator habitat is the Flight Path Project at Sea-Tac Airport. A joint effort by the Port of Seattle, Common Acre (a regional non-profit organization), and the Urban Bee Company, the project implemented a "pollinator improvement plan" on a large area of unused "scrub" land by replanting the area with a special seed mix of wildflowers and other native plants that support pollinators.[90] Because that project was so successful, Seattle's City Light agency developed a plan to create a "pollinator pathway" in the utility's transmission line right-of-way along 14 miles of power line corridor.[91] According to its designer, the pathway project will "connect the current fragmentation of ecosystems with planned connections between existing green spaces, designing ecological exchange into these systems" – an approach that could be replicated in other communities with a patchwork of unused land parcels.[92]

And while pollinator habitat can be the primary goal of a restoration project, it can also be incorporated into other uses of acquired properties. Borders with perennial or annual flowering plants, hedgerows of flowering shrubs, and grass buffer strips supplemented with wildflowers are all measures that increase the ecological fitness of local pollinators and are compatible with many other management options.[93] Pollinator habitat may take some time to establish, and many plantings will need some degree of ongoing long-term maintenance.[94] (And in cases where project managers undertake establishment of a bee colony, Wildlife and Sport Fish Restoration Program (WSFR) grants can fund pollinator conservation projects.[95]

Other examples of habitat-friendly projects include the construction of bat or bird houses on acquired properties. These projects can help mitigate the loss of habitat due to nearby demolition or infrastructure projects.[96] Native bats and birds can play an important role in an ecosystem. Additionally, projects that encourage local species to occupy rehabilitated or re-established habitats can provide educational opportunities for the surrounding community.

Green Infrastructure. Green infrastructure projects incorporate the natural environment into water management by protecting, restoring, or reproducing features of the natural water cycle.[97] According to the U.S. Environmental Protection Agency (EPA), "At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to storm water management systems that mimic nature by soaking up and storing water."[98] Specific green infrastructure opportunities will vary by site, but in general, green infrastructure projects provide multiple benefits at a relatively low cost. [99]

The stormwater management benefits of green infrastructure can include reduced stormwater volume, decreased and/or delayed peak discharge, filtration and pollution prevention, and groundwater recharge. In some communities, it may be possible for acquisition project managers to collaborate with stormwater managers to help address green infrastructure objectives in an existing stormwater management plan. Financial benefits for the community can include reduced energy costs, reduced maintenance costs, and lower water bills. Green infrastructure also contributes to urban climate resilience: it can reduce local temperatures in summer, sequester greenhouse gases, and reduce energy needs (e.g., for air conditioning).[100] Community benefits include, but are not limited to, improved physical and mental health, aesthetic improvements, and increased recreation opportunities—particularly where a green infrastructure project incorporates more than one public use (i.e., parks, greenways, public education opportunities, etc.).[101]

Examples of green infrastructure projects that can be implemented on small scales and/or that may work well in a patchwork distribution include (but are not limited to):

- *Rain gardens/bio retention cells*: shallow depressions that utilize soil and plants to filter pollutants and infiltrate runoff;
- *Bio swales*: shallow, vegetated channels that convey, slow down, and infiltrate runoff;
- *Tree planting*: reduces runoff by intercepting rainfall, as well as by improving stormwater infiltration in soils;
- Restoration of riparian areas and/or wetlands: slows down and infiltrates runoff.[102]

Using buyout properties for any of these (or other) green infrastructure projects can create jobs and revenue for the community while also providing habitat and ecological services benefits.

Pocket Parks. Turning vacant lots into "pocket parks" is a way to create a useable and visually appealing green space for a community. Pocket parks are small-scale open spaces, generally in urban settings that are often smaller than ¼ of an acre in size.[103] Parks provide refuge for local wildlife, typically increasing the number of pollinators in the area. Even small parks can provide multiple ecosystem services, and oftentimes there are opportunities to incorporate green infrastructure elements (e.g., floodable parks or park areas, bio swales). And even small, oddly shaped lots can be good locations for pocket parks.[104] Compared with parks that are larger and/or feature structures or facilities, pocket parks require less maintenance; therefore, they may be a good management option for communities facing a patchwork of buyout properties with limited resources.

Holdouts: Working Around Remaining Owners and Existing Infrastructure

In some neighborhoods that have experienced flood disasters, the local government has acquired many of the properties, but a few owners – holdouts – have chosen to remain. This results in an uneven distribution of buyout properties (Box G describes some challenges this may present). Such a distribution, with "holdouts," may result from a community acquiring a majority of the neighborhood's properties in the immediate aftermath of a single disaster, or it may result from a community continuing to make progress on acquisitions in a target area over multiple flood events or as new funding becomes available.

Depending on the situation, a holdout distribution can limit opportunities for restoration and land management. In such cases, the opportunities described in the preceding section — such as gardens, small parks, and green infrastructure projects — may be good options. However, in other cases where there are a large number of contiguous properties acquired and only a few scattered holdouts, there may be opportunities to use the vacant lands for habitat restoration or to provide significant habitat value. There may also be opportunity to provide larger-scale community amenities, such as linear parks or large recreation areas (e.g., Frisbee golf courses, soccer fields).

BOX G

Box G: **Early Identification of Existing Infrastructure and Utilities**

One of the primary obstacles in a holdout context can be the remaining infrastructure and utilities: where any houses remain, roads and utility lines will need to remain and be maintained by the government or utility company. Existing infrastructure and utilities may be obvious (e.g., roads, sidewalks, overhead power lines), non-obvious (e.g., pipes, subterranean power lines), or even invisible (e.g., rights-of-way or easements that have not yet been or are not regularly exercised). Because any of these can limit a community's ability to optimize the performance of restoration sites, it is very important to identify all existing infrastructure and utilities early in the planning process.

Restoration Opportunities

Wherever there are a number of contiguous acquisitions there may be a real opportunity for meaningful habitat conservation. Habitat restoration or management projects can provide new habitat for native species, form new connections among dispersed habitat areas in the region, or both. The type of habitat to be restored will depend on surrounding landscape and land use, historic habitat types, community needs, and funding available. Examples of valuable habitat types that a community might restore include: floodplain/riparian habitat; wetlands habitat; native prairie/grassland habitat; or upland forest habitat. For example, in Montevideo, Minnesota, the city incorporated many of the buyout properties into its Lowland Prairie Project, where native grasses have been seeded to enhance wildlife habitat. Other areas were converted to wetlands or detention ponds. Similarly, Moorhead, Minnesota, proposed to restore wildlife habitat in properties it acquired along the Red River.

The following section addresses (and Table I summarizes) a range of restoration activities that communities may choose to undertake, from "no intervention" or "minimal action", to "rehabilitation," all the way to "reestablishment." This list of categories is not exhaustive, and the lines between categories are not firm; however, these categories are a useful starting point for thinking about options, including what some of the pros and cons of each approach might be, as well as helpful for defining a restoration project's goals.[105] As Table I reflects, the potential habitat and ecosystem service values vary significantly across the range of options — as do restoration costs, the capacity needed to accomplish the intervention, and ongoing maintenance requirements (see p. 28). This section describes these four broad categories of restoration activities and highlights examples from case study communities.

For purposes of the discussion in this guide, our restoration categories, in order of management intensity, include:

- **No Intervention**: Passively allowing natural processes (and natural disturbances) to develop without management intervention.
- **Minimal Action (Enhancement)**: Small-scale actions resulting in modest alterations of a site. May restore limited ecosystem services to the site.
- **Rehabilitation**: Some manipulation of physical, chemical, or biological characteristics of a site, with the goal of returning some elements of habitat structure or function (ecosystem services).
- **Reestablishment**: Actively rebuilding the natural habitat, or "return of an ecosystem to a close approximation of its condition prior to disturbance."[106]

Communities Letting Nature Back In: No Intervention or Minimal Action

In many communities after a buyout, the local government has no plan for further interventions on acquired properties. Often, that means allowing natural vegetation to "reclaim" the land. This is usually an unplanned, unmanaged process – however, it is a process that can achieve some habitat benefits for native species while keeping costs and maintenance time low. At a slightly more involved level, communities may take minimal action to help manage a habitat enhancement process that nature is performing mostly on its own. For example, communities may engage in invasive species control, weeding, or small native plantings, with the goal of returning some ecosystem services. Although this is generally a low-cost approach, which can make it an attractive option, the habitat value of these sites may not be maximized, and opportunities to functionally connect contiguous parcels may be lost. Moreover, unless monitoring policies or outreach strategies are in place, neighbors may continue to interfere on the properties and may even reverse the minimal actions the community has taken toward restoration.

A common challenge with zero or minimal management intervention is that neighbors may object to allowing native vegetation—and the "pests" that might come with it—to grow unchecked in a neighboring lot. Often, that situation results in neighbors taking it upon themselves to mow or otherwise maintain the acquired property, even if that is against the policy of the local agency overseeing the acquisition. This issue has proved particularly challenging for some buyout neighborhoods in New Jersey, where many properties were acquired following Superstorm Sandy in 2012.

Table I: Restoration Approaches in Order of Management Intensity

	No Intervention	Minimal Action (Enhancement)	Rehabilitation	Reestablishment
Management Approach	- No action taken to restore or maintain the sites	- Small-scale actions to maintain the site, resulting in modest alterations	- Restore elements of structure or function (ecosystem services) to an ecological system, without attempting complete restoration	- Return an ecosystem to a close approximation of its condition prior to disturbance or of a reference site nearby; restoring ecosystem services to the area
Potential Restoration Activities	- Allow natural vegetation to return - Prohibit mowing, etc.	- Some invasive species removal - Some native species planting	- Re-establish dominance of native plant community - Total re-vegetation of the site - Invasive species management	- Floodplain reestablishment - Wetland reestablishment - Wildlife habitat reestablishment
Pros	- Low cost - Little staff time required - Some habitat value	- Low cost - Little staff time required - More habitat value - Opportunity to engage and educate community	- More habitat value - Increased biodiversity and native species - Some ecosystem values returned - Relatively low cost - Opportunity to engage and educate community	- Habitat value maximized - Ecosystem value maximized - Opportunity to engage and educate community
Cons	- Habitat value may not be maximized - Ecosystem service value not maximized - Neighbors may object (e.g., want to mow)	- Habitat value may not be maximized - Ecosystem service value not maximized - Easy for neighbors to interfere	- More expensive than no and minimal action - Requires capacity and/or partners - Habitat not returned to historic conditions	- Expensive - Requires capacity and/or partners - Could preclude other uses (e.g., recreation)
Community Example	Pierce Co., WI	Jefferson Co., WI	Montevideo, MN	n/a

In Sayreville, New Jersey, the post-Sandy buyout resulted in the acquisition of around 180 parcels in low-lying, flood-prone land. The land procured in the buyout is currently simply used as open space, and the vacant lots are unmanaged by the city. State officials want the land to revert to its natural state; however, the remaining residents in the neighborhoods want the lots planted with grass and regularly mowed, and are doing so themselves.

Property mowed by neighbors in Sayreville, NJ.

Three communities in Wisconsin (Pierce County, Kenosha County, and Jefferson Counties), also have opted to “let nature back in” on acquired properties:

- In Kenosha County, 108 properties have been purchased since 1993, which is around 58% of the properties that the Southeastern Wisconsin Regional Planning Commission (SEWRPC) had originally identified for purchase. Many of the acquired properties have been allowed to revert to natural vegetation, although neighbors regularly mow some of the lots. Kenosha County does not closely monitor what is being done at the sites, other than to ensure the land is still vacant, there are no new structures, and off-road vehicles are not used.

- In Jefferson County, 115 properties on Blackhawk Island have been acquired since 1994, totaling about 60% of homes on the island. The county has required that these properties, now managed by the county’s Parks Department, be allowed to return to a natural state, or that natural vegetation is allowed to regrow. Some neighbors, however, have continued to mow adjacent properties. The Parks Department does some management, including monitoring and invasive species control, but no further habitat restoration efforts are underway at this time. Among the reasons for this is the fact that there are still many holdouts left on the island and fewer contiguous properties upon which to construct projects.

- In Pierce County, 73 properties were purchased and returned to open space after a major flood impacted Trenton Island in 1993; the relocated residents comprised about 65% of the island's total population. Today, much of Trenton Island is maintained as open space and has been allowed to return to a floodplain forest ecosystem. The township does some monitoring to ensure that there has not been any new development and that wildlife is left undisturbed.


At left: Jefferson County. At right: Pierce County.

Monitoring and outreach may be necessary in order to keep neighbors on board with a community's goals for the buyout properties, and a community might expect to see a correlation between increasing the level of management activity – even from zero to little— and the approach's ultimate success. If wildlife habitat value is a community's goal, it is likely to require some level of monitoring, neighbor outreach, and/or other public education – or additional restoration actions, as described below.

Rehabilitation of Natural Habitat

In some situations, dedicating additional resources to restore habitat and ecosystem services on vacant properties can provide not only meaningful wildlife habitat, but also resilience and community benefits (e.g., educational opportunities) for the remaining residents and the community as a whole. Rehabilitation is defined as restoration of some elements of structure or function (e.g., water quality or flood mitigation function) to an ecological system, without attempting complete restoration of all aspects of historic habitat conditions.[107] In some cases, the result may be a habitat or ecosystem that was not there originally, but that provides a productive ecosystem type that provides desired ecosystem services.[108] These types of projects generally give communities flexibility to do what is feasible, cost effective, and easy to maintain, while still providing habitat for native species.

Rehabilitation activities might include:

- Total re-vegetation of the site;
- Re-establish dominance of native plant community;
- Invasive species management;
- Wetland restoration.

Buyout parcel used in Montevideo's Lowland Prairie Project, which used a rehabilitation approach to acquisition management.

An example of a community that has taken the rehabilitation approach is Montevideo, Minnesota, where the community restored 26 acres of native prairie grass on floodplain acquisition parcels. The restored area wraps around, and through, the properties of several remaining homes. The restoration was completed as part of a larger project required by state and federal agencies to compensate for impacts that resulted from levee construction. The community restored the flood buyout lands along the Chippewa River to lowland shrub, wooded, and riverside prairie; doubling the required replacement ratio to 4 to 1.[109] (See testimony at goo.gl/3u8vny).

This project also aims to promote wildlife and provide the benefits of open space. Prairie grasses successfully reclaimed the land acquired in floodplain buyouts for the first time in 2015.[110] Other floodplain buyout areas in Montevideo were reestablished as wetlands – a process that may require different and more intensive effort than habitat rehabilitation.[111]

Reestablishment of Natural Habitat

Reestablishment is defined as "the process of intentionally altering a site to establish a defined, indigenous, historic ecosystem. The goal of this process is to emulate the structure, function, diversity and dynamics of the specified ecosystem."[112] In other words, the goal of a reestablishment project is to bring the site back to original or historic conditions. Reestablishment is the attempt to reconstruct an ecosystem, returning it to the original species composition and structure.[113]

Examples of reestablishment projects on acquired properties might include:

- Floodplain restoration;
- Riparian buffer restoration;
- Wetland restoration;
- Wildlife habitat restoration;
- Forest restoration.

Restoration projects may be more challenging in the holdout context, where people still inhabit remaining homes and there may be remaining infrastructure that cannot be removed, than in areas where no structures remain (e.g., comprehensive buyouts below). Remaining infrastructure can include roads and sidewalks as well as telephone lines and utility poles. However, even where infrastructure has not or cannot be removed entirely, small-scale restoration efforts can still take place.

In addition to providing habitat for native species, restored sites can also provide other community benefits including educational opportunities for the community (see Box H).

Box H

Box H: **Using Restoration Sites as Opportunities for Outdoor Education**

In St. Charles County, Missouri, where over 1,000 properties were acquired with federal funding between 1993 and 1995, a seven-acre parcel of buyout property became an "outdoor classroom" for biology students at Lindenwood University. According to Professor Daryl Anderson, "We've had a chance to do all kinds of outdoor biology. The students take soil samples from the marsh. They observe in a way that teaches biological techniques. Some of these kids are becoming experts in migratory birds and frogs and plants. They're not just learning about science. They're learning science, which is a methodical way of thinking and doing things."

Source: FEMA & State of Missouri Emergency Management Agency, Success Stories from the Missouri Buyout Program at 7 (Aug. 2002).

Recreation Areas and Other Amenities

The second major category of management opportunities provided by buyout properties in this holdout context is recreation areas and other community amenities. These kinds of uses can provide flood mitigation benefits while also providing a community gathering space, specific recreation opportunities, and many other social and cultural benefits.

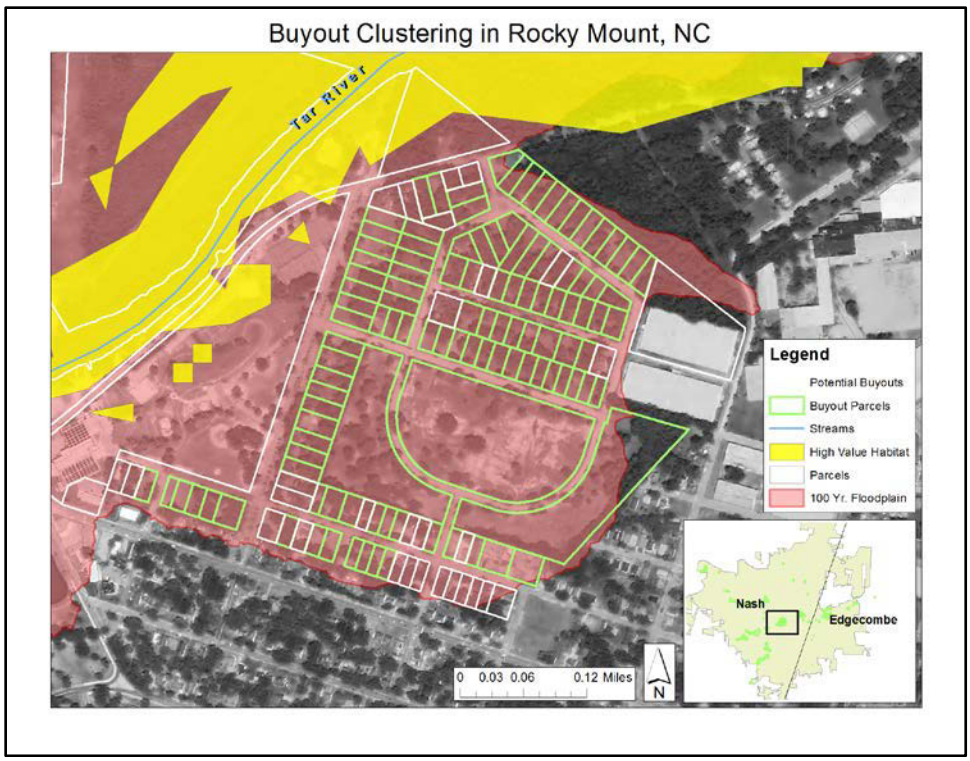
Examples of recreation areas and other amenities that may be developed on acquired properties include:

- Linear parks/ greenways;
- Parks and playgrounds;
- Athletic fields;
- Other recreation (e.g., Frisbee golf);
- Gathering spaces;
- Education centers or outdoor classrooms.

In Rocky Mount, North Carolina, for example, after parcels were acquired with buyout funds following the flood of 1999, the city turned the properties over to the Parks and Recreation Department. In 2003, the Tar River Trail, a public greenway, opened for use by cyclists and pedestrians. By 2004, the Farmington Disc Golf Course was completed. It was followed by another disc golf course at Sunset Park in 2007. Within the last two years, a dog park, barbecue park, and a community garden also have been established in the land purchased by the city. The city also manages two large areas of contiguous parcels as community forests. These sites remain unused for active recreation because they are in areas well served by existing parks.

Signs help educate the community about a community forestry project in Rocky Mount, NC.

Rocky Mount has made great strides in making use of the land it acquired after the flood, but the Parks and Recreation Department continues to work towards fully utilizing the parcels. For example, the city's current Master Plan emphasizes increasing the connectivity of the greenway and walking trail systems. Under that plan, much of the buyout land forms large, nonlinear spaces that eventually will be converted into contiguous parks. The remaining parcels along the river channel will be used to better arrange trails. And the city's community forestry program will provide scenic, natural areas for adjacent communities. In addition to the Master Plan, the Parks and Recreation Department has outlined a plan for a mixed-use district along the river that skirts the northern edge of Rocky Mount. This area, dubbed River Falls Park, would link several parks and public facilities with the Historic Mill District and wildlife conservation areas using a network of greenways and pedestrian trails.[114]



Areas outlined in pink indicate holdouts.

Comprehensive Buyouts: Opportunities for Larger-Scale Habitat Restoration

In some cases, all of the homeowners in a neighborhood will decide to leave, and the community is left with a large, contiguous area of acquired properties. In these cases, larger-scale habitat reestablishment projects may be possible. In general, the different types of restoration opportunities are similar to those outlined above; however, some of the challenges noted above may be less problematic, or even eliminated, when there are no holdouts. For example, in the context of a comprehensive buyout, the community can remove existing utilities and roads that would have otherwise prevented a restored habitat from achieving its natural or near-natural state. Or, if no neighbors remain in the area to undertake mowing, then this challenge is eliminated.

Restoration of Habitat on a Large Scale

Species, natural communities, and ecosystems are influenced by habitat factors at several spatial scales. Many of the habitat restoration opportunities described in the previous two sections provide good opportunities to benefit local, small-scale habitat features and habitat connectivity. Comprehensive buyouts can present opportunities to restore the larger- or watershed-scale habitat features that are also important for sustaining populations, natural communities, and ecosystems. Local governments and communities interested in habitat restoration should answer various questions as they

begin planning in order to ensure that the project is feasible and be completed successfully (see Box J on page 36).

Restoration plans are necessary for all restoration projects, but especially for large-scale projects. A restoration plan helps to ensure that a project aligns with the community's vision for the acquisition site, sets attainable and benefit-producing goals, and outlines the restoration and long-term management activities that will occur on the site. If there is no in-house capacity for this planning effort, the local government may consider hiring an outside consultant or expert to write the plan. Some examples of the elements that the restoration plan is likely to require are highlighted in Box I.

Box I

Box I: **Key Elements of a Restoration Plan**

Restoration plans should include information about proposed projects from the planning stages through long-term maintenance in order to ensure success.

- Project description, goals, and objectives (characterization of desired habitat).
- Site map with target restoration areas delineated (with topographical information).
- Existing site conditions.
- Reference sites.
- Plant species list, including quantities, spacing, and percent of community (plant palette).
- Site Preparation (e.g., weed eradication, soil amendments).
- Plant Installation Plan.
- Maintenance Plan (including an irrigation plan and an exotic/invasive plant eradication plan).
- Monitoring Plan (including performance criteria and a sampling plan).
- Timelines for all activities (taking into account seasonal considerations for site preparation, planting, and maintenance).

See *Digging In: A guide to community-based habitat restoration* from the California Coastal Commission for more information *(available at:* https://www.coastal.ca.gov/publiced/unbweb/diggingin.pdf).

In addition to providing space for native species, ecosystem services for the community (e.g., additional flood storage), and a healthier community, large-scale habitat restoration could also provide an educational opportunity for the community and a place for school groups and the public to learn about local ecosystems and native habitats. Federal regulations allow for the development of some supportive structures (e.g., restrooms, open walled structures, signage, boardwalks, etc.) on buyout properties that could provide infrastructure for an outdoor classroom or other community learning opportunities.

Given that funding sources are often a major impediment to restoration efforts, partnerships may be key in some communities. Thinking big will require conservation experts, planners, designers, and others; some of which may be available in house, some not. Many states have habitat restoration programs that have expertise in restoring and managing the types of habitats that may be prevalent in acquired properties (e.g., floodplains, wetlands, streams, etc.). Non-profit organizations, consulting firms, and other groups also have active restoration programs. For more on overcoming funding challenges, see page 46.

Box J

Box J: **Things to Consider Before Planning a Large-Scale Reestablishment**

- What is the size of contiguous properties?
- Is the surrounding land use compatible with habitat restoration (e.g., hydrology, connection to other protected areas, etc.)?
- What is the plan for surrounding area?
- Is there adjacent or nearby habitat area?
- What is the history of the site?
- Are there local conservation/restoration plans that include the site, or surrounding areas?
- Are there policy constraints or opportunities?
- Are more buyouts possible in the area?
- Are utilities/basements removed? Can they be removed?
- Is there funding available?
- Can we find partners?

Large Parks and Other Larger-Scale Amenities

Another opportunity for a community that has undergone a comprehensive buyout is the development of a large-scale park or trail system on the acquired floodplain properties. In the case of a large, comprehensive buyout, it is possible that the community might have acquired a significant area on which to develop a large park that could become a centerpiece of the community and a place for residents to gather.

As an example, the city of Austin, Minnesota has acquired 240 properties since 1978. The properties have been turned over to the city's Parks and Recreation Department and are in a variety of uses, including parks, restored habitats, and un-maintained open space. With many of the acquired properties, the city has developed a very successful linear park and trail system. The plan for the park was developed around 1993. The Comprehensive Linear Park System was developed to manage the acquired flood-prone properties so all citizens can enjoy the open space. The project provides multiple services to Austin, MN; acquired plots now provide stormwater runoff retention areas, open space for wildlife management, and means for expanding the existing trail system so that the region's parks and recreation areas are connected.[115]

In the case of Austin, the federal acquisition programs allow some structures to be built or remain on site. For example, Austin converted an existing church building to a compatible structure (open on all sides). The structure is now used as a community gathering space, for weddings and other uses.

Making Informed Decisions and Taking Action

The best use for acquired properties – be it habitat restoration, recreation, or another community amenity – will always depend on the ecology of the acquisition site, the surrounding land use, local policies and regulations, and community desires for the neighborhood. In many cases, local land use, hazard mitigation, or other plans can help inform a community's decision. This section sets out a basic decision-making process for identifying what to do with the acquired properties after title has been transferred. Key steps in the process include (1) gathering information on the site and surrounding areas; (2) evaluating and mapping the possibilities; (3) getting community input; (4) defining goals for the site; and (5) developing and implementing a final plan for how the site will be restored and/or used.[116] FEMA's *Property Acquisition Handbook for Local Communities* also lays out a multi-objective planning process for open space management of acquired sites. The handbook is available at https://www.fema.gov/media-library/assets/documents/3117.

Step 1: Gather Information: The first step is to gather information about the site and the surrounding landscape. This information will inform community goals for the site and help determine what uses and activities are possible and what constraints might exist.

This information-gathering step can be done in advance of meeting with community members and other stakeholders so that residents are well informed about a site's characteristics, opportunities, and limitations before they start thinking through community wants and needs for the properties.

Information Required. In general, the following types of information are likely to be relevant to a project decision: natural and cultural properties of the site; information about adjacent areas and their use; and information on existing and planned community amenities (see Table II for details).

Table II: Information relevant to project decisions

Type of Information	Corresponding Details	Importance and Relevance to Project Planning
Natural resources and features	• Current and historic ecology and natural features (e.g., hydrology, topography, soil type and quality, flora and fauna) • Critical resources (e.g., wetlands, coastal zones, wild and scenic rivers, drinking water aquifers, endangered or threatened species and their critical habitat)	• Helps the lead agency and stakeholders understand the site's present values and sensitivities
Cultural resources and features	• Historic, archeological, and culturally significant features • Existing infrastructure (e.g., roads, utility rights-of-way) that may constrain restoration or other uses of the site	• Helps the lead agency and stakeholders understand the site's values and sensitivities and plan for constraints
Adjacent land uses	• Connection or proximity to existing, functioning habitat • Connection or proximity to existing protected areas, identified priority conservation or restoration areas • Surrounding land uses (e.g., residential, industrial) • Owners of adjacent or nearby properties	• Helps the lead agency and stakeholders understand the landscape in which the project is situated (e.g. proximate habitats can provide a seed source and a corridor for wildlife to travel to and from newly-restored areas)
Existing and planned community amenities	• Existing and planned recreation areas and other community amenities, including information about proximity to the site being considered • Any known "gaps" in amenities that might exist in the neighborhood or community surrounding the site	• Helps the lead agency and stakeholders identify the potential for the site to fill existing "gaps" • Helps inform the types of uses that residents are likely to need, want, and support as the project moves forward

How to Find Information. There are a variety of resources available for gathering the necessary information. A good place to start is to contact the local (including county) and/or state agencies responsible for land use planning, natural resource management (e.g., floodplain management, water resources, coastal resources, fish and wildlife), and parks and recreation planning in your area. Local and state agencies typically can provide or direct you to information such as historic and current aerial photographs, local and/or regional management plans, and maps. Your local resource conservation district may also be able to provide information (see Box K). In some cases, federal agencies (e.g., U.S. Fish and Wildlife Service, USGS, the Army Corps of Engineers, NOAA, Natural Resource Conservation Service) will be able to provide maps and technical information about the area or certain natural resources that fall under their programs. Non-government resources like local watershed groups, consulting firms, and academic institutions can be helpful as well.

It is possible that some of the needed information was compiled previously for purposes of applying for a hazard mitigation grant or other funding or other community planning efforts, so it might be useful to be in touch with the original state and local acquisition project managers and other local planners. The body of information gathered as a basis for planning will continue to grow as the project evolves and should be updated as appropriate throughout the process. This information may also support future ongoing management and monitoring.

Legal and Regulatory Landscape. It is also important at this stage to review applicable laws, regulations, and policies to identify existing criteria, actual or potential conflicts, and opportunities for comprehensive planning and collaboration. Many sites will be subject to local ordinances and land management policies, which local agencies and community partners can identify. State natural resource agencies can provide information about any statewide regulations and policies that might apply to the project. Local, county, and state regulators also may be able to identify federal agencies with jurisdiction over the site's natural resources.

The types of laws, regulations, and policies that may apply to restoration projects or other open space uses might include (but are not limited to):

- Local land use plans
- Grazing maps
- Local floodplain regulations and policies
- Local and state hazard mitigation plans
- Coastal zone management plans
- State and federal wetlands regulations and policies
- State and federal conservation, wildlife, and endangered species protection laws.

For more information on permitting and approval requirements, see page 55.

Box K

Box K: **Working with Your Local Resource Conservation District**

All 50 states have authorized the establishment of local resource conservation districts (RCDs) to encourage, support, organize, and fund the conservation of natural resources and ecosystems at the local level. Also referred to in some states as soil and/or water conservation districts, RCDs are grassroots agencies that work in partnership with other government units, community groups, businesses, and individuals to help find solutions to conservation issues on their property. In general, RCDs are authorized to oversee programs related to soil conservation, flood prevention, irrigation, restoration, recreation, and other areas. An RCD also may have the power to adopt land-use regulations, acquire property, enter into contracts, and receive and award funds. Support available from your RCD for voluntary restoration projects might include:

- Technical assistance (e.g., site assessment, engineering design, GIS mapping);
- Planning, implementation, and monitoring assistance;
- Data about the site and surrounding area (e.g., soil survey, topographic map);
- Equipment rentals;
- Funding.

Your local RCD's website can be a good place to start to get information about their specific programs and how to contact their staff. For more on forming partnerships with RCD-like entities, see pages 40 and 50.

Source: SoHuong N. Tran & Liu Chuang, Natural Resources Conservation Service, USDA, Working Paper No. 3, State Conservation District Laws Development and Variations (July 1996).

Identifying Possible Partners. The final component of this first step is to identify possible partners and their potential role in the planning, implementation, and/or management of the project. Often, these groups will also be important sources of information being compiled at this stage. Some examples of potential partners are:

- Local land trusts
- Watershed groups
- Community groups
- Conservation organizations (including RCDs and private non-profits)
- Local agencies responsible for natural resources, recreation, land-use planning, etc.
- State agencies
- Colleges or universities (including student researchers, academic experts, and interest groups)
- Companies or corporations (with interest in volunteering or donating time)

Community agencies should seek to identify the aspects of your potential project in which your possible partners are interested, what they are able to do, and what capacity exists. In addition to helping with information-gathering, these groups may be able to help engage with community stakeholders (and identify additional partnership opportunities), plan and design restoration projects or community amenities, implement projects, and fund, maintain, manage, and monitor sites into the future (See Box K). It may make sense to set up an initial meeting to gauge interest and to gather information from these groups up front. (For more on the issue of finding the right partner(s), refer to the next section.)

Step 2: Map the Site in Relation to Surrounding Land Uses: As noted in the first step, it is important to know where sites are in relation to other buyout sites, potential buyout sites, and other habitat areas. Visualizing where the parcels are in relation to existing protected areas or conservation lands or areas identified as priorities for conservation or restoration can provide insight into the type of restoration or management activities that would be most successful. Mapping can help to identify opportunities to connect habitat areas. It may also help in identifying the best partners for a project. For example, if many acquired properties are near or adjacent to state-owned land, the state may be able to help with management or funding.

Step 3: Get Community Input: Community input is important for determining potential uses of acquired properties that will be feasible, fundable, sustainable, and valued by citizens. Without support from neighbors and community members, community amenities might go unused and restoration areas might eventually fail due to improper maintenance.[117] Community buy-in is especially important in situations where there are still people living throughout the neighborhood (e.g., patchwork and holdout contexts) or adjacent to the project area, since the new use of the site will be part of the daily life of those local residents.

When reaching out to the community for input, important stakeholders to engage may include, but are not limited to, neighbors, community groups, local government staff, conservation professionals, and others. The process for gathering and utilizing community stakeholders' input might involve:

- Performing outreach to make the public aware that you're planning a project at the site;
- Conducting a community workshop to describe opportunities and gather community opinions/wants/needs;
- Developing draft plans based on input gained at the workshop;
- Presenting proposed plans to the community.

An initial community workshop might include providing, exchanging, and discussing information on, for example: the acquisition site (including current use, existing

infrastructure, natural features, and surrounding land use); existing and planned community facilities and programs (e.g., recreational, cultural, natural) in the vicinity of the buyout area; and nearby habitat areas or areas identified as priorities for conservation. Goals, objectives, or restrictions set out in local regulations, policies, and plans may affect use of the land and should be reviewed. This workshop could also include presentation of any mapping that has been done for the site (as described above). The maps might show the current use of the site, other potential buyout properties, and the location of buyout properties in relation to wetland habitats, wildlife habitats, and areas identified as habitat protection and restoration priorities. The second half of the meeting might include a discussion of priorities – both collective and of different stakeholders – and a strategy to structure and design acquired properties to provide multiple benefits.

Important questions to ask community members during the workshop might include:

- What do community members want?
- What are the existing gaps and needs?
- What uses are possible on the site?
- What uses are feasible/practical (given restrictions in deeds, existing policies or ordinances, etc.)?
- Is there funding available?
- Who will maintain the site going forward?

The initial workshop will help identify potential management/use opportunities for the site, illustrate what the property could look like under different scenarios, identify potential funding sources for restoration and management activities, and develop guidance for prioritizing properties for future acquisition. It will also signal to neighbors and other stakeholders that their participation in the decision-making process is valued and help them feel more invested in the project's success. It may be useful to hold one or more follow-up meetings throughout the process to provide updates, encourage ongoing communication among stakeholders, and avoid surprises.

Step 4: Develop Goals and Objectives: A floodplain buyout vision and development plan provides a clear purpose and broad goals and guidelines for the project. The framework it sets out will serve as the basis for developing more focused and specific plans for implementation, management, and monitoring.

Define Goals and Objectives. Based on what is learned in the information gathering and community input stages, the next stage is to define goals and objectives for the new use of the acquired properties. The goals and objectives should be feasible and sustainable and should align with criteria in local plans and policies and with community wants and needs. In communities where project areas are spread out across the community, the goal setting could be done on a site-by-site basis or on a holistic basis (see box L).

Box L

Box L: **Goals vs. Objectives**

Goals are "general guidelines that explain what you want to achieve in your community. They are usually long-term and represent global visions such as 'protect public health and safety'."

Objectives "define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific, measureable, and have a defined completion date. They are more specific and outline the 'who, what, when, where, and how' of reaching the goals."

Source: Emergency Mgmt. Division, Mich. Dep't of State Police, EMD-PUB 207, LOCAL HAZARD MITIGATION PLANNING WORKBOOK 41 (June 2001), *available at*: http://www.michigan.gov/documents/8-pub207_60743_7.pdf.

Goals should be integrated with other community goals to the greatest extent feasible. For example, restoring natural conditions and functions of the native ecosystem may be consistent with a locality's Comprehensive Plan. Examples of integrated goals may include:

- Sustain native species
- Minimize flood damage to public and private property
- Reduce response and recovery costs
- Improve sense of community among residents/ positive community image
- Improve community health
- Improve community resilience.

Objectives are the defined implementation steps needed to achieve the identified goals. They are specific and measurable. Example objectives are:

- Restore wetland or wildlife habitat
- Restore natural floodplain functions
- Provide additional community amenities
- Provide additional ball fields for community recreation programs
- Increase green space in underserved neighborhoods.

A project with well-articulated goals and objectives is more likely to succeed and to garner public support. A common method for setting effective goals and objectives is to keep in mind that each one should be SMART: Specific, Measurable, Achievable, Realistic, and Time-bound. [118] Once goals and objectives are defined, they need to be prioritized. Among the many resources available with tips for conceptualizing and writing goals and objectives, one example is *Tips for Writing Goals and Objectives*,

available on the University of Southern California's website (*see* https://practicum.usc.edu/docs/Tips_for_writing_Goals_and_Objectives.pdf).

Develop a Draft Use and Management Plan. The draft plan will identify potential management/use opportunities for the site, illustrate what the buyout areas could look like under different scenarios and how those relate to the identified goals and objectives, identify potential funding sources for restoration and management, and provide guidance for prioritizing properties for future acquisition.

Elements of the conceptual plan might include:

- A summary of the ideas that were identified in information gathering and community input steps;
- The goals and objectives that have been identified;
- Concept diagrams to clearly represent the overall intent of the project and the land's potential uses;
- A conceptual map or maps that illustrate what the acquired properties could look like under different scenarios.

When developing concepts for the plan, aspects that need to be considered include accessibility, existing infrastructure, and public safety. It may be necessary or advisable to bring in police, fire officials, an attorney, local planners, or other experts to ensure that the conceptual plan conforms with local codes, ordinances, policies, and best practices before it is finalized. (The next section, "Working Through the Challenges," addresses some of these considerations in more detail.)

Gather Input on Draft Plan. A second community meeting will provide an opportunity to present the findings and gather more input from stakeholders. In some cases, you will want or need to make significant changes to the concept plan based on their input.

Step 5: Finalize and Implement Your Plan for the Site's New Use

At this point, the lead community agency is ready to finalize, and then implement, a plan for the site's new use or management approach.

Finalize the Development Plan. This plan is more focused and specific than your conceptual plan, and its content will depend on project-specific factors like what use(s) you have chosen and the guideposts you have set out in your conceptual plan. For example, if habitat restoration will occur on the site, then a specific restoration plan will be needed (see p. 34). The development plan should include adaptive management or contingency plans in case anything goes wrong or something unexpected occurs during implementation.

Identify Necessary Permits. The final plan should clearly identify any permits or approvals that are required for developing community amenities or starting restoration work at the site. Permits that may be necessary will vary widely by project type and location. The regulatory programs that trigger permit requirements are administered by a variety of local, state, or even federal agencies, and it is important to identify them and plan accordingly. In general, permits/approvals must be obtained prior to beginning work at your site, and some permitting programs have ongoing reporting or renewal requirements that should be worked into your plan as well (more information on permits is provided at p. 55).

Develop a Long-Term Monitoring and Maintenance Plan. Once the development plan is finalized, a monitoring and maintenance plan should be developed to ensure that the use is sustained. This plan should identify a party or parties who will be responsible for maintaining and monitoring the site over the long-term. In some cases, properties may be transferred to a third-party (a conservation-oriented organization) or may be leased to neighbors or another third-party. (More information on title transfers can be found at p. 60) The implementation plan should identify what is required of any third-party transferees or lessees in terms of monitoring and maintenance and how much it might cost.

Identify the Players Involved. The plan should identify partners, including staff, contractors, and volunteers. Who will be involved in the development/restoration of the site? What are their specific roles? The final plan should identify all the players that will be involved from the early planning and construction stages through monitoring and ongoing maintenance.

Finalize the Budget. The final plan should include a budget. The budget needs to include all the costs of restoration or use development. Long-term management and maintenance costs should be included, as well as any funds that may be necessary to implement the adaptive management or contingency plan. The plan should also identify funding sources for all the costs in the budget. (More information about potential funding sources is provided at p. 46).

Develop an Outreach Plan. Lastly, the final plan should include an outreach plan to ensure that community members and neighbors understand the plans for the site and how it will improve community resilience, health, and appearance.[119] The outreach plan should provide for engagement with local conservation groups, homeowners associations, students, neighbors, and the general public.

Implement the Plan. When you have worked through all the steps in the decision making process, it is time for implementation (and then long-term management) of your carefully planned project. Community staff may need to hire contractors, oversee partners, participate in construction, monitor restoration, reach out to community

members, etc. Once the project itself is complete and the site's new use or management approach has been established, the community will need to ensure that long-term management and maintenance is funded and commences according to plan.

In some cases, the community will decide to turn over the deed (or a lease) to another entity, whether it occurs immediately after a project is complete (prior to the start of the long-term management phase) or at some time in the future (after long-term management already has begun). Federal programs allow the community to turn over acquired properties to other government agencies, but also to groups with a conservation mission. Such organizations may include local watershed groups, land trusts, conservation organizations, or other similar groups. (For a brief discussion of how and why communities might decide to pursue this option, see p. 52). To the extent that a community already knows that it intends to turn the property over to another agency or group after the project is complete, and which agency or group it will be, that entity should be engaged from as early in the process as possible. In addition to making sure expectations stay aligned, they may have expertise and/or funding that may be useful for the restoration effort.

SECTION III. Making it Happen: Challenges and Issues to Consider When Determining What Can Be Done with a Property

Our detailed case studies of communities participating in floodplain acquisition programs and supporting research have identified examples of programmatic and management structures that have been successfully employed. We have also learned that communities face many challenges in prioritizing and financing buyouts and managing acquired properties to provide multiple benefits. In this section, we identify some common challenges that may arise in connection with a post-acquisition restoration or management project, as well as some basic information and resources that can assist communities in meeting them.

To potentially leverage other funding sources for a project, community project teams can encourage interagency and inter-stakeholder collaboration.

How do I fund a large restoration project?

One of the primary obstacles to restoring habitat or natural floodplain functions to acquired properties on a larger scale is lack of funding.[120] Federal floodplain acquisition

programs (e.g., the FEMA Hazard Mitigation Assistance Programs) provide funding to *acquire* the property and remove structures, but not for subsequent *restoration* or ongoing *management* of the sites.[121] Generally, allowable expenses for structure demolition and relocation under federal acquisition programs include: removal of demolition debris and household hazardous wastes; abatement of asbestos and/or lead-based paint; removal of septic tanks; permitted disposal of fuel tanks; removal of structure foundation and basement walls to at least one foot below finish grade; filling of basements with clean fill; termination of abandoned utilities; capping of all wells; and grading or leveling of demolition sites.[122]

Funding for any restoration or development on acquired properties falls on the sub-recipient, often the local government. Therefore, if a community would like to do something on the land, such as restoring habitat or developing community amenities, it must find other sources of funding. The cost of restoring habitat or developing community amenities on the site will depend on the scale and scope of the project. Many communities will have prior experience with developing parks and other recreational facilities, and will likely have some understanding of the related costs. Many state and local governments may have established standards with pricing estimates for various recreational uses.[123] For example, the State of Colorado Small Community Park & Recreation Planning Standards provide a good range of cost estimates for a variety of recreational uses, from baseball fields to general parks, including annual maintenance costs.[124]

Habitat restoration standards and/or pricing estimates may be less common. The local government departments that are responsible for the floodplain acquisition program and for managing acquired sites often do not have the expertise or funding to restore habitat and manage for ecological outcomes. Furthermore, it is likely to be more difficult for project planners to find information on generalized or widely applicable restoration costs, because restoration projects vary so widely depending on setting and scope. In general, restoration costs will include plan development, staff time, large equipment rental, plants, soils, signage, fences, equipment or temporary structures, etc., and the budget should reflect all of these costs to the greatest extent possible. If there is no in-house capacity for taking on habitat restoration projects, communities should reach out to local or state conservation groups, local resource conservation districts, state agencies, and consulting firms, all of which may have useful information and/or be willing to assist communities in planning to restore acquired sites.

In some cases local funding will be available to complete projects. In other cases, additional funding sources will be necessary. Potential funding sources may include:

- Federal grants;
- State grants;
- State appropriations/other state funding or financing;
- Local funds;

- Foundation grants;
- Community fundraising;
- Corporate sponsorships;
- Partnerships.[125]

Every state, community, and project has access to a unique combination of funding opportunities. Some projects may leverage multiple funding sources (See Box M to learn about how Rocky Mount, North Carolina was able to do this).

Box M

Box M: **Leveraging Multiple Funding Sources in Rocky Mount, NC**

Rocky Mount, North Carolina is a good example of how a community can leverage multiple funding sources for projects on acquired property. Their many projects on acquired properties – dog park, forest preserve, barbecue park, and others (described at pages 17, 21, and 33) – have been funded with assistance from federal and state grants, volunteer labor, and private and in-kind donations. However, the city's more recent projects have relied more heavily on private contributions and local money. One example of this trend is the Barbecue Park on the Tar River. Three Boy Scouts raised a total of $7,500 and coordinated volunteers. Creation of the park served as their Eagle Projects.

Source: UNC Institute for the Environment and Environmental Law Institute (2016), Rocky Mount, North Carolina*, available at* https://www.eli.org/research-report/floodplain-buyout-case-study-rocky-mount-nc).

How can I get buy-in from neighbors?

Community participation is a vital component of any project, whether it involves site-scale volunteer maintenance of a community garden by neighbors or a community-scale participatory planning process to determine the best use of a site. As noted in the previous section, engaging community members in the decision-making process should be a key priority for local governments (or other project proponents) planning a project on acquired properties.

Box N

Box N: **Working with Neighbors on Invasive Plant Management**

Non-native plant species can significantly hinder your efforts to restore natural habitat and enhance biodiversity at your site. There are practices you can adopt, and encourage a site's neighbors to adopt, to minimize some of the problems caused by invasive plant species. Some helpful strategies for managing invasive plants, and for encouraging neighbors' cooperation with your efforts, can be found in the Trustees of Reservations' *Invasive Plant Management: Guidelines for Managers* (2008), available online at: http://www.thetrustees.org/assets/documents/what-we-care-about/Invasives-Plant-

Guidelines-Final_Sep08.pdf.

There are a number of existing resources that can help a community develop an outreach plan and raise support for projects on acquired properties, some of which are identified here:

- ***Getting in Step* (2010).** The U.S. Environmental Protection Agency's "Getting in Step" guides for watershed outreach campaigns are a good place to start.[126] The stakeholder engagement guide provides conceptual guidance as well as logistical tips and specific strategies for considerations ranging from generating initial interest, to engaging stakeholders, to properly equipping stakeholders for productive participation.[127] The watershed outreach guide sets out a "step-by-step approach to social marketing and outreach planning and implementation" to help communities "determine the most effective vehicle to reach [their] target audience and motivate behavior change."[128] The guides can be found at: https://cfpub.epa.gov/npstbx/files/getnstepguide.pdf.

- ***IAP 2 Spectrum of Public Participation* (2007)**. The International Association of Public Participation has developed guidance to help a community define its public participation goals and identify specific techniques to reach them.[129] You can find this resource at http://www.fgcu.edu/Provost/files/IAP_Public_Participation_Spectrum.pdf.

- ***Public Participation Guidelines For Park Planning* (2012)**. The Department of Parks, Recreation, and Cultural Resources for the City of Raleigh, NC, has effectively organized its public participation policy and guidelines around four "pathways" for public participation - outreach, information exchange, feedback and consultation, and consensus seeking. These pathways may serve as a useful example for communities seeking specific best practices and strategies to strengthen their public participation framework.[130] You can find this resource at https://www.ncsu.edu/nrli/decision-making/projects/documents/FinalPublicParticipationGuidelines05-14-12.pdf.

- ***Decision-Making Guidelines for Vegetation Management, San Mateo County Parks* (June 2006).** Habitat restoration projects are successful when they are appropriately maintained over time, and neighbors and visitors to the site will be an important factor in the site's future maintenance. There are steps project managers can take to increase the probability that neighbors, visitors, and local volunteer groups will make positive contributions toward long-term management goals (or at least not detract from stewardship efforts). The San Mateo Country Parks and Recreation Department clearly defined the objective of "encouraging park stewardship" as part of its Decision-Making Guidelines for Vegetation Management.[131] Specific strategies to further the objective -- utilizing volunteer

groups, deploying helpful signage, developing neighborhood relationships, and addressing boundary issues (e.g., invasive plant encroachment from adjoining backyards, domestic pet issues, etc.) -- are found in the guidelines and may serve as a useful reference for communities seeking ways to encourage or improve neighborhood stewardship. The San Mateo County Parks guidelines are available at https://parks.smcgov.org/sites/parks.smcgov.org/files/documents/files/Vegetation%20Management%20Guidelines.pdf.

How do I find the right partners?

Partners can play important roles in any project on acquired land, including helping to plan for future acquisitions, helping sellers navigate the buyout process, planning management activities, fundraising, restoring sites, and providing long-term management and maintenance.[132]

Box O

Box O: **Partners in the Post-Buyout Process in Tulsa, OK**

Tulsa, Okla., is recognized as a national leader in flood management. Along the way, the City and the U.S. Army Corps of Engineers faced resistance from citizens to their actions. The City of Tulsa decided to create a multi-disciplinary team to study and alter recommended solutions for floodplain and storm water management instead of attempting to undergo the acquisition and post-buyout project process alone.

The National Parks Service's Rivers, Trails, and Conservation Assistance Program (Rivers and Trails) was invited to participate in a rejuvenated, citizen-driven management plan. Outdoor recreation planners and officials with experience in similar projects in other cities also joined the effort. In the end, twelve additional government entities were invited to contribute expertise to the Management and Technical Committees, which were largely responsible for the successful development and execution of the Mooser Creek management plan.

For more about how Tulsa identified partners instead of undertaking a project alone, see http://www.rdflanagan.com/Mooser/Mooser.pdf

In general, many community and environmental groups are unaware of the potential opportunities for restoring or redeveloping floodplain buyout sites, but these groups may be able to contribute a range of experience, skills, resources, and relationships that will help the project succeed. As a first step, the community agency may identify particular implementation needs – such as technical expertise, a strong volunteer network in the area, or access to funding – and then target outreach to potential partners accordingly. (For more on developing and implementing outreach strategies, see the above discussion of neighborhood buy-in).

There are a number of different agencies or groups that could be interested in some aspect of the project. The following broad categories and accompanying examples may be useful for identifying some of possible partners, as well as their potential roles.

Local, State, and Federal Agencies. While partnering with another government entity might mean the project generates additional process-based requirements, government agencies may have useful powers and tools, such as providing opportunities to acquire or connect additional land adjacent to buyout properties, granting approvals and permits, and providing opportunities for additional public funding (see Box P below for a good example of interagency cooperation in Westernport, MD, after Hurricane Fran).

Government partners may also be able to assist the community with long-term management of a buyout site. For example, in East Grand Forks, Minnesota, many acquired properties were converted to a large greenway system that is now managed cooperatively by the City of East Grand Forks (which owns the land), the Minnesota Department of Natural Resources, and the Grand Forks Park District, with help from a Greenway and Trail Users Advisory Group. Another example is Wakenda, Missouri, where the National Resources Conservation Service (NRCS) took over management of buyout sites as part of a larger project to reduce the potential for flooding in the watershed.[133]

Broadly speaking, the kinds of agencies a community might consider partnering with include, but are by no means limited to:

- *Federal*: Natural Resources Conservation Service, U.S. Army Corps of Engineers, National Parks Service, Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Forest Service, U.S. Environmental Protection Agency, Federal Emergency Management Agency.

- *State*: Departments, agencies, and programs in areas such as Natural Resources, Environmental Protection, Wildlife/Fish and Game, Floodplain Management, Water Resources Management, Coastal Resources, Transportation, Commerce.

- *Local*: City, county, or town entities or programs responsible for public works, land use planning, parks and recreation/open space, urban development, tourism, flood and/or stormwater management, port authority, historical or archaeological resources. Local resource conservation districts, whose capacities are described in Box K, can also be good options.

Box P

Box P: **Interagency Partnerships in Action**

The town of Westernport, located along Georges Creek in Allegany County, Maryland, was declared a federal disaster area in 1996 after Hurricane Fran. In the aftermath of

the disaster, the community acquired 27 floodplain properties acquired through voluntary buyouts,[i] cleared and the land, and restored stream habitat to the area. The community then turned to long-term management considerations.

Town leaders "wanted to explore alternatives that would preserve the integrity of the stream restoration while affording citizens some use of the area" and build "local support for long-term floodplain open space protection." At the town's request, the National Park Service's Rivers, Trails, and Conservation Assistance Program (RTCA) coordinated the formation of an interdisciplinary Floodplain Park Planning Team to develop recommendations for long-term open space use of the floodplain buyout area. The project partners included the Allegany County Planning Department, Maryland Department of Natural Resources, Maryland Department of the Environment, Maryland Office of Planning, National Resources Conservation Services, and the University of Maryland's Landscape Architecture Design Studio.

When the Planning Team, using a community-based process, produced a Final Concept Plan, the plan included: making "[i]mprovements to habitat value of the stream and adjacent lands through re-vegetation of the site with native plants and enhancement of stream buffers"; passive recreation areas (e.g., walking trail, pavilion, picnic area); and outdoor educational facilities (e.g., nature trail, stream access area, pavilion for classes, interpretive signage).

Source: Association of State Flood Plan Managers, Mitigation Success Stories in the United States at 36-38 (Dec. 2000).

[i] The disaster declaration allowed FEMA and NRCS to fund removal of debris from the stream, but federal acquisition funds were not readily available, and the "Westernport project's funding was made possible through innovative pilot programs developed by [Maryland State Highway Association] and NRCS that redirected funds from normal highway maintenance and stream-clearing activities to property acquisition and stream restoration activities." *Id*. at 36-37.

Non-Governmental Organizations. Large national or regional non-profit organizations with conservation and habitat restoration missions, like the Nature Conservancy, Ducks Unlimited, the National Audubon Society, and American Rivers, can help communities with whom they partner by providing expertise, funding, and an existing network of relationships with conservation professionals, agencies, and community groups. In Washington State, for example, the state Department of Ecology has partnered with the Nature Conservancy to lead the "Floodplains by Design" partnership.[134] The mission is "carrying out integrated projects that improve flood protection for towns and farms, restore salmon habitats, improve water quality, and enhance outdoor recreation," and Puget Sound communities are leveraging the resources available through this public/private partnership. In King County, the community partnered with Floodplains by Design to plan a project that will acquire up to 15 floodplain properties (and remove up to 15 homes) to add flood storage, improve climate resilience, and restore salmon habitat in the Cedar River corridor.[135] While the "Floodplains by Design" partnership is

neither affiliated with nor receives funding from FEMA's HMGP, the planning and implementation processes as well as the development of partnerships in various sectors can serve as a useful model for similar projects.

Partnering with a *local* non-profit organization also has proven very effective for some communities (See Box Q for an example). A local organization may be interested in working with a buyout site's new owner to restore or use the land to further its specific, localized mission (consistent with flood mitigation and open space uses). The U.S. Forest Service is developing a resource for environmental stewardship organizations to be able to seek out other entities working towards similar goals in overlapping regions (see Box R on page 54), but local guides or directories may also serve as starting points for identifying potential non-profit or non-governmental partners.

Box Q

Box Q: **Partnering with a Local Non-Profit**

Since 1993, the City of Springfield, Missouri, has acquired nearly 200 properties on around 200 acres using FEMA, state, and local funds. Almost all of the properties are located in or adjacent to the floodplain, but they are scattered along several different urban streams.

Hoping to find a use for the sites that would provide multiple benefits to the public, the City formed a partnership with local non-profit Ozark Greenways to incorporate scattered buyout properties into the Greenway, a "major system of linear parks and trails" within the city.[i] Guided by open space objectives set out in the City's long-term plan, the City (represented by its stormwater management department) and its partners have completed a series of several small-scale projects over time.[ii]

Ozark Greenways, whose stated mission is "working to preserve the Ozarks' natural heritage for public use and enjoyment by developing a greenway trail network," plays a major role in the partnership's activities, conducting planning, funding efforts, advocacy, promotion, acquisition of easements, and urban forestry.[iii] Through this partnership, creek channels have been reconstructed, thousands of native plants and trees have been planted, and the public is guaranteed access to the new park areas and trail corridors. In terms of long-term management and maintenance, once a new segment is added, it becomes part of the city's park system and is managed accordingly.

[i] To see how community planners used a map to illustrate the relative locations of buyout properties and trail area, *see* http://www.springfieldmo.gov/AgendaCenter/ViewFile/Item/359?fileID=1680 at p. 8.
[ii] City of Springfield, *Projects & Studies* (last visited April 28, 2016), http://www.springfieldmo.gov/2129/Projects-Studies .The vision for the Greenway system is set out in the City's Vision 20/20 Parks, Open Space, and Greenways Plan, which is available online at: http://www.springfieldmo.gov/1938/Vision-2020-The-Future-is-Now.
[iii] *What is Ozark Greenways?,* Ozark Greenways (2016), http://ozarkgreenways.org/about-us/mission/

Other potential partners include:

- Local or state land trusts (to find land trusts in your area, visit the Land Trust Alliance website);[136]
- Local watershed groups/councils;
- Other community groups, e.g., fitness and/or recreation organizations, historical societies, faith-based organizations;
- Companies or corporations that can sponsor or donate volunteer time to projects that might reflect or support their mission or help their visibility in a particular community;
- Colleges or universities (student researchers, academic experts, and interest groups).

Reaching out to potential partners and creating new relationships can be productive even outside of forming a formal partnership. For example, Rocky Mount, North Carolina, sent city officials to visit other North Carolina cities that had implemented a FEMA buyout in the past. Officials from Greenville and Goldsboro were able to provide Rocky Mount planners with insights on how to implement and manage an acquisition project, including inspecting and assessing damaged homes and using GIS to track acquisitions, which helped Rocky Mount navigate and expedite the lengthy application process.[137]

Box R

Box R: **Getting on the Map – Tools to Identify Urban Environmental Stewardship Networks**

The U.S. Forest Service's Stewardship Mapping and Assessment Project (STEW-MAP) seeks to map the social and spatial interactions among the range of civic organizations working to conserve, manage, monitor, advocate for, and educate the public about their local environments. STEW-MAP has developed a web-based tool to help communities identify who, what, where, why, and how environmental stewardship groups are working across their urban landscapes. The project invites stewardship groups to map where they work, whether at the parcel, neighborhood, or citywide level, as well as provide social network data about how the groups are connected with each other through collaborative projects, information exchange, and funding.

As of April 2016, STEW-MAP is active in Baltimore, the Chicago region, Los Angeles, New York City, Seattle, and Philadelphia. The STEW-MAP website encourages stewards from other cities who are interested in starting projects to contact the STEW-MAP team.

Source: U.S. Forest Service, U.S. Department of Agriculture, *Stew-MAP: Stewardship Mapping and Assessment Project,* http://www.stewmap.net/.

Will the project require any permits?

Permitting, and the fees and time associated with the process, are often perceived as significant obstacles to implementing a project that alters the landscape or land use. It is true that most projects taking place in flood-prone areas will require some type of permit, notification, or approval, even when they are small in scale and/or designed to have positive impact on the environment. On the other hand, some of the agencies overseeing the relevant permitting programs have carved out exemptions or streamlined the process for habitat restoration projects meeting certain criteria. Here we discuss some of the permits that a habitat restoration or other open space development project is most likely to need, noting common requirements and ways agencies have found to make the process simpler and less burdensome for restoration projects with net benefits.

As noted earlier, it is important to take full inventory of the legal and regulatory landscape in the early stages of a project; the sooner you identify potential permit/approval/notification requirements, the more likely you are to achieve compliance in time to keep your project on schedule (e.g., within the timeframe required for funding). Regulatory agencies with jurisdiction over a project, or over one or more of its components, might include any combination of federal, state, county, city, town, or other agencies, so it is important to understand the different (and sometimes overlapping) requirements at each level. The following summaries note some of the permitting and approval requirements typically associated with certain resources and project activities, but it is important to consult with state and local regulators to verify which requirements apply to a particular project. Your state's regulatory assistance office may be able to help guide you.

Work in or Affecting Waterways or Wetlands. Given potential effects on water quality, navigation, and fish and wildlife, many projects in or near public waterways or wetlands will trigger one or more of the federal, state, and/or local regulations that guarantee certain minimum protections for these resources. If your project involves placing any material into, removing any material from, or otherwise disturbing a waterway or wetland, there is a good chance it will require a permit from the Army Corps of Engineers ("ACOE"), the state water quality agency, or both.

- *Army Corps of Engineers Permits*: A federal permit from ACOE is required for any "dredge and fill" activity in the "waters of the United States."[138] Large-scale projects may need an individual Clean Water Act Section 404 permit.[139] However, ACOE has adopted a set of general permits called nationwide permits (NWP) that function as a sort of blanket authorization for certain activities that will result in minimal individual and cumulative impacts[140] Notably, NWP 27 covers "Aquatic Habitat Restoration, Establishment, and Enhancement Activities," authorizing many activities associated with habitat restoration projects in wetland and riparian areas with the condition that such activities "result in net increases in

aquatic resource functions and services."[141] Often, the proponent of a project covered by this (or any) NWP still needs to submit a Pre-Construction Notification to the local ACOE office to verify the authorization.[142]

Also, if a project will affect species or habitat listed under the Endangered Species Act, the ACOE will have to consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service before your NWP authorization or other permit can take effect.

- *State Permits for Streambed Alteration, Wetlands Restoration, Etc.:* Whether or not a dredge and fill permit is required from the ACOE, it is common for states to have their own permitting or prior approval requirements for activities affecting wetlands and aquatic habitats (e.g., public waters, streambeds, lakes).[143] To help streamline the process, the state may allow applicants to fill out a joint application for state and federal permits (although you'll still need to receive permits from both agencies).[144] Also, Section 401 of the Clean Water Act requires states and tribes to review all federal permit applications that might result in a discharge of pollutants, including sediment, to state or tribal waters/wetlands to ensure the project complies with state water quality standards. The state has the authority to approve, condition, or deny this request for water quality certification, and projects might be required to incorporate additional measures to address likely impacts – e.g., sediment, stormwater runoff, spills, disturbance to fish and wildlife, etc. – during the construction phase and/or for the duration of the site's use.[145]

Restoration and management of native vegetation is a key component of habitat restoration, so it is worth noting that some states require special permits for activities affecting plant life in public waters or wetlands. If a project involves activities like removing, planting, or otherwise manipulating aquatic vegetation (e.g., cattails, bulrush) or using herbicides or pesticides in public waters, it might need an additional or supplemental permit or authorization.

- *Local Requirements for Erosion and Soil Slippage*: It is common for local governments to place restrictions on and/or require permits for projects affecting steep slopes or bluffs (e.g., excavation, cutting or clearing plants) with potential to worsen or accelerate erosion. When contacting local land use and planning officials to discuss a proposal, it is a good idea to inquire whether the project could trigger any such regulations and, if so, what steps you will be required to take to comply.

Work in Floodplains and Floodways. Local and/or state floodplain authorities are responsible for making sure activities in the floodplain conform to their standards and existing management plans. When a project is located within or encroaches on a designated floodplain or floodway, as is typically the case with a voluntary buyout, it

may require a floodplain permit or approval. In California, for example, these are called "encroachment permits" and are issued by regional Flood Protection Boards.[146]

Other Regulatory Considerations. Above we have identified some of the permitting programs most likely to apply to a habitat restoration project (or other development) on buyout property. Other permits, licenses, and approvals that should be considered, depending on a project's location and design, range from zoning requirements to air quality regulations. Regulations in various jurisdictions (i.e., local, state, federal) are important to consider in planning phases so that the project complies with requirements and is able to proceed without unanticipated costs. See Box S for a list of potential permits, licenses, and approvals.

Box S

Box S: **Permits, licenses, and approvals**

Making an early effort to understand what regulations apply to potential projects and alternatives being considered on a given site can help determine what is practical and cost-effective during the planning stages, thus helping to avoid the surprise of unanticipated costs and delays after a project is in motion.

- Army Corps of Engineers permits;
- State permits for streambed alteration, wetlands restoration, etc.;
- Local requirements for erosion and soil slippage;
- Stormwater discharge permit (including during construction/earth-disturbing phase);
- Local permit for land use conversion, grading, landscaping, etc.;
- Local building or occupancy permit (may apply to pavilions, fences, and other structures compatible with open space deed restrictions);
- Consistency with local land use plan;
- Water appropriation permit or "water right" certificate (e.g., for irrigating green spaces or watering community gardens);
- Minimum setback requirements for any structures (local zoning authority);
- Herbicide/pesticide permit or license;
- Air quality permit to burn vegetative or other material (e.g., prepare for project by burning at the site to clear debris and control weeds); and
- Local weed and mosquito control ordinances.

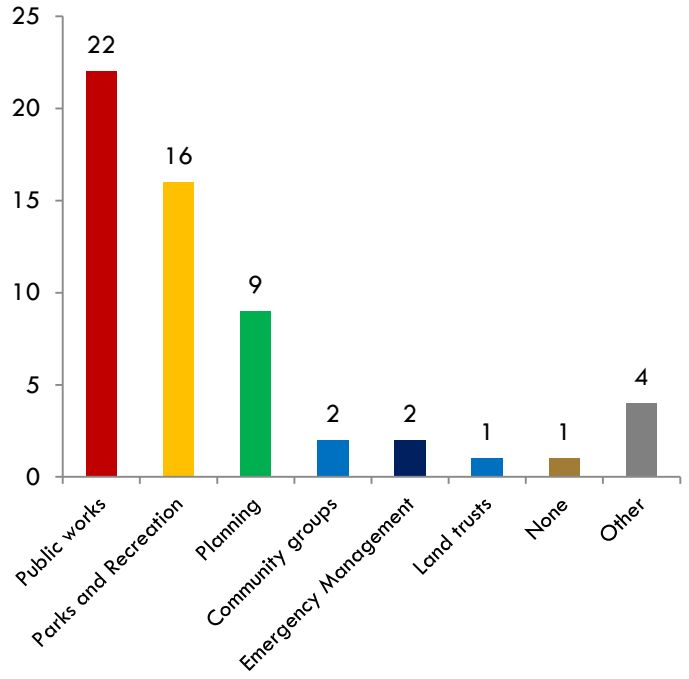
Environmental Assessments: Depending on a range of project-specific factors, such as state law, agency partnerships, sources of funding, land ownership, and design details of your project, a project may require an environmental impact assessment under the National Environmental Protection Act (NEPA) or your state's equivalent. Acquisitions of property using federal grants are generally exempt from NEPA, but subsequent projects that alter conditions at a site may trigger federal or state impact assessment laws anew. Most of the time, requirements under these laws are procedural, designed to ensure governments or project sponsors give thorough consideration to a project's

impacts rather than establish substantive restrictions; however, when a project requires an environmental assessment, agencies responsible for granting permits and approvals typically cannot do so until the process is completed.[147]

Who will be responsible for ongoing maintenance and management?

Restored habitats may require long-term management and maintenance in order to be successful over the long-term.[148] Long-term management and maintenance responsibilities will vary depending on the needs of the site, but could range from more intensive activities (e.g., habitat management, invasive species control) to more minimal activities (e.g., maintaining fences and signs). In some cases local governments will have the capacity and funding to take on these responsibilities themselves. In other cases, local governments will look to outside groups to aid with these tasks.

Figure 2. Entities that oversee acquired properties (Findings from ELI Outreach Study, 2015)



ELI's 2015 study collected information about the acquisition of property in floodplains to help determine best practices. 40 community representatives across North Carolina, Wisconsin and Minnesota shared their experiences, which helped ELI understand gaps between actual use of acquired properties and their potential to foster multiple community and environmental benefits.

In many cases, management of acquired properties tends to be the responsibility of a local government agency. In small communities, there may be an elected official or city staff member in charge of all such properties. In larger communities, parks and recreation, public works, planning/zoning, or emergency management agencies may manage floodplain buyout properties. In a study conducted by the Environmental Law Institute, respondents noted the entities that currently oversee acquired properties. The responses, ranging from public works departments to community groups, are highlighted in Figure 2.

In some cases these local agencies are well equipped already to manage restored habitats and/or community amenities. Parks and recreation departments, for example, will have expertise in the maintenance of parks and other outdoor recreational facilities. In other cases, the department holding the acquired properties

will have neither the capacity nor the funding to monitor and maintain the sites over the long term. Monitoring properties and/or managing habitat just may not be part of the mission or day-to-day activities of some of these agencies. For that reason, some communities have had success involving more than one agency in a site's ongoing management (See Box O, p. 50, for an example of successful partnerships).

For habitat restoration projects, as with many other uses that provide multiple benefits, there is often a long list of potential management and maintenance responsibilities – all of which must be defined and allocated among future site managers and/or land stewards. A long-term management/maintenance plan can help to accomplish this as early as possible in a project's life cycle, in order to avoid making management decisions on-the-fly after a community has already started (or finished) a project. The more clearly the ongoing management tasks are set out in the plan, the easier it will be to determine the costs over the long-term. When designing a maintenance plan, keep in mind opportunities to leverage existing resources and/or provide multiple benefits – in Tulsa, for example, the government's management and maintenance trails double as nature trails open to the public. Box T lists various maintenance and management tasks that should be included in plans for habitat restoration projects.

Box T

Box T: **Common Maintenance and Management Tasks for Restored Habitats**

- Passive habitat management (e.g., species monitoring);
- Active habitat management (e.g., control of invasive plant species, prescribed burning);
- Planning and conducting educational activities;
- Maintenance and repair of fences or other infrastructure (e.g., signage);
- Monitoring (e.g., water quality monitoring);
- Enforcement (e.g., enforcing deed restrictions, enforcing management and maintenance schedules).

Management and maintenance can be expensive, and these expenses must be factored into funding decisions up front. How much money will be needed to manage sites? Project managers should carefully determine these costs to ensure that money is available for management and maintenance over the long-term (*see* ELI/Land Trust Alliance's *Handbook for Land Trusts*, which specifically includes technical guidance on both long-term management planning and long-term funding or The Nature Conservancy's *Long Term Stewardship Calculator Handbook*, which accompanies a long-term stewardship calculator available at www.nature.org/stewardshipcalculator).[149]

During the planning process, a community can try to identify ways to meet project goals that are most cost-effective in the long term. In Springfield, Missouri, for example (see Box Q), maintenance considerations were kept in mind when project designers made

landscaping decisions on the Greenway created using buyout properties: "The underlying turf is buffalo grass - a native grass chosen for its hardiness and low-maintenance. The selection of native plants leads toward a future reduction in maintenance costs and negative environmental impacts because natives have been proven to require less maintenance, water, fertilizer and pesticides. Tree species included native willows, redbuds, witch hazels and serviceberries."[150]

Communities have found ways to finance improvements and maintenance of properties through public mechanisms. In East Grand Forks, Minnesota, for example, maintenance and management of the greenway system is funded through an annual utility fee. Similarly, the city of Tulsa finances improvements to its urban greenway with stormwater fees assessed on new construction projects.

In addition to relying on governmental management and funding, local governments might look to community groups and the public to help manage and maintain sites. These groups could include community organizations, schools, watershed groups, land trusts, and other local or regional conservation groups. In addition to helping the government meet the property's ongoing needs, community-led management helps ensure buy-in from neighbors and the public for the management of the site, increases chances of use, and helps to sustain the restoration or use over the long term.

In some situations, community-led management initiatives can be established and maintained through a fairly informal framework, like a volunteer program. However, other times it is helpful to establish a formal arrangement — such as a memorandum of agreement, contract, or sub-contract – to clearly establish the responsibilities of each party and help increase accountability. It may even make sense to formally transfer ownership or use/occupancy rights to a qualified third party having appropriate management capacity and resources; this can relieve the government of ongoing maintenance responsibilities related to the land while engaging the broader community in habitat or public amenity management. The following section points out some issues for a community to think about if or when a property transfer is being considered.

Does it make sense for my community to transfer the property to another organization?

After a buyout, the property's open space deed restrictions attach in perpetuity, but the community may lease the property to a new user or outright transfer the property to a qualified public or non-profit owner. A lease or title transfer may make sense for reasons related to management responsibilities, stakeholder participation/support, legal liability, or other considerations. Both leases and transfers must have FEMA approval prior to the transaction.[151] Whether or not money is involved in the transaction, the new user or owner would become responsible for the property and adhering to the deed restrictions.[152] This includes, for example, responsibility for the 3-year open space certification required for open space monitoring.[153] Here we note some of the ways that

buyout properties can be transferred to facilitate new uses and some of the considerations involved.

Transferring Title to a Public Entity or a Conservation Organization. Under the FEMA Hazard Mitigation Assistance Programs (including the HMGP), sub-recipients are allowed to transfer their interest in the property after the acquisition is complete – but only to certain entities, and only with the prior approval of the FEMA Regional Administrator.[154] Organizations to which full title can be transferred are limited to: (1) another public entity; or (2) a non-profit organization with a conservation mission.

Especially in situations where properties border other public lands – e.g., a park, nature preserve, conservation area –an agency that owns and maintains other land in the area may be well suited to acquire some or all of the site.[155] This could be a state entity like a state natural resource agency, or it might be a different local agency, like a municipal parks department. Regional conservation districts are also an option, and it may even be possible in some cases to transfer the land to a different federal agency.

FEMA's handbook, *Property Acquisition Handbook for Local Communities*,[156] emphasizes the importance of considering adjacent land uses when developing a plan for acquisitions. If federal funding is limited, acquiring properties near existing conservation or recreation areas that are managed by other agencies could make it easier to transfer post-buyout management responsibilities and expand ongoing, sustainable uses of a community's land. During initial stakeholder outreach and while exploring possible partnerships, a community may want to explore the possibility of identifying another agency that would be willing and able to take over responsibility for the site's management and maintenance.

Other than public entities, the FEMA Hazard Mitigation Assistance Programs may authorize transfer of acquired properties to qualified, private non-profit organizations with a conservation mission.[157] There are criteria as to what qualifies as a conservation organization.[158] It might make sense to transfer properties permanently to a conservation organization like a land trust through a full title transfer, where the acquisition of floodplain property may align with the organization's own goals and objectives. It is also possible that transferring title of the property to a private non-profit partner could be a way to enable the community to leverage other sources' funding for the project.

A conservation easement may also be used to transfer interest in the property to a land trust or other qualified group. These organizations are likely to have stewardship and monitoring protocols in place for their existing land, allowing them to coordinate the necessary management and maintenance efforts, be it by their staff or community volunteers, more efficiently. Having another organization (or agency) be the easement holder is a way to allocate responsibility to the other entity for maintaining and keeping competing uses away from the property. It is also possible that additional public or

private funding sources are available, but are limited to projects on private land; in this situation, transferring title of the property to a private non-profit partner could enable an ambitious project to leverage the funding it requires.[159]

Leasing the Property to a Private Individual or Entity. In some situations, the community will want to retain ownership of the acquired property while still granting other parties the right to use it. While governments may have informal arrangements already with neighbors and community groups allowing use of the land for activities like gardening or recreation, a formal agreement in the form of a lease may help the potential new user(s) feel more secure in their right to the property and more willing to invest their own resources to maintain the property for that use. Properties acquired with federal mitigation funds may be subsequently leased to public or private entities or individuals for uses consistent with open space deed restrictions with prior FEMA approval.[160] The owner does not need to receive market value for the lease – indeed, it is common for community leasing programs to use nominal fees such as $1.[161] Leases can be flexible in duration to suit both parties' needs, ranging from short-term for a pilot project, to a longer-term commitment or lease-to-own arrangement.[162]

Where buyout parcels are adjacent to remaining homes or other privately owned parcels in the neighborhood, it may be mutually beneficial to lease properties to nearby property owners who are interested in maintaining the additional open space. Wyoming County, West Virginia, which acquired a number of riverfront properties through the Hazard Mitigation Grant Program, leases each site to neighboring landowners for $25 a year. The lessees take care of the properties, and according to FEMA, "[w]here houses once stood, horses now graze, gardens flourish, and open green space is abundant."[163] For a community that wants more flexibility in who can legally occupy the land and for what duration, a lease can be a good option for formally assigning management responsibilities to another person or organization.

Conclusion

Buyouts create opportunities for communities to create public assets while restoring the ecological integrity of the floodplain and strengthening the community's resilience to future disasters. Communities have put lands acquired as part of a buyout to a variety of uses, including community gardens, dog parks, greenways, and restored wetlands. Understanding the legal and practical requirements of HMGP-funded floodplain acquisitions is fundamental to maximizing the potential benefits of acquired parcels. Considering habitat and conservation opportunities in addition to community resilience can maximize the benefits of floodplain buyout projects.

Once properties have been acquired, a community must decide how it will maintain and monitor the land. Different management options entail varying degrees of investment

and attention. Choosing the best-fit project for a community requires consideration of various factors:

- Local, state, and federal laws and regulations;
- Geographical layout or distribution of acquired property and the broader landscape; and
- Available resources, including funding, knowledge, and capacity for planning and executing a successful project.

Communities can take certain steps to avoid obstacles and address the challenges that come with voluntary floodplain acquisitions as well as post-buyout projects. Obstacles include getting owners to sell property, deciding on the best management option for patchwork distributions, and funding the acquisition and projects.

Well-informed planning, community input, and clear goals and objectives are important for the long-term success of a project. Partnerships can reduce certain planning burdens on the local government (or HMA applicant) and engage diverse groups in the local community or region. Management and maintenance responsibility can be distributed strategically in a similar fashion. Ultimately, the HMGP and other hazard mitigation funding programs provide an opportunity for smart growth and management of ecosystems in a way that maximizes environmental and community benefits.

For additional information about the HMGP and other FEMA hazard mitigation programs, see FEMA's Hazard Mitigation Grant Program website (*at* www.fema.gov/hazard-mitigation-grant-program). Further details about ELI and the UNC-IE's case studies on communities that have acquired properties using the HMGP can be found on ELI's website (*at* https://www.eli.org/sustainable-use-land/floodplain-buyout-case-studies). Finally, ELI's handout for wetland and conservation agencies or organizations, *Strategic Partnerships for Floodplain Buyouts: An Opportunity for Wetland Restoration,* provides a concise explanation of HMGP-funded floodplain acquisitions and presents ways for interested organizations to get involved in the planning, execution, and maintenance of projects that promote wetland and conservation management goals. You can find the handout and more information about ELI and UNC-IE's project on our Floodplain Buyouts website (*at* https://www.eli.org/land-biodiversity/floodplain-buyouts).

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For more information about the other two HMA programs, see "Additional Federal, State, and Local Grant Programs" section, beginning at p. 10 of this guide.
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[20] *See* 42 U.S.C. § 5170c *and* 44 CFR 206.432(b). *See also:* FEMA, "Hazard Mitigation Assistance," available at http://www.fema.gov/hazard-mitigation-assistance. Once the total amount exceeds $2 billion dollars, the fixed percentage decreases to 10%; if the total exceeds $10 billion, the percentage decreases to 7.5%. A state with an approved Enhanced State Mitigation Plan in effect before the disaster declaration is eligible for HMGP assistance up to 20%. 44 CFR 206.432(b).
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[29] FEMA, "Hazard Mitigation Assistance Guidance. Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program, Federal Emergency Management Agency," February 2015, Page 26, http://www.fema.gov/media-library-data/1424983165449-38f5dfc69c0bd4ea8a161e8bb7b79553/HMA_Guidance_022715_508.pdf.
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[31] The selection criteria states are required to use in selecting HMGP mitigation measures are listed at 44 C.F.R. 206.435.
[32] The Sandy Recovery Improvement Act of 2013 (SRIA) added Section 429 to the Stafford Act, directing the development of an expedited and unified interagency EHP review process, also known as Unified Federal Review, to ensure that Federal agencies coordinate EHP compliance for projects. SRIA amends the Stafford Act, which authorizes HMGP, and provides FEMA with the authority to implement the provisions of Program Administration by States (PAS) as a pilot program. As a result, states or federally-recognized tribes wishing to participate in the PAS pilot may be delegated certain implementation responsibilities traditionally fulfilled by FEMA. *See* FEMA, "Hazard Mitigation Assistance Guidance: Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program," February 2015, Page 99.
[33] *See* 44 C.F.R. 206.434(c)(5). For a full list of HMGP eligibility criteria, see 44 C.F.R. 206.434(c).
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[35] FEMA, "Homeowner's Guide to the Hazard Mitigation Grant Program," February 2017, http://www.fema.gov/media-library-data/1424984123917-7c01edf0d1a0309bc09987bd47e75e32/HomeowneBrochureFinal.pdf.
[36] 44 C.F.R. § 80.9.
Note regarding homeowner compensation or acquired property: If the property was flooded in the *past year*, the community can offer pre-flood fair market value (FMV), which is not always given. If the property has not incurred a *recent* flood then compensation is usually just FMV, even if the property has had to be repaired or has suffered from flooding in the past.
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Note that if the acquisition cost including site restoration is $276,000 or less per property (or average of all properties in the project), the project is cost-effective and does not have to undergo the traditional BCA. *See* FEMA, "Cost Effectiveness Determinations for Acquisitions and Elevations in Special Flood Hazard Areas Using Pre-calculated Benefits," *Federal Emergency Management Agency* (October 8, 2013), Available at https://www.fema.gov/media-library/assets/documents/85014.
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[47] 42 U.S.C. § 4104c.
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[50] 42 U.S.C.A. § 5133. *See also:* FEMA, "Hazard Mitigation Assistance Guidance. Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program, Federal Emergency Management Agency," February 2015, Page 26, http://www.fema.gov/media-library-data/1424983165449-38f5dfc69c0bd4ea8a161e8bb7b79553/HMA_Guidance_022715_508.pdf. *See also:* FEMA, "FEMA Federal Insurance and Mitigation Administration Fact Sheet," 2016, https://www.fema.gov/media-library-data/1455711373912-17d561db31cc299667dc5c60811165d1/FY16_PDM_Fact_Sheet.pdf.
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Community gardening in South-East Toronto*", Health Promotion International* 22:2 (2007), Pages 92-101, available at http://heapro.oxfordjournals.org/content/22/2/92.abstract (finding community gardens were perceived by gardeners to prov*i*de numerous health benefits, including improved access to food, improved nutrition, increased physical activity and improved mental health); Teig, E. et al., "Collective efficacy in Denver, Colorado: Strengthening neighborhoods and health through community gardens," *Health and Place* (2009), doi:10.1016/j.healthplace.2009.06.003 (concluding that "social organizational underpinnings of gardens give rise to a range of social processes, including social connections, reciprocity, mutual trust, collective decision-making, civic engagement and community building, all important processes associated with improving indivi*d*ual health and strengthening neighborhoods"); Been, V. and J. Voicu, "The Effect of Community Gardens on Neighboring Property Values," *New York University Law and Economics Working Papers* (2006), Paper 46, available at http://lsr.nellco.org/nyu_lewp/46/ (finding that: "a community garden has a statistically significant positive impact on [value of] residential properties within 1000 feet of the garden;" "the impact increases over time;" and "gardens have the greatest impact in the most disadvantaged neighborhoods").

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[104] McPhearson, T. "Vacant Land in Cities Could Provide Important Social and Ecological Benefits." New York: *The Nature of Cities* (August 21, 2012). Web. Available at http://www.thenatureofcities.com/2012/08/21/vacant-land-in-cities-could-provide-important-social-and-ecological-benefits/.
[105] These terms are used for purposes of this guide. Other scholars and practitioners may use different terms to describe the same level of restoration activity or intervention. *See generally* Hobbs, R. A. et al., "Intervention Ecology: Applying Ecological Science in the Twenty-first Century," *BioScience* 61 (June 2011), Pages 442-450, available at http://www.colorado.edu/philosophy/hale/ENVS5200/Hobbs%20--%20Intervention%20Ecology.pdf (commenting that with respect to the "differences between restoration per se and other activities such as rehabilitation … the terminology remains confusing and inconsistently used" in the literature).
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[108] *Id*.
[109] "City of Montevideo, Minnesota Flood Hazard Mitigation Program." *Minnesota Senate: Environment, Economic Development, and Agriculture Division* (n.d.). Available at http://www.senate.mn/committees/2013-2014/3063_Environment_Economic_Development_and_Agriculture_Division/leveetestimony.docxopen_in_new.
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[113] Id.
[114] ELI and UNC-IE. "Rocky Mount, North Carolina." *Environmental Law Institute(* October 2016). Page 10. Available at https://www.eli.org/sites/default/files/eli-pubs/rockymountnccasestudy.pdf.
[115] FEMA, "Loss Avoidance Study," *Federal Emergency Management Agency* (October 2013), Page 4, available at https://dps.mn.gov/divisions/hsem/hazard-mitigation/Documents/Austin%20Loss%20Avoidance%20Study%202013.pdf.
[116] FEMA has published a handbook summarizing some of the best practices used by communities around the country to successfully acquire properties and convert them into open space while taking into account "multi-objective planning, the goal of which is to use open space to fulfill as many of a community's objectives as possible." *See* FEMA, "Property Acquisition Handbook for Local Communities," *Federal Emergency Management Agency* (updated May 2014), Page IV-I, available at https://www.fema.gov/media-library/assets/documents/3117.
[117] *See, e.g*, FEMA, "Property Acquisition Handbook for Local Communities," *Federal Emergency Management Agency* (updated May 2014), Page IV-10.
[118] There are many resources available that provide tips for writing your goals and objectives. One example is *Tips for Writing Goals and Objectives*, available on the University of Southern California's website at : https://practicum.usc.edu/docs/Tips_for_writing_Goals_and_Objectives.pdf.
[119] *See, e.g*., EPA, "Water Topics," *U.S. Environmental Protection Agency*, available at www.epa.gov/owow/watershed/outreach/.

[120] *See generally* The Nature Conservancy and Ducks Unlimited, "Accelerating Wetland Restoration in the Chesapeake Bay Watershed: Obstacles and Solutions," N.p. (October 2015), available at http://www.aswm.org/pdf_lib/accelerating_wetland_restoration_%20interview-report_final.pdf.
[121] The list of activities to which federal funds can be dedicated is detailed in FEMA's *Hazard Mitigation Assistance Guidance Addendum.* FEMA, "Addendum to the Hazard Mitigation Assistance Guidance*," Federal Emergency Management Agency*, February 27, 2015), available at http://www.fema.gov/media-library-data/1424983165449-38f5dfc69c0bd4ea8a161e8bb7b79553/HMA_Addendum_022715_508.pdf.
[122] *Id*., Page 6. The guidance specifies that aesthetic improvements and landscaping are non-allowable costs.
[123] *See, e.g.,* "Cost Analysis & Financial Strategies: On-line Lesson," *Northern Arizona University* (2001), http://www.prm.nau.edu/prm423/cost_analysis_lesson.htm (citing Wirth Design Associates, "Long Range Master Plan for Park & Recreation Planning Standards," Flagstaff, AZ (1997)).
[124] RPI Consulting, Inc.. "State of Colorado Small Community Park & Recreation Planning Standards (2003). Available at http://www.town.ridgway.co.us/parkscommittee/2003_Parks_Standards_DoLA.pdf.
[125] For more on these types of grants, see http://www.eli.org/sites/default/files/eli-pubs/d22-06.pdf.
[126] *See* US EPA Office of Water, "Getting in Step: A Guide for Conducting Watershed Outreach Campaigns, 3rd Ed.," *U.S. Environmental Protection Agency* (November 2010), available at https://cfpub.epa.gov/npstbx/files/getnstepguide.pdf; US EPA Office of Water, "Getting in Step: Engaging Stakeholders in Your Watershed, 2nd Ed.," *U.S. Environmental Protection Agency* (May 2013), available at https://cfpub.epa.gov/npstbx/files/stakeholderguide.pdf.
[127] *See* US EPA Office of Water, "Getting in Step: Engaging Stakeholders in Your Watershed, 2nd Ed.," *U.S. Environmental Protection Agency* (May 2013), available at https://cfpub.epa.gov/npstbx/files/stakeholderguide.pdf.
[128] US EPA Office of Water, "Getting in Step: A Guide for Conducting Watershed Outreach Campaigns, 3rd Ed.," *U.S. Environmental Protection Agency* (November 2010), Page 1, available at https://cfpub.epa.gov/npstbx/files/getnstepguide.pdf.
[129] *See* International Association for Public Participation, "IAP2 Spectrum of Public Participation," *International Association for Public Participation* (2007), available at http://www.fgcu.edu/Provost/files/IAP_Public_Participation_Spectrum.pdf.
[130] *See* Smutko, L.S. and M.L. Addor, "Public Participation Guidelines for Park Planning," Raleigh, North Carolina: *Department of Parks and Recreation* (May 2012), available at https://www.ncsu.edu/nrli/decision-making/projects/documents/FinalPublicParticipationGuidelines05-14-12.pdf.
See also Department of Parks, Recreation, and Cultural Resources, "Public Participation Policy for Park Planning," Raleigh, North Carolina: *Department of Parks, Recreation and Cultural Resources* (updated December 2014), available at http://www.raleighnc.gov/content/PRecDesignDevelop/Documents/ParkPlanning/PlanningStudies/PublicParticipationforParkPlanningPolicy.pdfopen_in_new.
[131] Parks and Recreation Department. "Decision-Making Guidelines for Vegetation Management." *County of San Mateo* (June 30, 2006). Available at https://parks.smcgov.org/sites/parks.smcgov.org/files/documents/files/Vegetation%20Management%20Guidelines.pdf.
[132] For more about how a city recognized as a national leader in flood management, Tulsa, decided to identify partners instead of undertaking a project alone, see http://www.rdflanagan.com/Mooser/Mooser.pdf.
[133] Missouri State Emergency Management Agency. "Stemming the Tide of Flood Losses: Stories of Success from the History of Missouri's Flood Mitigation Program." *Missouri Department of Public Safety* (n.d.), Page 71.
[134] The Nature Conservancy. "Floodplains By Design." *The Nature Conservancy* (accessed December 2015). Web. Available at http://www.nature.org/ourinitiatives/habitats/riverslakes/floodplains-by-design.xml.
[135] Floodplains by Design. "Science." *Floodplains by Design* (accessed September 2017). Web. Available at http://www.floodplainsbydesign.org/science/.
[136] Land Trust Alliance. "Find a Land Trust*." Land Trust Alliance* (accessed January 2017). Web. Available at http://www.findalandtrust.org.
[137] ELI and UNC-IE, "Rocky Mount, North Carolina," *Environmental Law Institute* (October 2016). Available at https://www.eli.org/research-report/floodplain-buyout-case-study-rocky-mount-nc.
[138] The ACOE administers these permit programs pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers Harbor Act . U.S. waters include: navigable coastal and inland waters, including lakes, rivers, streams and their tributaries, interstate waters and their tributaries, and wetlands adjacent to navigable and interstate waters. Isolated wetlands and lakes, and intermittent streams are also regulated by ACOE if their degradation could adversely affect interstate commerce. ACOE's jurisdiction extends to the ordinary high water or high tide line. See 33 U.S.C. 1344.

[139] ASWM. "Permits for Voluntary Wetland Restoration: A Handbook." *Association of State Wetland Managers* (November 2013). Available at http://www.aswm.org/pdf_lib/permits_for_voluntary_wetland_restoration_handbook.pdf.
[140] *See* US ACE, "2012 Nationwide Permit Information," *U.S. Army Corps of Engineers* (accessed December 2016), available at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/NationwidePermits.aspx.
[141] Ibid.
[142] US ACE. "Nationwide Permit Reissuance: Questions and Answers." *U.S. Army Corps of Engineers* (Feb. 15, 2012). Available at http://www.usace.army.mil/Portals/2/docs/civilworks/nwp/NWP2012_qa_15feb2012.pdf. Note: Division engineers can add regional conditions to NWPs to restrict their use and ensure those activities result in minimal adverse effects. Contact the Corps' district office to determine if there are any additional conditions for the NWPs in your region.
[143] 25 states have some sort of aquatic resource permitting. See "Vulnerable Waters: Assessing the Nation's Portfolio of Vulnerable Acquatic Resources since *Rapanos v. United States*," *Environmental Law Institute* (August 2011), available at https://www.eli.org/sites/default/files/eli-pubs/d21-06.pdf.
[144] *See, e.g.,* Oregon Department of State Lands, "New Joint Permit Application," *Department of State Lands* (last accessed October 2016), available at http://www.oregon.gov/dsl/Pages/New-Joint-Permit-Application.aspx.
[145] Clean Water Act, Section 401.
[146] *See* Griggs, F.T. and River Partners, "California Riparian Habitat Restoration Handbook," *California Riparian Habitat Joint Venture* (July 2009), Page 36, available at http://www.riverpartners.org/documents/Restoration_Handbook_Final_Dec09.pdf.
[147] Procedural requirements can range from one relatively simple step (e.g., finding of no likely impact) to a series of more complicated and expensive ones (e.g., in depth study and analysis, public notice and hearing).
[147] *See generally* Hobbs, R. A. et al., "Intervention Ecology: Applying Ecological Science in the Twenty-first Century," *BioScience* 61 (June 2011), Pages 442-450, available at http://www.colorado.edu/philosophy/hale/ENVS5200/Hobbs%20--%20Intervention%20Ecology.pdf.
[149] Wilkinson, J.B. et al.. "Wetland and Stream Mitigation: A Handbook for Land Trusts." *Environmental Law Institute* (Sept. 2012). Aavailable at http://www.eli.org/research-report/wetland-and-stream-mitigation-handbook-land-trusts.
See also
The Nature Conservancy, "Long-Term Stewardship Calculator: Accompanying Handbook," *The Nature Conservancy* (May 2016), available at https://www.conservationgateway.org/ConservationPlanning/ToolsData/Documents/Long-Term%20Stewardship%20Calculator%20Handbook.pdf. The long-term calculator tool can be found at http://www.conservationgateway.org/ConservationPlanning/ToolsData/Pages/stewardshipcalculator.aspx.
[150] City of Springfield. "Jordan Creek." Springfield, Missouri: *City of Springfield*. Web. Available at https://www.springfieldmo.gov/2139/Jordan-Creek.
[151] See Addendum at Section A.4.5; 44 CFR Section 80.19(b). Page 10. Available at: https://www.fema.gov/media-library-data/1424983165449-38f5dfc69c0bd4ea8a161e8bb7b79553/HMA_Addendum_022715_508.pdf.
[152] Ibid. *Also see* Florida Department of Community Affairs, "Handbook for Floodplain Acquisition and Elevation Projects," *Florida Department of Community Affairs* (January 2001)," available at: http://www.floridadisaster.org/publications/FloodplainAcqElevProj.PDF.
[153] Ibid
[154] See Addendum at Section A.4.5; 44 CFR Section 80.19(b). Available at: https://www.fema.gov/media-library-data/1424983165449-38f5dfc69c0bd4ea8a161e8bb7b79553/HMA_Addendum_022715_508.pdf.
[152] Ibid.
[156] FEMA, "Property Acquisition Handbook for Local Communities," *Federal Emergency Management Agency* (updated May 2014), Pages IV-8 and IV-9.
[157] A qualified conservation organization is an organization whose purpose has been conservation for at least 2 years before the opening of the application period that resulted in the transfer of the property interest to the sub-applicant, pursuant to Section 170(h)(3) and (4) of the Internal Revenue Code of 1954, as amended, and the applicable implementing regulations. The transferee must document its status as a qualified conservation organization where applicable.
[158] See Addendum at Section A.4.5; 44 CFR Section 80.19(b). Page 10. Available at: https://www.fema.gov/media-library-data/1424983165449-38f5dfc69c0bd4ea8a161e8bb7b79553/HMA_Addendum_022715_508.pdf.
[159] For land acquisition/easement guidance through the National Fish and Wildlife Foundation, see NFWF's Guidance to Applicants Requesting Funds for the Acquisition of Interests in Real Property, available at http://www.nfwf.org/whatwedo/grants/applicants/Pages/acquisitions-easements.aspx.

For information about easements through the Nature Conservancy, see TNC's Conservation Easements website at http://www.nature.org/about-us/private-lands-conservation/conservation-easements/all-about-conservation-easements.xml.
Pennsylvania's Department of Conservation and Natural Resources and the Pennsylvania Land Trust Association serve as excellent examples of easements for conservation. For more information, including sample easements and tools for deal-making, see: Pennsylvania Land Trust Association, "Acquiring Land & Easements," *Conservation Tools,* available at http://conservationtools.org/guides/category/2-acquiring-land-easements.

[160] 44 CFR 80.19(b)(2).

[161] For example, families adjacent to two properties acquired with HMGP funds are paying GreenBrier County a token rent of $1 to use the land for family gardens in West Virginia. See FEMA's "Mitigation Works" (2011), Page 17, available at http://nhma.info/uploads/bestpractices/2011%20-%20Best%20Practices%20-%20Acquisitions%20Buyouts.pdf.

[162] In order for lease-to-own to be an option, the lessee still must be an entity qualified to take title under the Hazard Mitigation Grant Program restrictions described previously.

[163] FEMA. "Mitigation Best Practices." *Federal Emergency Management Agency* (March 25, 2011). Page 26. Available at http://nhma.info/uploads/bestpractices/2011%20-%20Best%20Practices%20-%20Acquisitions%20Buyouts.pdf.

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