Resourcing Revolutionary Resilience

Transformational Climate Adaptation Finance Toolkit
Resourcing Revolutionary Resilience:
Transformational Climate Adaptation Finance Toolkit

Created by:
The NAACP Environmental and Climate Justice Program
The University of Maryland Francis King Carey School of Law

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Environmental and Climate Justice Program’s Mission
Advancing the leadership of frontline communities to eliminate environmental and climate injustices and ignite an environmental, social, and economic revolution.

NAACP Mission
The mission of the National Association for the Advancement of Colored People (NAACP) is to ensure the political, educational, social, and economic equality of rights of all persons and to eliminate race-based discrimination.

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Introduction

The NAACP and Environmental and Climate Justice Program
The NAACP believes that environmental justice and climate justice are civil and human rights issues. We started the Environmental and Climate Justice Program in 2009, after decades of civil rights advocacy, because we saw a connection between issues like pollution and sea levels rising and the affect those are having on the health and well-being of African American communities. On the national level, the NAACP’s Environmental and Climate Justice Program staff supports the leadership of state and local NAACP units addressing environmental and climate justice issues in their own communities. Together, we are working to make long-lasting, real change for our communities.

The Environmental and Climate Justice Program has three main goals:

<table>
<thead>
<tr>
<th>Reduce harmful emissions, particularly greenhouse gases.</th>
<th>Advance energy efficiency and clean energy policies and practices.</th>
<th>Strengthen community resilience in the context of climate adaptation.</th>
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<tr>
<td>Combines action on shutting down coal plants at the local level with advocacy to strengthen development and monitor enforcement of air, soil, and water quality regulations at the federal, state, and local levels. Also includes a focus on corporate responsibility and accountability.</td>
<td>Works at the state level on campaigns to pass renewable energy and energy efficiency standards while simultaneously working at the local level with communities, small businesses, unions, and others to develop demonstration projects to ensure that communities of color are accessing revenue generation opportunities in the new energy economy, while providing safer, more sustainable mechanisms for managing energy needs for our communities and beyond.</td>
<td>Ensures that communities are equipped to engage in climate action planning at the municipal and community levels that integrates policies and practices on building resilience, advancing food justice, advocating for transportation, housing, and water equity and upholding civil and human rights in emergency management, in response to sea level rise, and more.</td>
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**Why the NAACP and UMB Joined Forces to Create This Toolkit**

In its ten-year history of existence and work with frontline communities, the NAACP’s Environmental and Climate Justice Program has committed its resources to addressing the systemic inequities that have resulted in the vulnerabilities of certain communities and populations through orchestrated oppression, as well as resulting in the degradation in our ecosystem that has brought us to the state of catastrophic climate change.

Given that our current economy is predicated on the notion of their being winners and losers and through exploitation and domination of groups that are marginalized within the system, it is our aim to dismantle the oppressive forces and structures that persistently render our communities disproportionately vulnerable to the impact of climate change. While this is the long term goal, the steps to get there and ensure the survival of our communities as we progress towards those aims, mean that we must equip communities to reform existing system to the greatest extent possible and make the best it can from the available policies, programs, instruments, and funding streams.

As such, the NAACP worked with the Small Business & Community Equity Development Clinic and the Environmental Law Clinic at the University of Maryland Francis King Carey School of Law to develop this toolkit with the aim to build the capacity of frontline communities to develop/reform/advance *equitable* means of financing climate adaptation. This toolkit is part of a broader Transformational Climate Adaptation Finance Initiative that will steadily provide more and more resources for frontline communities.

Instead, this toolkit should help your community understand adaptation financing options, systems, structures, challenges, and needs. Armed with this information, your community can determine what steps to take in the near, mid, and long term to ensure its sustainability and resilience in the face of climate change.

*The master’s tools will never dismantle the master’s house.* They may allow us to temporarily beat him at his own game, but they will never enable us to bring about genuine change.

- Audre Lorde
Resourcing Revolutionary Resilience: Transformational Climate Adaptation Finance Toolkit

Transforming the Economy and Adapting to Climate Change Must Go Hand-in-Hand
By: Dorcas Gilmore, Thornton McKinney and Jacqui Patterson

In Highland Park, MI in the Detroit metropolitan area, when the municipality was challenged by paying for their streetlights, Detroit Edison eventually not only cut off their electricity supply, but they later came and removed the light poles. Out of concern for issues of safety related to driving in the dark and crime, the community decided to harness local power literally and figuratively. They came together and raised the money to buy new light poles, as well as solar panels to power the street lights. Now, they own and operate their own street light system and don’t have to be concerned that an outside force, compelled only by profit, will take away a resource that is essential to their safety and wellbeing.

The loss of basic public infrastructure and underfunding of municipalities are critical issues in many cities and towns. In the case of Highland Park, the community organized and combined a community ownership strategy to solve a basic problem of adequate and reliable street lights. This is an example of the type of community-led efforts that are happening across the country and require more attention and greater access to capital.

While candidates line up their policy platforms, we remind all of the real circumstances of the most marginalized of society and compel those vying for office to take heed of the fact that the best solutions are led by the people, for the people.

While the federal government commissions a “Presidential Committee on Climate Security” to scrutinize the results of the National Climate Assessment that was conducted by their counterparts, socio-political marginalization, leading to infrastructure disparities and other threats to the health and livelihoods of communities of color, continue to result in vulnerabilities that challenge any notion of resilience to the very real impacts of climate change. Here — in the wealthiest nation on earth — the stark contrast between those marginalized and those of political and economic means paints a bleak picture of the baseline from which we are seeking to build resilience:

- Nearly 22 percent of households of color experience food insecurity, as compared to 10 percent of white households.[i]

- In Baltimore, many low-income residents experienced water shutoffs, while the city’s governmental and commercial customers, accounting for more than half of the $40 million in then-outstanding water bills, were left largely undisturbed. A similar situation occurred in Detroit.[ii]
● Low-income individuals, communities of color, and vulnerable persons pay the highest proportions of their income for energy, and consequently are at the highest risk of dealing with utility disconnections.[iii] Tragically, with these circumstances, too many have paid the price of energy poverty with their very lives, with a recent example being a New Jersey grandmother who died after the electricity she needed to operate her respirator was cut off for non-payment.[iv]

● People of color are far more likely to experience homelessness, even when accounting for poverty rates.[v] For example, African Americans represent 40% of the homeless population despite representing only 13 percent of the general population. [vi]

● People of color have lower overall levels of health insurance coverage,[vii] and generally experience more illness, have worse health outcomes, and suffer from premature death at higher rates than their white counterparts.[viii] The Latinx and Native American populations are two and three times more likely, respectively, to be uninsured than White Americans; and African Americans are 70% more likely to be uninsured than White Americans. [ix]

● The effects of mass incarceration are pernicious and widespread, with African American adults being five times more likely to be imprisoned than white Americans. Mass incarceration has been linked to poorer health outcomes, contributing to mental health disorders, diabetes, asthma, hypertension, HIV, hepatitis C, and even higher rates of infant mortality while building wealth building for those who are advancing prison privatization.[x]

Each of these statistics illustrates how our political system, our economy, and our governance structure are failing broad swaths of society through benign neglect at best and systematic exploitation at worst. In a nation of such tremendous wealth and opportunity, these are outcomes that should never be. A system that is so deeply flawed that results in persistent social, economic, and political marginalization can not be made right with just a few tweaks to apparatus that is designed for structural oppression. This underscores the need for transformative change — a change that can best be effectuated through proactive efforts to cultivate a vibrant solidarity economy, built on principles of cooperation, interdependence, and deep democracy.

“They Tried to Bury Us, They Didn’t Know We Were Seeds.”

Rooted in a deep history of resilience, many communities besieged by disinvestment, discrimination, and displacement, are already showing us the way forward. These communities on the frontlines of climate injustice and economic injustice are developing innovative solutions to an extractive and inequitable economy.
To spotlight models that are working across the country, the NAACP Environmental & Climate Justice Program along with the University of Maryland Carey School of Law’s Small Business & Community Equity Development Clinic and Environmental Law Clinic are hosting a Transformational Climate Adaptation Finance Initiative Summit on March 4th. The March 4th event will be the launch of the NAACP Environmental & Climate Justice Program’s Transformational Climate Adaptation Finance Initiative. The initiative will focus on building an economy rooted in equity, justice, and resilience for all communities to systemically address climate injustice and other circumstances resulting from social, political, and economic marginalization.

For instance, multiple communities are taking action on climate change impacts that are exacerbated by pre-existing vulnerabilities. Coastal communities, confronted with land loss, flooding and a variety of other issues as the result of climate change, have begun advocating for measures, such as wetland preservation and stringent enforcement of land use regulations being advanced by the Houma Nation in Louisiana. Youth-led, community-level political engagement is being led by national groups such as the Sunrise Movement and state and local groups such as Jolt in Texas. Planning for relocation in the face of rising sea levels has forced a discourse between governments and indigenous communities about land buy back and seizure policies such as recent negotiations with the Isle de Jean Charles Band of the Biloxi-Chitimacha-Choctaw Tribes. The Gulfport, Mississippi NAACP as well as the Longview Texas NAACP each responded to food insecurity that is made worse by climate driven shifts in agricultural yields, by developing and sustaining a network of community gardens that are providing nutritious fruits and vegetables to communities that previously lacked access.

In addition to efforts aimed at addressing specific felt impacts of climate change, communities are organizing to shift economic systems by beginning to build the solidarity economy: The Kheprw Institute, for example, is working to foster greater social equity through youth-led initiatives to establish a local system of resource sharing and cooperative governance; the Fab Lab network is seeking to democratize access to tools for technical invention to facilitate local entrepreneurship as well as piloting a local currency model that keeps wealth circulating in communities and repels extractive forces from encroaching; and

Even as the Transformational Climate Adaptation Finance Initiative launch gets underway today, communities across the South are feeling the brunt of disasters driven by inequitable systems where outcomes are exacerbated by discriminatory policies and practices.

The current crisis along with the daily impacts of climate injustice call us to act now to not only adapt to climate change and to equitably fund adaptation for all communities, but also to change the underlying economic inequalities that are often at the heart of the death and destruction wrought by natural and human-created disasters including the travesties of sea level rise driven displacement and food scarcity resulting from shifts in agricultural yields.
We must build on local examples and grow the seeds of economic and environmental transformation. And following the work of many communities, our elected officials must not simply give lip service to the need for change in the aftermath of disaster and during campaigns, they must work with communities to deliver policy changes that make economic democracy, climate justice, and community wellbeing not only priorities, but non-negotiable, mandatory standards of our society.

We know transformation is possible, because many communities are leading the way forward to a just, equitable, and democratic economy. We also know that if we truly hope to achieve the oft spoken ideal of a nation that is “indivisible with liberty and justice for all,” this transformation is a moral imperative.

“When the Kerner Commission told white America what black America has always known, that prejudice and hatred built the nation’s slums, maintains them and profits by them, white America could not believe it. But it is true. Unless we start to fight and defeat the enemies in our own country, poverty and racism, and make our talk of equality and opportunity ring true, we are exposed in the eyes of the world as hypocrites when we talk about making people free.

- Shirley Chisholm

[ii] https://rewire.news/article/2015/05/21/baltimore-detroit-criminalizing-low-income-people-shutting-water/
[v] https://endhomelessness.org/time-change-findings-sparc-study-race-homelessness/
[ix] https://www.kff.org/uninsured/state-indicator/rate-by-raceethnicity/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D
[x] https://www.americanprogress.org/issues/race/reports/2018/06/05/451647/mass-incarceration-stress-black-infant-mortality/
Defining Foundational Terms

**Environmental Justice**
We define environmental justice as the fair and equal treatment of all people regardless of race, color, national origin, gender, sexual orientation, gender identity, ability, or income level, etc. in the development, implementation, and enforcement of environmental laws, regulations, and policies. At the heart of our approach to achieve environmental justice is to elevate community leadership and decision-making in every step to make their environment a safe and healthy place to live.

**Examples of Environmental Justice initiatives:**
- Air quality regulations that are stringent and ensure constant monitoring and enforcement.
- Public policy that ensures all people have access to affordable and safe water.
- Access to affordable and healthy foods for all.

**Climate change** is a shift in weather patterns over time. One of these changes is global warming, which is the increase in the temperature of the earth’s near-surface air and oceans. Climate change is driven by emissions of greenhouse gases including carbon dioxide—which is emitted through the burning of fossil fuels in energy production—and made worse by deforestation, as forests play a key role in absorbing carbon dioxide. Because of climate change, we experience more floods, droughts, hurricanes, tornadoes, sea level rise, heat waves, forest fires and other issues.

**Climate Justice**
The NAACP recognizes that climate change is real and the effects of climate change hit African American, low-income, and other frontline communities first and worst. Climate justice is an extension of environmental justice. It recognizes that the effects of climate change – increased floods, hurricanes, tornadoes, sea level rising, drought, shifts in agricultural yields, etc. – impact people who already experience inequity more than those who experience inequity less in our society. As climate justice advocates, we work to uphold human and civil rights through advancing equity based policies, principles, and practices. We recognize the injustice of those suffering the most from climate change, as well as those who are left out of decision making on regulations, legislation, and programming. For more information on how climate change disproportionately impacts communities of color and low-income communities, check out this blog post: [https://www.enterprisecommunity.org/blog/2018/12/climate-change-disproportionately-affects-low-income-communities](https://www.enterprisecommunity.org/blog/2018/12/climate-change-disproportionately-affects-low-income-communities).
Frontline Communities

in the context of climate justice, are neighborhoods or populations of people who are directly affected by climate change and inequity in society at higher rates than people who have more power in society. They are “on the frontlines” of the problem. For example, people of color, people who have lower incomes, people who have disabilities, children, people who are elderly, people who are LGBTQ, women, etc. have less advantages and access to resources in our society than other people. In the context of climate change, people who experience oppression because of race, income, gender, sexual orientation, disability, gender identity, age, etc. are more likely to lack resources and protections in our society in general; and even less access to resources and protections not only to adapt to our changing climate but also to pass policies and legislation that are fair and just.

When we pull back the curtain and take a look at what our ‘colorblind’ society creates without affirmative action, we see a familiar social, political, and economic structure - the structure of racial caste. The entrance into this new caste system can be found at the prison gate.
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– Michelle Alexander
Nuances of Climate Adaptation Finance

This toolkit discusses financing options for community development generally, and examines how to finance projects to address specific adaptation efforts. For example, community development block grants could be used to tear down an abandoned dilapidated structure and build a new one, and the SeedMoney Challenge Grant may be used to pay for a community garden on the roof of the new structure.

Community organizing is absolutely critical to accessing funds for climate adaptation. While there are a variety of programs from many different sources, there are significant limitations to who can access those programs. Since this toolkit is for communities, many of the programs discussed will be ones that community groups (particularly ones organized as nonprofits and/or cooperatives) can directly access. However, there are also many programs that direct funds to state and local governments only; for these programs, community groups and members can involve themselves throughout the decision-making process. Thus, even if the funds are not directly accessible to your community group, the group can still influence where the money eventually goes. Simply put, adaptation

Where your community is and who its members are will affect how much access it has to financial resources. This toolkit will help your community self-evaluate and determine what sort of position it is in with respect to accessing financial resources for climate change adaptation.

It is important to note that many of the financial resources discussed in this toolkit were created by historically inequitable systems and institutions. For example, the community of Isle de Jean Charles, in South Louisiana, in the early 2000s decided that it needed to relocate because the effects of sea level rise and coastal erosion threaten the very existence of the land that the community inhabits. The Isle de Jean Charles community has worked with a variety of groups and governmental entities to ensure that their relocation efforts are as minimally harmful to the community, and have had some serious success. Their success mostly comes from organizing, cooperating, and having some time. If this community hadn’t realized that it would need to relocate relatively early, it would very likely be in a position where it would have very little input in the relocation process; it would instead look more like a rescue mission.

Some of the ways frontline communities experience finance-related disparities in climate adaptation efforts include:

- **Discriminatory and racist creditworthiness determinations** result in communities of color, women, and low-income persons lacking access to affordable debt financing. This means that taking out a loan to pay for adaptation might be more expensive for a single woman of color than it is for a married white man. Today, there are many protections for “fair lending,” but the harmful effects of past practices have not worn off.

- **Discriminatory and racist housing policies** have resulted in communities of color and low-income persons living in closer proximity to environmental hazards.
Not only is this a result of these communities being steered toward lower valued properties and excluded from higher value properties, it is also because polluters have selected these communities for their sites. This results in their land being worth less than more privileged communities. Since land is often the most valuable asset that an individual or family owns, communities of color and low-income persons are less likely to be offered favorable loan terms and interest rates, combined with explicitly discriminatory lending practices. Similarly, if a community’s only viable option is to relocate, it will be very difficult for individuals in that community to sell their property for a price that allows them to purchase new property of otherwise equal quality.

- **Lower quality building materials** mean that properties in communities of color and low-income communities are more susceptible to the harmful effects of climate change. This could mean that the same climate threat (like stronger storms) poses a greater risk to lower-income persons, because their property will be more damaged than wealthier persons.

- **Undocumented persons** are less likely to be able to access financing for adaptation because financial tools and instruments, including ones recommended in this toolkit, either outright require citizenship or require submission of documentation that undocumented persons can only get by risking criminal charges or deportation.

### Solutions to Discriminatory Financial Practices

Communities of color and low-income persons have historically lacked access to financing for projects in their communities. As is discussed throughout this toolkit, many of the barriers are the result of discriminatory and inequitable practices. However, there is nothing inherently discriminatory about finance. This means that the inequitable outcomes experienced by communities are the result of human decisions, thus, by elevating equity in decision-making, these barriers can be removed.

<table>
<thead>
<tr>
<th>Discriminatory or Inequitable Practice</th>
<th>Solution</th>
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| The “Dual-Credit” Market: Capital markets and mainstream financial services, such as credit unions, prime loans, and lines of credit, are rarely offered to communities of lower-income persons and persons of color. Further, lack of financial education means that these communities aren’t even aware of the importance of the quality and type financial products they use. This results in these | Short term:  
- Require fringe/ alternative financial service providers to report timely payments to credit reporting agencies so that communities who only have access to these services can build credit  
- Require credit reporting agencies to treat timely payments to fringe/ alternative financial service providers the same as |
communities only having access to “fringe/alternative financial services,” such as pay-day lenders, pawn shops, and sub-prime lenders. Often, providers of fringe financial services do not make consistent and timely reports to credit reporting agencies/credit bureaus, meaning that it is impossible to build strong credit by using these services. Compounding the problem is the reality that many of the owners of the businesses that offer fringe financial services are not community members, which perpetuates extractive practices.

The National Fair Housing Alliance has significant resources on the dual-credit market: https://nationalfairhousing.org/access-to-credit/

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<th><strong>Identifying &amp; Correcting Credit-Reporting Errors</strong></th>
<th><strong>those made to mainstream financial service providers</strong></th>
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<tr>
<td>Credit reporting agencies favor creditors to customers when it comes to correcting errors, regardless of whether the creditor is mainstream or fringe. Additionally, there is no requirement that a creditor notify a customer when the creditor reports negative credit information to the credit reporting agency. This means that if the creditor makes a mistake and reports negative information, the customer is responsible for finding this out. While there are ways to correct errors, the credit reporting agencies typically rely on the creditor to conduct an investigation to determine whether there was an error. If the creditor does not make timely and consistent reports to credit bureaus, the customer will have to conduct an investigation on their own.</td>
<td>Require all financial service providers to provide information on how different financial products affect credit</td>
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<td></td>
<td>Do not include negative credit history in credit score/creditability determinations if the supplier of that negative information does not also include positive credit history</td>
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**Long term:**
- Incentivize mainstream financial services to enter communities of lower-income persons and persons of color
- Make financial literacy a required element of high school education, and allow parents and other community members to attend classes
- Retroactively build the credit of users of fringe/alternative financial services by auditing the records of such providers and transmitting records of timely payments to credit reporting agencies
- Incentivize community-ownership of financial service providers
- Slowly disincentivize fringe/alternative financial service providers from existing (moving too quickly could eliminate all financial resources in a community)

**Identifying & Correcting Credit-Reporting Errors:**

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<th><strong>Short term:</strong></th>
<th><strong>Long term:</strong></th>
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<td>Require creditors to immediately notify customers of a negative credit event, and prohibit credit reporting agencies from reducing credit scores until the customer has received notice from the creditor (or after the creditor has made reasonable efforts to notify the customer)</td>
<td>Establish a public and independent entity to investigate alleged errors</td>
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<tr>
<td>Establish a streamlined and uniform dispute resolution procedure that</td>
<td>Establish a streamlined and uniform dispute resolution procedure that</td>
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creditor “verifies” that the negative information was “correct,” often customers are limited to suing the creditor to correct the error, which is prohibitively expense for many customers. Thus, credit customers suffer the consequences of creditors’ mistakes.

provides attorneys to customers who cannot afford them and require losing creditors to pay winning customers’ attorney fees and costs (but do not require losing customers to pay winning creditors’ expenses)

- Implement heavy penalties for creditors that regularly make errors
- If a dispute arises, require the credit reporting agency to report the customer’s credit as it was prior to the alleged error until the dispute is resolved
- If a creditor is found liable for discriminatory or fraudulent conduct, eliminate the negative credit history reported by this creditor

**Accounting for Redlining:** Part of the New Deal included efforts to provide mortgage assistance to communities, and part of this process included color-coding neighborhoods. Neighborhoods outlined in red were considered “hazardous,” and were not offered high-quality loan products because these communities were considered bad investments. If a neighborhood included minorities, especially black people, the neighborhood was typically outlined in red. This is one of, if not the, primary factors contributing to the racial wealth gap. While redlining no longer exists, the effects do. To this day, property in formally redlined neighborhoods is worth less than other, similarly situated neighborhoods. With respect to finance, this means that communities of persons of color have assets that are worth less than those of their white counterparts.

To read more about the how redlining contributes to the racial wealth gap, check out this article in the Washington Post and the links within the article: https://www.washingtonpost.com/news/wonk/wp/2018/03/28/redlining-was-banned-50-years-ago-its-still-hurting-minorities-today/?utm_term=.a18463542567.

**Short term:**
- Educate the public on the history of redlining and what it means for communities today

**Long term:**
- Enhance the credit scores of people who live in, or formally lived in, redlined neighborhoods
- Incentivize mainstream financial service providers to offer affordable products to people who both currently live in redlined neighborhoods and who formally lived in these neighborhoods
- Reduce property taxes on property within redlined neighborhoods to (a) compensate property owners for reduced property values and (b) increase the resale the value of such property.
### Renting Does Not Build Credit

**Renting Does Not Build Credit:** Paying your mortgage helps you build strong credit, paying your rent does nothing for your credit. Lower-income persons and persons of color are more likely to rent than to own, meaning that they are less likely to build their credit from paying for their housing. For many people, their housing represents their largest monthly expenditure. This problem primarily stems from the fact that landlords are not subject to financial regulations requiring them to report timely rent payments to credit reporting agencies. Additionally, the most widely used credit scoring model, FICO 8, does not include rent payments in the calculation. With that said, FICO 9, which is the newest FICO model, does include rent payments; also, the big three credit reporting agencies, Experian, Equifax, and TransUnion, will include rent payments when reported.

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<tr>
<td>• Continue to phase out FICO 8</td>
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<td>• Request that landlords report rent payments to credit reporting agencies</td>
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<th>Long term:</th>
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<tr>
<td>• Require landlords to report rent payments to credit reporting agencies</td>
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### Mortgages Rely on Credit

**Mortgages Rely on Credit:** To access an affordable mortgage (or a mortgage at all) you need good credit and a steady income. Given all of the barriers to credit that communities of minority persons face, this means that a race plays a major role in determining whether someone has access to an affordable mortgage. That is, a white person with the same income as a black person is more likely to have better credit, and, therefore, more likely to be able to become a property owner. As is discussed above and throughout, the benefits of property ownership are substantial and long lasting.

<table>
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<td>• Educate potential homebuyers on models like those of the Neighborhood Association Corporation of America (NACA), which offers more affordable mortgage products lower to moderate-income persons, and provides financial and homeownership education (learn more about NACA here: <a href="https://www.naca.com/about/about-naca/">https://www.naca.com/about/about-naca/</a>)</td>
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<th>Long term:</th>
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<tr>
<td>• Incentivize more models like NACA</td>
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<td>• Incentivize traditional mortgage lenders to discount the impact of credit scores for applicants who are members of communities that have historically lacked access to credit (this may require changes to discriminatory lending practices laws)</td>
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<tr>
<td>• Create entities willing to purchase unaffordable mortgages issued to persons who are members of</td>
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communities that have historically lacked access to credit, and restructure those mortgages to reflect the mortgagees true ability to pay

- Audit mortgages issued to persons who are members of communities that have historically lacked access to credit and, for the mortgagees who have unaffordable mortgages, take steps to mitigate (such as restructuring the mortgage, reducing property taxes, or making direct payments)
- Set up a fund that is financed by fines, judgements, and settlements from discriminatory lenders and use that money to subsidize future mortgages for persons who are members of communities that have historically lacked access to credit

**Government Collection of Penalties:** When a creditor violates the law and gets caught, they typically have to pay a fine to the government. However, it is often the creditor’s customers, not the government or the public, who is harmed most by the illegal behavior. Of course, the government can use the money from these finds and judgments to promote the general welfare of society, and, more specifically, enforce the law against other bad creditors. Still, a customer whose credit has been ruined by the illegal behavior is in not directly compensated for their loss.

**Short term:**
- Do not include negative information reported by a creditor convicted of a crime or required to pay a fine to the government

**Long term:**
- Allocate a portion of the fines, judgments, and settlements to go directly to the customers
- Use the funds from fines, judgments, and settlements to audit the records of past creditors that have been convicted of a crime or had to pay a fine and eliminate negative reporting by these creditors from the credit reports of their customers
**Sample Climate Adaptation Financing Action Checklist**

- Organize community members who are interested in environmentally focused development efforts.

- Evaluate your community’s needs regarding climate adaptation.

- Evaluate the current status of development in your community.

- Determine whether meeting the adaptation needs should be part of overall community development efforts.

- Determine whether some of your community’s adaptation efforts could be part of revenue generating activities.

- Determine what aspects of your community’s adaptation efforts should be carried out by a tax-exempt entity, for-profit entity, or both.

- Establish a plan for forming the entities you need to carry out your adaptation efforts.

- Advertise the entity and its proposed activities to build public interest.

- Develop well-thought out plans for the actual adaptation efforts (including considerations related to engineering, regulations, finances, and timelines).

- Determine what kinds of resources your community needs and develop a resource raising plan:
  - Conduct asset mapping in the community and in the networks to which your community is connected to determine what resources your community already has at hand.
  - If applicable, locate government resources to finance your efforts.
  - If applicable, locate private resources to finance your efforts.

- Conduct an equity analysis on the financial resources available.

- Provide the community members with your findings and analyses and give them adequate time to review and ask questions.

- Consider the community members’ opinions and document a response to all legitimate concerns.

- If possible, generate your own revenue.

- Assemble all materials necessary to apply for grants and loans.
Apply for grants and loans.
The Toolkit at a Glance

The Big Picture on Equitable Climate Adaptation Finance
This introductory section helps frame the remainder of the toolkit. In this section we introduce important framing and language related to equity in climate adaptation finance.

Module 1: Key Terminology and Concepts
This module looks at some of the foundational aspects of climate adaptation, equitable community development, general financial information, and policies related to these areas.

Module 2: Sea Level Rise
This module explores community led initiatives to combat Sea Level Rise. It is further divided by responses sea-level rise, and discusses how to fund these responses.

Module 3: Extreme Weather
This module considers options that communities have to minimize the damage caused by extreme weather events, finance immediate post-disaster responses, and how to rebuild.

Module 4: Shifts in Agricultural Yields
This module considers the affects of shifts in agricultural yields, particularly health and wellness, access to water, and land use. The module is further divided to address how shifts in agricultural yields affect rural communities and urban communities differently.

Module 5: Putting It All Together: Liberatory Economy Principles and Practices in Action in Communities
This module highlights new economy models of climate adaptation that chart a course for transformative change and provide potential for replication in other geographic areas.
Introduction
Scientists widely accept that the climate has changed, it will continue to change, and even if all humans on earth immediately adopt all of the best mitigation practices, the damage already done will require humans to adapt to the changed environment. Climate “mitigation” refers to efforts to reduce additional greenhouse gas emissions in the future - for example, requiring filters to be placed on the smokestacks of coal-burning power plants. Climate “adaptation” on the other hand, refers to how society can adapt to the effects of climate change. If mitigation is the cure, adaptation is the treatment. Most environmental experts suggest that responding to climate change will require both mitigation and adaptation efforts. This toolkit focuses primarily on climate adaptation and specifically on tools that communities can use to finance climate adaptation projects. Traditional examples of climate adaption projects include the following:

- A waterfront community notices the tides are coming in higher and higher each year and so they put their homes on stilts.
- A community begins to regularly experience stronger storms than its structures were engineered to withstand, so they reinforce those structures.
- A farming community notices that its natural sources of irrigation are providing less usable water and transitions to crops that use less water, and uses portions of its land for non-farming purposes.

However, the NAACP has determined that it’s critical to significantly expand its operational definition of climate adaptation measures. In order to truly prepare our communities, who face multiple vulnerabilities wrought from historic marginalization and oppression, we must go beyond infrastructure improvements and advance a deeper, broader view of the components of adaptive resilience building.

Further, many of the financial resources currently available in the US are products of an extractive economy. Since communities and societies are in the very early stages of adaptation, there is the opportunity to plan ahead and create transactional structures that more equitably distribute the costs and benefits of adaptation. Hundreds of years of humans extracting natural resources from the earth and using them to develop societies has resulted in serious harm to the environment and massive inequality between producers and consumers of such resources. Similarly, hundreds of years of discriminatory and unscrupulous financial practices have resulted in marginalized communities having less access to financial resources, further perpetuating their marginalization. With this in mind, community-led climate adaptation presents opportunities to recognize the harmful results of our past actions and respond to the risks
posed by them in ways that benefit the natural environment while uplifting the community through economic development that utilizes more equitable financial tools, products, and systems.

**Equity Analysis Considerations for Proposed Climate Adaptation Projects**

1. **Who proposed the project and why?**
   - Was it the community? Which members of the community? What are their goals in accomplishing the project? Do any community members object, and if so, why?
   - Was it the government? Federal, state, or local? Which specific agencies? Do they have a record of decision?
   - Was it an organization that is not affiliated with the community? Who makes their decisions? What is their mission? What are their goals? Where do they get their funding? What is their role beyond the proposal? Why did they choose this location? What is it about the community members that made them choose this community?
   - Was it a business, and if so, what aspect about the project do they find profitable?

2. **Who is responsible for the project’s need?**
   - Is it in response to sea level rise, extreme weather events, or shifts in agricultural yields? If so, is there more than one actor who may be responsible?
   - Did a large nearby institution organization, corporation, or some combination, cause some environmental harm?

3. **Who will benefit from the project in the short-term?**
   - Are there specific areas of the community that will benefit, and if so, which areas? How will those benefits be distributed among individuals and groups? Did all members contribute to the project equally? If any members contributed less than other members, did they have a good reason? If an individual contributes to the project in a way other than by giving money, who decides the value of that individual’s contribution?
   - Will it be outside investors? Who are these investors? Why did they invest? What made them choose your community in particular? Have they made public statements regarding the project? Are there any public documents you can access related to project (particularly with the Securities and Exchange Commission or local planning and permitting authorities)? Are they invested in other climate adaptation projects?
   - Will it be the broader public? What are the characteristics of the other communities that makeup the broader public? Does this include other political districts, such as a different county, state, or country?
   - Will it be the government? Which governments? In what ways?
4. Who will benefit from the project in the long-term?
   ➢ Ask the same questions as short-term

5. Who is planning the project?
   ➢ Is it the community? Which specific members of the community? Are businesses involved? Who is paying for the planning? How long will planning take? Who decides what a "good" plan is? What are the criteria for a "good" plan? Is there a short-term, medium-term, and long-term plan, and if so, who is making the decisions for each?
   ➢ Is it the government? Which specific agencies? How are those agencies funded? What is the legal authority that the agency has for making a decision? How are they deciding who to include in the decision-making process? Can your community enter into a Memorandum of Understanding (MOU)?
   ➢ Is it outside organizations? What are their goals and missions? How are they funded? Who is making their decisions? Why did they choose this community? Are they willing to let the community be part of the decision-making process, and if so, in what capacity? Are they involved in other adaptation projects, and if so, where?
   ➢ If some combination of community, government, and outside groups are involved in the planning process, to what degree is each? Why does there need to be more than one organization?

6. Who will carry out the physical labor to complete the project?
   ➢ Will it be the local community where the project is taking place? Who defines "local" and how? Which members? Are their members whose circumstances are such that they cannot perform physical labor? Who is paying them? What are their opportunity costs (as in, could they be doing other things that earn them more money)?
   ➢ Will it be outside organizations? Are they for-profit, and if so, what aspects of the project do they find profitable? Are they tax-exempt, and if so, what is it about this project that allows them to perform the work tax free (for example, is it charitable)?
   ➢ Will it be the government? Which governments? Why aren’t they using contractors? What is their authority to act?
   ➢ Will it be a business? Who owns the business? Who is paying them? Why do they see this project as profitable?

7. Where is the project going to take place?
   ➢ Will it be on private property? Who owns that property? If it’s taking place on more than one owner’s private property, does any one property owner get more benefits than another or bear more costs? What is the property owner’s intention after the project is finished? Is the property owner willing to grant rights to others to use or benefit from the property? How does the project affect the value of the property? Who determines the project’s
impact on the property?
- Will it be on public property? Who is responsible for maintaining the property? Will the project impact the public’s ability to use the property, and if so in what ways? What is the plan for the property once the project is finished?
- Is this an urban project? How many communities will benefit and bear costs? What are the demographic characteristics of the communities that will benefit and bear costs? Are any government entities involved? How will the project affect the communities’ cultures?
- Is this a rural project? (ask the same questions as for urban projects)
- Is this a coastal project or an inland project?

8. How long will the project take to complete?
- Who is setting the timeline? What criteria did they use to set the timeline? Have they done this sort of project before?
- Who decides when it is finished? What does “finished” mean? What happens if there is a dispute about when the project is finished?
- What happens if things don’t happen on time? If a target date is missed, who is harmed and who benefits?

9. Will the project generate revenue?
- Where does the revenue go? Does it go to a for-profit entity, tax-exempt entity, government, or some combination, and exactly which type? Will the revenue be taxed?
- Who is responsible for managing the revenue? Are they taking a portion of the revenue to cover expenses for managing the revenue?

10. Who decides if the project is successful?
- Is it the community? Which specific members of the community? What if the project ends up harming outside communities? What are the criteria to determine success? Is there a pre-determined idea for what success looks like?
- Is it the broader public? What are the characteristics of the communities that make up the broader public? Why does the public get to decide whether the project is successful? Does it matter what percentage of the public thinks the project is successful (for example, if 51% of the public finds the project successful, is it acceptable to ignore the other 49%)?
- Is it outside organizations? Who within those organizations makes this determination? What are their criteria? Are they willing to help if they deem the project unsuccessful? How do they benefit from a successful project? How are they harmed by an unsuccessful project?
- Is it businesses? What kind of entities are they (corporations, LLCs, benefit corporations, cooperatives, etc.)? Are they local businesses? How do they determine success? How important is profitability in terms of defining success? Have they contributed any resources to the project? How do they benefit from the project? If they determine the project is
unsuccessful, will they help make it successful?

11. If someone is harmed by the project who is potentially legally liable?
   ➢ What measures/agreements are in place to ensure equitable redress resulting from harm for all who are impacted?

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**Equitable Climate Adaptation Generally**

Georgetown Climate Center’s “Opportunities for Equitable Adaptation in Cities” report can help you better understand what equitable adaptation projects look like:


Also, this excerpt from a scholarly article provides seven principles of equitable adaptation, and the citations it provides can be helpful:

https://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?referer=https://www.google.com/\&httpsredir=1\&article=1527\&context=sdlp

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**These are the times to grow our souls. Each of us is called upon to embrace the conviction that despite the powers and principalities bent on commodifying all our human relationships, we have the power within us to create the world anew.**

- Grace Lee Boggs
Grounding Climate Adaptation in a Just Transition Framework

The current US economy is based on capitalistic structures that frequently benefit large institutions, particularly corporations solely intent on maximizing shareholder profits, at the expense of the less economically and politically powerful members of society. This is especially true for financial markets.

Getting to an economy that equitably distributes costs and benefits will take organizing, power building, and a concerted strategy.

As we consider models for adaptation programming, we should ensure that whatever structures/processes we put in place are ones that are on the path to moving society away from an “extractive economy” and toward a “living economy.” Adaptation is a relatively new concept, and successful adaptation projects require a variety of parties. As such, if we act strategically, we can seize opportunities to create more democratic decision-making models of organizing adaptation projects.

As this toolkit will show, many of the financial resources available for climate adaptation projects are products of an extractive economy. As such, as a civil rights advocacy organization, it is our role to use the power of the NAACP to reform these products to the greatest extent possible to remove the elements that drive inequities while creating and advancing new systems, policies, programs, practices and tools that are rooted in regeneration, cooperation, and deep democracy.
To move away from extraction and domination and towards a society built on regeneration and cooperation, we need a complete and systemic transformation. The transitions we must make to get there include:

<table>
<thead>
<tr>
<th>1. Drilling and burning for power</th>
<th>→</th>
<th>Harnessing the sun and the wind</th>
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</thead>
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<tr>
<td>2. Burying or burning our waste</td>
<td>→</td>
<td>Recovering, reusing, and recycling waste</td>
</tr>
<tr>
<td>3. Trucking and shipping our food</td>
<td>→</td>
<td>Locally produced food that is nutritious and accessible for all</td>
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<tr>
<td>4. Privatizing the essential resource of water</td>
<td>→</td>
<td>Acknowledging water as a human right and ensuring access to this precious resource for all.</td>
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<tr>
<td>5. Displacing people from home and land</td>
<td>→</td>
<td>Upholding housing as a human right, protecting land from appropriation, and ensuring access to a place called home for all.</td>
</tr>
<tr>
<td>6. Commoditizing people and labor</td>
<td>→</td>
<td>Upholding living wages and workers’ rights for all.</td>
</tr>
<tr>
<td>7. Surveilling, profiling, criminalizing, incarcerating, and/or militarization based on skin color and country of origin</td>
<td>→</td>
<td>Prioritizing restorative justice, rehabilitation where necessary, and peace.</td>
</tr>
<tr>
<td>8. Tokenization, lip service, and superficial diversity</td>
<td>→</td>
<td>True shifts in leadership, ownership, and power in decision making to frontline communities.</td>
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Raising Black Children—female and male—in the mouth of a racist, sexist, suicidal dragon is perilous and chancy. If they cannot love and resist at the same time, they will probably not survive.

-Audre Lorde

As we consider the baseline from which we are working, as we seek to advance transformation, the European Energy Agency created this flow chart to show the movement of adaptation finance. As is evident, the role of communities has been minimal:

Systems change is about addressing the root causes of social problems, which are often intractable and embedded in networks of cause and effect. It is an intentional process designed to fundamentally alter the components and structures that cause the system to behave in a certain way.

–Wikipedia

Linking Adaptation to Community Economic & Equity Development

“Community Economic Development” refers to the ways that a community’s economy develops. One of the more common examples of this is an old run-down shopping center being turned into a mixed-use facility with living, working, and recreational spaces. Often, community economic development incorporates equity considerations, but equity isn’t necessarily the goal.

“Community Equity Development” refers to ways of making economic development more equitable. It is this focus on equity that distinguishes it from community economic development. Thus, equity development ensures that the members of the community benefit from the economic developments in their community. If the economic development is turning the old shopping center into a mixed-used facility, equity development is ensuring that the community members have a say in deciding just what those mixed uses are, and that the community members are the primary beneficiaries of the use of the facility.

With respect to financing economic development, “displacement” has proven to be a major problem for equitable development. In fact, communities on the frontlines have renamed “Urban Renewal” as “Urban Removal” to highlight this dynamic. Often, purportedly well-intentioned developers will target an economically distressed
neighborhood for new developments. These developers may even take meaningful steps to include the community – bringing community members into the decision-making process, guaranteeing that community members have access to jobs once the development is complete, etc. If the community members are not the owners of the development, though, then profits flow out of the community and to the developers. Further, when the development does well, if community members are not the owners of the development, then they may not be able to afford increased property values. This results in the community being displaced, all while developers earn profits and gentrifiers briefly benefit from relatively low rents.

This is particularly relevant to adaptation because communities are already at risk of displacement. Thus, adaptation projects in communities can either accelerate harmful displacement, or can help avoid it. Consider a community that uses stilts to elevate structures, and the average property value increases by 20%: Will individual property owners be able to pay for increased property taxes? What happens to wealth generated by that increased property value? Can that wealth be used to offset the additional costs to individual community members?

Here are a few resources on displacement and how to prevent it:

- https://howhousingmatters.org/articles/can-affordable-housing-programs-prevent-displacement-changing-urban-neighborhoods/

While some communities have developed equitably, many have not. Frontline communities, especially those comprised of persons of color and low-income persons, are often the ones suffering from the most inequitable development. Since adaptation often means restructuring the economic development in a community, it presents opportunities for equitable development.

Here are some considerations when evaluating how to incorporate adaptation measures into broader community development efforts, meaning development efforts that have the potential to uplift the economic conditions of the community as a whole.

- What is the degree of economic development in your community?
  - Is your community a suburban neighborhood that mostly features single family homes and supporting businesses? If so, broader community development may seem less appropriate, though should not be ruled out. For example, a waterfront community in a suburb of a large city that has relatively high household incomes and is otherwise diverse, or a low or moderate income urban community where members have self-determined
that they are thriving and resilient, may choose to focus on specific adaptation projects that are focused on infrastructure.

- If the community members are not thriving, if the community is fighting to survive, or only some members are thriving and most are not, the community may be ideal for broader development efforts that can incorporate adaptation efforts.

- What are the features of the economic development?
  - Is it in a newly economically distressed area? If so, there are resources available to your community for broader development efforts that can incorporate adaptation.
  - How many grocery stores are available in walking distance? What types of grocery stores are they? Grocery stores and types are indicators of the degree, quality, and equity of economic development. An indicator of success is that all community members have access to affordable fresh foods. Alternatively, if the only options for lower income persons are packaged food stores, broader community development efforts may be necessary.
  - What are the types of local businesses and who are the targeted consumers? Is there a wide variety of businesses designed to serve a range of consumers across the socioeconomic spectrum? If all of the businesses in your community are targeted at taking advantage of low-income persons’ financial disparities, such as pay-day lenders, a broader community development approach may be necessary.
  - Why are those businesses in your community? Are the businesses in your community there because the owners want to be a part of your community, or do they just want the money your community has to spend?

- Who is served by that economic development?
  - Are community members the owners, employees, and consumers of local businesses? If so, focusing more on adaptation seems more appropriate.
  - Is infrastructure designed for cars, bicycles, pedestrians, and people with disabilities? If cars only, it may be worth engaging in broader community development efforts to allow for environmentally friendly modes of transportation.
  - Is there an educational institution in your community, and if so, who are the students, faculty, and staff and where do they live/shop/dine/play? Are there industrial facilities in your community, and if so, who are the owners and employees and where do they live/shop/dine/play? Knowing this information can help you (1) determine whether the entities earning the most from your community are members of your community, and (2) know who you need to negotiate and/or partner with for development and adaptation efforts.

- Who makes decisions about the economic opportunities of your community?
  - Are members of the community actively engaged in planning and approval
of new initiatives? When a new business is coming to your community, who are the first people the business’s owners will want to talk to? If community members are actively engaged in determining the future of the community’s development, focusing on adaptation seems appropriate.

- What is the environmental impact of the development?
  - Have developers taken meaningful steps to preserve the environment? Is your community part of “urban sprawl”?
  - Are there regulations and laws that will prevent future development from causing additional environmental harm?
- Are nearby communities engaged in broader scale development efforts, or are they focusing on adaptation?
  - What are the differences and similarities between your community and these communities?
  - Can you cooperate with them to achieve your goals more efficiently? For example, if a nearby community is building an affordable housing development, you could negotiate a community farm be constructed in the process and can dramatically reduce the cost of constructing the farm.

- What are the financial conditions of the individual community members?
  - Are they financially insecure? If so, broader development efforts are probably necessary.
  - Do they have the financial resources to invest in community development, and if so, to what degree? If so, they should be asked to contribute, and it may be easier or harder to convince them to do so based on whether adaptation is identified as a primary goal.

- What is the adaptation timeline?
  - Is your community in a position where immediate action (1-12 months) is necessary? Are there some aspects of your efforts that can wait 2-3 years before being implemented and some that cannot?
  - Why are you thinking about adaptation now?

Transformation requires constant evolution. It is not a singular event. What matters is whether we—whether this combined generation—will step into the sacred duty and the kuleana (responsibility) of turning back the tide of darkness with the light of hope, life, and mutuality. Across the spectrum of time and space, will we plant and nurture the
seed that reconnects us to us?

- Kaweloku
Module 1

Key Terminology and Concepts
Module 1: Key Terminology and Concepts

Introduction
One of the most challenging aspects of adaptation finance is that many people, in all sectors of society, lack the financial vocabulary to fully grasp how financial products and tools work. Financial systems are can be incredibly exclusionary by means of complex or inaccessible terminology and concepts. While it is imperative that we change the exclusionary nature of these institutions, one way that we can increase equity in the meantime is by improving financial literacy. If community members are expected to make long-term financial decisions with far-reaching effects, they need to know what the general considerations for these decisions are. In this module we outline some of the foundational terminology and concepts related to adaptation finance.

Key Terminology

**Transactions:** In the most broad, general sense, a transaction is an exchange for value. Most transactions exchange goods or services for money. Still, it is important to remember that there is no limit to what can be exchanged (except for things that are illegal to exchange).

One of the most important types of transactions is the "**secured transaction**": generally, this refers to transactions that require the purchaser to put up some form of collateral in order to complete the purchase. When you buy a $10,000 car you may have $1,000 cash to put as a "down payment" and have to borrow the other $9,000 from a bank or credit union that has a right to repossess the car if you fail to pay back the loan-this creates a secured transaction, because the value of the car "secures" the loan. For all secured transactions that are not mortgages, the Uniform Commercial Code, Article 9, provides the legal requirements.

**Assets:** An asset is something that someone owns that has economic value and is expected to provide some sort of future benefit. Most people think of assets as things like real estate or inventory, but it also includes intellectual property (like a patent), goodwill (usually calculated by subtracting the purchase price of a business from the fair market value of its assets), accounts receivable, and many other intangibles.

**Credit:** Credit is simply an agreement that a borrower has with a lender that allows the borrower to get something of value now with the promise of paying for it later.

**Debt financing:** This is really just a shorter way of saying “borrowing money in order to pay for something.” Loans and bonds, discussed above in the tables, are the two most common forms of debt financing.
**Equity:** In finance, equity refers to the value (sometimes money, but not always) left over when liabilities are subtracted from assets. In a for-profit entity, the equity is what the owners of the business are entitled to. For example, if a business only has three work trucks worth $25,000 each and its only liability is a $50,000 balance remaining on a lease agreement, there is $25,000 worth of equity; if this business had 5 shareholders with equal ownership interests, each would be entitled to $5,000.

**Clarification:** In this very simple example, you may have thought “How do the shareholders get $5,000 each if the equity is the value of the trucks and not cash in the bank?” This would be an instance where the equity is simply recorded on the balance sheet, and the shareholders’ wealth would increase in an economic sense, but not in terms of cash. If the business decided to stop operating (“dissolve”), once it sold the trucks and paid off its balance the money left over would go to the shareholders.

**Creditability/creditworthiness:** A determination of how likely a borrower is to pay back a debt; in other words, how likely they are to keep their promise. While “credit” is an important concept, creditability raises much broader concerns.

If a borrower is not viewed as creditworthy, it will not have access to loans at affordable interest rates, if it has access to loans at all. For individuals, creditworthiness is represented by a “credit score” and often very little else. For entities, lenders look beyond the factors that determine an individual’s credit score. This highlights the need to organize – individual community members often lack the creditworthiness needed to access financial resources significant enough to pay for adaptation projects. Lenders typically perceive for-profit endeavors as more worthy of being lent large sums of money than personal projects (even if that is not in fact the case). Unfortunately, centuries of oppression and marginalization, and continuing biases, have resulted in disparities in creditworthiness. This means that, in many instances, the communities most in need of affordable debt financing are least likely to get it, even if they are in fact equally as likely to pay back their debts.

**Liabilities:** Essentially, this is just another way of saying “debts.” The main difference is that liabilities are legal obligations; that is, a business might have a debt that is not technically a liability because there is no legal requirement for the business to repay the debt.
The Four Financial Statements

**Balance Sheet:** the balance sheet of an entity is simply the place where it lists assets, liabilities, and equity. It is called a balance sheet because the assets, listed on the left side, must equal liabilities plus equity, both listed on the right side. Understanding the balance sheet is important because creditors, investors, donors, regulators, and others will want to see an entity’s balance sheet to better understand the financial wellbeing of the entity.

**Cash Flow Statement:** the cash flow statement shows how much cash has come into the entity and how much has gone out in a given time. Knowing this information can help investors and lenders determine whether the entity is positioned to pay its debts.

**Income Statement:** the income statement shows the “bottom line,” or how much the entity spent versus how much it earned. Since not all income is in the form of cash, and not every expenditure is paid for in cash, the income statement will not always mirror the cash flow statement. Knowing this information will help investors and lenders determine whether the entity is financially responsible and profitable (which are not always the same).

**Statement of Shareholders’ Equity:** this document shows the changes in value of shareholder equity over a certain period of time. It is usually part of the balance sheet, but for more complicated business structures it makes sense to have as a separate document. This is important to investors because it shows whether other investors have made a return. (note: this statement is irrelevant to tax-exempt entities because they do not have shareholders.)

All entities should keep excellent financial records. For nonprofits, many states require that these documents are publicly available. More important than compliance, keeping these statements up-to-date and accurate will help determine the entity’s financial position, and therefore its opportunities.

The SEC’s “Beginners’ Guide to Financial Statement” provides more information on these statements: [https://www.sec.gov/reportspubs/investor-publications/investorpubsbegfinstmtguidehtm.html](https://www.sec.gov/reportspubs/investor-publications/investorpubsbegfinstmtguidehtm.html).
Tools, Resources, Examples, and Models for Equitable Climate Adaptation Finance

After your community determines its needs, its vision, and how decisions will be made to meet those needs and realize that vision, the next step is locating the resources to achieve the community’s goals. The remainder of this toolkit reviews tools, examples, and models that can be used to equitably finance climate adaptation. It also provides resources, such as questions, considerations, and links to other sources, to help in the decision-making process for selecting a certain tool or model. The toolkit primarily considers three factors: structure, source, and utility. Analyzing these three factors, in detail, is crucial to making sound decisions about adaptation finance.

- **Source:** *Where the money comes from matters.* Very broadly, money is either public or private. Of course, it’s not that simple. Often, dollars that come from private sources, especially nonprofits, originate from the government. Sometimes, public and private dollars are mixed for a single project. Whether the money comes from a public or private source is relevant to the conditions attached to that money. For example, the federal government sets the floor for anti-discrimination requirements, but some states have stricter requirements. Similarly, certain private entities go much further to advance equity than the government does. Ideally, the sources of your financing promote principles of social equity, support the community, practice inclusive policies, do not have discriminatory pasts, and have some way of redressing parties they’ve wronged.

- **Structure:** *Generally, this refers to the relationship between the entity receiving the money and the entity providing the money.* Thus, this is how the community gets access to the funds. There are many structures provided in this toolkit, and many more outside of it and yet undiscovered. Structure is important because it, too, impacts the conditions on the money. Also, it impacts the utility of the money. For example, if the community group is a neighborhood association that wants to build a community safe room for extreme weather, it may have to use a conduit bond issued by a state that first requires a public vote, then the money be managed and administered through an agency, and that agency uses the installment sale method. In this example, it may be several years before the safe room is built and the community can actually use it.

- **Utility:** *This is about what the money can do.* For example, a general operating grant has a lot of utility because the grant recipient can use that money for pretty much anything. Evaluating tradeoffs for utility is difficult, but this toolkit provides questions, considerations, and resources to help make these evaluations. Consider forming a benefit corporation and issuing stock—yes, you can spend that money in any way to advance the goals of the business, so there is substantial utility in this financing mechanism, but you have to give up some control and ownership of the business.
Pay-As-You-Save: A Model for Equitable Finance

“Pay-as-you-save” refers to using the money that you save because of some new-found efficiency and using it to pay for the project that created the efficiency. That may sounds a little abstract, so consider this example:

- An insurance company determines that a coastal community is likely to experience a catastrophic storm in 15-20 years, and if that happens, the insurance company will have to pay $10 million.
- The insurance company then determines that if all of the houses in the community are elevated 6 feet higher than their current foundation, the expected cost of the storm drops to $3 million.
- Then the insurance company determines that the total cost to raise every home would be $12 million, but that there are enough grants and tax benefits to reduce the out-of-pocket cost to the community to $5 million.
- The insurance company might then be willing to (a) help the community access the grants and tax benefits; and (b) pay the $5 million up-front and allow the community members to slowly pay the insurance company back through the payment of non-reduced premiums.
- This would allow the community members to spend nothing more than they were originally spending while adapting to climate change.

Pay-as-you-save is used to keep housing affordable: By upgrading a housing unit to be more energy efficient, affordable housing can stay affordable. For example, poor insulation in an apartment complex may mean that the average unit is paying $150 in electricity bills each month. If the insulation is upgraded, at a cost of $50,000, the average unit’s monthly bill drops to $125. The building owners and the residents can agree to keep their utility bills at the current monthly average, and the building complex can use the “savings” to pay off the installation cost, and eventually lower the residents’ electricity bills. Otherwise, the apartment might increase rents to pay for the insulation upgrade, which could price residents out of their apartments before they realized the electricity-bill savings.

Why is pay-as-you-save “equitable”? This model recognizes that who is in the best position to pay for something right now isn’t always the same as who benefits the most from it. Generally, it is much easier for insurance companies, developers, utility providers, and other large institutions involved with property ownership, to access the financial resources needed to carry out large projects than it is for individual property owners or renters. Often, these big institutions benefit from the projects, but it is the individual property owner that receives the most benefits. If the large institution pays for the up-front costs of the project, the community members can get the benefits of the project at no additional cost. Further, once the savings pay for the project, or even during the repayment period, the large institution can lower prices for consumers.

- For information on some of the various pay-as-you-save models, check out: https://betterbuildingssolutioncenter.energy.gov/sites/default/files/Energy_Efficien
How is pay-as-you-save related to climate adaptation? By definition, adaptation seeks to reduce the harm experienced by communities as a result of climate change. Almost all of the adaptation efforts referenced in this toolkit create opportunities to save on insurance or utility costs, or both. By planning ahead, communities can negotiate pay-as-you-save plans to help them finance their adaptation activities.

Community Development Corporations and Community Development Financial Institutions can help Equitably Finance Adaptation

By using “community development corporations” (CDCs) and “community development financial institutions” (CDFIs) to access tools traditionally associated with community development efforts, such as US Housing & Urban Development (HUD) grants and discounted loans, communities can more affordably and equitably finance adaptation projects associated with broader community development efforts. In some cases, adaptation projects may themselves qualify as community development.

Community Development Corporations (CDCs)

A CDC is a 501(c)(3) public charity that serves to develop the neighborhoods and areas in which it exists. “Develop” often has many meanings. CDCs help with affordable housing by constructing and operating housing facilities, and since they are nonprofits, charge affordable rates (and often have more equitable agreements with residents than traditional landlords).

CDCs also help with general economic development, neighborhood planning, sanitation and other health initiatives, and occasionally help with education and social services.

How are CDCs relevant to equitable climate adaptation finance? In communities that have the capacity, the decision makers of CDCs are members of the community. If the community determines that adaptation efforts are needed, it can plan and carry out those efforts through a CDC.

CDCs often qualify for grants, and some lenders offer lower cost loans and are more willing to lend to CDCs. CDCs additionally qualify for some tax benefits that lower their costs. The community members are then the ones deciding how the money is spent. Additionally, if the adaptation project (or supporting projects) results in revenue generation, it could relate to the CDC’s charitable purpose and be tax-exempt; the revenue can then go to finance further community development efforts, building resiliency and sustainability.

Since CDCs are public charities that assist their own communities, no individual “profits” from the community. Instead, the revenue generated in excess of costs goes to the CDC, essentially creating a fund to pay for maintenance and additional development. This structure moves communities toward a circular economy, since the majority of the community’s wealth creation is kept in the community.
For more resources on CDCs, [www.Community-Wealth.org](http://www.Community-Wealth.org) provides substantial resources.

*Until the great mass of the people shall be filled with the sense of responsibility for each other's welfare, social justice can never be attained.*

-Helen Keller

**The Cleveland Model:**

Source: [https://community-wealth.org/content/cleveland-model-how-evergreen-cooperatives-are-building-community-wealth](https://community-wealth.org/content/cleveland-model-how-evergreen-cooperatives-are-building-community-wealth)
CDCs Help Communities Adapt to Climate Change in Cleveland:
The “Cleveland Model,” which is diagramed on the previous page, prioritizes equity in community development by including the community members in all aspects of development, from the planning phase to the operating phase.

In 2009, the city of Cleveland launched the Sustainable Cleveland 2019 Initiative, which incentivizes development that will help make Cleveland’s communities more climate resilient. Climate adaptation is one of the main priorities of this initiative. Projects include community farms (http://www.evgoh.co/gcg/) and green housing (https://www.dscdo.org/climate-resilience).

Kresge Foundation grants, which are made directly to the city and then issued as subgrants to CDCs and other neighborhood-level organizations, are one of the primary sources of funding for community-led adaptation efforts in Cleveland. In addition to the Kresge grants, the Cleveland Climate Action Fund was created by several organizations and institutions to provide funding directly to community groups for climate change related projects.

To provide communities with a better understanding of how to equitably carry out community development projects that incorporate climate adaptation (and mitigation), the city of Cleveland and several CDCs created the Neighborhood Climate Action Toolkit, available here: https://d3n8a8pro7vhmx.cloudfront.net/sustainablecleveland/pages/149/attachments/original/1462888931/NEIGHBORHOOD_CLIMATE_ACTION_TOOLKIT-FINAL.pdf?1462888931

To learn more about what's going on in Cleveland, check out:

Community Development Financial Institutions (CDFI)
CDFIs are private financial institutions that are dedicated to affordable financial products, and aim to promote financial responsibility. They primarily serve historically oppressed communities. CDFIs can be for-profit or nonprofit. The Department of the Treasury certifies CDFIs; with this certification CDFIs gain access to a network of other CDFIs, and are eligible to receive financial resources provided by the US Department of Treasury. This allows them to offer more affordable financial products than traditional lenders. Importantly, they are required to provide development services with their financial services.

There are four main types of CDFIs:
- Community Banks
- Community Development Loan Funds
- Community Credit Unions
- Community Development Venture Capital Funds

To learn more about the different types, check out the CDFI Coalition’s breakdown: http://cdfi.org/about-cdfis/cdfi-types/

The US Treasury’s CDFI Fund only provides money to CDFIs, not directly to community groups or individuals. This web page contains information for how to find a CDFI to fund your project: https://www.cdfifund.gov/Pages/FAQ.aspx

There are about 1,000 CDFIs in the US. You can find a list of all the CDFIs in the US, how to become a CDFI, and lots of other information here: https://www.cdfifund.gov/Pages/default.aspx

The Democracy Collaborative also provides significant resources on CDFIs: https://community-wealth.org/strategies/panel/cdfis/index.html

You can contact the US Treasury’s CDFI Fund office by phone, mail, or in person:

Phone: 202-653-0300

Office Address:  
U.S. Department of the Treasury  
Community Development Financial Institutions Fund  
1801 L Street, NW 6th Floor  
Washington, DC 20036

Mailing Address:  
U.S. Department of the Treasury  
Community Development Financial Institutions Fund  
1500 Pennsylvania Avenue, NW  
Washington, DC 20220
CDFI Helps Finance Portland Urban Farm:
Craft3, a relatively large nonprofit CDFI serving Washington and Oregon, provided a loan to Zenger Farm in Portland, Oregon so that they could bring an urban farm to southeast Portland. Zenger Farm is a nonprofit organization dedicated to educating the public about sustainable farming practices to build community resiliency.

In addition to Craft3’s loan, Zenger Farms raised $2 million in loans and equity financing. The project created 12 jobs and preserved 20 acres of landscapes. It also helps 60 families receive healthy food at an affordable price. For more information on this project, visit Craft3’s Success Story’s page: https://www.craft3.org/results/StoriesOfChange/story-details/zenger-farm; or read about Zenger Farms from their site: https://zengerfarm.org/about-the-farm/

Craft3 provides a variety of products, including ones aimed specifically at land conservation, food & agriculture, and Tribal communities. Their loans typically range from $25,000 to $3 million, and they may back their loans with a government guarantee when applicable. Interest rates range from 7-12%, and terms are in the 3-7 years range. They also offer revenue-based payment.

You can view their products here: https://www.craft3.org/Borrow. (Please keep in mind that this is not a recommendation for Craft3, they’ve just made it easy to see what their products cost.)

New Orleans Lower 9th Ward Community Sues Brad Pitt’s “Make It Right” Organization Over Poorly Made Climate Adapted Homes:
Make It Right – New Orleans, LLC is a nonprofit founded by actor Brad Pitt to provide climate adapted housing to the Lower 9th Ward Community in New Orleans, Louisiana. The homes were built to be eco-friendly and were elevated on stilts to prevent future flooding. AMCREF Community Capital, a New Orleans-based CDFI, provided almost $13 million in financing for this project in 2009. In September 2018, Make It Right was sued by the residents of the community because the houses were of low quality – mere rainwater was causing damage. Subsequent reporting found that the organization was not transparent with the community, and often did not include the community in the decision-making process.

This is an example of how a well-intentioned CDFI can find itself lending to an organization that appears to promote equitable development but in fact does not. For news stories on the lawsuit, check out:

- https://www.theadvocate.com/new_orleans/news/article_258e70e8-b5e4-11e8-95d0-030296bbc61f.html
Consider Structuring Adaptation Projects to Qualify for CDC and CDFI Assistance:

Earlier we provided some considerations for deciding whether an adaptation project could be part of broader community economic development efforts. If you find that your adaptation project can be best achieved by making it part of economic development, consider looking to see what local CDCs and CDFIs are available, and what sort of projects they fund.

For example, if your community needs to adapt to rising sea levels, it may find that some sort of living shoreline with a breakwater would provide the most benefits at the lowest cost. By looking to see if local CDCs and CDFIs have been part of similar efforts, you may be able to structure your project similarly to those other projects to better position yourself to access financing and assistance. For example, a local CDFI may have recently provided financing for a living shoreline that uses native flowers and oyster shells; if you have some flexibility on project materials, you may want to source your materials from the same sources as this other project.

The "structure" essentially means the relationship between the various parties needed to carry out the project (so to “structure a project similarly” would be to hold similar community-feedback events, apply for the same grants, work with certain types of organizations, use certain entities, etc.). Additionally, if you find that your adaptation project is better suited just as an adaptation project, but you are having difficulty finding financing, it could be worth going back to the drawing board to see if you can incorporate broader community development somewhere in the project to have greater access to funds.

However, trying to force a structure onto a project just to try to have a better chance of getting financing can be risky. You could end up benefitting in the short-term only to run-up large long-term costs. It is important to speak with professionals about the potential risks and benefits of the project’s structure.
Government Funding for Community Economic Development

Government Funding for Community Economic Development can help equitably finance adaptation. While there are few programs designed to provide financing for adaptation specifically, there are many programs aimed at community economic development. By incorporating adaptation efforts into broader community development, communities may be able to find government financing more readily than if they focused on adaptation specifically. This is attainable when keeping in mind a “systems change” approach to climate adaptation means that we transform all aspects of our economy.

For a comprehensive list of federal funding for community development efforts, check out [http://www.reconnectingamerica.org/resource-center/federal-grant-opportunities/](http://www.reconnectingamerica.org/resource-center/federal-grant-opportunities/). But please note that many of the programs listed are not directly accessible to community groups.

There are three major sources of federal funding for community development:

1. Community Development Block Grant (CDBG)

   The CDBG is a HUD program. Typically, HUD determines how much money a state is entitled each year and issues grants to the state totaling that amount. The state then issues subgrants to local governments, who work with CDCs and other local organizations to fund and carry out community development projects.

   Additionally, some municipalities are considered “entitlement communities,” and they receive funds directly from HUD. These local governments, just like the ones that get subgrants from states, work with CDCs and other local organizations to fund and carry out community development projects. Another aspect of the CDBG program is the “Section 108 Loan Guarantee.” Under this program, states and entitlement communities can receive a portion of their CDBG grant as loans from private lenders that are guaranteed by the federal government (that is, the federal government will pay back the lender if the state or local government fails to).

   Why would a state or local government prefer a loan to a grant? The Section 108 loans can be several times larger than what a community is entitled to receive from a grant, which can help finance projects in desperate need of completion. Importantly, the state or local government can re-loan the funds to local community development groups, including CDCs, which allows these groups to access discounted loans (but note that the profits from the interest payments will typically flow out of the community and into the accounts of large financial institutions).
To learn more, visit: https://www.hudexchange.info/programs/section-108/.

For more information on the CDBG, check out HUD’s website: https://www.hud.gov/program_offices/comm_planning/communitydevelopment/programs

Also, the Democracy Collaborative provides a brief overview of the CDBG program: https://community-wealth.org/strategies/policy-guide/cdbg.html.

For some of the ways the CDBG can be used for adaptation, check out Georgetown’s Adaptation Clearing House: https://www.adaptationclearinghouse.org/resources/hud-community-development-block-grant-program.html.

2. Low Income Housing Tax Credit (LIHTC)

Essentially, the LIHTC gives tax credits to development entities (usually CDCs or for-profit developers), who then sell the tax credits to investors. The money raised from selling the tax credit can then be used to finance affordable housing projects. To qualify as a low-income housing project and be eligible for LIHTC benefits, either (a) 20% or more of the units are rent restricted and occupied by persons with incomes at 50% of the area median income or less; or (b) 40% or more of the units are rent restricted and occupied by persons with incomes at 60% of the median income or less.

Generally, the LIHTC helps to finance new construction and renovations. This makes the LIHTC potentially valuable for adaptation. If new housing is to be built in an area that expects harm from climate change, the extra money needed to make the housing climate change ready can come, at least in part, through the LIHTC. More importantly, adaptation projects can be framed as “renovation” projects and can qualify for the LIHTC.

For some general information on the LIHTC, the Democracy Collaborative is useful: https://community-wealth.org/strategies/policy-guide/lihtc.html

3. HOME Investment Partnership Program

This is another HUD program. The program awards grant dollars to states and municipalities. Importantly, the state or locality must set aside 15% of the funds they receive to support “Community Housing Development Organizations” (CHDOs). A CHDO is a nonprofit with at least 1/3 of its board made up of either (a) representatives of low-income neighborhood organizations; (b) residents of low-income neighborhoods; or (c) other low-income community residents. Often, a CDC qualifies as a CHDO.

For more information on the HOME Investment Partnership Program generally,
Like the other two programs, the HOME program can be used to develop housing that is climate adapted. If a community knows that residential structures need to be adapted, it can integrate adaptation projects as part of general low-income housing projects, and acquire funds through HOME.

Other Grants and Funds for Economic Development

- Economic Development Administration (EDA): https://www.eda.gov/funding-opportunities/
  - Regional Innovation Strategies Program: provides money to 501(c)(3) organizations (and state, local, and Tribal governments), to help with start-up cost, and is further broken down into two programs:
    1. i6 Challenge- Up to $750,000
    2. Seed Fund Support Grant Challenge- up to $300,000
  - Funding Opportunity Number: EDA-HDQ-OIE-2019-2005942

- Public Works and Economic Adjustment Assistance (EAA) Programs: Provides investments that support construction, non-construction, technical assistance, and revolving loan fund projects under EDA’s Public Works and EAA programs. Grants and cooperative agreements made under these programs are designed to leverage existing regional assets and support the implementation of economic development strategies that advance new ideas and creative approaches to advance economic prosperity in distressed communities. EDA provides strategic investments on a competitive-merit-basis to support economic development, foster job creation, and attract private investment in economically distressed areas of the United States.
  - Funding Opportunity Number: EDAP2018

- HUD
  - Choice Neighborhoods Program- provides money to rehabilitate distressed housing, further separated to two grants:
    1. Planning Grants
    2. Implementation Grants
  - https://www.hud.gov/cn
  - 501(c)(3) organizations are eligible recipients, but this grant most often goes to public housing authorities; check out the different years
award recipients to see who has been receiving grants and how much

- Funding for 2019 has not been announced

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**Note on Opportunity Zones:** The three programs listed above are tried and true methods of achieving affordable housing outcomes, and ones that, with some creativity, can help fund climate adaptation projects. Recently, the US Congress created a new instrument- Opportunity Zones. These may be better or worse at helping to equitably finance climate adaptation through community development efforts, but it is too soon to tell.

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**Black and Third World people are expected to educate white people as to our humanity. Women are expected to educate men. Lesbians and gay men are expected to educate the heterosexual world. The oppressors maintain their position and evade their responsibility for their own actions. There is a constant drain of energy which might be better used in redefining ourselves and devising realistic scenarios for altering the present and constructing the future.**

-Audre Lorde
**Entities:** As we have said before, organization is absolutely critical to successful community development. When a group of people organizes, they sometimes form what is referred to as an “entity.” Really, “entity” just means “a thing with a distinct existence.” When we use the term, we mean a “legal entity,” which is an entity with a distinct legal existence. This means the entity has its own legal rights – it can do things like sue and be sued, own property, and enter into contracts. Whether your adaptation efforts are part of broader community development or not, entities can help you finance them.

In most cases, forming a legal entity can help communities carry out adaptation projects because they:

1. Typically have greater access to capital than individuals;
2. Help shield individuals from liability;
3. In the development context, entities help create sustainable and regenerative financing options;
4. Can give much needed legitimacy to a project; and
5. Enhance opportunities for discounted goods and services through economies of scale.

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**Access to Capital**

Some adaptation projects are “capital intensive,” which means that they require large sums of money and are generally longer-term. Individuals in frontline communities are rarely equipped to engage in these sorts of projects alone. By organizing both tax-exempt and for-profit entities, individuals can combine their collective resources and position themselves to take on these projects. For-profit entities in particular often have substantially greater access to financial resources than individuals and nonprofits do. By forming entities like benefit corporations and cooperatives, communities can take advantage of these resources while equitably and responsibly distributing the profits to the community.

**Shielding from Liability**

For LLCs and corporations (which can be nonprofits), the individual owners of the entity are not responsible for paying the debts of the entity from their personal assets. If a business has $100,000 in assets and loses a lawsuit worth $150,000, the person who wins the lawsuit can take all of the business’s assets, but cannot repossess the personal property of the owners of the business to get the remaining $50,000. There are some exceptions, but if the entity keeps good records and keeps all of the its documents completely separate from the owners’ personal documents, the owners’ personal assets are often well shielded.
### Economies of Scale

By forming entities and cooperating with other community-based entities, communities can negotiate with developers, public and private, and other service providers to receive discounts.

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<th>Generating Revenue</th>
<th>Providing Legitimacy</th>
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<tbody>
<tr>
<td>Whether tax-exempt or not, entities can generate revenue, which can help your</td>
<td>When your community applies for loans and grants, or offers goods or services,</td>
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<td>community become self-sufficient and give it access to more valuable financing</td>
<td>there is tremendous value in having an entity with a registered name that anyone</td>
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<td>tools. Since adaptation often presents opportunities to redevelop an area,</td>
<td>can quickly look up. If your community is advocating for funds to be directed in a</td>
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<tr>
<td>communities can plan for developments that have revenue generating features. For</td>
<td>certain way, speaking as a unified community through an entity, like a 501(c)(4)</td>
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<tr>
<td>example, if a community chooses to adapt by starting a neighborhood farm, it can</td>
<td>social welfare organization, helps to show decision makers that the problem is</td>
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<td>form a cooperative organization and grow more crops, or more profitable crops,</td>
<td>community-wide.</td>
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<tr>
<td>than it needs and sell the excess to non-community members for a profit.</td>
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The ability to distribute profits makes for-profit entities desirable from a community wealth-building perspective.

Investors invest in a business because they expect that the business is more likely to earn a profit than it is to fail, and by investing they enter into an agreement with the business to be paid back and earn a profit themselves. Investors in community wealth building efforts often are focused on the financial return and the social return of contributing the community’s social and environmental wellbeing.
Determining whether a community should develop a for-profit entity to advance adaptation efforts

After your community decides what adaptation measures are needed, it can gauge whether a for-profit entity would be helpful in completing those projects. Some of the considerations for making this determination are:

- **What is the anticipated cost of the project?** If the project is relatively expensive (more than the average annual household income for your community), having a for-profit entity to access loans and other financial resources may be helpful, since it could be difficult to raise the money from community members’ donations alone.

- **How long is the project expected to take?** If the project is very long-term (at least 5 years to complete), the need for a for-profit entity is less than for short-term projects. With a long-term project, the community can apply for grants, loans, other programs, and contract with wealthier organizations. However, if the project has commercial revenue-generating potential, a for-profit is more appropriate, regardless of the timeline.

- **What is the revenue generating potential?** If the revenues can be generated by activities that are substantially related to a stated charitable purpose and are otherwise non-commercial in nature, a nonprofit entity could be more appropriate than a for-profit. However, if there is the potential for substantial revenue generation – more than what the entity needs to carry out the community’s adaptation efforts – having a for-profit entity to distribute the profits among community members can help build a more resilient and financially secure community.

- **Who will benefit from the project?** If the project primarily benefits require that a for-profit entity carry out the project.
Benefit Corporations
In traditional corporations, decision makers are *required by law* to prioritize maximizing shareholder wealth. In response to demands that outside stakeholders’ interests also be considered, many states now allow for benefit corporations. Essentially, by stating in the organizational documents that the business will consider things other than shareholders’ financial interest, and by filing those documents under the benefit corporation statute, investors are on notice that the business is not only focused on profits, and therefore cannot sue them for taking the less-profitable but more socially beneficial action. From a financial perspective, the largest downsides of benefit corporations are that they have significant compliance costs and are taxed twice.

Here are some of the ways that benefit corporations can help equitably finance adaptation projects:
- **They can raise significant capital by issuing stock, and the law allows flexibility in the type of stock issued, meaning that community members can have more valuable stock than non-community members (for example, by only allowing community members to purchase stock with voting rights)**
- **Investors are the sort of people and institutions that are concerned about the business’s impact on the world and not just profits**
- **Customers are willing to pay more for a good or service because they know it comes from socially responsible business**

Here are some considerations before using a benefit corporation:
- **Are you willing to give up decision-making authority in exchange for capital, and to what degree?** While a benefit corporation can issue non-voting stock, that stock would generally be considered less valuable, and it may be difficult to find enough buyers at a meaningful price.
  - Policy proposal: incentivize the purchase of non-voting stock by non-community members, such as by reducing the capital gains tax on this stock
- **Does your community have the customer base to support the higher compliance cost and double taxation?** For some communities, these increased costs are not a major issue because there are enough customers with enough resources and demand. However, if the benefit corporation’s target customers are unable or unwilling to purchase the business’s goods and service at a price and quantity that allows the business to make a profit, the business will not survive.

Additional Questions: How many units of stock will be issued? What will the price of the stock be? Will there be different classes of stock? Will there be dividends? What sort of investors will be sought? What is the threshold for considering profits above outside stakeholders? Can you afford to comply with securities regulations? Will financing from stock be enough to begin projects, or will debt be necessary as well? Will you elect S Corp status to be taxed as an LLC? For more information, visit: [https://benefitcorp.net/](https://benefitcorp.net/).

Note on “B-Corp”: The link above will take you to a website affiliated with the private nonprofit organization B Lab. B Lab evaluates and certifies entities meeting certain social-benefit and corporate-responsibility thresholds – an entity with this certification is called a Certified B Corp., and could be an LLC. This certification is completely optional, and is most valuable as a networking and marketing tool (which can be quite valuable). To learn more, visit: [https://bcorporation.net/about-b-lab](https://bcorporation.net/about-b-lab). Of particular value, B Lab has a directory of Certified B Corps, which can serve as inspiration: [https://bcorporation.net/directory](https://bcorporation.net/directory)
Cooperative Corporations and LLCs
Structuring a business as a cooperative allows for collective decision-making and can give members significant autonomy with respect to their personal finances. There are many different forms of cooperative structures, and all have their own benefits and downsides. Choosing whether to organize your cooperative as a corporation or LLC is a major decision, and has serious financial implications. Depending on what state you’re in will affect this decision – some states prohibit nonmembers from owning equity, affecting the ability to attract investors. For financing considerations of cooperatives, visit: http://www.co-oplaw.org/finances-tax/financing/.

From a cost perspective, benefits of choosing an LLC include fewer reporting and internal structure requirements than corporations do.

Here some ways structuring your business as a cooperative can promote equity while earning profit:

- Allows for significant community buy-in, helping community members feel part of the development
- The people producing the goods and services realize their value by sharing in the profits
- In some states and with certain types of cooperatives, there are very low start-up and maintenance costs
- Presents opportunities for localized investment

Here are some considerations before structuring your business as a cooperative:

- Is the business willing to “front” the money if community members lack the resources for the initial buy-in? To realize equitable decision-making, community members should have formal authority within the cooperative, which is typically represented by stock ownership or a membership interest, which requires a transaction to occur. If community members cannot afford to conduct this initial transaction, the business can contract with the community member to essentially say “We will give you this stock or membership interest in exchange for your promise to pay us back, either by working for the cooperative or by some others means that we mutually agree to.” However, not all cooperatives have the financial resources to do this.
- Does the community have the capacity to withstand financial losses when business isn’t going well? The very general purpose of the cooperative structure is to provide benefits for the people who contribute to the success of the business. If the business experiences losses, though, so do the cooperative’s members (at least economically).
- Are you in a state with significant compliance burdens? Some states, like Maryland, have significant requirements for cooperatives, much more than for a typical LLC. Other states, though, treat cooperatives similar to other businesses. Thus, which state you’re in will partially determine how expensive it will be to operate your cooperative.
- Do you need significant capital quickly? Since cooperatives typically demand involvement from their owners (and in some states this is required), it is difficult to get large investors to purchase ownership interests in cooperatives.

Additional Questions: Will the funds received from the initial buy-in be enough to capitalize the coop to the degree that it can afford to begin projects? If not, what is the plan to reach that mark? Will the coop issue stock? What kinds of stock? How many units of stock? What will the price of the stock be? Will the coop issue dividends? Can the coop afford to comply with securities regulations?
**Additional Resources on Benefit Corporations and Cooperatives**

The resources provided in the table below can help you better understand benefit corporations and cooperatives. These resources can be particularly useful in forming the entity. Also, these sources provide examples of models and entities that have worked.

<table>
<thead>
<tr>
<th>Entity Type</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefit Corporation</strong></td>
<td>State-by-state instructions on how to create: <a href="http://benefitcorp.net/businesses/how-become-benefit-corporation">http://benefitcorp.net/businesses/how-become-benefit-corporation</a></td>
</tr>
<tr>
<td></td>
<td>General information: <a href="http://cbey.yale.edu/sites/default/files/CBEY_BCORP_Print.pdf">http://cbey.yale.edu/sites/default/files/CBEY_BCORP_Print.pdf</a></td>
</tr>
<tr>
<td></td>
<td>Most states that allow benefit corporations provide state-specific resources, or an organization within the state does, here are a few: Maryland: <a href="https://www.peoples-law.org/how-form-benefit-corporation-maryland">https://www.peoples-law.org/how-form-benefit-corporation-maryland</a> Colorado: <a href="https://www.sos.state.co.us/pubs/business/FAQs/pbc.html">https://www.sos.state.co.us/pubs/business/FAQs/pbc.html</a> Florida: <a href="http://form.sunbiz.org/pdf/lnhs75.pdf">http://form.sunbiz.org/pdf/lnhs75.pdf</a></td>
</tr>
<tr>
<td><strong>Cooperatives</strong></td>
<td><strong>Worker cooperatives with immigrant and low-income communities:</strong> <a href="https://institute.coop/sites/default/files/resources/386%202013_De%20Barberi%20Outline%20NY%20Co-op%20Network%20Summit.pdf">https://institute.coop/sites/default/files/resources/386%202013_De%20Barberi%20Outline%20NY%20Co-op%20Network%20Summit.pdf</a></td>
</tr>
<tr>
<td></td>
<td><strong>Cooperatives in rural communities:</strong> <a href="https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/tool-legal-rural-home-coops.pdf">https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/tool-legal-rural-home-coops.pdf</a> (note that this is designed for Wisconsin communities, but most of the resources are generally applicable)</td>
</tr>
<tr>
<td></td>
<td><strong>Housing cooperatives:</strong> <a href="https://coophousing.org/resources/owning-a-cooperative/starting-a-new-cooperative/">https://coophousing.org/resources/owning-a-cooperative/starting-a-new-cooperative/</a></td>
</tr>
<tr>
<td>Black-Owned Farming Cooperatives: <a href="http://federation.coop/">http://federation.coop/</a></td>
<td></td>
</tr>
</tbody>
</table>

Cooperatives generally:

- **Seek counsel before forming an entity:** Forming an entity is a legal process, and it is always a good idea to have an attorney assist you. By using the resources provided in the table above, you can get a pretty good idea of what you need to do, but your specific goals in your specific county, state, or territory could result in special legal considerations that only a trained attorney will know. Two options for free legal services are local or regional law schools with community development or transactional law clinics and local or state bar associations with nonprofit and business legal services at free or reduced rates.

- **Note on Cooperative Principles:** There are seven widely accepted cooperative principles. Even if you find that a cooperative is not the best model for your adaptation efforts, incorporating these principles into whatever entity or organization you do form can lead to more equitable outcomes:

  1. **Voluntary and Open Membership:** Cooperatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.

  2. **Democratic Member Control:** Cooperatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary cooperatives members have equal voting rights (one member, one vote) and cooperatives at other levels are also organized in a democratic manner.

  3. **Member Economic Participation:** Members contribute equitably to, and democratically control, the capital of their cooperative. At least part of that capital is usually the common property of the cooperative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing their cooperative, possibly by setting up reserves, part of which at least would be
indivisible; benefiting members in proportion to their transactions with the cooperative; and supporting other activities approved by the membership.

4. Autonomy and Independence: Cooperatives are autonomous, self-help organizations controlled by their members. If they enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their cooperative autonomy.

5. Education, Training, and Information: Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public - particularly young people and opinion leaders - about the nature and benefits of co-operation.

6. Cooperation among Cooperatives: Cooperatives serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures.

7. Concern for Community: Cooperatives work for sustainable development of their communities through policies approved by their members.

❖ Mimicking a benefit corporation with an LLC: State laws that allow for benefit corporations use the corporate laws to do so. This means a benefit corporation, by definition, cannot be an LLC. But if your community determines that the benefit corporation model would generally be best for your adaptation activities, but that an LLC is more desirable at this point in time, or you live in a state that doesn’t allow benefit corporations, there is a way to get some of the perks of a benefit corporation through an LLC.

➢ LLCs are governed by state laws and “operating agreements between the LLC members.” By expressly stating in the operating agreement that decisionmakers are required to consider outside stakeholders, and having members sign affidavits stating that they will not sue the decisionmakers for considering these outside stakeholders, the LLC can effectively operate as a benefit corporation. However, this is only recommended under certain circumstances, such as when the LLC is being used as a subsidiary, or is not being used to raise significant capital. If this approach is taken, the LLC should not be advertised as a benefit corporation. Forming an LLC with this sort of operating agreement does not waive the LLC decisionmakers’ fiduciary
**duties**, instead, it makes it much *more difficult* for members to sue the fiduciaries for considering outside stakeholders.

- This is not applicable to all states: Maryland, Oregon, Utah, Pennsylvania, and Delaware allow for benefit LLCs.
Small Business Administration Grants and Loans for Adaptation
If your community determines that a for-profit entity is desirable for adaptation efforts, the Small Business Administration (SBA) can help you access funding for your project.

The SBA is located at: 409 3rd St, SW, Washington, DC 20416
You can call the SBA at: 800-827-5722

SBA Regional Offices: These provide more localized support, you can find them here: https://www.sba.gov/local-assistance/find/?type=SBA%20Regional%20Office&pageNumber=1

Small Business Development Centers (SBDCs): These are found in every state and receive funding from the SBA and other sources. They provide consulting, training, and other services. You can find them here: https://www.sba.gov/local-assistance/find/?type=Small%20Business%20Development%20Center&pageNumber=1

Grants
The SBA’s Small Business Innovation Research (SBIR) grant program provides money to small businesses to help them fund research and development efforts. Though not explicitly for climate change adaptation, the SBIR program has provided funds to programs that resulted in techniques and materials to combat erosion and wildfires, so it can be used for adaptation. Typically, the funds first go to a participating agency, which then subgrants to small businesses (the participating agencies and departments relevant to adaptation are: EPA, Department of Agriculture, NOAA, Department of Energy, Department of Transportation, and Department of Health and Human Services). The grant is through a competitive application process; there are four basic criteria to qualify:

1. Organized as a for-profit business in the United States
2. 500 or fewer employees (including affiliates)
3. Work is performed in the United States
4. The business’s ownership is at least 50% US individuals or independently operated entities

For a complete overview of the program, visit: https://www.sbir.gov/about/about-sbir.

Loans
The SBA does not issue loans directly to small businesses. Instead, it guarantees loans issued by lending partners. This means that a private financial institution issues the loan, and the SBA agrees to cover the loan payments if the small business is unable to pay back the debt (there are several conditions to this). This makes it much more likely that a financial institution will offer a loan to a business that otherwise wouldn’t qualify for a loan.
Four criteria to qualify for an SBA loan guarantee:
1. For-profit business;
2. Doing business in the US;
3. Owner has invested time and money in the business; and
4. There is no other way to access financing

For the general SBA Loans website, visit: https://www.sba.gov/funding-programs/loans

For a guide on SBA loans produced by a private source, see: https://www.startups.com/library/expert-advice/sba-small-business-startup-loans
Depending on the sort of adaptation projects your community demands, and the timeline it sets for these projects, different combinations of tax-exempt entities can help your community finance these projects. The most valuable form of tax-exempt entity is the 501(c)(3) public charity, because it can actually operate (carry out adaptation projects), and donors get a tax deduction for donating. However, if an adaptation project is large enough, a public charity is rarely the most efficient way to finance the project. Instead, it often is financially wiser to set up a few of the tax-exempt entities – doing so can grant greater access to capital, minimize tax burdens, and limit liability. The downsides of using several entities, though, are management and compliance, both of which can be challenging and expensive.

### 501(c)(3) Charitable Organizations

**What are they?** These can be private foundations or public charities. Generally, community groups will organize as a public charity. To get this status, the organization must meet the requirements in Code section 509(a). Even though the IRS requires that public charities be organized “exclusively” for charitable purposes, a small portion of an organization’s activities can be business activities (but the income earned from those activities is taxed).

**How are they relevant to adaptation finance?** These organizations can be structured to carry out adaptation projects from start-to-finish, but this is very difficult for anything of significant scale. Instead, they can create both tax-exempt and for-profit subsidiaries and affiliated organizations to attract investors and access capital while maintaining control of the project and taking advantage of preferential tax treatment. Importantly, Community Development Corporations (CDCs) are formed as 501(c)(3)s and are an extremely valuable way of maintaining local control over development projects. Most importantly for financing adaptation, 501(c)(3)s are often eligible for grants, discounted loans, and conduit bonds.

**Where to find more resources:** BoardSource provides a wealth of resources on 501(c)(3)s, here is their page about formation: [https://boardsource.org/resources/starting-nonprofit-faqs/](https://boardsource.org/resources/starting-nonprofit-faqs/).

501(c)(2) Title Holding Corporations & 501(c)(25) Title Holding Corporations or Trusts with Multiple Parents

What are they? The (c)(2) is a very common tool in development projects. Essentially, it functions as a subsidiary of another tax-exempt entity for the purpose of holding title to real property and transferring any income produced by that property to the parent. The (c)(25) does the same, but it can have up to 35 owners, whereas the (c)(2) can only have one. These must be organized exclusively for these purposes, and contributions to them are not tax-deductible to the donors.

How are they relevant to adaptation finance? By using a tax-exempt title holding company, a community can minimize the tax burden resulting from income generated by adapted property. Also, the title holding company can contain all of the liability for that property – for example, if someone is injured on the property, the title holding company is liable, not the parent.

Where to find more resources:

501(c)(4) Social Welfare Organizations

What are they? These are often advocacy organizations. Since 501(c)(3)s have significant lobbying restrictions and are prohibited from participating in campaigns, 501(c)(4)s can be extremely useful when it comes to achieving policy objectives. The biggest downside of these organizations is that donations are not deductible for the donors.

How are they relevant to adaptation finance? If your community wants to urge governments to adopt certain policies, this entity enables you to do that work. Also, if conduit bonds require legislative action, these organizations can advocate with legislators for that action.

Where to find more resources: For how to start a 501(c)(4):
Considerations for a 501(c)(3) organizing an affiliated 501(c)(4):
General information from the IRS:
For how 501(c)(3)s can engage politically, with some mention of when a 501(c)(4) might be useful:
https://www.councilofnonprofits.org/sites/default/files/documents/Make_a_Difference_RG%5B1%5D.pdf.
501(c)(5) Labor, Agricultural, or Horticultural Organizations

What are they? These are organizations established for the purpose of agriculture or horticulture, and bettering the lives of the people engaged in such activities. They also provide a way for general labor organizations (like unions) to form.

How are they relevant to adaptation finance? If your adaptation activities involve agriculture or horticulture in any way, forming one of these entities can help pay for some of the aspects of those efforts. In many cases, these efforts could fall under another tax-exempt entity, but if your efforts are fairly limited then these can be the most cost-effective means of financing such activities.

Where to find more resources: This IRS publication offers a good overview of 501(c)(5) organizations: https://www.irs.gov/pub/irs-tege/eotopicj03.pdf

501(c)(12) Mutual Ditch or Irrigation Companies

What are they? These are cooperatives formed to serve specific purposes in specific localities. These also include certain utilities, like telephone service providers, but this toolkit only considers the ditch and irrigation aspect. In many cases, ditch or irrigation activities that qualify for 501(c)(12) status will also qualify under 521(a) Farmers’ Cooperative Organizations, but not always.

How are they relevant to adaptation finance? If your adaptation efforts include installing, repairing, or maintaining ditch or irrigation systems, and those activities are not part of farming activities, forming a 501(c)(12) can be the an effective method of carrying out those activities.

Where to find more resources: The IRS’s Survey on these organizations is helpful: https://www.irs.gov/pub/irs-tege/eotopice02.pdf
501(c)(14) Credit Unions

**What are they?** Essentially, these are cooperative banking institutions comprised of member-owners. Members have access to loans and other financial products and services at lower rates than what for-profit banks would offer.

**How are they relevant to adaptation finance?** Credit unions can provide the loans and other financial resources needed to carry out an adaptation project, and the “profits” can stay in the community.


For an article about how crowdfunding can help maximize a credit union’s value in the development context, check out this article: [https://www.businessnewsdaily.com/9923-credit-union-equity-crowdfunding-finance-startup.html](https://www.businessnewsdaily.com/9923-credit-union-equity-crowdfunding-finance-startup.html).

501(c)(15) Mutual Insurance Companies or Associations

**What are they?** These are small insurance companies designed to serve communities, usually no bigger than a county. If annual gross receipts are less than $600,000 and 50% of the value of the gross receipts comes from insurance premiums, then the organization typically qualifies as exempt.

**How are they relevant to adaptation finance?** If your community lacks access to affordable insurance products, it may be worth creating one of these organizations, or locating one nearby. These are fairly rare, but should not be ignored.

**Where to find more resources:** The IRS’s Audit Technique Guide for these entities can be helpful in understanding how to qualify: [https://www.irs.gov/pub/irs-tege/atg_small_insurance_cos_assns.pdf](https://www.irs.gov/pub/irs-tege/atg_small_insurance_cos_assns.pdf).

521(a) Farmers’ Cooperative Organizations and 501(c)(16) Cooperative Organizations to Finance Crop Operations

**What are they?** A farming cooperative can be organized under Code section 521(a) to receive tax-exempt status. Once this is done, the farming cooperative can form a corporation under 501(c)(16) to finance the operations of the cooperative. It can do this by issuing limited types of stock.

**How are they relevant to adaptation finance?** If your adaptation activities involve any type of farming, and it makes sense for your community to form a 521(a) farming cooperative, forming a corporation under 501(c)(16) can help with raising revenue.

**Where to find more resources:** Here is general information from the IRS on 521(a) organizations: [https://www.irs.gov/irm/part4/irm_04-044-001](https://www.irs.gov/irm/part4/irm_04-044-001). There is not much information on 501(c)(16) organizations, but here is some from the IRS: [https://www.irs.gov/irm/part4/irm_04-044-001](https://www.irs.gov/irm/part4/irm_04-044-001).
Related Entities: often, a single entity is not in a position to carry out development projects from start to finish, and maintain those projects, by itself. By using combinations of tax-exempt and for-profit entities, your community can access capital to carry out adaptation projects, advocate for more equitable environmental policies, influence larger organizations to more responsibly allocate resources, generate revenue to bolster resilience, and better sustain long-term success. In terms of equitable development, this is especially the case, because there are often capital-intensive projects blended with charitable activity.

Parent-Subsidiary

This is the most common relationship, and it is extremely important to community development. The “parent” owns a controlling share and has some authority over the fundamental decisions of the “subsidiary.” In the adaptation context, a 501(c)(3) public charity might be the parent of a for-profit subsidiary that leases equipment for adaptation projects.

Additionally, for-profit subsidiaries can help finance their tax-exempt parents’ activities. As long as the subsidiary does not elect to be an S Corp, a for-profit subsidiary corporation may make tax-deductible dividend payments to the parent.

One of the most important features of this relationship is liability shielding: if a community wants to take-on a project with significant risk, it can shield much of the community’s assets by using subsidiaries. For example, if a community wants to raise the elevation of homes in anticipation of rising sea levels and higher storm surges, it can establish a subsidiary to perform the construction and take out the minimum insurance required. Then, if someone gets hurt on the construction site or poor craftsmanship results in injury, the parent is not responsible for paying these claims, the subsidiary’s insurance is.

Joint-Venture

Instead of forming subsidiaries with an indefinite lifespan, it sometimes makes more sense to team-up with another entity to complete a relatively short project.

Usually joint-ventures takes the form of a partnership or multi-member LLC, since these are easy to form and do not require significant compliance cost.

An example of a joint-venture in the adaption context might be a nonprofit that trains returning citizens to perform skilled labor forming a three-member LLC with a construction corporation and a titleholding company to rebuild homes for communities ravaged by natural disaster, with a provision in the LLC’s operating agreement to dissolve the business once all of the homes built are occupied.

To be clear, this is different from the parent-subsidiary relationship because the parties to a joint venture are not “controlled” by any of the other parties (generally).
Generally, with many community development projects, nonprofits and businesses work together. Your community might be in a position to form and operate all of the entities necessary to carry out a development project. Your community or coalition may need to form an entity to carry out its objectives, but more likely, your organization will have to work with other groups. Here are some of the considerations for deciding how to form an entity for the collaboration:

1. Are there organizations already in existence in or near your community that could carry out your adaptation needs? If so, you may not need to form an entity at all, but it could still be helpful to form a small nonprofit focused on adaptation that can partner with the preexisting entities.

2. What are the types of adaptation activities you need to engage in? Once you’ve analyzed the risks to your communities and ranked them, is your community in need of substantial resources in a short period of time? Or are larger projects less pressing? Would a structure that allows for the quick accumulation of capital be most effective at achieving your needs? Which entity deserves more resources in the near-term?

3. Are the adaptation efforts your community wants to engage in beneficial to the broader public? If so, a public charity may be able to raise meaningful capital, and could carry out activities that for more limited-impact projects would be disallowed. Is the proposed project going to primarily benefit the board members and employees of the organization carrying out the project? If so, there could be restrictions on using a nonprofit for these projects.

4. What is the financial situation of individual community members? If your community is composed of upper-class to upper-middle-class individuals, it will be much easier for your community to collect start-up money, whether that is for a nonprofit, for-profit, or some combination. Alternatively, if your community is composed of lower-income individuals, it will be difficult to have all the initial funds come directly from the community, but it will be generally easier to access grants and public sources of financing, as they typically prefer benefitting lower-income communities. If your community is mostly middle-class, could you start with one or two moderately-well funded entities and grow from there?

5. Will successful completion of adaptation projects result in revenue generating activities? Do the revenue generating activities advance the charitable organization’s mission?
Land Trusts and Easements
Affordable Housing and Conservation Tools that can help Equitably Finance Community-Led Adaptation Efforts
This toolkit just discussed a variety of entities, and below it describes many financial tools and resources for community-led adaptation. A land trust is a specialized type of entity, and an easement is a right to use someone else’s land. Together, and independently, these structures can be used to help finance adaptation efforts. Depending on the structure, land trusts and easements can be highly beneficial to equitable adaptation efforts. The structure must have considerable flexibility to minimize restrictions and hurdles.

Land Trusts
A “land trust” is a trust where the asset is the land, and may or may not include structures on the land. Essentially, this means that the person or entity that owns the land (the “grantor”) would transfer the title to the land to a trust, and would name beneficiaries who can use the land only in ways that the owner allows. The “trustee” is in charge of making sure the land is used by the beneficiaries in a way that complies with the owner’s intent. **Importantly, the owner can be the beneficiary.**

The grantor also determines how active the trustee is in managing the land. Some states require that the trustee have real duties (which can be rather minimal, like performing site inspections and paperwork), others allow the trustee to be mostly passive (only taking action when necessary).

Land trusts effectively operate as title holding companies. The primary difference between a land trust and a 501(c)(2) or (c)(25) title holding corporation is that the 501(c) organizations can only hold title to property owned by other tax-exempt entities. Depending on the structure of your adaptation and community development projects, using either a 501(c) organization or a land trust may be more efficient. It is important to seek counsel on this matter, and be sure that the attorneys are aware of land trusts, title holding companies, and their differences.

Land trusts are used in affordable housing in several ways, primarily by separating the rights to use the actual housing structure from the ownership of the land. A “community land trust” is a nonprofit organization that is dedicated to providing affordable housing using land trusts. The land trust will own the property, including the housing structure, but will lease the structure to the resident as a long-term renewable lease. Since the lease does not include the value of the land, it is much more affordable than a traditional lease or mortgage. If the resident chooses to move, the resident can sell the lease to someone else. If the property has increased in value, the original resident will get to keep some of the “profit,” and the rest will go to the land trust.

Usually, community members make up about one-third of the board of directors of a community land trust. This promotes more equitable development. Further, the grantor can set up the trust in a way that preserves culture and resists disruptions like gentrification. For more information on community land trust, check out the Democracy

**Land trusts are used in conservation** by restricting the use of certain land. A trust can be structured to last forever, or however long the grantor wishes. Also, grantors can put just about any restriction they can think of on the land, as long as it’s not illegal or impossible. This means that someone can set up a trust to hold land forever and never let it be developed. This can be an extremely valuable conservation tool. For more information on conservation land trust, and their relationship with climate change, check out https://www.landtrustalliance.org/topics/climate-change. The Land Trust Alliance provides a wealth of resources on land trusts generally: https://www.landtrustalliance.org/.

- **Lack of flexibility in conservation land trusts can pose barriers to adaptation:** If a land trust is set up to last forever, or for a very long time, and the conditions are that the land cannot be touched, it can be extremely difficult to adapt the land to a changing climate. For example, if a coastal area can be adapted in a way that is minimally disruptive and has broad public benefits, principles of equity and economics would suggest adapting the land. If that coastal area is in a land trust and the grantor passed away and the grantor did not want the land altered in any way, it may be extremely difficult to adapt the property. To read about how this issue is affecting efforts to promote biodiversity, check out: https://www.yaleclimateconnections.org/2015/07/climate-change-poses-challenges-for-land-trusts/.

**Land trusts are facilitating adaptation** in limited but growing circumstances. Important to equitable adaptation finance, communities can “sell” their property to a land trust that can then use the assets it acquires through these sales to access financial resources that no individual community member could access, and use those financial resources to fund adaptation efforts. The individual community members could gain cash, but lose significant wealth in this structure, though, because all of the value of home ownership is reduced to the value of the lease.

- If community members possess their homes through a community land trust, making adaptation improvements to the homes can increase the value of the homes, increasing overall community assets. Further, the land trust may help finance some of the improvements.
  - For example, elevating homes on stilts increases the value of the home and decreases insurance costs - the person who lives in the house may qualify for grants to cover most of the cost to raise the home, and the land trust can put up the remainder, and when the lease (or other property interest) is sold the occupant and the land trust split the profit.

- Communities can also use land trusts to preserve areas of land that can be beneficial for managed retreat options and natural barriers.
  - For example, if there is “higher ground” near a coastal community, that
community may purchase that land with a land trust and make it so that the land has to be in a state where the community can occupy it if and when sea levels threaten their current land.

- Similarly, that same community could keep the current land it occupies in a conservation land trust that only allows improvements to address climate change. This would preserve the land as much as possible, but also ensure that it can be used in a way to protect the community’s new higher ground location.
- The South Kingstown Land Trust in Rhode Island is making efforts to adapt, you can read more about the project here: https://www.crc.uri.edu/download/climate_sklt_final-1.pdf.

### Easements

An “easement” is a legal right to use some or all of another’s property. For example, if a school finds that the best place for a bus stop is right in front of someone’s house, the school may get the property owner to grant an easement so that it can install a bus stop and allow schoolchildren to stand there and wait for the bus.

A “conservation easement” is an easement that is granted for the purpose of environmental conservation. A common example of a conservation easement is a coastal property owner granting an easement to a conservation group for the property closest to the shoreline, and the easement restricts any further developments on that property. This prevents land owners and developers from investing in property that will eventually be lost (or substantially damaged) by rising sea levels.

- Like land trusts, conservation easements can also pose a barrier to adaptation. Especially older easements that were put in place before climate change adaptation was on anyone’s radar. For example, a coastal conservation easement might prevent a community from constructing any form of coastal reinforcement, and could even be structured to prevent homes from being raised.

- Another example is an easement that preserves lands on the outskirts of an urban area, preventing nearby communities from converting the land to an urban farm.

- For more information on how easements can be problematic for adaptation, check out this scholarly article: http://labs.russell.wisc.edu/rissman/files/2011/12/Rissman-et-al-2014-Adapting-conservation-easements-to-climate-change-ConsLett.pdf

Easements can facilitate adaptation in several ways.

- If a community is having trouble raising finances to fund an adaptation project, individual property owners can grant easements to governments or environmentally conscious organizations (or both), who can then help finance the adaptation of the land.
- If an adaptation project results in land being re-purposed for revenue generating activities, it may make sense to grant an easement to whoever needs access to the land to help generate the revenue.

- If a community does not have the ability or need to outright purchase property, it may be possible to get an easement to adapt the parts of the property that need adapting.


- The Land Trust Alliance provides information on how to use easements in a way that considers climate change: [http://climatechange.ita.org/get-started/plan/adaptive-easements/](http://climatechange.ita.org/get-started/plan/adaptive-easements/).
Financial Responsibility, Organizational Insurance, and Legal Compliance

Financial Responsibility, Organizational Insurance, and Legal Compliance foster resilience and sustainability. This toolkit just considered a range of entities and structures that can help your community efficiently and equitably finance climate adaptation projects. One of the downsides of using any of these entities or structures is that they can be expensive to maintain. Still, it is extremely important to maintain them. Three of the most important maintenance considerations are:

1. General financial responsibility;
2. insurance; and
3. Legal compliance.

Here are two models to consider for financial responsibility:

**Components of an Effective Financial Management Structure**

<table>
<thead>
<tr>
<th>Resources</th>
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<tbody>
<tr>
<td>• Skilled financial staff</td>
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<tr>
<td>• Fully utilized financial software</td>
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</tbody>
</table>

**Information**

| Robust data systems |
| Timely analysis |
| Regular dissemination and use of reports |

**Processes**

| Overhead cost allocation method |
| Budget-to-actual reports |
| Cash flow projections |

**Core Management Practices**

| Accurate, realistic budgets based on true costs |
| Ongoing monitoring |
| Enough cash to meet expenses |

**Financial Objectives**

| Informed decision-making |
| Sustained financial strength |

Sustained increase in liquidity
Rainy-day fund equivalent to 1 year core budget
Outstanding level of staff satisfaction & commitment
Outstanding rates of efficiency & effectiveness
Tested risk-management policies
Culture of strategic planning & performance measurement
Culture of stewardship & accountability
Diverse & positive in-house income versus public funding
Sustained high profitability
Sustained increase in solvency

Source:
https://books.google.com/books?id=XuaMBAAQBAJ&pg=PA39&lpg=PA39&dq=entities+provide+legitimacy+to+community+groups&source=bl&ots=uWs6rx7Wq6&sig=ACfU3U0JoNMYxjY9p4OstdeQlp5JD2PA8Q&hl=en&sa=X&ved=2ahUKEwiFp5z2-lzgAhVKSN8KHWTyCbk4ChDoATADegQIBxAB#v=onepage&q=entities%20provide%20legitimacy%20to%20community%20groups&f=false (Page 29)
Insurance is crucial
From a financial perspective, it is extremely important to properly insure the entity so that the entity can withstand sudden financial hardships.

- Generally, determining the proper level of insurance for your entity is a matter of evaluating your assets and the risks to those assets. There are a variety of insurance products the entity could possess:
  - Property Insurance
  - Casualty Insurance
  - Workers’ Compensation Insurance
  - General Liability Insurance
  - Commercial Property Insurance
  - Directors and Officers Liability Insurance
  - Spoilage and Food Contamination Insurance (for entities engaged in storing food products)

- For more information on insurance related to small businesses, check out these articles: https://www.inc.com/guides/201103/how-to-insure-your-business-and-employees.html; and https://www.forbes.com/sites/thesba/2012/01/19/13-types-of-insurance-a-small-business-owner-should-have/#2c93e90d20d3.

- For more information on nonprofit insurance, the Nonprofit Risk Management Center provides ample resources. For an overview of different types, see https://www.nonprofitrisk.org/resources/articles/contemplating-coverage-insurance-for-public-entities/.

State laws vary with respect to what insurance is required. As a starting point, you can look at https://www.insureon.com/states, but you should keep in mind that this is an insurance company and its analysis is influenced by its desire to sell you its insurance products. Once you begin to seriously consider purchasing insurance for your entity (which should be during the formation stage of that entity), you should determine the state agencies responsible for overseeing the insurance industry.

Some states may have clear, easy to understand requirements, some may not. If you contact these agencies, and you should if anything is unclear, it is important that the authority you speak to puts everything in writing – that is, if someone at a state agency tells you over the phone that your business does not need workers compensation
insurance if it only hires independent contractors, you need to have that person either send you an email or mail you a letter that says this.

Compliance Requires Resources
This toolkit advises communities to form entities, but it does not address compliance. There are more stringent rules for nonprofits than there are for businesses. Further, every state has a different regulatory environment, and some practices may be allowed in some states but not in others. From a financial perspective, attention to compliance is critical as penalties for non-compliance are significant. Thus, it is imperative that the entities’ decisionmakers know and understand what is required for ongoing compliance.

- For tax-exempt entities, the IRS has a website to help with ongoing compliance: [www.stayexempt.irs.gov](http://www.stayexempt.irs.gov). The IRS also has a document called Publication 557 that can help you understand the federal requirements for tax-exempt entities, it is available here: [https://www.irs.gov/pub/irs-pdf/p557.pdf](https://www.irs.gov/pub/irs-pdf/p557.pdf). The state in which the tax-exempt entity is incorporated and operates will have their own regulations that you will need to follow.

- For-profit entities are subject to a range of regulations that, typically, are more general in nature than those of tax-exempt entities. Your state government will have an agency that is responsible for ensuring compliance. You should become familiar with the rules and regulations prior to operating the business.
**Sources of Financing:** For smaller scale adaptation projects, communities may be able to completely self-finance the project from start to finish. Often, though, communities will need to access external financing. In the broadest of terms, there are two sources of financing: (1) public; and (2) private. This toolkit also explores litigation as a financing tool for climate adaptation projects (generally, by suing polluters and governments), but this should be thought of as a specialized and expensive tool only to be used in rare circumstances.

**Public and private finance are heavily intertwined**
This toolkit mostly separates public dollars and private dollars, but the reality is neither can exist without the other. Private parties pay taxes, fees, and fines that go to public treasuries. Public treasuries then turn around and send those revenues back to private entities (and occasionally individuals).

The federal government occasionally gives money directly to community groups, but more commonly sends that money first to states or large foundations. Similarly, states do have programs that send money directly to community groups, but it’s more likely that the state first sends the money to a local government (the county, city, town, etc.) or a large foundation.

Still, there are plenty of projects that can be funded by 100% public dollars or 100% private dollars. Seeking out local, cooperative, climate-conscious sources of private financing can help your community promote equitable development. Using public dollars generally avoids perpetuating extractive economic systems. Of course, not all communities will be in positions to use the most equitable options.
Adaptation often requires both public and private financial resources and tools
As we mentioned above, for-profit entities and tax-exempt entities may work together to complete adaptation projects; the financial needs, revenue generating outcomes, and charitable purposes of adaptation projects sometimes create situations where it would be impractical and expensive to use just one type of entity. For similar reasons, adaptation projects often require, and are eligible for, both public and private financing.

This, of course, is not always the case. A small nonprofit may be able to pay for something like a living shoreline all by itself, using money received from donations alone. A for-profit worker-cooperative may be able to finance a small community farm exclusively through private debt and equity financing and its own revenue generating activities.

For larger projects and less established organizations, both public and private sources can be useful. By prioritizing public sources of funding, community groups can limit the potential for discriminatory practices, and are generally better able to hold the government accountable for such practices, because of anti-discrimination laws and policies the government must follow. By being critical of potential private sources of financing, community groups can negotiate more equitable terms and can locate more ideologically aligned firms.

Time, budget, and location all contribute to a community’s ability to access funds for climate change. For public funds, bureaucracy causes long wait times between initially requesting funds and receiving them, and politics makes access inconsistent. Seeking out private firms that use equitable practices requires substantial time. Still, if communities think long-term and, where they can, apply the principles associated with the more equitable forms of finance in this toolkit, they can minimize the harmful effects of promoting extractive financial practices.

Below there are two tables that identify public and private sources of financing:

<table>
<thead>
<tr>
<th>Public Financing Products and Tools in Community Groups</th>
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<tr>
<td>Grants</td>
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Locating state grants can be a bit more difficult, depending on the state. Here are a few private entities that can help you find grants:

- The Center for Nonprofit Excellence: https://www.thecne.org/engage/grants/
- The Foundation Center and Regional Foundation Centers: www.foundationcenter.org
- GrantWatch: www.grantwatch.com.
- Maryland makes locating grants easy by consolidating them all on the Governor’s Grants Office: https://grants.maryland.gov/Pages/home-page.aspx.

However, these are not authorities, and they may not have all grants available in your state. Instead of relying on them, use them to get a strong sense of the grants available and then locate further information from the state agency or authority that issues the grant. Additionally, some of these sources offer paid services, which claim to help your organization locate and apply for grants – if your organization has the resources to do this (about $40 per month), and your organization does not have access to individuals knowledgeable about grants who are willing to share their knowledge for free, it could be worth it to pay for these additional services.

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<thead>
<tr>
<th>Common Grants</th>
<th>Less-Common Grants</th>
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<tr>
<td>General Operating Grants</td>
<td>Challenge Grants</td>
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<tr>
<td>Program and Project Grants</td>
<td>Employee Matching Grants</td>
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<tr>
<td>Capacity Building Grants</td>
<td>Technical Assistance Grants</td>
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<tr>
<td>Endowment Grants</td>
<td>Professional Development Grants</td>
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<tr>
<td>Matching Grants</td>
<td>Conference Grants</td>
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<td></td>
<td>Seed Funding and Continuation Grants</td>
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Both the federal government and states offer loans that can help communities finance adaptation efforts. Typically, government loans offer better terms and interest rates than private loans, but the application process is more difficult.

Generally, there are more loan products available for businesses than there are for individuals or nonprofits. Especially valuable are Small Business Administration (SBA) loans. These loans have interest rates capped at Prime+2.25% for 10-year terms or Prime+2.75% for 25-year terms.

Additionally, the maximum an SBA loan can be is $5 million. For a guide to SBA loans, visit: https://www.startups.com/library/expert-advice/sba-small-business-startup-loans

All federal loans currently available are located here:
Like grants, it is more difficult to find state loan products. You may be in a state that provides all of its loan products in one centralized location, or you may be in a state that requires you to go to individual agencies to determine what loan products are available. When searching for loan products in your state, it is usually more efficient to start out with broad search terms, such as “[state] loans for development”; “state loans for housing”; and “[state] loans for businesses.”

Research tip: when searching for state loans, you will likely come across a variety of student loans, which are not useful for adaption; you can mostly get rid of student loans in your search results by typing “- student” so what you enter in the search bar would look like this: “Virginia loans for low-income housing - student”.

Maryland provides resources for for-profit entities here: 
https://open.maryland.gov/business-resources/funding-programs/.

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<th>Conduit Bonds</th>
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<td>These are bonds issued by governments on behalf of tax-exempt entities. Essentially, these function as loans for nonprofits. Like loans, the organization’s perceived ability to repay has a significant impact on the terms and rates of the bonds, which presents a problem of equal access, since some communities may appear more or less likely to repay than they actually are.</td>
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</table>

The structure can take a variety of forms, but the three most common are (1) loans; (2) leases; and (3) installment sales.

1. **In a “loan,”** the government and the nonprofit enter an agreement where the government first issues the bond and provides an agreed upon sum of money to the nonprofit, then the nonprofit is responsible for paying at least the interest payments and the principal, and sometimes the other costs of managing the debt.

2. **In a “lease,”** the government keeps title to the property being financed by the bond, but offers a below-market-rate to the nonprofit to lease the property (this is how some $1/year for 99 years arrangements exist); the nonprofit is still required to pay the interest payments to bondholders, and the principal, just not as lease payments.

3. **In an “installment sale,”** the government keeps title to the property while it is being developed or repaired, and once the project is finished the nonprofit begins paying the interest payments and principal (and sometimes other costs).

Both the loan and the installment sale structure provide for equitable ways of financing large projects. The lease structure is less equitable since the nonprofit (and therefore the community) does not get to legally own the land. Unfortunately, some projects in some states are limited to the lease structure. Usually, states and counties can issue these bonds. The federal government does not issue conduit bonds.

Conduit bonds typically have a lower return than other securities, but they are valuable to investors because (1) the interest earnings are tax-exempt, and (2) they are generally backed by the government and therefore a reliable source of
income. Additionally, people who are ideologically aligned with the organization or the project the bond funds may be willing to accept a lesser financial return.

Conduit bonds are usually used to fund facilities construction and renovation. They could be used in any long-term adaptation project that has some sort of public benefit. Since conduit bonds require the government to take action that it is not required to take, and occasionally require the public to vote, it is difficult to get access to them. Additionally, they are relatively complex, and usually require several lawyers, accountants, and bankers. For these reasons, conduit bonds are usually best reserved for very expensive projects (mid-hundreds of thousands and above).

Here are some additional resources on conduit bonds:
- The Council of Development Finance Agencies has a Bond Finance Resource Center that breaks down just about every type of bond, including conduit bonds: https://www.cdfa.net/cdfa/cdfaweb.nsf/resourcecenters/bond.html.

<table>
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<tr>
<th>Tax Incentives (and the Residential Renewable Energy Tax Credit)</th>
<th>Using the tax code to incentivize development is a long-standing American tradition, and one that has a history of inequitable outcomes. Even with this history, community groups can use tax incentives to equitably finance adaptation projects. There are three basic types of tax incentives (1) tax credits; (2) deductions; and (3) exemptions. To be clear, none of these are truly “financing” because they do not provide funds, they simply lower costs.</th>
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<tr>
<td>1. Tax credits are usually viewed as the best tax incentive because they reduce an individual’s (or entity’s) tax burden dollar-for-dollar; this means that if you’re supposed to pay $1,000 in taxes, but you have a $1,000 tax credit, you pay $0 in taxes. Presently, the only federal tax credit relevant to adaptation is the Residential Renewable Energy Tax Credit, which is discussed below. Most states have at least one tax credit that applies to adaptation, these are also discussed below.</td>
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</table>
| 2. Deductions reduce your taxable income, either by taking the standard deduction, itemizing deductible expenses, or using a special provision. Most individuals take the standard deduction (in 2018: $12,000). If someone has significant business expenses because they are a private contractor, they may itemize their deductions and save more than taking the standard deduction. The Tax Cuts and Jobs Act created Section 199A of the Internal Revenue Code, which provides for the “qualified business income” deduction; this deduction allows the owners of certain LLCs, Partnerships, Sole Proprietorships, and S Corps to deduct up to 20% of }
income from those entities, which is something your community group should consider when deciding which entities to establish and structure.

3. **Exemptions** give you a right not to pay tax that you would otherwise have to pay. The federal income tax does not have any exemptions related to climate change finance. Many states, though, have property and sales tax exemptions that could be available in certain situations. For example, some local governments exempt from property tax the value of any renovations made on a home, which could include adapting the home to climate change.

To see tax incentives related to renewables and energy efficiency, both state and federal, check out the DSIRE interactive map, operated by the N.C. Clean Energy Technology Center at North Carolina State University: [http://www.dsireusa.org/](http://www.dsireusa.org/) (once you click on your state, you can filter the category by “financial incentives”). Also, the Department of Energy maintains a database of state tax incentives: [https://www.energy.gov/savings/search](https://www.energy.gov/savings/search).

One of the most popular federal tax credits is the **“solar tax credit,”** which is part of the Residential Renewable Energy Tax Credit. This applies to more than just solar panels, it also applies to solar water heat, geothermal heat pumps, wind, and renewable fuel fuel-cells.

| Tax Increment Financing (TIF) | Lots of research has been done on TIF, and most experts agree that it is a tool that governments should have access to, but that it should be used sparingly and thoughtfully because it can seriously undermine the tax base and result in gentrification and displacement without providing significant benefits.

TIF is relevant to community led adaptation in at least two ways:

1. If a community-operated entity, such as a community development corporation, is the developer, it can take advantage of this mechanism in an equitable fashion
2. If a community is in a TIF area, it can advocate for more transparency and to be part of the decision-making process.

Essentially, TIF works by rerouting increases in tax revenues to private developers. It can be structured in many different ways, but here is the typical example: A community is experiencing “blight,” or will soon be, and a developer (which could be a local community group, or it could be a large multinational corporation) sees an opportunity to redevelop the community. The developer goes to the local government and explains that redevelopment could revitalize the community, but that it cannot be done without a tax subsidy. The government agrees with the developer and begins working on a TIF plan. The government will determine how much property tax it is entitled to collect from the community in the current year; for example, say a community has 750,000 square feet of taxable property, and the average property tax assessed is $1 per square foot, so the government is entitled to $750,000. The government then evaluates the developer’s plan and estimates what the increase in property tax revenues would be; for example, 10 years after the development project breaks-ground the government will be entitled to $1 million in property tax from the same community, often due to increases in both the value of the property and the volume of the property. The government then takes the difference, multiplies that by the number |
of years that it is expected to take to reach that point, and offers the sum to help
finance the development; in this case, the government would provide $2.5 million
($250,000 x 10 years). Then, each year after the TIF is established, the
government collects increased property tax revenue, but only keeps what it was
allowed to keep in the first year (in this example, $750,000 each year), and uses
the excess to pay off the amount provided to the project.

What may or may not be obvious is that TIF necessarily involves raising property
values, sometimes resulting in gentrification and displacement. Further, it gives tax
revenues that could be going to community welfare to private developers. Of
course, the theory is that overall community welfare will increase after the
development occurs, but who comprises the community at that point might be
radically different from who the development was allegedly intended to benefit.

The Lincoln Institute of Land Policy, which is mostly critical of TIF, has done
significant research on TIF, some of which is available here:
https://www.lincolninst.edu/search/site/tif.

Similarly, CityLab has many articles on TIF related issues:

The Council of Development Finance Agencies has provided recommended
practices for TIF, including how to make them more equitable and beneficial for
communities, available
https://www.cdfa.net/cdfa/cdfaweb.nsf/ord/recpracTIF.html/$file/Recommended
Practices_Effective_Tax_Increment_Finance.pdf

Note on federal government funding: The federal government can only spend money that
congress allows it to spend. In some instances, an agency will have authority to spend money,
but if congress did not appropriate any money then that authority doesn’t really matter. Keep in
mind that some of the programs referenced in this toolkit may not be appropriated any money
during the time your community needs to access these funds.

Private Financing Products and Tools in Community Groups

| Grants | Private grants typically come from foundations, and many foundations are primarily “grantmaking foundations.” For smaller community groups carrying out adaptation projects, private foundation grants are generally more accessible than federal government grants. Depending on what state you’re in will determine whether private foundation grants are more or less accessible than state and local ones. Public charities also issue grants, though they are usually very small. Something to consider with private grants is that there are sometimes more |

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strings attached than with public ones. The grant issuer may want constant updates and may not release the full amount of funds available until certain criteria are met. This could motivate you to work more diligently, or it could present frustrating barriers based on the grantor’s view of success.

The resources discussed in the public grants section above are just as valuable for private grants.

<table>
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<th>Loans and Micro-Loans</th>
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<td>Private loans may be the most well-known financial product. Larger financial institutions are unlikely to offer loan products specifically for adaptation. Instead, general project, business/commercial, improvement, and residential loans can be used for adaptation projects. Micro-loans refers to small dollar-value loans with terms and rates favorable to the borrower. There are many nonprofit micro-lenders, some of which offer loans specifically for environmental businesses and projects. Some also offer services, such as financial counseling. This form of loan has developed over the last 30 years in the US, and began in the international development context. The Aspen Institute’s FIELD initiative tracks micro-loans: <a href="https://www.aspeninstitute.org/tag/field-microfinance/">https://www.aspeninstitute.org/tag/field-microfinance/</a>. This is just one example of a micro-lender that provides financial resources specifically for climate conscious businesses: <a href="https://us.accion.org/small-business-loans/who-we-lend-to/">https://us.accion.org/small-business-loans/who-we-lend-to/</a>. Green America provides resources to find more equitable and environmentally conscious financial institutions: <a href="https://www.greenamerica.org/getabetterbank">https://www.greenamerica.org/getabetterbank</a>. A “loan guarantee” is a promise by someone (the “loan guarantor”) to pay the debt of someone else if that person defaults. Finding someone to guarantee a loan can greatly increase your chances of acquiring a loan and being offered an affordable rate. The loan guarantor only has to pay what they agree to, which does not have to be the full loan amount (and if it is not the full amount, that will affect the terms of the loan). “Patient capital” refers to financial products where the investor or lender does not demand a quick return. Instead, the investor or lender recognizes that the project will take a long time to generate profits, and is willing to be patient. Patient capital promotes equity in financing because it moves away from “quarterly capitalism” and toward a system that considers the needs of the people and project receiving funds. This applies not just to loans.</td>
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<th>Program Related Investments (PRI)</th>
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<td>Foundations make PRIs in projects that are aligned with their missions. Usually, this takes the form of a low or no interest loan, with more relaxed repayment terms than a traditional lender would offer. It could be an equity investment in a for-profit entity that is doing charitable work. These are relatively rare, but some of the organizations referenced throughout this toolkit have offered them. Additionally, if your adaptation project seems to align with a foundation that you are aware of, contact that foundation to see if a PRI could be negotiated. Researching foundations with similar missions will help you become aware of</td>
</tr>
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what financial resources are available.

To learn more about PRI, check out GrantSpace’s Knowledge Base on the topic, available here: [https://grantspace.org/resources/knowledge-base/pris/](https://grantspace.org/resources/knowledge-base/pris/).

| Equity Investments (note: in financial terminology, “equity” does not refer to the social equity principles that this toolkit is focused on.) | When an investor gives money to a business in exchange for legal rights in that business, the investor makes an equity investment. “Equity” in this context means “ownership interest.” This financing mechanism is reserved for corporations and LLCs.

If your adaptation project is expected to produce significant revenue, attracting equity investors should not be difficult. Projects that are not anticipated to produce revenue are unlikely to attract equity investors.

If the investors are members of the community and believe in the business’s mission, social equity is less of a concern. If the investors are outsiders exclusively focused on profit maximization, their demands can frustrate the needs of the community. Benefit corporations help with this, but they do not solve the problem.

Depending on the state, equity investments may be extremely difficult to acquire for cooperatives, even if the cooperative is financially successful. Some states require that purchasers of equity in a cooperative be active members in the cooperative. These requirements are intended to promote equitable community development, but sometimes present a barrier to accessing financing. |
|---|---|
| Crowdfunding | Crowdfunding is using a third-party platform to collect funds from small-scale investors. In recent years, crowdfunding has become a viable financing tool for both for-profit and tax-exempt entities.

The most valuable aspects of crowdfunding are the access to potential donors and investors and relative ease in managing the revenue. The platform that publicizes your project and processes contributions, such as GoFundMe or Kickstarter, will charge a fee, but in many instances that fee is reasonable for the ease with which you can raise and access money.

Crowdfunding is particularly valuable for lower dollar value for-profit activities. This is because some people are willing to take marginal, and sometimes nonfinancial, returns. For example, if an urban community group wants to paint the rooftops of buildings white to reflect sunlight to combat the “heat island effect,” some individual “investors” may be satisfied with simply receiving pictures of the before and after.

One form of crowdfunding is “Peer-to-Peer” funding, which generally describes a situation where individuals or organizations give relatively small amounts to other similarly positioned individuals or organizations. Usually, this is more successful for individuals than it is for organizations. While it is generally recommended that individuals organize and form entities to carry out their adaptation efforts, communities can organize to remain individuals for certain projects. For example, if a relatively small rural farming community plans to |
adapt to rising sea levels by growing and processing new crops, such as switching from corn fields to rice fields, individual crowdfunding campaigns may be more useful than seeking a community-wide grant or forming several entities to access debt financing.

Importantly, crowdfunding can take the form of loans, donations, or equity investments.

The Council of Nonprofits provides a general overview of crowdfunding, and toward the bottom of the page offers additional resources on crowdfunding: [https://www.councilofnonprofits.org/tools-resources/crowdfunding-nonprofits](https://www.councilofnonprofits.org/tools-resources/crowdfunding-nonprofits).

Investopedia’s page on crowdfunding is also particularly informative: [https://www.investopedia.com/terms/c/crowdfunding.asp](https://www.investopedia.com/terms/c/crowdfunding.asp)

| Issuing Bonds | Corporations and nonprofits can and do issue bonds. However, it is difficult to find buyers for these bonds unless the entity has been in existence for a long time, has significant assets or revenue streams, or is willing to collateralize the debt.

The difference between issuing a bond and selling stock is that the purchaser of a bond does not get any rights in the entity, just the right to be paid the value of the bond. Issuing bonds is a way of accessing funds without giving up any control.

For nonprofits, issuing bonds is a way to access debt financing without going through large financial institutions.

Regardless of the entity type, the entity issuing the bond needs to show that it is capable of repaying its debt; if it cannot do this, it will not find bond-purchasers. If the entity is not in excellent financial health, showing this often requires a “credit enhancement,” which is essentially a co-signor. Sometimes a co-signor will not be enough, and the entity will need to collateralize the bond. This means that the entity will have to give purchasers the right to repossess the entity’s assets and sell them if the entity fails to repay the bond.


| Donations (for tax-exempt entity) | Tax-exempt entities may receive money as donations and not pay income tax on this money. Not all tax-exempt entities are created equally, though. While all tax-exempt entities, by definition, do not pay taxes on their income (except for income generated that is unrelated to the exempt purpose), only 501(c)(3) organizations have the benefit of creating a tax deduction for donors. Thus, it is much easier for 501(c)(3)s to finance projects via donations, because the |
| Credit Cards | Credit cards are useful in some situations, and quite risky in others. Credit cards give a line of credit, essentially a loan-in-waiting. Depending on the entity’s (or individual’s) creditability, interest rates may be reasonable or may be extremely high. Usually, a credit card will have a higher interest rate than a loan, but provides more flexibility in the amount actually due. Unless it is absolutely necessary, individuals should avoid incurring credit card debt, for adaptation purposes or any other reason. Businesses, though, may find that a credit card with benefits (points, cash-back, airline miles, etc.) are preferable to, and easier to access than, other forms of debt financing. NerdWallet has a breakdown of currently available business credit cards: https://www.nerdwallet.com/business-credit-cards |
| Bartering Goods and Services | Instead of using money, your community can trade goods and services for other goods and services. This is not truly a “financing” tool or product because it does not result in money to fund projects. Still, bartering can help communities finance climate adaptation projects by helping to save cash. Bartering is the most ancient form of conducting transactions, but it has seen a recent comeback, especially with respect to moving toward a circular economy and away from an extractive economy. Bartering presents opportunities for more equitable transactions because the parties to the transactions can get subjective bargains when the “market” would say they lost. Here’s two examples:  
- Bartering services for sea-level rise: A local landscaping business charges $35/hour for general lawn maintenance and $60/hour for advanced work like installing flower beds. The business pays $150 per week to have its vehicles washed. Your entity could offer to wash the vehicles in exchange for assisting with constructing a living shoreline for 2-3 hours per week (including providing equipment). As long as this costs you less than $150 in materials and opportunity cost per week, you are both getting a bargain. You will still need to buy materials, but the labor and equipment cost could be reduced significantly.  
- Bartering goods and services for shifts in agricultural yields: By trading the fruits, vegetables, grains, fungi, honey, or anything else your community farm produces for labor from community members to maintain the farm or sell the produce to the public, the community can eat more wholesomely, be more interconnected, and individual |
Bartering’s difficulty often comes in the form of finding fellow barterers, but by identifying the resources of the community and locating entities that demand those resources and are able to help with your adaptation needs and asking them to barter, your community can save its financial resources.

One of the models used in bartering is “Time Dollars,” which is essentially a means of keeping track of the time that one person spends performing a service for another. The University of Kansas’s Community Tool Box includes resources for whether a Time Dollars system should be used in your community: [https://ctb.ku.edu/en/table-of-contents/implement/enhancing-support/time-dollars-program/main](https://ctb.ku.edu/en/table-of-contents/implement/enhancing-support/time-dollars-program/main).


The International Reciprocal Trade Association provides ample resources on bartering: [https://www.irta.com/](https://www.irta.com/).

| Family and Friends | Sometimes, the friends and family of your community’s members may have enough financial resources to loan or donate to help achieve your adaptation goals. These sorts of transactions have extreme benefits and potentially extreme costs (not just financial).

It is unlikely that friends and family financing will be enough to pay for a medium to large-scale adaptation project. However, getting friends and family to provide some start-up money can increase your organization’s creditability, giving it greater access to other financial products and tools.

Friends and family are unlikely to charge as much as financial institutions are for loans. Generally, they do not have the overhead that financial institutions do, so a 3% interest rate might be just as profitable to them as a 9% interest rate is to a bank. Additionally, friends and family are less likely to be punitive if you do not follow the agreement perfectly. For example, a bank might report that you missed a single payment by a single day, harming your credit score, where a family member is more likely to simply give you a phone call.

There are lots of resources available online for how to navigate friends and family financing, and any harm to relationships. The ACCA has a short overview and list of considerations here: [https://www.accaglobal.com/us/en/business-finance/types-finance/friends-family.html](https://www.accaglobal.com/us/en/business-finance/types-finance/friends-family.html); Entrepreneur magazine has a slightly more in-depth article here: [https://www.entrepreneur.com/article/228103](https://www.entrepreneur.com/article/228103).

Donations from friends and family is very different from loans – as long as everyone is on the same page. Though this might be a limited strategy, small amounts can quickly add up. |
One very important equity aspect to consider with friends and family financing is that some community members either do not have friends and family who can afford to give anything, or for a range of reasons they do not want to ask their friends or family who can afford to give.

Public-Private-Partnerships, Pay-for-Success Contracts, and Blended Finance

In the last few decades, three interrelated financing concepts have gained significant attention in the development context. Each of these tools usually require large entities to use them. Since these structures will likely continue and will affect communities, though, communities should be aware of them and should try to involve themselves in the decision-making process.

- **“Blended Finance”** refers to public and private entities paying to complete the same project. This is usually for longer-term projects where there are serious risks involved, but different risks can be allocated to different sectors.

- One of the more popular forms of blended finance, particularly in the US, is “Public Private Partnerships,” also called “P3s” or “PPPs.”
  - Many states and the federal government have legislation authorizing P3s.
  - An analysis is performed to determine what aspects of the project should be funded by private dollars (usually those with a relatively quick return), and those to be funded by public dollars.
  - P3s are mostly used in the infrastructure context, with toll roads being the most popular example.
  - Projects that utilize P3s are often very large scale; because of this, it may be difficult for community groups to become one of the “private” partners (the private partners are usually very large institutional investors) and directly access funds, but they can be part of the decision-making process.

- **“Pay-for-Success Contracts”** are more commonly known as “impact bonds.”
  - Essentially, the government identifies some public problem that private actors are better equipped to fix than the government is.
  - The government then determines what would be a “successful” outcome.
  - The government then determines how much it would save if that outcome is achieved, and offers the private actors that much money to achieve the outcome, but only if it is achieved.
  - The private actors then use their own money to do whatever they need to do to achieve the outcome, and are only repaid if they are successful.
    - This is the very basic structure, but it could take a few different forms; importantly, the government usually fronts some of the initial cost.
For more information on Pay-for-Success Contracts, visit: https://www.payforsuccess.org/learn/basics/#what-is-pay-for-success. The Urban Institute has done significant research on Pay-for-Success, and has identified some of the problems they cause communities: https://pfs.urban.org/pay-success/pfs-perspectives.

This toolkit also addresses Environmental Impact Bonds, a type of Pay-for-Success Contract.

If a P3 or a Pay-for-Success Contract (or a combination) is proposed for your community, here are some considerations:

- Who are the partners?
- How transparent is the decision making process?
- How is the problem defined?
- How is “success” defined?
- Why isn’t the project being paid for exclusively through public dollars? Why not only private dollars?
- Is the community involved in the decision-making process? What is the extent of involvement?
- What happens to the community if the project isn’t successful?
- From what sources are the public dollars coming from (property tax, sales tax, liquor tax, etc.)?
**Accessing Financial Products and Tools**

After your community decides what its adaptation needs are and what financial products and tools it has access to, it will need to access those resources. Generally, private sources of funding are quicker and easier to access than public ones, but public sources provide more protections and are generally more equitable.

<table>
<thead>
<tr>
<th>Applying for Grants</th>
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<tbody>
<tr>
<td><strong>Federal</strong></td>
</tr>
<tr>
<td>1. First, register with the System for Award Management (SAM) at <a href="http://www.sam.gov/SAM">www.sam.gov/SAM</a>.</td>
</tr>
<tr>
<td>2. Then go to <a href="http://www.grants.gov">www.grants.gov</a> and find the grant that is relevant to your adaptation project. If you need to talk to someone, the phone number is 1-800-518-4726.</td>
</tr>
<tr>
<td>3. Then compile all the documents and materials that the grant requires.</td>
</tr>
<tr>
<td>4. Apply for the grant.</td>
</tr>
<tr>
<td>5. Monitor SAM to track the status of your application.</td>
</tr>
<tr>
<td>6.</td>
</tr>
<tr>
<td><strong>State and Local</strong></td>
</tr>
<tr>
<td>All state and local grant-makers will have their own application process.</td>
</tr>
<tr>
<td>Some states will make it easy for grant-seekers and put everything in one centralized location. Others will leave it up to the grant-making agency to provide the relevant information.</td>
</tr>
<tr>
<td>In Maryland, the Governor’s Grant Office posts all Maryland grants at: <a href="http://grants.maryland.gov/Pages/home-page.aspx">http://grants.maryland.gov/Pages/home-page.aspx</a></td>
</tr>
<tr>
<td><strong>Private Grants</strong></td>
</tr>
<tr>
<td>Every foundation and charity that issues grants will have its own process for applying. Some will require more information than the federal government, some will require less. It is extremely important that the instructions are closely followed, and if anything is even slightly unclear do not hesitate to contact the grant-maker.</td>
</tr>
<tr>
<td>Some foundations provide additional resources for grant-seekers. The Ford Family Foundation, for example, publishes a “Toolkit for Grant Seekers” that is specific to that foundation’s grants (<a href="https://www.tfff.org/how-we-work/grants/how-apply-grant/tool-kit-grantseekers">https://www.tfff.org/how-we-work/grants/how-apply-grant/tool-kit-grantseekers</a>).</td>
</tr>
</tbody>
</table>

**Note on grant “proposals:”** many grant-makers do not have a step-by-step or fill-in-the-blank grant-application process, but instead request proposals. Every grant proposal is different, but there are many free online resources to help you write a grant proposal.

**There are a variety of grant-application toolkits available for free online:** The University of Kansas’s Community Tool Box includes a toolkit for applying for grants, it is available here: [https://ctb.ku.edu/en/applying-for-grants](https://ctb.ku.edu/en/applying-for-grants).
There are many ways to search for grants: the “Grants” section in the Public Financing Resources and Tools table above list several resources, and some specific grants are provided in the other modules.
Some environmental financial resources that can be used for adaptation

In the other modules, this toolkit identifies funding programs and financial resources that are relevant to specific types of climate adaptation. Many of those programs and resources are by organizations (public and private) focused on protecting the environment. Here are some of the more general environmental programs and resources that may be used for adaptation:

**EPA:**

- **Brownfields** - The EPA’s Brownfields Program provides grants and technical assistance to communities to clean up brownfields. Brownfields are places that have been contaminated, or potentially contaminated, by hazardous substances, pollutants, or contaminants. Here is the web page for the brownfields program: [https://www.epa.gov/brownfields](https://www.epa.gov/brownfields)

- **Smart Growth** - the EPA provides resources related to “smart growth,” which is essentially making efficient use of developed land. Occasionally, they offer funding. You can learn more here: [https://www.epa.gov/smartgrowth](https://www.epa.gov/smartgrowth). The EPA also provides a list of state funding resources for smart growth: [https://www.epa.gov/smartgrowth/regional-state-and-local-opportunities-funding-smart-growth-projects#States](https://www.epa.gov/smartgrowth/regional-state-and-local-opportunities-funding-smart-growth-projects#States).

- **Environmental Justice Small Grants** - provides up to $30,000 in grants directly to community groups working on social justice issues, particularly in areas of clean air, healthy water, land revitalization, and environmental health. For more information, visit [https://www.epa.gov/environmentaljustice/environmental-justice-small-grants-program](https://www.epa.gov/environmentaljustice/environmental-justice-small-grants-program); also visit the general EPA Environmental Justice page to see what programs the agency has available: [https://www.epa.gov/environmentaljustice](https://www.epa.gov/environmentaljustice).

- **Small Business Innovation Research (SBIR)** - this is in collaboration with the Small Business Administration- see the discussion on the SBA above.

**State & Local:**

There is truly a wide range of state and local programs. Some states, such as Maryland, Massachusetts, California, and Oregon, have very active environmental regulators and programs, and provide serious funding to community groups. Other states are less active, and community groups in these states often must rely on federal or private sources for financing. This toolkit cannot go into every state’s programs, but to give you a feel for what agencies and programs might be relevant in your state, here are Maryland’s and Baltimore’s:

**Maryland:**

- General Obligation (“GO”) Bonds
- Maryland Agricultural Land Preservation Foundation
- Maryland Board of Public Works
Resourcing Revolutionary Resilience: Transformational Climate Adaptation Finance Toolkit

- Maryland Clean Energy Center
- Maryland Department of Housing and Community Development
- Maryland Department of Housing and Community Development’s Local Government Infrastructure Financing (LGIF) program
- Maryland Department of the Environment
- Maryland Emergency Management Agency
- Maryland Energy Administration
- Maryland Energy Administration’s Energy Finance Initiative
- Maryland Environmental Trust
- Maryland State Highway Administration
- Maryland’s Rural Legacy Program
- Session Laws (such as 1-time expenditures for particular adaptation efforts and bond bills)

Baltimore:
- Baltimore City Community Catalyst Grants Program
- Chesapeake Bay Foundation (public and private)
- The Comptroller
- The Department of Planning
- The Department of Public Works
- The Department of Transportation (for the planning process more than direct funding)
- The Disaster Preparedness and Planning Project (DP3)
- Mayor’s Office of Emergency Management

Foundations:
Adaptation has not been as popular among foundations as other climate change initiatives, but it appears that it is a growing concern. All of the foundations listed below offer funding (and many other resources) for climate change. Some of the foundations explicitly name adaptation as an issue area, some are more general in nature. For all of these, it is worth checking their grant databases to see what sort of projects they’ve funded in the past. Many of these foundations are referenced in other parts of this toolkit.
- The Abell Foundation (Baltimore Focused)
- The Annie E. Casey Foundation
- ArtPlace America (ends in 2020)
- Baltimore Community Foundation
- Bill and Melinda Gate Foundation
- Charles Stewart Mott Foundation
- Chesapeake Bay Trust (Created by Maryland General Assembly)
- ClimateWorks Foundation
- David and Lucile Packard Foundation
- The Energy Foundation
- Foundation for the National Institutes of Health (Created by US Congress)
- Global GreenGrants Fund
Locating financing from other nonprofits is difficult, mostly because these nonprofits are focused on operating and not on grant making. What is particularly valuable about climate-focused nonprofits is the ability to partner, especially during the planning phase. By partnering with a larger nonprofit, you can dramatically cut costs because the larger nonprofit can qualify activities as charitable and pay for them. Not all nonprofits prioritize equity, though, so be sure to ask the relevant questions before partnering or receiving funding. Here are some of the leading nonprofits that can help your community finance adaptation efforts:

- Enterprise Community Partners (provides a variety of financial products, including loans and grants, and offers a full range of community development support services)
- Race Forward (provides a variety of equity-focused resources and training sessions)
- Environmental Grantmakers Association (provides resources on foundations focused on environmental grantmaking)
- EcoAdapt (focused on providing adaptation resources)
- Earth Economics (provides resources on investment-making)
- Earth Justice (legal services for environmental projects)
- Citizens Climate Lobby (advocacy organization for climate change)

Adaptation Funding Resources Spreadsheet:
Insurance as a Financing mechanism

Insurance can be used in a variety of ways to finance climate adaptation. After property is damaged, the money from insurance can be used to adapt the property, or at least reduce the out-of-pocket cost for adaptation. Alternatively, insurance savings can be used as a financing mechanism, most popularly through “pay-as-you save.” Finally, if firms in the US adopt international models of micro-insurance, communities can realize substantial insurance savings.

When discussing tools to finance climate adaptation, insurance cannot be ignored. While we often think of insurance as a way of paying for recovery, it can also be used to prevent damage, and to motivate adaptation. Unfortunately, to be protected from the financial costs of the changing environment and its side effects, people must purchase a range of insurance products. Also, depending on what property you own, lease, occupy, or otherwise possess will determine your access to insurance products. And, of course, where you live and where your property is located will affect the availability and price of insurance.

Recent developments in insurance have made insurance more available to some, but less so to others. For example, insurance companies are now using Big Data to better determine the risks associated with individual pieces of property, as opposed to making determinations based on zip codes. This means that two households in the same zip code, with property worth equal values, might pay different insurance rates because one house sits a few inches higher than the other. Of course, this is good news for the more elevated property, but bad news for the lower. We know that communities of color and low-income communities are more likely to live in flood plains, meaning they are more likely to experience loss from floods, yet they are also in disadvantaged financial positions and therefore less likely to have flood insurance. If insurance companies fail to account for these racial and socioeconomic disparities, “innovations” like Big Data may further compound the problems that these communities face when trying to insure their property. However, communities can organize to negotiate with the insurance companies for more equitable coverage.

One particularly interesting area of insurance is “microinsurance.” Essentially, this takes the model of microfinancing. Insurers are willing to accept lower premiums, paid on more irregular schedules, to insure lower-valued property. So far, microinsurance is not generally available in the US. But this should be viewed as an opportunity — microfinancing previously was unavailable in US, but investors noticed that it was working in developing countries and now the US has some microfinancing options. [ADD: what works with micro vs what doesn’t]

Another way communities can insure relatively low-value community-wide property is to create a fund themselves. This means forming a trust that individual community members pay into that only pays out for very specific types of damage. Imagine this scenario: a waterfront community requires individual property owners to build and maintain their bulkheads, but the only way to insure damage to the bulkhead is to take out an additional insurance policy, since general homeowner’s insurance will not cover
it. Also, if one person’s bulkhead is damaged, it compromises the integrity of the entire community (an “only as strong as the weakest link” situation). The additional insurance for one homeowner to insure their bulkhead cost $300 per year. There are 50 households in this community, meaning that, if each household insures their bulkheads, the community will spend $15,000 per year on insuring the bulkhead. Instead, the community members could choose to not purchase additional insurance, but pool their money in a trust designed only to pay out for bulkhead damage. Alternatively, the community could form a tax-exempt entity, donate the bulkheads to the entity and take a charitable deduction, then “lease” an easement from the nonprofit so that they can still use the bulkhead, and the tax-exempt entity can use the lease payments to pay for premiums on the insurance policy that it purchases to insure the bulkhead (or it could be the insurer itself). [NOTE: may be an opportunity for mutual insurance co]

Additionally, suing insurance companies for wrongfully denying claims and engaging in discriminatory practices can result in funds for climate adaptation. This strategy is unreliable, and should not be part of your community’s adaptation budget. Sometimes, community groups are extremely successful, and receive substantial awards. Other times, the insurance company has a better case, a better legal team, or both, and community groups spend huge amounts of time and energy to litigate a case only to lose or win a meaningless award. We will discuss insurance more in the contexts in which it comes up in the other modules.

**Changing Behaviors**

This toolkit is focused on adaptation measures, but many of the measures discussed could also be considered mitigation (such as urban farming). Changing one’s behavior in response to climate change is often a blend between adaptation and mitigation. Of course, some behavioral changes may only be accurately classified as one, for example, retreating to higher ground does nothing to mitigate the harmful effects of climate change, reducing consumption of fossil fuels is not adapting. Regardless of whether a change in behavior is technically adaptation or mitigation, communities need to understand that current behavior, particularly related to consumerism, must change if there is to be any hope in addressing climate change. The toolkit will not discuss every aspect of behavior that needs to change, but here are a few: [burning and burying trash, etc.]

**Moving**

While there is absolutely no requirement that a “community” be limited to a specific geographic region, the reality is that, in the adaptation context, when we talk about frontline communities we usually mean neighborhoods or groups of neighborhoods, as opposed to communities that exist on the internet comprised of individuals all over the world. Sadly, some frontline communities simply cannot exist in the future, because the climate has changed to the point where there is nothing that can be done to stop the damage coming. Already, in Louisiana, there are communities who are being required to permanently leave their homes. This toolkit exists to help communities find the
funding to adapt to the changing climate so that permanent displacement does not have to occur. But since that is not applicable to all communities, it is critical that some frontline communities plan to move away.

This toolkit strives to provide information on how to finance “planned retreat,” but it is important to understand that relocating may cause irreparable fissures in your community. By this, we mean that leaving the land your community was founded on could affect the culture and cohesion of your community in a way that is impossible to restore. For example, members of a coastal fishing community who are required to move to an inland, or even river-front, area will not be able to live the same lives they lived on the coast. An indigenous community that gives spiritual or religious value to the land it currently occupies or is near cannot simply apply that same value to the land it relocates to. Still, planning ahead can help ensure that your community is as resilient as possible, and that you positively take advantage of the changing conditions. Planned retreat will be discussed in each module, but here are some considerations for evaluating whether planned retreat should be part of your community’s adaptation strategy.

Rising Temperatures
As you look through the different modules, you might wonder where the discussion concerning rising temperatures is, after all, the biggest climate change issue is “global warming.” The remaining three modules all address different side effects of rising temperatures, and other climate change phenomena, that have direct impacts on communities. Certainly, rising temperatures directly affects communities – higher temperatures help diseases spread, among other things. Still, the majority of adaptation practices are not aimed at adapting to rising temperatures alone. Because of these realities, we think it makes more sense to discuss the few adaptation practices here. It is important to remember that, while global warming is a distinct result of burning fossil fuels, rising global temperatures are the primary cause of a host of other problems, namely sea level rise, extreme weather events, and shifts in agricultural yields. [NOTE: paying for global warming, like white roofs and green spaces]
Litigation

Litigation refers to the process of taking legal action. Filing a lawsuit against a polluter that harms your community seems like a great way to be compensated for that harm but litigation is rarely that simple. The truth is that morality and law are not always aligned, so even if there is no question as to whether a polluter is behaving immorally, communities harmed by that behavior must still prove that they have a viable legal claim to take advantage of litigation.

Successful litigation may result in a polluter paying some kind of reparation for the harm caused and may even include specific actions that the polluter must take in order to mitigate or rectify the harm it caused to the community. Of all the financing mechanisms discussed in this toolkit, litigation is the most difficult, time-consuming, expensive, and unreliable. This does not mean that community groups should eliminate litigation from their climate adaptation financing toolbox; rather, they should view litigation as a highly specialized tool, only to be used in certain rare instances.

If a community group has the means and interest to pursue litigation, or no alternative exists, litigation may serve as a tool that produces funds for adaptation projects. These funds can come in many shapes and forms. For example, the polluter may “settle” the case by paying the community to drop the lawsuit, or the court may award the community different types damages if the community wins the lawsuit. The information below describes each type of claim, including their risks and rewards.

Types of Legal Claims

Generally, there are two types of claims communities can bring before a court: statutory claims and tort claims.

Statutory Claims

A “statute” is a law written by the government. There are federal, state, and local statutes. Statutory claims are brought for violations of statutes. Environmental law is exceedingly complex and mostly based on statutes (as opposed to court-made law, which is discussed below).

Many of the most important federal environmental statutes include “citizen suit” provisions. This means that individual citizens, or organizations with an interest in the matter, can file a lawsuit to enforce some parts of the law. Two of the most vital federal statutes are the Clean Air Act (CAA) and the Clean Water Act (CWA). These statutes regulate water and air quality across the country through permitting

Important Federal Statutes

- Clean Air Act (CAA)
- Clean Water Act (CWA)
- National Environmental Policy Act (NEPA)
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA)
- Resource Conservation and Recovery Act (RCRA)
- Endangered Species Act (ESA)
- Migratory Bird Treaty Act (MBTA)
- Safe Drinking Water Act (SDWA)
- Emergency Planning and Community Right-to-Know Act (EPCRA)
processes and the creation of basic air and water quality standards.

Individuals and organizations can occasionally bring environmental claims using statutes that do not have environmental legislation at their core, such as the Administrative Procedure Act (APA) or the Fair Housing Act. Claims based on federal statutes must be filed in federal court, but most of these statutes have a state-law counterpart. Federal courts may not hear cases based on state law, so be aware that you may have a federal court send any issues based on state law to a state court. This toolkit focuses on federal statutes, but in some instances, you may also have a claim in state court.

**Case Study: Sierra Club v. ICG Hazard LLC**

As previously stated, just because a company is acting immorally does not make their actions illegal. In 2015, the Sierra Club, an environmental organization, brought a lawsuit under the Clean Water Act against ICG Hazard, a mining company. The Sierra Club alleged ICG was discharging selenium, a chemical that is harmful to aquatic animals. ICG had a general permit that listed the chemicals all mining facilities in the area could release. The Sierra Club argued that the permit did not explicitly list the chemical; therefore, the company could not release the chemical at all. The 6th Circuit disagreed and held that the company was not in violation of their permit. The court stated that the "permitting shield" protected the company from liability under the Clean Water Act. A permitting shield protects those who hold general permits from liability for discharges of pollutants not expressly mentioned in the permit. The reasoning behind this shield is that the Environmental Protection Agency (EPA) cannot be aware of all chemicals being released under a general permit due the number of potential chemicals as well as the number of facilities governed by the permit. Therefore, the companies benefit from the agency’s lack of resources. So, while the mining company released this potentially harmful chemical, they were not held liable because of their permit.

**Tort Claims**

Torts are commonly associated with motor vehicle accidents and medical malpractice suits, but are similar to lawsuits about wrongful acts that are not necessarily criminal. In environmental law, the most commonly used tort is nuisance, but recently there has been a revival of the “public trust doctrine.”

In the world of climate adaptation, many tort claims evolve from nuisance claims. Your community would bring a private nuisance claim against a polluter. To generalize, a private nuisance is some act that interferes with someone else’s right to use and enjoy their property, without actually physically trespassing on their property. In the environmental context, examples of this would include ash from power plants destroying
someone’s crops, or chemicals from a power plant leaking onto someone’s property and causing damage.

<table>
<thead>
<tr>
<th>Nuisance</th>
<th>Public Trust Doctrine</th>
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<tbody>
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<td>In the world of climate adaptation, many tort claims evolve from nuisance claims. Your community would bring a private nuisance claim against a polluter. To generalize, a private nuisance is some act that interferes with someone else’s right to use and enjoy their property, without actually physically trespassing on their property. In the environmental context, examples of this would include ash from power plants destroying someone’s crops, or chemicals from a power plant leaking onto someone’s property and causing damage.</td>
<td>The public trust doctrine asserts that natural resources should be considered a public commodity and that the government is responsible for handling the public commodity responsibly. A “trust” agreement allows a third party to hold property temporarily on behalf of, and for the benefit of, the future owner. When applied to climate change, the doctrine says that the government has the responsibility to protect the natural resources in the “trust” for current and future generations.</td>
</tr>
<tr>
<td><strong>Juliana v. United States</strong> In 2015, 21 children filed a lawsuit against the President and the United States for taking actions that increased carbon dioxide emissions. The children allege these carbon emissions lead to climate change and the deprivation of their constitutional rights of life, liberty, and property. The plaintiffs also assert that the environment is a public commodity, subject to the public trust doctrine. The plaintiffs are asking the court for injunctive and declaratory relief. The injunctive relief asks for fossil fuel utilization to be phased out for clean energy, and for energy companies to be more transparent about their practices in order to ensure compliance with environmental regulations. The requested declaratory relief asks the court to declare certain legislation that facilitates climate change as unconstitutional. This groundbreaking claim has led to countless governmental objections and procedural barriers. As a result of these objections, it seems as if the <em>Juliana</em> litigation is coming to an end. This development makes the <em>Juliana</em> case the perfect example of how climate change litigation has been dismissed by the federal government, mainly because of the hurdles addressed in the portions below.</td>
<td></td>
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</tbody>
</table>
Litigation of Discriminatory Tactics

In addition to the federal statutes mentioned earlier in the Module, there are some federal laws that specifically aim to protect people from discrimination. The Fair Housing Act (FHA) is one such law. The FHA is designed to protect people from discrimination when they are renting or buying a home, getting a mortgage, seeking housing aid, and so on. The FHA prohibits housing discrimination based on race, color, national origin, religion, sex, familial status, or disability. Climate change has unquestionably exposed vulnerabilities in housing for many communities, and certainly for frontline communities. Unfortunately, discriminatory tactics have emerged while frontline communities grapple with the challenges of change and adaption. This is particularly true in the wake of extreme weather events, when recovery efforts are underway and frontline communities are confronted with massive, sometimes total, destruction of their homes. Consider the following cases, where actions taken in the midst of post-disaster rebuilding were challenged as having a discriminatory effect on minority populations.

Case Study: Settlement in Mississippi

After Hurricane Katrina, several lawsuits ensued. One in particular addressed whether, and to what extent, a polluter’s conduct can be found to contribute to climate change and future environmental disasters. In Comer v. Murphy Oil, a group of Mississippi residents sued several oil and coal companies. In 2005, the residents alleged the companies’ actions increased greenhouse gas emissions, thereby increasing the damage caused by Hurricane Katrina. The plaintiffs filed claims of public nuisance, private nuisance, trespass and gross negligence, which would result in monetary damages for the community. In 2010, after battling standing and political question issues, the court dismissed the case because the court “lacked quorum.” This means the court did not have enough judges to hear the case. The plaintiffs tried again, filing a new lawsuit with the same claims in 2011. The court dismissed the plaintiff’s new case because of a principle called “res judicata.” The basic idea of res judicata is that if a party had a full and fair chance to litigate a claim, that party should not be able to litigate the same claim in a later case. The court never addressed the merits of the case, and therefore there is no answer regarding whether or not a company can be held liable for environmental disasters.

Comer v. Murphy Oil exemplifies the amount of time that goes into the litigation process. This case took over five years to litigate and, in the end, the residents walked away with nothing. While these procedural processes may seem unfair, they are one of the many hurdles your community may face if it chooses to use litigation tool for funding climate adaptation.

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1 https://www.hud.gov/program_offices/fair_housing_equal_opp/fair_housing_act_overview
2 Id.
In 2008, the Mississippi Conference of the NAACP and the Gulf Coast Fair Housing Center sued the U.S. Department of Housing and Urban Development for allowing then-Governor Haley Barbour to divert funds away from affordable housing initiatives and into a major port expansion project in Gulfport, Mississippi. The plaintiffs maintained that nearly $600 million in Community Development Block Grant (CDBG) funds that the state was allowed in the aftermath of Hurricanes Katrina and Rita was meant to go toward housing recovery programs that would have assisted low- to moderate-income residents. Instead, Mississippi's plan for the money, which HUD approved, would have been used to transform the port into a massive “Port of the Future.” Incidentally, port cargo would have been transported to and from the port along a corridor that cut directly through majority African American neighborhoods. The plaintiffs sought a declaration that, before approving funds for the port expansion, the HUD secretary was required to determine whether the proposal complied with the Fair Housing Act and CDBG requirements. Plaintiffs also sought an injunction to keep the money from funding the port project. The parties ultimately arrived at a settlement that created a new plan, which included a program to repair lower-income storm-damaged homes and to help low- to moderate-income families find rental housing. For an in-depth look at the events leading to the settlement, see https://povertylaw.org/clearinghouse/stories/shaw.

Case Study: Claims against St. Bernard Parish, Louisiana
The Greater New Orleans Fair Housing Action Center and Provident Realty Advisors brought an action against St. Bernard Parish, alleging that the parish violated the Fair Housing Act and other federal civil rights statutes when it enacted several housing ordinances in the midst of post-Hurricane Katrina rebuilding efforts. The Plaintiffs initially had a Consent Order stemming from a so-called “blood relative ordinance” that the parish had passed. The Plaintiffs had argued that this first ordinance had the intent and effect of discriminating against minorities. Specifically, the "blood relative ordinance" prohibited a single-family residence from renting to anyone other than a blood relative without first obtaining a permit. The councilman who introduced the ordinance had stated that the purpose was to "maintain the demographics of St. Bernard Parish." Because St. Bernard Parish is overwhelmingly white, the Plaintiffs argued, the ordinance essentially created a situation where African Americans were prohibited from renting in the parish. The parties resolved this dispute by entering into the Consent Order on February 27, 2008, under which St. Bernard Parish was directed to comply with the Fair House Act and was forbidden, among other things, from preventing minority citizens to rent the in area.

In December of the same year, the Plaintiffs filed a motion to enforce the February Consent Order. The Plaintiffs alleged that a new ordinance the parish had passed in September 2008 had a similar discriminatory effect as the previous ordinance, which meant that St. Bernard Parish was violating the terms that it had agreed to in the Consent Order. The new ordinance placed a moratorium on the construction of all multi-

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family housing for 12 months or until the parish could make certain zoning updates. This ordinance was passed as Provident, a real estate development group, was preparing to build four mixed-income rental complexes, each with 72 units. The construction was to be financed with Community Development Block Grant funds, Low Income Housing Tax Credits, and a permanent federal loan. A statistical expert testified that this moratorium created a disparate impact on African Americans for at least three reasons. The moratorium reduced the amount of available housing sites with 5 or more units; African Americans are 85% more likely than whites to live in a structure with 5 or more units. The moratorium also limited the rental stock generally; African-American households are twice as likely as white families to live in rental housing. Finally, African-American families are far more likely to have incomes supported by affordable housing developments, such as the ones Provident had planned to build.

The Court agreed with the expert’s analysis of the ordinance’s effect. It found that the ordinance had a disparate racial impact on African-Americans, that the parish acted with racially discriminatory intent, and that the ordinance had a discriminatory effect that violated the Fair Housing Act. St. Bernard Parish was ordered to rescind the moratorium ordinance, and the Court said it would consider damage claims and attorney’s fees for the Plaintiffs.

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**Case Study: Settlement after Superstorm Sandy**

In April 2013, the Latino Action Network and other civil rights groups filed an administrative complaint with HUD against the state of New Jersey, claiming that the state’s allocation of $2.8 billion in disaster recovery funds in the wake of Superstorm Sandy violated the Fair Housing Act and Title VI of the Civil Rights Act. About a year after filing the complaint, the parties reached an agreement. The agreement requires New Jersey, through the remainder of the storm-recovery process, to make more resources available for low-income renters displaced by the disaster and to dedicate an additional $240 million in funding for the hardest-hit areas. The agreement also requires the state to provide information in Spanish so that language barriers would not continue to prevent Spanish-speaking Sandy victims from being aware of and participating in storm-recovery programs.

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*Emancipate yourself from mental slavery. None but ourselves can free our minds.*

- Bob Marley
Hurdles Faced During Climate-Oriented Litigation
Finding an Attorney:
Finding the right attorney can be difficult. Environmental law is a very complex and niche field. Therefore, it may be difficult to find an attorney who has enough experience in the field to handle your case. Additionally, some attorneys may charge outrageous fees. Below, you will find a list of questions you may want to ask any perspective attorney.

- How long have you been a barred attorney?
- Have you ever tried cases similar to mine, and if so, what were the results?
- In which court will the lawsuit be brought and have you litigated there before?
- How long do you think this case will last?
- What are the odds that this case will win?
- What strategy or approach are you planning to use?
- Are there alternatives to a trial?
- Can you please describe your fee structure?
- Will I be responsible for the court costs associated with my case?
- Will any portion of my case be handled by junior attorneys, paralegals or legal assistants? If so, can you reduce the cost?
- Does your firm take any pro bono cases?
- Are there any potential conflicts of interest?
- How should I communicate with you?
- How much time can you dedicate to this case?

Expense
One aspect of litigation of which the general public may not be aware is the expense associated with lawsuits. Environmental law, in particular, is very complicated and nuanced. Therefore, they cannot be treated like less complex lawsuits where your community can represent themselves pro se (without an attorney). Some law firms may be willing to represent your community pro bono (for free), but is not guaranteed. After you have an attorney, you will likely need to hire experts which can be hundreds to even thousands of dollars per hour. Depending on your attorney you may also be responsible for paying court fees for different filing and administrative needs. These costs can add up very quickly, so make sure your community is well equipped to handle the expenses associated with litigation.

Time
As highlighted by the Juliana case, which began in 2015 and still has not gone to court on the merits of the case, litigation can take years. While the Juliana case is unique, it is common for litigation to take months, if not years to complete. Additionally, once the case has been decided by the court, the losing side can appeal the decision. If there is
an appeal, a higher court has to determine whether the lower court made the right
decision. This process can also take months or even years. You may even have to pay
for new, more expensive attorneys.

Standing
One of the biggest challenges in bringing a lawsuit in the climate change context is
standing. In short, standing involves your community’s right to bring a lawsuit. In order
to even to be heard in court, a community must prove all three of the following: (1) it has
sustained a real injury; (2) the action of the entity being sued caused the injury; and (3)
a court’s intervention can help to fix the harm. Proving all three for claims about climate
change justice is almost impossible. Because so many factors can contribute to an
injury, it is difficult to place the blame on any one entity, or even a group of entities. This
is discussed more below. The three elements listed above are fairly standard across all
jurisdictions. However, your state may have additional standing requirements. When
bringing a lawsuit, it is essential that your community reviews your state’s standing rules
and procedure to ensure your community can bring a lawsuit. If your community cannot
show it has standing, the court will dismiss its case.

Causation
Another challenge you and your community group may face is proving causation. When
we think about large corporations polluting our environment, we often think that they are
being “negligent.” Businesses are sued all of the time for negligence (when someone
slips and falls in a grocery store because the store’s employees forgot to clean up a spill
and put up a sign, the person who fell has a strong case against the store for being
negligent). With climate change, though, it is extremely difficult to prove one specific
polluter, or even a group of polluters, are the cause of the harm experienced by a
person or community. This has some merit. For example, if you live in a city, near a
major polluter like a coal-fired power plant, it is possible that the polluter is causing harm
to your health and property. However, automobile drivers in the city, people living in the
city who use more energy than necessary, people who litter, people who smoke
cigarettes, and many others, also bear some responsibility for the harm your community
experiences. So, large polluters argue, it would be unfair to force the major polluter to
pay for all of that harm.

Redressability
A large barrier to obtaining standing in climate change suits is the ability for a court to
remedy the alleged injuries claimed by the plaintiff. Redressability is the ability of the
court to fix or offer a remedy to the injured party. It is not often established in
environmental law suits because the relief sought by plaintiffs frequently requires the
cease of operations of fossil fuel corporations and/or requires certain statutes affecting
the fossil fuel industry to be ruled unconstitutional. As mentioned above, the Juliana
plaintiffs asked the courts to remedy their injury by mandating an industry-wide
movement to clean energy sources. The Juliana court deemed such a request
unfeasible and unable to be redressed. This is one of many reasons the Juliana case
will likely be dismissed. It is suggested that your community group consult with its
attorneys to tailor a feasible remedy request that ensures redressability.
Remedies Available through Litigation
A prevailing lawsuit, or even a lawsuit that results in settlement, can produce financing for communities. However, a monetary judgment is not always granted, and if it is, it may not be distributed to your community. The type of lawsuit, the amount of harm caused, and location of the court can shape the remedy.

Resolving Cases, Litigation and Settlement:
A settlement is the result of an agreement between the parties involved in a lawsuit. Settlements are negotiated between the parties and the terms are incorporated in a “settlement agreement” that may be presented to the court for approval. Settlements decrease the cost, time, and risk associated with litigation. The majority of cases filed are settled, and never make it to court.

Alternatively, if the parties cannot settle then the case will go to trial. If a claim makes it to trial, and the parties have sought damages, a court may award the winning party with damages to be paid by the losing party. If the court finds for the plaintiff, this would be your community group; the court can award damages, where the defendant, the person or entity being sued, is required to pay for the harm they caused. The amount and type of award is based on the kind of claim being brought, how much harm was caused, and whether or not the harm was intentional.

The remedy for a tort case, generally, will be different from an award for a case based on statutory violations. For example, in torts cases, courts will award “compensatory” damages for loss or harm. These damages are designed to make the injury party “whole.” The court may also issue punitive damages if it believes the polluter acted egregiously and needs to be punished for its action. For claims based on statutes, the court will generally award a civil penalty if the polluter is found guilty. This money will go to the government, and not the community. Courts may use their discretion and opt to not issue monetary damages as a remedy. If a court decides to issue monetary damages, those funds are generally given to federal and state governments that can then decide how to utilize the money on their own.

Again, because the court typically has discretion in awarding civil penalties, your community may not receive any funding, even if you win. For example, the court may issue an injunction, instead of, or in addition to a monetary award. An injunction is simply an order to stop doing the conduct that is causing the harm. Some of the major federal environmental statues even have provisions that allow courts to charge the polluters criminally, meaning those responsible for the violation would face jail time.
Case Study: Environment Texas

As previously stated, environmental lawsuits rarely lead to funding going directly to communities for climate adaptation projects. For example, in Environment Texas Citizen Lobby v. Exxon Mobil Corporation, environmental groups, Environment Texas and the Sierra Club sued Exxon, alleging one of its complexes consistently released pollutants into the air for years and violated the Clean Air Act. Although the court only found a total of 94 daily violations, on appeal, the court ordered Exxon to pay $19,951,278.00 as a civil penalty. However, this money is not going to the community groups who brought the lawsuit, but rather the court ordered the company pay the fine to the U.S. Treasury Department. Keep in mind that large awards like this rarely go to the community.


Case Study: Volkswagen Trust

There are instances where community groups receive funding for climate adaptation projects through settlements. In 2015, Volkswagen admitted to covering up the emissions levels of their diesel vehicles in order to meet nationwide emission standards. To avoid litigation, Volkswagen agreed to a settlement that required the company to pay $25 billion dollars to the United States Government. The government then placed $2.7 billion into an Environmental Mitigation Trust fund. States involved in the settlement then received their share of the $2.7 billion in order to remedy the effects of the extra emissions produced by Volkswagen’s diesel vehicles. Most states have a plan for these funds, but have not distributed any funds yet. For example, Maryland received $75.7 million from the Volkswagen Settlement. Maryland’s government plans to use 15.8% their settlement money on assisting communities affected by high amounts of ozone (a combination of dangerous chemicals that can have a negative impact on human health) and replacing outdated diesel School buses with more efficient replacements. Many states, like Maryland, invite non-profits and communities to apply for grants.

If you’re interested in learning more about the Volkswagen trust and fund distribution, see the Sierra Club’s guide: https://content.sierraclub.org/evguide/sites/content.sierraclub.org.evguide/files/THE%20VW%20SETTLEMENT%20GUIDE%20for%20Advocates.pdf.
Module 2

Sea Level Rise
Module 2: Sea Level Rise

Introduction
Of all of the negative effects that global warming brings with it, rising sea levels may be the most difficult for communities to adapt to. Why is this? The world’s seas and oceans are simply too massive, and their forces too strong, for humankind to control. A basic rule of chemistry is that it is harder to change the temperature of a liquid than it is a solid. This means that once the seas start to warm, it is extremely difficult to cool them off, even if we are successful at reducing surface temperatures. This warming of the seas has already begun.


The above image is an aerial view of the Isle de Jean Charles in Southeast Louisiana. This community is considered “America’s first climate refugees.” The adaptation efforts of this community are truly inspiring, and in many ways serve as an example of how to equitably finance adaptation to sea level rise. For some news reports on this community, check out these articles: https://www.nytimes.com/2016/05/03/us/resettling-the-first-american-climate-refugees.html; and https://www.citylab.com/environment/2018/01/how-to-save-a-town-from-rising-waters/547646/
Why are the seas rising?

There are two primary causes of sea level rise:
1. thermal expansion
2. melting ice

Thermal expansion: as things heat up, they get bigger. A result of “bigger” bodies of water is higher sea levels.

Melting ice: water that was once in its solid state either on land or floating on water is now in its liquid state and adding more water to the seas.

Seas are rising and they will continue to rise for the foreseeable future.

If you are interested in learning more about causes of sea level rise, check out the Smithsonian Institute: https://ocean.si.edu/through-time/ancient-seas/sea-level-rise.

Why isn’t mitigation enough?

Several studies, by governments and by private institutions and researchers, have found that even if all of society immediately implements the best mitigation practices available, sea levels will rise to the point of threatening tens, and potentially hundreds, of millions of people.

One of the earlier studies to predict this was the UN’s IPCC 2013 report, available here: https://www.ipcc.ch/report/ar5/wg1/.

That report found that sea levels will rise by 1-2 feet by 2100 with the immediate global adoption of mitigation best-practices.

Since it appears that the world will not be adopting mitigation best practices any time soon, we know that sea levels will rise beyond 1-2 feet. While adaptation would still be necessary with 1-2 feet, it is even more pressing knowing that current practices leading to global warming will not be mitigated substantially in the near future.
What options do communities have to adapt to sea level rise?

<table>
<thead>
<tr>
<th>1. Barriers and Reinforced Shorelines</th>
<th>2. Elevating and Floating Structures</th>
<th>3. Planned or Managed Retreat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranging from small-scale living shorelines to massive sea walls, barriers can reduce the harmful effects of increased storm surges and more aggressive erosion.</td>
<td>For communities that wish to stay where they are geographically, elevating or floating their structures, such as their homes and businesses, may be the only option.</td>
<td>For some communities, the geographic area in which they reside will be completely overtaken by water. It may be possible for these communities to stay there, but it will not be safe.</td>
</tr>
</tbody>
</table>

However, most experts agree that these are only temporary solutions, and in some instances can be more harmful to the environment than if nothing was done. This is also referred to as coastal “armoring.”

This, however, is an expensive option. Additionally, floating (or amphibious) structures is a developing area with no real dedicated financial resources, so even if it would be the best option for your community’s structures, it may be prohibitively expensive and extremely difficult to find the expertise needed.

For these communities, their only option is to move away. Also, some communities may find that barriers and elevated structures are too expensive or temporary, and that it is in the communities’ best interest to relocate.

These adaptation measures can be combined, and some communities may find that a combination is necessary. For example, a community that experiences both shoreline erosion and increased storm surges would benefit from both barriers and elevated structures.

**Financing Sea-Level Rise Adaptation**

The three adaptation methods listed above all have costs. Depending on a variety of factors, the government or the community members will be better positioned to pay for them. Often, the most affordable and equitable way for communities to adapt to sea level rise is through a combination of public and private projects, with different proportions of public and private funding depending on who benefits most and who is best positioned to pay, and when.
Evaluating the Risks
Sea level rise is a global phenomenon that presents different risks to different communities. If your community’s financial resources are limited, it is extremely important to accurately determine what adaptation projects should be prioritized.

Some of the major threats of sea level rise are:

**Coastal Flooding**- land that was once safe from sea water will be periodically inundated with water, flooding communities much more regularly.

**Erosion**- as tides rise and waves crash on land and infrastructure not designed for such circumstances, erosion will occur more rapidly. This can be especially dangerous when storms come, because the land and structures that previously served as barriers will be weakened.

**Inadequate Infrastructure**- infrastructure in many communities was not designed, engineered, and built in expectation of climate change. For some communities, this could mean that critical infrastructure, like roads, bridges, and tunnels, will become unsafe.

**Saltwater Inundation**- some communities rely on their freshwater and brackish ecosystems. As sea levels rise, some of these ecosystems will be flooded with salty seawater, which can seriously harm them.

**Note on Inland Communities:** This module is focused on the communities directly affected by sea level rise, which is typically coastal and flood plain communities. To be sure, inland communities face risks from sea level rise, such as (1) more severe weather events; (2) changes in agriculture; and (3) influxes of displaced communities. These issues are addressed in other modules.

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**Risk Evaluation Tools**

**Climate Central Surging Seas Program:** The NAACP has previously partnered with Climate Central, an organization devoted to researching and reporting on climate change. Their Surging Seas program is devoted to sea level rise. By going to the Maps & Tools page of their website, [http://sealevel.climatecentral.org/maps](http://sealevel.climatecentral.org/maps), and reviewing the materials, you can determine the risk posed to your community.

**NOAA’s Office of Coastal Management:** NOAA provides a variety of tools and data to help your community predict the effects of sea level rise. By going to this page, [https://coast.noaa.gov/digitalcoast/tools/slr.html](https://coast.noaa.gov/digitalcoast/tools/slr.html), you can access these resources, including an interactive map (the side bar of the interactive map has a “Local Scenarios” feature that could prove quite helpful).

**The Union of Concerned Scientists** offers an interactive mapping tool based on congressional districts. An overview of the tool with recommendations on how to use it (and links to the tool itself) is available here: [https://blog.ucsusa.org/kristy-dahl/sea-level-rise-coastal-congressional-districts-interactive-map](https://blog.ucsusa.org/kristy-dahl/sea-level-rise-coastal-congressional-districts-interactive-map).
Resourcing Revolutionary Resilience: Transformational Climate Adaptation Finance Toolkit

Barriers and Coastal Reinforcement

Costs to Consider

- Raw Materials (oyster shells, rocks, concrete, netting, plastics, steel or other metals, plants, nails, screws, rope, etc.)
- Tools & Equipment (hammers, power tools, heavy machinery, specialty equipment, etc.)
- Labor (engineers, architects, scientists, lawyers, construction workers, etc.)
- Environmental Assessments
- Transportation of materials and labor
- Monitoring and security
- Maintenance
- Insurance
- Repair
- Permits and fees
- Taxes
- Surveys

Evaluating the Costs

- NOAA (note: costs are in wide ranges, meaning actual costs may be significantly higher or lower). [https://coast.noaa.gov/data/digitalcoast/pdf/living-shoreline.pdf](https://coast.noaa.gov/data/digitalcoast/pdf/living-shoreline.pdf)

When discussing coastal barriers and reinforcement, experts often refer to how “green” or “gray” the structures are. The more green a barrier or reinforcement, the more it incorporates the natural ecosystem, and usually the less rigid it is. The more gray something is, the more it uses rigid human-created materials, such as concrete and steel. The following barriers and reinforcements are provided in order of most green to most gray.
Living Shorelines and Beach Nourishment

In communities that are not at risk from high wave energy, living shorelines provide an environmentally sustainable way to adapt to sea level rise. Often, these are more affordable to install and repair than more rigid artificial barriers. However, these do not offer the sort of highwater and storm surge protection that the rigid structures do.

The Center for Coastal Resources Management provides resources to help you determine what type of living shoreline, if any, is appropriate for a community: http://ccrm.vims.edu/livingshorelines/faq.html.


*the cost estimates below come from these sources and the three provided in the “Evaluating the Costs” table above.

<table>
<thead>
<tr>
<th>Vegetation Only - this involves planting native species along shorelines to create a natural buffer between land and sea.</th>
<th>Cost for professional services: NOAA estimates at “up to $1,000 per linear foot,” but if the project does not require any additional fill (sand, soil, etc.) then $25-100 per linear foot is more reasonable. Even with fill, these projects rarely exceed $500 per linear foot. Maintenance costs are estimated at up to $100 per linear foot per year, but this is on the high end. Do-It-Yourself: $22 per linear foot.</th>
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<tbody>
<tr>
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<tr>
<td><strong>Oyster Shells</strong></td>
<td><strong>Cost for professional services:</strong> $350-400 per linear foot. Maintenance costs are estimated at up to $100 per linear foot per year, though they decrease as a natural ecosystem develops. This also includes living breakwaters. <strong>DIY:</strong> $5-15 per linear foot for shallow waters (DIY is not realistic for deep water)</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Wood &amp; Stone Edging &amp; Sills</strong></td>
<td><strong>Cost for professional service:</strong> $1000-2000 per linear foot. Maintenance costs are estimated at up to $100 per linear foot per year. (this is according to NOAA and is on the high end) <strong>In this case, installing the vegetation is something the community members may be able to do themselves. If the wooden or stone barriers are small-scale, community members can potentially perform this work as well. Laying large wooden logs and moving heavy stones is best left to the experts (which your community might have!).</strong></td>
</tr>
<tr>
<td><strong>Beach Nourishment</strong></td>
<td><strong>Cost for professional services:</strong> $1000-2000 per linear foot. Maintenance costs are estimated at up to $100 per linear foot per year. <strong>Beach nourishment often requires special machinery, and at a minimum trucks capable of delivering large quantities of sand. For these reasons, DIY often isn’t an option.</strong></td>
</tr>
</tbody>
</table>

**Oyster Shells** - these can be used for a variety of purposes. They can line the shoreline and provide a barrier, they can be placed in open water to provide a natural way of breaking waves before they hit and erode the shore, and other uses. To see how oyster shells are being used for sea level rise adaptation, check out: [http://www.pbs.org/wnet/peril-and-promise/2018/07/living-shorelines-use-oyster-shells-marsh-grass-reverse-coastal-erosion/](http://www.pbs.org/wnet/peril-and-promise/2018/07/living-shorelines-use-oyster-shells-marsh-grass-reverse-coastal-erosion/)

**Wood & Stone Edging & Sills** - this involves using wood or stone to create a perimeter for vegetation, providing a more durable barrier immediately between land and sea. These can be particularly helpful for areas that experience light but consistent waves.

**Beach Nourishment** - this could involve a few additional steps, but mostly refers to adding sand to beach areas. Adding vegetation can create a root structures that help hold protective dunes in place.
There are many factors that determine costs, and the above figures are only supposed to give you an idea of ranges.

The universal need for a more just and inclusive world, in opposition to the commodified and exclusionary world of neoliberalism, is the great event of our century; it opens the possibility of joining together local, national, sectoral, and class struggles in one single struggle for the formation of a Planetary Community, the self-realization of civil society and the construction of a world ‘where many worlds fit.’

-The Zapatista Army of National Liberation
1996:151
Rigid Structures and Shoreline Armoring

Some communities may find that a living shoreline does not provide enough protection. For communities that expect substantial storm-surge, this is likely the case. These communities may determine rigid structures are all that can protect them from the changed climate.

Communities considering large rigid structures should seriously weigh the costs and benefits over time. The cost of installing a large sea wall can be the same as raising all of the homes in the community, or potentially even relocating the community, and sea walls can only do so much.

Communities may find that a combination of living shoreline and a more rigid structure is best for their purposes. It some instances it may even be more affordable for a combination than just a rigid structure.

There are much fewer opportunities for the DIY option with rigid structures. These often require very specialized equipment and machinery. They also require engineers and architects, and others.


To read about ecological impacts of rigid structures, check out [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5421310/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5421310/).

<table>
<thead>
<tr>
<th>Groins or Jetties</th>
<th>rock, concrete, steel, or wood that is perpendicular to the beachfront, similar in appearance to a pier.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Some estimates put the price per linear foot in the $150-350 range, others from $2,000-5,000 per linear foot for initial construction, all depending on the materials used, depth of water, and length; $100-500 per linear foot per year for maintenance and repair.</td>
</tr>
</tbody>
</table>
### Financing for Barriers

If your community determines that a barrier is needed to protect from sea level rise, there are a variety of financial resources and tools your community has access to. By applying the principles, systems, and structures discussed in Module 1 to the financial resources provided here, you can promote equity in climate adaptation finance. Many factors will determine what financial resources are available, but scale is certainly one of the most important considerations. For relatively small-scale living shorelines, it is likely

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Cost Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakwater -</td>
<td>NOAA places the price range from $5,000-10,000 per linear foot for initial construction, and maintenance costs estimated at over $500 per linear foot per year. Other sources say this is more in $800-1,200 range per linear foot. The depth of the water is the primary determinant of how expensive the project will be, so this is only economical in relatively shallow waters.</td>
</tr>
<tr>
<td>Revetments -</td>
<td>NOAA places $5,000-10,000 the per initial linear cost foot, from with maintenance at $100-500 per linear foot per year. Other sources indicate a price range of $100-300 per linear foot. The materials used have a substantial effect on price.</td>
</tr>
<tr>
<td>Bulkheads -</td>
<td>NOAA puts the price at $2,000-5,000 per linear foot for initial construction, and annual maintenance and repair costs of $100-500 per linear foot. Other sources place the price anywhere from $500-1,000 for initial construction.</td>
</tr>
<tr>
<td>Seawalls -</td>
<td>NOAA estimates the initial construction at $5,000-10,000 per linear foot, and maintenance repair at over $500 per linear foot per year. The reality is that seawalls are usually too large of a project to be financed at the community level – governments typically fund these.</td>
</tr>
</tbody>
</table>

There are many factors that determine costs, and the above figures are only intended to give you an idea of ranges.
that a local 501(c)(3) can raise the money and carry out the project all by itself. For community-wide bulkheads and breakwaters, it is more likely that a variety of entities will be involved. Remember, try to find a way to raise revenue for sustainability and resilience. Living shorelines can revitalize ecosystems, and create landscapes that people are willing to pay to visit and enjoy. More rigid structures can be built to have productive use, such as a sport-fishing pier.

Federal Funds and Programs for Barriers
Use grants.gov, go to “Search Grants” and limit by Category: Agriculture; Community Development; Disaster Prevention and Relief; Environment; and Transportation; then further limit the Eligibility to the entity your community will use to apply for the funds

NOAA:
- Office for Coastal Management Funding Opportunities Page: https://coast.noaa.gov/funding/
- Department of Commerce Grants Policy: http://www.osec.doc.gov/oam/grants_management/policy/default.htm (NOAA is an agency in the Department of Commerce)
- This is a general funding announcement to fund NOAA programs, including those related to sea level rise adaptation; applications are due September 30, 2020: https://coast.noaa.gov/funding/_pdf/NOAA-NFA-NFAPO-2018-2005418-NOAA-BAA-posted-09.30.2017.pdf.
  - Applies to:
    - Nonprofits
    - Commercial organizations
    - International or foreign organizations or governments (Does your community have strong ties to any of these who might be willing to issue a subgrant?)
    - Institutions of higher education (Can you get subgrants? Can you get on the planning committee? enter MOUs? Etc.);
      - State, local, and Indian Tribal Governments (Can you get subgrants? Be on a planning committee? Enter MOUs? Etc.)
  - Funding Instrument:
    - Grant agreement (in most cases)
    - Cooperative agreement (if NOAA is heavily involved in the project)
  - Unless congress says otherwise in the appropriation, cost sharing is not required.

Specific Programs:
- Coastal And Marine Habitat Restoration Grants
  - Funding announcement: NOAA-NMFS-HCPO-2019-2005889- Community Based Restoration Program
• Coral Reef Conservation Program, Domestic Coral Reef
  o Awards between $30,000 - 80,000
  o For “coral reef conservation projects in shallow water coral reef ecosystems”
  o Limited geography, but applies to most US island territories
  o Deadline was Jan 29, 2019
  o Contact: Liz Fairey (301) 427-8632; liz.fairey@noaa.gov

• Great Lakes Habitat Restoration Regional Partnership Grants
  o Funding announcement: NOAA-NMFS-HCPO-2019-2005904
  o Minimum award is $1 million, max is $40 million, thus this is for large scale projects
  o Designed to take place over several years
  o Only applies to Great Lakes communities
  o Contact: Rina Studds (301) 427-8651; 1315 East-West Hwy, NOAA Restoration Center, F/HC3, Silver Spring, MD 20910

• NOAA Coastal Resilience Grants Program
  o This has been used to fund a variety of living shoreline projects.
  o Approximately $60 million has gone to coastal projects since 2015
  o To see projects that have been funded by this, visit: https://coast.noaa.gov/resilience-grant/

• The Coastal and Estuarian Land Conservation Program (CELP)
  o Through this program, NOAA provides funds to state and local governments that then purchase land or easements for the purpose of preserving them.
  o A community group could work with the state and local governments to sell property and grant easements to vulnerable property to help finance their adaptation efforts.
  o This is a nontraditional means of financing climate adaptation, but it could be valuable for some communities.
  o To learn more, visit: https://coast.noaa.gov/czm/landconservation/

• Here’s a program funded by NOAA grants: **North Carolina: The North Carolina Coastal Federation** will help waterfront landowners pay to install “living shorelines” on their property. Using plants, oyster shells and other natural features, living shorelines are natural alternatives to seawalls and other types of hardened structures: https://www.coastalreview.org/2016/08/grants-can-help-pay-living-shorelines/
EPA:
The general funding page for EPA adaptation funding and programs can be found at:
https://www.epa.gov/arc-x/federal-funding-and-technical-assistance-climate-adaptation

EPA’s resources on applying for grants can be found here:
https://www.epa.gov/grants/how-apply-grants; and here:

Specific Programs

• Climate Ready Estuaries Program
  o This program helps local conservation organizations preserve and adapt estuaries.
    ➢ The program does not provide money directly to community groups, but can work with community groups to provide “tools and assistance to address climate change vulnerability and plan for adaptation.”
    ➢ The general web page is here: https://www.epa.gov/cre/about-climate-ready-estuaries-program.

• Environmental Justice Small Grants
  o Deadline was February 15, 2019 (but it may come back!)
  o Maximum grant is $30,000
  o Provides money directly to community groups in “underserved communities,” primarily for planning and educating on correcting environmental injustices
  o Contact: Jacob Burney (202) 564-2907; burney.jacob@epa.gov
  o General website: https://www.epa.gov/environmentaljustice/environmental-justice-small-grants-program
  o To see 2017’s grant recipients (none of which dealt with barriers) see:

• Chesapeake Bay Program
  o Since 1983, this program has worked to restore and preserve the Chesapeake Bay and its watershed.
  o The program reaches Delaware, Maryland, New York, Pennsylvania, West Virginia, and Washington, DC.
  o The Program brings together, federal, state, and local government agencies and officials, and nonprofits and educational institutions are also part of the decision-making process.
  o In 2019, funding was cut dramatically, and most of the work in the immediate future will relate to monitoring, as opposed to starting (and funding) new projects.
  o Contact: James Hargett, EPA Chesapeake Bay Program Office, 410 Severn Ave, Suite 112, Annapolis, MD 21403; (410) 267-5743; Hargett.james@epa.gov
  o General program website: https://www.epa.gov/aboutepa/about-chesapeake-bay-program-office
• Great Lakes Programs
  o This includes the Great Lakes Restoration Initiative and the Great Lakes Shoreline Cities Grants
  o This is an example of funding that typically goes first to the state, and then is sub-granted
  o There are opportunities to work with the state or local government agencies carrying out the projects, and depending on the state the government may be required to include community groups
  o The general website is here: https://www.epa.gov/great-lakes-funding

• Remember, if the location of the barrier is on a brownfield, then brownfield grants may assist with some costs https://www.epa.gov/brownfields/types-brownfields-grant-funding.

Fish & Wildlife Service
• Great Lakes Restoration Initiative
  o This program provides funding and support for fish and wildlife restoration and conservation activities in the Great Lakes region.
  o Living shorelines promote biodiversity, and are eligible to receive funding and support from this initiative.
  o Most of the money goes to the states or municipalities, but local community groups are eligible for some funding
  o Funding Announcement: F19AS00073
    ❖ Grants range from $30,000-200,000
    ❖ Funding instrument is a cooperative agreement
    ❖ FWS expects to have a significant role in the project
    ❖ Contact: Christie Deloria-Sheffield (906) 226-1240; Christie_deloria@fws.gov

State Funds and Programs for Barriers
All coastal states offer funding in some fashion that can help build barriers for sea level rise. Like the federal government, grants are often available. Additionally, conduit bonds can be useful for more rigid barriers, as they are designed to be long-term capital investments with significant public benefit.

Every state is different, and this toolkit will not list out specific programs like it did for the federal government. By contacting the local agencies and departments, you can find out which options are available to you. For example, the Chesapeake Coastal Service in Maryland offers several different financing resources that could help pay for a barrier: http://dnr.maryland.gov/ccs/Pages/funding/fundingopp.aspx. Similarly, California’s Coastal Commission operates the Local Coastal Programs, which can help provide community groups with funding for barriers: https://www.coastal.ca.gov/lcps.html.
Local Funds and Programs for Barriers

Usually, local governments receive their funding from the state and federal governments, then they contract with local private entities to carry out the given adaptation project. Localities also issue conduit bonds, which are useful for longer-term sea level rise barrier projects. The Center for Coastal Resources Management, in its Rivers & Coasts publication in 2014, highlighted several local living shoreline projects. [Link](http://ccrm.vims.edu/publications/pubs/rivers&coast/RC914.pdf) importantly, these all use funding from a variety of sources.

Here’s a grant program for barriers by a local government agency: **Oregon: East Multnomah Soil and Water Conservation District**: The Partners in Conservation (PIC) program provides funding to support conservation projects and conservation education in the District. In order to be eligible for funding, projects or events must be located within the EMSWCD service area (all Multnomah County east of the Willamette River) or serve its residents. Projects must show a clear public benefit in one or more of the following: habitat restoration or watershed health, soil erosion prevention/control, soil health, water quality, water conservation, and/or environmental education. [Link](http://emswcd.org/grants-and-cost-share/apply/for-organizations-pic/)

Private Funds and Programs for Barriers

It is possible to finance barrier projects exclusively through grant, conduit bond, and other public dollars, but this is not always reliable. You might not win the grant, or supporting grants, the public may not support your bond, and you may not meet the criteria for other resources. For these reasons, using private dollars could be necessary.

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**Annapolis, MD: Parkwood neighborhood creates urban living shoreline.**

The project costs approximately $100,000, 95% of which was funded by the Chesapeake Bay Foundation, Chesapeake Bay Trust, Maryland Department of Environment, Maryland Department of Natural Resources, Restore America’s Estuaries, and NOAA, the other 5% came directly from the community, and community members provided a significant portion of the labor as volunteers. This is also a good example of how multiple sources of funding are required for any sort of moderate-scale project. To read more about the project, check out: [Link](https://www.capitalgazette.com/cg2-arc-1e51a539-0e31-513a-93f6-0e0154e20bd4-20120616-story.html) [Link](http://www.cbf.org/how-we-save-the-bay/programs-initiatives/maryland/cbf-creates-first-urban-living-shoreline.html)
to carry out barrier adaptation efforts. This is especially the case for projects that go beyond vegetation-only living shorelines for areas larger than neighborhoods.

**Foundations:** Foundations typically make grants to larger nonprofits, but also to smaller nonprofits. Many foundations only want to fund efforts that are “innovative” and “scalable.” There are many foundations engaged in financing barriers for sea level rise, here are some of the major ones:

- The Kresge Foundation (https://kresge.org/programs/environment) (note that there is limited application to the actual construction)
- Dorris Duke Charitable Foundation (https://www.ddcf.org/what-we-fund/environment/)
- The Kendeda Fund (https://kendedafund.org/our-programs/southeast-sustainability/) (note that this is probably limited to planning)
- Charles Stewart Mott Foundation (https://www.mott.org/work/environment/)
- Wells Fargo Environmental Grant Program (https://www.wellsfargo.com/about/corporate-responsibility/community-giving/environmental-grant-program/)
- Abell Foundation (https://www.abell.org/environment) (note that this is focused on Maryland)

Additionally, local foundations may be a great way to fund smaller-scale projects, or provide supplemental funding. Not all of these local foundations will have user-friendly websites, so it may be better to communicate with them via phone. Visit the Foundation Center’s website for resources on how to find foundations:
https://fconline.foundationcenter.org/?gclid=Cj0KCQiA14TjBRD_ARIsAOCmO9ZgnmaPjcZVvmwwb3smjoYVjMYFx7CoCQZn9OdqLfnXRUjwZNmQqCsaAk-REALw_wcB

**Public Charities:** For building barriers, nonprofits can be particularly helpful in financing the planning stage. Here are two charities that provide funding for climate adaptation:

- Open Space Institute: Resilient Landscapes Fund https://www.openspaceinstitute.org/funds/resilient-landscapes-funds

**For-Profit Sector**

- Traditional loans: some barriers can be constructed via traditional loans, or at least part of the financing can come from this source. If the barrier is constructed in a way that will have some revenue generation (sport fishing, scenic recreation, etc) then a business entity could probably get a loan for it.
- Insurance: if you live in an area where insurance rates are higher because of the threat of sea level rise, constructing a barrier may lower insurance rates, and those savings could be used to finance, either as pay-as-you-save or retroactively, the construction of a barrier. For example, a Community
Development Corporation could receive a grant to cover 25% of barrier construction, then sign contracts with individual households that obligate the households to pay to the CDC the amount saved in insurance each year after the barrier is built, then the CDC could take out a loan for the other 75% and use the insurance savings payments to pay for all or part of the loan (pay-as-you-save).

- **Public Private Partnerships**: Different locations have different opportunities. In Maryland, the Chesapeake Bay Trust offers at least two grant programs that could fund barrier construction and installation: Nontidal Wetlands [https://cbtrust.org/grants/non-tidal-wetlands/](https://cbtrust.org/grants/non-tidal-wetlands/); and Green Streets, Green Jobs, and Green Towns (G3) [https://cbtrust.org/grants/green-streets-green-jobs-green-towns/](https://cbtrust.org/grants/green-streets-green-jobs-green-towns/).

**Considerations for Residential vs. Commercial endeavors:**
If the barrier protects commercial or business interest, those interest should be involved in the financing of the barrier. These business entities can categorize the expenditures as capital expenditures and take advantage of the tax benefits. Additionally, if their commercial insurance rates decrease, they can use this savings to offset the initial expenditure.

**Note on revenue generation:**
- Revenue generation is a priority in all of the adaptation efforts your community takes. Of course, your community should build the barrier that provides the greatest degree of protection relative to cost, taking into consideration specific community needs, but the potential for revenue generation should be applied to the analysis.
- That is, if a wood-edged living shoreline would provide the exact same protection as an oyster shell-edged living shoreline, but the oyster shells are more expensive than wood where you are, but would provide revenue generation by enhancing marine biology and flora (and therefore value and use of the land), it may be worth spending extra in the short-term on the oyster shells.

**Elevating or Floating/Amphibious Structures:**
As long as humans have been living near water, they have been elevating their structures. As you might imagine, raising a home 10-20 feet in air is not cheap. For some communities, though, the only way to remain in their current geographic locations is to elevate their residences. Floating homes are also a long-existing human innovation. Floating homes may seem more radical than elevating them, but may be more appropriate in certain circumstances.

**Elevating**- for a detailed overview, see: [https://www.fema.gov/pdf/rebuild/mat/sec5.pdf](https://www.fema.gov/pdf/rebuild/mat/sec5.pdf)
Lifting or Extending the Foundation
This process involves separating the home from the ground, sometimes maintaining the foundation and sometimes replacing it. Wood, cement/concrete, or occasionally metal is used as “stilts” or “pilings” to keep the structure elevated. Depending on the specific environmental conditions in your community, you may be required to use a specific material. How high you should raise your home is also based on several conditions. From a financial perspective, the up-front costs are obviously important, but the potential for saving from insurance and other costs must be part of your analysis on what materials and how high to go. Additionally, depending on which flood zone your community is in, you may have a required elevation.

Costs to consider: FEMA provides this process
1. Evaluate the existing foundation to determine whether it will support an elevated house
   - This evaluation will need to be performed by an expert.
   - Some house-lifting organizations will provide this service in the overall cost of the project, but if the home is not capable of supporting an elevated house, you will likely still be charged for this evaluation.
   - What if the evaluation determines that the house can be raised but then, after construction begins, something is noticed or determined that prevents the house from being raised? Will the evaluator pay reimburse you for costs?
   - Are you in an area that experiences earthquakes or high winds?
2. Obtain necessary permits
   - Depending on where you live, this could be relatively cheap and easy, or it could be extremely complicated, expensive, and take a long time.
   - Are you near protected lands and waterways?
   - Are there lots of trees around your home? Root structures and tree tops may require additional permits to remove
   - Will the firm handling the construction help with this?
   - What do the permitting authorities say about timelines?
3. Turn off utility services and disconnect utility lines
   - Usually, this is as simple as contacting the utility company and explaining why you need them turned off.
   - Depending on the nature of the utility service, there may be a fee to have a technician physically turn the utility off; inquire about this when you call.
4. Excavate around the foundation as necessary to install lifting beams, and, if required to strengthen the foundation OR demolish foundation and construct new one
   - Not only will this require specialized, heavy machinery, it will require specialized labor
• If the excavation team discovers something under the surface of your property (such as an historical artifact or an endangered species), it may dramatically slow down the entire process and be extremely expensive to comply with relevant regulations (this is quite rare, but something to consider before beginning the excavation process)

5. Cut holes in the foundation and house walls as necessary to install the network and lifting beams
   • Like excavation, this will require specialized machinery and labor

6. Raise house with jacks
   • More specialized equipment and labor

7. Extend foundation walls to desired height and install wall openings to allow flood waters to enter
   • More specialized equipment and machinery

8. Construct stairs, escalator, or elevator to allow for entry and exit at new height* (not provided by FEMA)
   • This will require carpenters, and, depending on costs, could be purchased separate from the rest of the construction.

9. Lower house onto extended foundation walls, reconnect utility lines, and restore utility services
   • Of course, lowering the house onto the new foundation will be included in the cost of raising the home
   • However, turning utilities back on may have some additional fee

10. Restore landscaping* (not provided by FEMA)
    • During the construction process, the land around your home will almost certainly be damaged, paying a landscaping company to restore the property can have substantial cost

Keep in mind:

❖ This is the process, and does not include materials cost. The wood or concrete, and all of the supporting materials will have substantial costs.

❖ This process also doesn’t consider where you will live or do business while the construction is occurring. As soon as you turn off utilities your home is no longer fit to live in. If you have friends and family willing to help you during this process, that can be extremely helpful, if not, you will need to find temporary housing, or rent temporary commercial space, which can dramatically increase the cost of raising your structure. Usually, the time that
the structure in uninhabitable is just a few days, but that might mean up to $1000 for a family to stay in a decent, nearby hotel, and even more for a business to find a place to store and sell its products and services.

- Total estimated cost is $30,000-$100,000, depending on these factors:
  - Size of structure
  - Number of floors
  - Status/condition of structure (older and damaged will be more costly)
  - Status/condition of foundation
  - Time
  - Permits
  - Labor
  - Liability (anyone working on raising your structure needs liability insurance, as the risk are so great; be sure to check that the entities are fully insured, but know that the more insurance means more cost to you)
  - Landscaping
  - Surprises (such as historical artifacts, improperly drawn property lines/surveys, protected species, etc.)

- The actual construction required to raise a structure usually takes a matter of days, but the entire process will likely takes months (particularly the evaluation and permitting phase)

Specific funds available

**FEMA**

- **Hazard Mitigation Grant Program**- this allows Individual Homeowners, Businesses, and Nonprofits to apply **through sub-applicants (which can include nonprofits)** for up to 75% of the cost of elevating a home or business (for more information, see [https://www.fema.gov/hazard-mitigation-grant-program](https://www.fema.gov/hazard-mitigation-grant-program)) (note that this applies to more than just elevating)
• **Increased Cost of Compliance**: Provides up to $30,000 for elevating a home or business. You are eligible if (1) you have an NFIP flood insurance policy; (2) community building department determines that your structure is substantially or repetitively damaged by flooding (meaning there needs to be damage first); and (3) the damage to the structure is at least 50% of the pre-flood market value. For more information, see [https://www.fema.gov/media-library/assets/documents/12164](https://www.fema.gov/media-library/assets/documents/12164).

• **Flood Mitigation Grant Program and Pre-Disaster Mitigation grant program**: by applying *through “subapplicants” (which cannot include nonprofits)* home and business owners can receive funding to elevate their structures. Unlike the HMGP, this process requires the use of a state, local, tribal, or federal government entity to apply on your behalf, and only after they’ve complied with certain planning regulations. For more information, see [https://www.fema.gov/flood-mitigation-assistance-grant-program](https://www.fema.gov/flood-mitigation-assistance-grant-program) and [https://www.fema.gov/pre-disaster-mitigation-grant-program](https://www.fema.gov/pre-disaster-mitigation-grant-program).

• **State/Local programs**: Some states, like Louisiana, have programs specifically for home elevation, but many do not. Check with your local emergency management agency to see whether any programs exist in your state.

• **Other ways to finance**
  - Pay-as-you-save
  - Increased property value
  - Productive use of new space
  - HUD Programs

**Raising the Floor and Roof**
Depending on the risk your community faces, the structures in your community, and available resources, it may make more sense to keep the current foundation of the structure intact and on the ground and instead raise the floor of the structure, and, if necessary or desired, raise the roof. If this is being done to comply with the NFIP, the area between the foundation and the floor may not be living quarters (but can be storage space). Depending on the current size of the structure, and the owners’ preferences, it may make sense to add a floor/story to the structure. For example, it would likely be more affordable for a two-story home with an attic to raise the floor and ceiling of the first story by a few feet, raise the floor of the second story by a few feet, delete the attic, and use the newly created space under the first floor to store what was previously in the attic, eliminating the need to raise the roof. Also, for example, it may make sense for a 1 story home with high ceilings to convert to a two-story home with moderate ceilings and a small amount of storage space under the newly elevated first story. The same source as above provides a general overview of this process: [https://www.fema.gov/pdf/rebuild/mat/sec5.pdf](https://www.fema.gov/pdf/rebuild/mat/sec5.pdf)
Costs to consider
The general process and costs for this are the same as for elevating the foundation, with a few important differences:

- If the roof needs to be raised, the roof will likely need to be deconstructed and reconstructed, and not all of the materials will be reusable. This will require specialized labor, equipment, and the purchase of new materials. This labor is not limited to construction workers, as architects and engineers will be necessary.

- If another level is installed on the structure, this will require specialized labor and significant new materials. This labor is not limited to construction workers, as architects and engineers will be necessary.

- There will not be the cost of purchasing large wooden or concrete structures to hold the structure in place, but there will need to be more minor supports between the elevated floor and original foundation.

- Depending on the type of structure and land it is built on, there will typically be less excavation and landscaping work than if the foundation was raised.

- The timeline for the actual elevation is likely to be slightly longer than for raising the foundation, since there is work that must occur inside the home.

- Depending on a variety of factors, mostly the construction strategy and whether the structure currently has more than one level, it may be possible to stay living and/or doing business in the structure during the construction.

- If only the floor needs to be raised, prices typically range in the $5,000-$10,000 range, depending mostly on the size of the structure, but also the condition of the structure.

- If the floor and the roof are being raised, prices run from $8,000 to $30,000, depending on the size and complexity of the job.

- If there is an additional level being added to the structure, prices can range anywhere from $60,000 to over $150,000. The range mostly comes from the desired purpose and features of the new level. If a new bathroom is installed, this alone can increase the cost by $15,000-30,000. Similarly, if a kitchen is added, prices can increase dramatically. Alternatively, if the new space is just being used as storage space or fairly simplistic living space, cost can be kept relatively low (but still likely more than $50,000, depending on the size).

Specific funds available
All of the programs listed above for lifting and extending the foundation are applicable here.

- Other ways to finance
  - Pay as you save
  - Increased property value
  - Productive use of new space
  - HUD Programs
**Floating Structures**

In the Netherlands, some communities are adapting to sea level rise by constructing structures (usually homes) to float on the water's surface. There are a few ways this is done, but usually the structure sits on a buoyant frame that is tethered to the ground, and when a flood occurs the structure rises with the water. In some cases, pre-existing structures can be retrofitted to float.

Floating homes are nothing new – “house boats” have been around almost as long as boats have been around. However, building inland structures to float is a somewhat radical way of adapting to climate change. In many cases, it is more economical and more structurally sound to raise the structure. In some situations, though, especially for preexisting waterfront communities who have less dense soil beneath their homes, a floating structure could be an available option. For a general overview, check out this article: [https://www.nbcnews.com/mach/science/how-floating-architecture-could-help-save-cities-rising-seas-ncna863976](https://www.nbcnews.com/mach/science/how-floating-architecture-could-help-save-cities-rising-seas-ncna863976). The Louisiana-based nonprofit Buoyant Foundation Project is dedicated to bringing floating homes to the US, and provides several case studies around the world: [http://buoyantfoundation.org/](http://buoyantfoundation.org/). The FLOAT house in New Orleans is a model for affordable and green floating structures: [https://www.morphosis.com/architecture/126/](https://www.morphosis.com/architecture/126/)

- **Costs to consider**
  - Insurance: until this adaptation method is proven, it could be extremely difficult to access affordable insurance for a floating structure.
  - Engineering and Architecture: this is a new type of adaptation, and has not been deployed at scale in the US; thus, finding engineers and architects to design the structure may be challenging, they may charge very high rates, and since there are few proven models, the likelihood of failure is higher.
  - Materials: according to the Buoyant Foundation Project, the materials needed to retrofit an existing structure into a floating one are cheaper than those needed to traditionally raise it. However, this is likely case-specific, meaning that for some people it will be cheaper to float and for some cheaper to raise.

- **Specific funds available**
  - In the US, there are not funds dedicated specifically to floating structures.

- **Other Sources of Funding:**
  - Research entities: as SLR becomes a more pressing concern, more research entities, like universities, will want to study the feasibility of floating structures. By offering to let your structure serve as a test structure, you may be able to get this work done with no financial cost to you. Of course, there are serious risk with this – not every research project turns out the way it was intended to. Though it did not pay for construction, Virginia used Sea Grant dollars to pay for research on floating structures: [https://vaseagrant.org/amphibious-architecture-in-hampton-roads/](https://vaseagrant.org/amphibious-architecture-in-hampton-roads/).
  - General home improvement grants and loans could be used to pay for
this.

- In other countries, these have been funded by public private partnerships and grants from international organizations.
- In Vietnam, a floating community was funded by an insurance company and the Global Resilience Partnership: [https://www.telegraph.co.uk/news/0/amphibious-homes-work-water-stay-afloat-floods/](https://www.telegraph.co.uk/news/0/amphibious-homes-work-water-stay-afloat-floods/). Note that this is unlikely to be available to US customers in the near future.
Planned or Managed Retreat
Already, sea level rise has caused Americans in South Louisiana to have to abandon their homes (see the case study below). For some communities, sadly, the land they live on will soon no longer be safe to inhabit, regardless of how strong their barriers are and how high they raise their structures. Additionally, even if a barrier or raising/ floating your structures would be sufficient, some coastal states have made it almost impossible (or extremely expensive) to build in coastal areas, with the policy rationale that coastal communities should be using their money to get away from the coast, not prolong their stay.

Of all the adaptation measures, moving away presents the most equity concerns. With respect to financial equity, moving away is particularly challenging. Since most people’s only valuable asset is their real property, and since the people are moving because their property is becoming uninhabitable, those people are in no position to finance their own move (at least not completely). Thus, there will be stakeholders outside of the community that have input on an issue foundational to the community’s existence and identity – where it is. For these reasons, extra care must be taken in addressing how to finance permanent relocations.

For some communities, abandoning their homes and other important infrastructure is not tolerable, but staying where they are is not safe. For these communities, moving the physical structures is an option, though it is an extremely expensive one.

In general, the public funding in this area is buy-outs, meaning that the government will buy your property (often at a lower price than market) so that you can have money to find a new place to live. This raises serious equity issues, as will be discussed below. To read about an example of how buy-outs can be destructive, check out this article, https://www.citylab.com/environment/2018/01/how-to-save-a-town-from-rising-waters/547646/, about Diamond, LA, that lost its “community” because of one-by-one buyouts.

To read about what other areas in the US are doing about managed retreat, check out: http://www.coastalresettlement.org/what-others-are-doing.html.

A detailed report of one community’s relocation efforts can be found here: http://www.relocate-ak.org/. This is the story of the Inupiaq community in Kivalina, Alaska. This community received funding from:

- $500,000 grant from ArtPlace America
- A grant from the International Commission for Environmental Cooperation (which first went to the Climate Foundation a Re-Locate organization, and the community partnered with these entities)
- A study conducted by the Army Corp of Engineers
- The National Endowment for the Arts (for a design project)
- United States Indian Health Service (which funded a study)
Tools to encourage retreat:

Tools to encourage retreat include rolling easements, conservation and other land trust, and building restrictions, but that means that structures cannot be adapted.

- Costs to consider
  - Site Selection- you have to go somewhere. Where will it be? Who decides this? In looking for a new location, you will need to pay someone to evaluate the land and determine whether it is a good fit for your community.
  - Land acquisition- contrary to the saying, dirt is not cheap. Unfortunately, cheaper land is often cheaper because there is some undesirable aspect of it – maybe it is next to a powerplant, maybe a loud train comes through in the middle of the night, maybe it’s a brownfield. If you have the time and the resources, buying cheap, less desirable land can be beneficial, because you have time to develop it the way you want. Alternatively, if your needs are such that you need to move soon, buying cheap land might prove more expensive and hazardous in the long run.
  - New construction- maybe you will be able to find preexisting structures where your community can work, play, and live, but this is unlikely. Instead, if your entire community is relocating, you will likely need to construct new structures, which can be massively expensive. One of the benefits of this, though, is that the structures can be made to respond to the changing climate, and therefore be more resilient.
  - Jobs- will you be in close enough proximity to peoples’ places of work so that they do not need to find new employment? Does it make more sense to move to a place with lots of businesses for people to find work, or is it better to find a place in need of businesses and start new ones? This will depend on a variety of factors, especially the skillset of your community members.
  - Logistics of moving- maybe your community can organize to move all of their belongings with personal vehicles and/or split the cost of rental vehicles, which can save significant sums of money. Maybe your community does not have access to these resources and will need to pay someone to move their belongings.
  - Mental health services- leaving one’s land, especially when there are emotional, religious, cultural, and familial ties to it, can be extremely traumatizing. Who will pay for mental health professionals to care for and monitor the individuals in the community who are particularly traumatized?
  - Relocating structures: if your planned retreat strategy involves moving physical structures, such as homes, churches, schools, businesses, etc. the cost of the retreat can increase dramatically. Alternatively, if your community has located a new plot of land that is sizeable enough to support your community’s structures, and is
close enough as to not incur huge transport costs, it could actually be cheaper to move old structures there than to build new ones.

- Specific funds available
  - Hazard Mitigation Grant Program- this allows Individual Homeowners, Businesses, and Nonprofits to apply through “subapplicants” (which can include nonprofits) for up to be “bought out” by the government (for more information, see https://www.fema.gov/hazard-mitigation-grant-program)
  - State and local buyouts- many coastal states offer to purchase coastal property to incentivize people to move. Unfortunately, some states have plans to do this, but have not allocated funding; for Louisiana as an example of a state with a plan but no money, check out this NPR story: https://www.npr.org/2018/01/04/572721503/louisiana-says-thousands-should-move-from-vulnerable-coast-but-cant-pay-them.

- Other ways to finance:
  - Traditional home sale- you could sell your home and use the money to buy a new one
  - Land Trust and Easements
  - Pay-as-you-save
  - Productive use of land
  - Mortgage contingent loans- this is just an idea, put forth by the Lincoln Institute of Land & Policy: essentially, the government issues a loan based on home value, not income, and the recipient can use the money to buy new land; the government gains title to the house, but the occupant may stay in For a brief discussion, visit: http://www.climigration.org/blog/2017/11/30/how-novel-financing-strategies-can-help-make-sense-of-managed-retreat.

**Equity issue:** tying a loan to property value, as opposed to income, would logically help to properly value the loan, since the loan funds will be used to replace existing property. However, we know that communities of persons of color are likely to have lower property values than whiter communities, even accounting for differences in income. This means that, generally, a white person and a black person with the exact same income living in houses that are otherwise identical would receive different amounts for their mortgage contingent loan (with the black person receiving less), this could perpetuate inequality and segregation (the white person will have a larger loan and be able to move into a more affluent neighborhood, again). A more equitable system would account for this.

- Major Equity Considerations
  - Who is buying the land? Is it a private party? For profit?
  - Who decides the land acquisition process? Are community
members involved?
  • Who sets the price for buyouts? Why those people? Is the community involved? How transparent is this process?
  • Who decides where to move? Does the community have input? Why does anyone else have input?
  • When will the move occur? Who sets this timeline? Why is it being set this way?
  • Will the new location be one that is capable of retaining the cultural aspects of the community? Who decides this? How do they decide?
  • Should the present value of your property really be what determines how much money you get to move? Does this mean that wealthier people, who are less needy of government support, get more money to move than lower income people? Why?
  • If the state or local government makes it too expensive or challenging to adapt current structures, who is the primary beneficiary of this? Who bears the most cost? If there is an expensive permitting or other process, where does that money go? Why there?
Module 3

Extreme Weather
Module 3: Extreme Weather

Introduction
The number of extreme weather events such as heat waves, droughts, tornadoes, wildfires, hurricanes, and heavy downpours have been increasing in the United States, and the strength of these events have increased as well. Climate change, a shift in weather patterns over time, has been linked by scientists as a major cause behind this increase in extreme weather events.

The science behind this link is mainly supported by the ever-advancing science of attribution, which observes how much climate change increases the odds of any one particular event occurring. Though it is difficult to pinpoint exactly why extreme weather is a product of climate change, the increasing presence of extreme weather events is shown to start with a warming climate. Climate change, notably global warming, increases the likelihood of heat waves, favors increased atmospheric moisture that may result in higher sea levels and more frequent heavy rainfall and snowfall, and leads to evaporation that can exacerbate droughts and wildfires. “These trends in extreme weather events are accompanied by longer-term changes as well, including surface and ocean temperature increase over recent decades, snow and ice cover decrease and sea level rise.”

Some of the ways extreme weather disproportionately affects persons of color and low-income communities include:

- Houses in lower-income and some communities of color are often not built with materials strong enough to withstand extreme weather impacts and people cannot afford to upgrade their homes (for example, lift their house on stilts) to protect them from hurricanes, flooding, and other storms that result from climate change.
- Emergency planners often do not consider communities of color, low-income communities, nursing home facilities, people with disabilities, women, LGBTQ people, and incarcerated persons when they plan emergency transportation needs, evacuation routes, shelter needs, food and clean water access, utility

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4 Extreme Weather and Climate Change, Center for Climate and Energy Solutions, (https://www.c2es.org/content/extreme-weather-and-climate-change/).
shut-offs and reconnection processes, medical needs, etc. When they make plans, they do not organize educational programs that reach these communities as well as rural communities in disaster preparedness. Unfortunately, groups that tend to be most severely impacted by extreme weather events are also excluded from emergency planning processes.

- Hurricanes and other extreme weather events often leave areas without electricity, and lower income areas are usually the last to get power reconnected. Living without electricity for extended periods exposes people to a range of risks, including sweltering heat without access to air conditioning or extreme cold without heat. People most affected by these types of events are typically lower income, elderly populations, and incarcerated individuals (disproportionally people of color) who are unable to evacuate or have limited mobility.

- People who are undocumented and/or people whose first language is not English often do not receive the same resources during natural disasters caused by climate change. Often, these individuals do not seek government resources for the fear being deported, which does happen in some cases, and because of prejudice and bias in emergency responders. There are not resources like pamphlets or community education programs created in their language or with their culturally specific needs in mind.

- Women of color and youth are at higher risk for sexual assault when placed in emergency shelters, emergency housing, or when they are forced to live with family members or partners who may be their abuser or perpetrator.

- LGBTQ youth in particular experience high rates of homelessness, making it more difficult to reach them during an emergency. Additionally, their needs, particularly those in the transgender community, are not considered when emergency planners consider shelter needs. In fact, many shelters refuse to take in transgender or gender non-conforming people.

- Communities of color are vulnerable to displacement after disasters strike. Neighborhoods that have been long neglected and experienced disinvestment are often targeted for redevelopment projects that are not for and push out previous residents. The resulting population shifts often cause the size and demographic composition of Congressional districts to change. This opens up the possibility for gerrymandering, the practice of redrawing legislative district lines in order to advantage a particular political party or group, which threatens our democracy.

As climate change causes an escalation of extreme weather events, funding to assist those affected become increasingly more important. The majority of the contributions, given through donor-advised funds and online platforms that are focused on providing disaster assistance, come from foundations, bilateral and multilateral donors, the U.S. federal government, corporations and smaller donors. ¹⁰

In addition to receiving outside funding to rebuild after an extreme weather event, it is crucial for communities to become more resilient to extreme weather. There are many

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ways for a community to undertake climate adaptation actions to better protect itself from climate risks such as flooding, heat waves, wildfires and hurricanes.\textsuperscript{11} Options that communities can use to adapt to extreme weather include:

- Installing barriers and reinforced shorelines\textsuperscript{12}
- Elevating or floating structures such as homes and businesses\textsuperscript{13}
- Planned or managed retreat\textsuperscript{14}
- Construct an expansive dune, seawall and jetty system\textsuperscript{15}
- Transform vacant land to green space to reduce storm water runoff\textsuperscript{16}
- Plant trees\textsuperscript{17}
- Develop an emergency heat plan to prepare city services for a heat event\textsuperscript{18}
- Establish cooling centers to reduce heat stress and heat-related deaths and illnesses\textsuperscript{19}

There are numerous adaptation options that are available at the community level, and in many instances the solutions are organizational and contractual. Examples of adaptations include:

- Before an Extreme Weather Event:
  - A local community group can contract (probably as a memorandum of understanding) with local businesses, schools, governments, etc. to provide their facilities as shelters during an extreme weather event and their vehicles for transportation to such shelters.
    - The local organization, or another, could educate the community on how to access the facilities.
  - A local community group can have an event to plant trees, which assists with water retention and preventing mud slides.
  - A local group can pass out informational pamphlets about preparing for an extreme weather event, such as an explanation on how to stay healthy during a heat wave, or where shelters or evacuation routes are located.

- During an Extreme Weather Event:

\textsuperscript{12} Toolkit, Module 2
\textsuperscript{13} Toolkit, Module 2
\textsuperscript{14} Toolkit, Module 2
A local community group could provide food, water and/or supplies at the extreme weather shelter.  
A local community group can put up signs signaling how to get to an emergency evacuation route or shelter.

- After an Extreme Weather Event:
  - The shelter can serve as a familiar and convenient resource center, organized by a local organization.
  - A local community group with expertise in disaster relief and financing can assist citizens in obtaining government funds or grants to help them rebuild or recover belongings after an extreme weather event.

As communities and organizations work towards implementing extreme weather adaptation plans, it is important for community members and leaders to apply the equity analysis framework to proposed projects. This framework should lead to special considerations, such as:

- Is this project community-driven?
  - Who is leading this project? Is it the community, public agency, or third party?
  - Who is supporting this project?
  - Are there ongoing interactions between the leader of the project and the community members?

- Was this project created through an inclusive and collaborative process?
  - Were low-income residents and people of color given the opportunity to envision and set adaptation priorities and influence investments, policies and programs pursued in their communities?
  - Were city agency meetings held at convenient times for working people?
  - Were city agency meetings supported by interpreters for representative languages?
  - Did the city agency partner with others, including community-based organizations, community institutions and foundations?

- What is being achieved through the adaptation project?
  - Will the project generate negative consequences for particular groups or communities?

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We all need to work together, because there are no jobs on a dead planet; there is no equity without rights to decent work and social protection, no social justice without a shift in governance and ambition, and, ultimately, no peace for the peoples of the world without the guarantees of sustainability.

-Sharan Burrow

Before the Event: Financing Weather-Resilient Structures
The impacts of climate change can pose significant challenges to existing built infrastructure. Many of our nation’s infrastructure elements, including buildings of all types as well as components of our energy, transportation, water, and sanitation systems were not built to withstand the impending range of climate conditions and increased frequency of extreme weather events projected for the future. For example, mechanical systems may not be sufficient to cool homes and businesses during extreme heat, and storm water management systems may not have the capacity to drain city streets after extreme precipitation events. Older roofs may be unable to support heavier snow loads associated with increased evaporation, and seals at entry doors and windows may be insufficient to resist the wind-driven rain of tropical storms.21 The increased frequency of some extreme weather events and expected changes in everyday climate conditions may present a challenge to older buildings and infrastructure. Bolstering outdated structures and implementing updated building codes may help reduce vulnerabilities.22 This section will discuss how to make structures resilient against various types of disasters such as floods, winds, fires, heat wave, and extreme cold. Furthermore, the section will provide various options to finance weather-resilient structures.

As a community begins adapting for extreme weather events, it is important that individuals and local groups make equity assessments to ensure adaption plans are evenhanded. Equity in emergency preparedness and resilience building means that plans to minimize the potential effects of disaster situations account for and include all

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members of the community. To do this, communities must establish diverse planning tables and inclusive plans that include the needs of all people, accommodate the differential pre-existing vulnerabilities of various groups, and build on community assets. NAACP members can play a critical role in shaping conversations around emergency planning in their communities.

**Specific Funds Available for Building Resilient Structures:**

- **Hazard Mitigation Grant Program:** this allows Individual Homeowners, Businesses, and Nonprofits to apply through subapplicants (which can include nonprofits) for up to 75% of the cost of elevating a home or business (for more information, see [https://www.fema.gov/hazard-mitigation-grant-program](https://www.fema.gov/hazard-mitigation-grant-program)) (note that this applies to more than just elevating).

- **Increased Cost of Compliance:** Provides up to $30,000 for elevating a home or business. You are eligible if (1) you have an NFIP flood insurance policy; (2) community building department determines that your structure is substantially or repetitively damaged by flooding (meaning there needs to be damage first); and (3) the damage to the structure is at least 50% of the pre-flood market value. For more information, see [https://www.fema.gov/medialibrary/assets/documents/12164](https://www.fema.gov/medialibrary/assets/documents/12164).

- **Flood Mitigation Grant Program and Pre-Disaster Mitigation grant program:** by applying through “subapplicants” (which cannot include nonprofits) home and business owners can receive funding to elevate their structures. Unlike the HMGP, this process requires the use of a state, local, tribal, or federal government entity to apply on your behalf, and only after they’ve complied with certain planning regulations. For more information, see [https://www.fema.gov/flood-mitigation-assistance-grant-program](https://www.fema.gov/flood-mitigation-assistance-grant-program) and [https://www.fema.gov/pre-disaster-mitigation-grant-program](https://www.fema.gov/pre-disaster-mitigation-grant-program).

**Other Ways to Finance:**

- **State/Local programs:** Some states, like Louisiana, have programs specifically for home elevation, but many do not. Check with your local emergency management agency to see whether any programs exist in your state.

- **Pay-as-you-save programs:** many companies, especially electric companies, offer Pay-as-you-save (PAYS). The concept is based on spreading the cost of home upgrades over a substantial period of time where the energy savings from a home upgrade helps pay for the financial loan. The PAYS golden rule is the energy savings generated from home upgrades must achieve savings equal to or more than the cost of the repayment terms.
HUD Programs

Case Study: Philadelphia Improves Water Quality, Reduces Runoff, and Invests in the Local Economy

In 2011, Philadelphia adopted Green City, Clean Waters, a plan to reduce storm water pollution through the use of green infrastructure. The plan aims to reduce storm water pollution entering Philadelphia’s waterways by 85 percent by the end of the project life in 2026. Engineering and economic analyses showed that green infrastructure, with some application of traditional infrastructure, was the best option due to its many co-benefits, because features could be installed in a decentralized manner servicing multiple watersheds (when compared to a tunnel solution) and because green infrastructure benefits are experienced with each installation of a new feature. Site-specific green infrastructure is also more adaptive over a 25-year period because designs and plans can be altered more easily for small, distributed, projects than with gray infrastructure. The plan uses decentralized plant- and soil-based green infrastructure to reduce the city’s combined sewer overflows. The Philadelphia Water Department is designing or has constructed more than 1,000 projects already in the city, including tree trenches, rain gardens, porous paving projects, swales and storm water wetlands. The projects are capable of keeping 1.5 billion gallons of polluted water out of rivers and creeks every year.

As previously mentioned in Module 2, the floating house concept can be used in this situation. The floating house concept is also known as “amphibian buildings”. They are buildings that are designed for land, but can self-adjust when water levels rise.

Winds
Tornadoes and hurricanes are among the most destructive forces of nature. Building codes are the baseline defense against hurricane and other natural disaster damage. In addition to making sure to meet all building codes, there are several best practices for wind resistance design:

- A continuous load path is essential to holding a building together when high winds of a hurricane try to tear it apart.
  - Ensure a continuous load path from the roof to the foundation of home by connecting the roof to the wall with a metal anchor, connecting components of the wall together with appropriate metal connectors, and anchoring the walls to the foundation with anchor bolts or other suitable embedded anchors.
- Buildings constructed with insulated concrete blocks (ICB) maintain their integrity.

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23 https://www.greenmatters.com/home/2018/01/04/ML8rn/engineers-have-developed-a-system-to-make-houses-float-during-flooding.
during intense winds of a hurricane of over 200 mph.

- Buildings constructed of insulated concrete blocks are much stronger than steel-framed buildings and wood under extreme wind events.
  - A study by Portland Cement Association (PCA) established that concrete walls have greater structural capacity and stiffness to resist the in-plane sheet forces of high wind than steel or wood framed walls.24

A benefit corporation, MyStrongHome,25 has a mission to strengthen communities in coastal areas. They deliver home upgrades that meet the FORTIFIED requirements of the Insurance Institute for Business and Homes Safety (IBHS). FORTIFIED is the industry standard for disaster mitigation, and is based on decades of research and data collection.26 IBHS created the FORTIFIED Home program to help strengthen homes from hurricanes, high winds, hail, and severe thunderstorms.27 The program raises engineering and building standards of new and existing structures above minimum building code requirements so that damage is reduced during hurricanes and high winds. A Fortified designation is based on what standard home builders can meet: Bronze, which focuses on reinforcing a roof and is seen as the first line of defense against a powerful storm; silver which includes roof reinforcements and adds enhanced window and door protections; and gold, which includes full-scale structural protections throughout, from top to bottom and side-to-side.28

While building to a disaster resilience standard entails a higher cost, it typically results in cost savings over the long term. A report conducted by Blue Sky Foundation of North Carolina found that the additional cost of building a home to the FORTIFIED for Safer Living standard cost an additional $3,936, or about 5% more for a home with a retail value of $80,000. Amortized at 6% simple interest over a 30-year mortgage, the additional monthly cost would be about $24 per month.29 According to the report, this additional cost is easily offset by likely repairs of the home after the 5-10 hurricanes anticipated over the mortgage period.30 Furthermore, according to research by the University of Alabama’s Center for Insurance Information and Research, a home built to Fortified standards increases in resale value by 7 percent more than a house built conventionally.31

In another example, IBHS reported that a 3-bedroom, 2-bath 1,132 square foot home

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built to the FORTIFIED standards in Baldwin County, Alabama, only cost $1,000 to $1,500 more than a home built to the standard code (IBHS 2012). Often, the additional cost is offset by lower insurance costs. For example, Flora and Anita Cannon’s Spanish Fort, AL, house needed a new roof so they decided to retrofit their home to the FORTIFIED standard for existing buildings. The Cannons paid nearly $3,500 per year for insurance before the upgrades but the policy was reduced to less than $1,800 once the house is retrofitted to the FORTIFIED hurricane standards.

Case Study: FORTIFIED Homes Tested in Texas

The FORTIFIED program was tested by Hurricane Ike on the Bolivar Peninsula in Texas in September 2008. 10 out of 13 FORTIFIED homes survived a direct hit from Hurricane Ike, including a 20ft. storm surge. These FORTIFIED homes were the only structures left standing for miles around, precisely because they were specifically designed and built to withstand extreme wind and water damage. The three FORTIFIED homes that did not survive were collapsed when other homes in the area slammed into them.

Fires

Pre-fire risk reduction can help communities adapt to wildfire. Resilient structures are a tool that communities can use to assist them in this goal against wildfires. Pre-fire risk reduction, on a variety of fronts, can help communities adapt to wildfire. Fire adaptation means communities take mitigation actions so they can live with wildfire without harm and without extensive wildfire suppression efforts. One of these mitigation efforts is to build resilient structures. Resilient structures are less susceptible to ignition from embers- the primary cause of structure loss. Therefore, resilient structures are less susceptible to damage overall.

For wildfires, resilient structures have some shared characteristics which include:

- A resilient structure, for instance, is constructed of less flammable materials, has a class “A” roof (not a cedar shake roof or siding), has metal screen over eave vents, and under decks.
- Class A roof is the most fire resistant and should the choice of anyone living in wildfire-prone areas.
- Common Class A roof coverings include asphalt fiberglass composition shingles and concrete or clay tiles. Some materials have a “by assembly” Class A fire

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rating, meaning that additional materials must be used between the roof covering and the roof sheathing in order to attain the fire rating.\textsuperscript{36}

In addition to resilient structures, wildland urban interface (WUI) codes and ordinances define best practices for construction and location of new development in a WUI community, as well as outline resilient materials for developments. For instance, some communities don’t allow cedar shake roofs, siding, or fencing in high risk areas. Others restrict new developments in high risk wildfire risk areas where it’s difficult to protect structures at risk. Codes and ordinances are location specific and designed to meet local needs.\textsuperscript{37}

**Heat Wave**

Extreme heat causes more deaths than any other weather-related hazard—more than hurricanes, tornadoes, or flooding, and an average of 65,000 Americans visit emergency rooms each summer for acute heat illness.\textsuperscript{38} To respond to the growing challenges related to extreme heat, communities are implementing strategies that change building design, urban planning, and emergency planning through regulations, incentives, pilot projects, and new climate resilience programs. This section will highlight the resilience strategies for extreme heat.

**Resilience Strategies for Extreme Heat Include:**

- **Choosing Cool Roofs to Reduce Heat Sensitivity**\textsuperscript{39}
  - Cool roofing products are made of highly reflective and emissive materials (often light colored) that can remain 50-60 degrees cooler than traditional materials during peak summer weather.
  - Cool roof materials have higher solar reflectance (more than 65 percent) and transfer less than 35 percent of the energy to the buildings below them.
  - Material options depend on the slope of the roof, but include coatings, asphalt shingles, metal, clay tiles, and concrete tiles and can be implemented on commercial or residential buildings.
  - Cool roofs are often 5-10 cents greater cost per square foot than conventional roofing materials (and 10-20 cents per square foot greater for a built-up roof with coating). Some roofing options cost significantly more (up to $1.500 per square foot), but these can result in greater reflectivity


and greater benefits. Cool roofs can reduce cooling system needs and reduce peak electricity demands by up to 10-40 percent.\textsuperscript{40}

- Installing Cool Pavements to Reduce Heat Exposure\textsuperscript{41}
  - Conventional pavements in the United States are made with impervious concrete and asphalt, which can reach peak summertime surface temperatures of 120-150 degrees because of lower solar reflectance (about 5-40 percent).
  - Various types of cool pavement materials have been developed that have higher solar reflectance. Some are also permeable, allowing for more evaporative cooling of pavement surfaces.
  - Permeable cool pavements allow air, water, and water vapor into small gaps in the pavement. These pavements address local flooding and urban storm water issues by allowing water to pass through the voids and into the soil or supporting materials below.
  - Cool pavement costs vary by local climate, expected traffic, area being paved, and contractor. The costs range from 10 cents to $10.00 per square foot, with higher cost materials generally having longer service lives. There are also options to coat pavements with cooler surface applications, which can cost between 10 cents and $6.50 per square foot.\textsuperscript{42}

- Increasing Canopy Cover and Vegetation to Reduce Heat Exposure
  - Trees and vegetation can reduce heat by shading buildings, pavement, and other surfaces to prevent solar radiation from reaching surfaces that absorb heat, then transmit it to buildings and surrounding air.
  - A study of five cities (Berkeley, California; Bismarck, North Dakota; Cheyenne, Wyoming; Fort Collins, Colorado; and Glendale, Arizona) showed that the cities spend $13–$65 annually per tree, but experienced benefits of $31–$89 per tree. For every dollar invested in management, the returns ranged from $1.37–$3.09 per tree, per year, for the five cities (when considering stormwater runoff, energy savings, air quality and aesthetic benefits).


Case Study: Louisville, Kentucky, Combines Urban Cooling Strategies

A 2012 study from the Georgia Institute of Technology found that Louisville was the fastest-warming heat island in the United States.¹ That same year, the city experienced a heat wave, forcing the cancellation of a horse race and widespread damage to infrastructure. Following that record-breaking heat, the city took action on climate change: A regional climate and health assessment, the Urban Heat Management Study, was initiated to consider heat management strategies, model the results of managing heat with cool materials, green space, energy efficiency and combined strategies, and conduct a population vulnerability assessment.¹ The Louisville Metro Office of Sustainability announced a cool roof rebate program for residents and businesses to apply for a rebate of $1 per square foot of cool roof to incentivize at least 100,000 square feet of new cool roof installations.¹ The city has installed cool roofs on eight park buildings in 2016, nearly 145,000 square feet of cool roofs since 2009 and cool coatings on the top of three parking garages.¹ Due to the findings of the assessment study, the city hired a forester¹ and completed an Urban Tree Assessment in 2015 which recommended that the city increase its canopy cover from 37–40 percent and from 8–15 percent in central business district areas.¹

Extreme Cold

The risk of structural failure from snow load is influenced by the characteristics of the building. Some roof structures and materials are more susceptible to snow-induced collapse than others. Building configurations create conditions in which drifting and sliding snow may pose a risk. Commercial, industrial and agricultural buildings typically use one roof configuration throughout the structure, but sometimes with varying roof and ridge elevations. Architecturally influenced design, such as residential, often incorporate multiple roof geometries. In general, short-span roof structures are less susceptible to excessive snow loading failure than long-span roof structures. Short-span roofs are less prone to deflection and therefore less at risk to ponding and improper roof draining.⁴³

Roof construction material is an important factor in determining a structure’s susceptibility to failure. To clarify, engineers design structures for a total load comprised of dead load (permanent load) and temporary loads (includes snow load). The weight of the structure itself is a dead load; therefore, heavier structural materials have heavier dead load. Buildings constructed of heavier materials are typically less susceptible to snow-induced structural failure. This is because snow load in excess of the design snow load constitutes a smaller percentage increase of the actual total load above the total design in heavier structures. A smaller variation from the total design load means less likelihood that a structure will fail from the excess load. Another way to this of this if dead load to snow load ratio. Therefore, a good rule of thumb is that the higher the dead

load to snow load ratio, the less susceptible a structure is.44

Infrastructure can be made resilient against extreme cold disasters such as blizzards by:

- Installing short-span roof structures
  - Short-span roof structures are less susceptible to excessive snow loading failure than long-span roof structures. 45
  - Short-span roofs are less prone to deflection and therefore less at risk to ponding and improper roof draining.46
- Providing high levels of building insulation to minimize heat loss through building envelope.47
- Providing high levels of thermal mass where significant diurnal temperature swings occur (i.e. where daytime storage of heat can occur).48
- Providing hardening strategies appropriate to mitigating winter storms for the project region, such as providing a high-performance roof that is rated for higher-than-code wind velocities.49
- Providing protection against the potential for ice dam formation on low-sloped roofs by preventing ice from forming around drains. For steep-sloped roofs, designs should include increased attic insulation, sealed ceiling penetrations, and applying a waterproof membrane on roof deck at roof edge (ice and water barrier). This moisture barrier should extend from the roof edge to at least 2 ft. (61 cm) towards the interior of the building, beyond the exterior wall enclosing conditioned space. No localized heat source should be installed in non-conditioned attic space such that it creates localized heating of the roof surface; un-insulated recessed lights shall not be installed where they could cause localized heating of the roof surface. Provide all attic or roof access doors between conditioned and non-conditioned space with proper insulation, sealant and weather-stripping or gaskets and treat them as exterior doors.50
- Providing protection against frozen pipes so that building design prohibits water pipe runs in exterior walls and unheated spaces. Insulate/seal all wall, door, and wall penetrations. Monitor interior building temperature to prevent freezing of interior piping such as domestic water and fire protection sprinkler systems.51

The methods mentioned above will help keep homes and the community at large resilient against natural disasters. Each of the following methods have subsequent costs to consider, which may increase the need for funding.

- Financing for resilient structures:
  - Federal financing for weather-resilient structures: The need to promote resilience in federal disaster policies has become more urgent in the wake of increasingly frequent natural disasters, rapid urbanization, climate change, and globalization. Thus, the federal government has multiple grant programs that they offer to support federal disaster resilience and strengthening of infrastructure and preparation in communities to reduce damage in the event of a natural disaster.
  - The list below is a compilation of federal grant assistance programs for the goal of resilience.
    - Environmental Protection Agency Smart Growth Grants
    - Grants.gov is the unified portal for announcing federal funding opportunities, as well as submitting grant applications. You can search by category, agency, eligibility, and funding instrument type, and can receive email notifications about new grants that fit specific criteria. NOAA has helpful guidance for first-time Grants.gov users.
    - The Emergency Management Performance Grant (EMPG) Program provides more than $350 million to assist local, tribal, territorial, and state governments in enhancing and sustaining all-hazards emergency management capabilities. The purpose of the Emergency Management Performance Grant (EMPG) Program is to provide Federal funds to states to assist state, local, territorial, and tribal governments in preparing for all hazards.
    - National Fish and Wildlife Foundation, National Coastal Resilience Fund restores, increases and strengthens natural infrastructure to protect coastal communities while also enhancing habitats for fish and wildlife. [https://www.nfwf.org/coastalresilience/Pages/home.aspx](https://www.nfwf.org/coastalresilience/Pages/home.aspx)
    - United States Department of Agriculture Rural Development Loans and Grants Strategic Economic and Community Development is a Farm Bill provision that allows USDA to give priority for projects that support the implementation of regional economic development plans through the following four USDA Rural Development programs: Community Facilities Loans, Grants and Loan Guarantees, Water and Waste Disposal Program Loans, Grants and Loan Guarantees, Business & Industry Program Loan Guarantees, and Rural Business Development Grants
    - FEMA: Pre-Disaster Mitigation Program (PDM)PDM is authorized by the Stafford Act, 42 U.S.C. 5133. PDM is designed to assist states, territories, federally-recognized tribes, and local communities to implement a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding in future disasters. For more information, please see: [https://www.fema.gov/pre-disaster-mitigation-grant-program](https://www.fema.gov/pre-disaster-mitigation-grant-program)
FEMA: Hazard Mitigation Grant Program (HMPG) is designed to reduce risk to individuals and property while reducing reliance on future federal disaster response and recovery funds. For more information, please see: https://www.fema.gov/hazard-mitigation-grant-program

Loans: Both the federal government and states offer loans that can help communities finance adaptation efforts. Typically, government loans offer better terms and interest rates than private loans, but the application process is more difficult.

When searching for loan products in your state, it is usually more efficient to start out with broad search terms, such as “[state] loans for development”; “state loans for housing”; and “[state] loans for businesses.” Research tip: when searching for state loans, you will likely come across a variety of student loans, which are not useful for adaptation; you can mostly get rid of student loans in your search results by typing “-student” so what you enter in the search bar would look like this: “Virginia loans for low income housing-student”. Maryland provides resources for for-profit entities here: https://open.maryland.gov/business-resources/funding-programs/.

Conduit Bonds: As discussed in Module 2, conduit bonds are bonds issues by governments on behalf of tax-exempt entities. Essentially, these function as loans for nonprofits. Like loans, the organization’s perceived ability to repay has a significant impact on the terms and rates of the bonds, which presents a problem of equal access, since some communities may appear more or less likely to repay then they actually are. The structure can take a variety of forms, but the three most common are (1) loans; (2) leases; and (3) installment sales. Conduit bonds are usually used to fund facilities construction and renovation. They could be used in any long-term adaptation project that has some sort of public benefit. Since conduit bonds require the government to take action that it is not required to take, and occasionally require the public to vote, it is difficult to get access to them. Additionally, they are relatively complex, and usually require several lawyers, accountants, and bankers. For these reasons, conduit bonds are usually best reserved for very expensive projects (mid-hundreds of thousands and above).

Climate or green bonds are used to finance low-carbon and climate-resilient infrastructure. Green bonds may be sold by governments, as well as by private entities, to finance projects that have positive environmental or climate attributes. Unlabeled bonds can also be applied to fund a range of transport, renewable energy, energy efficiency and flood defense projects.

Catastrophe Bonds: Insurance-linked securities (ILS), in particular public-

52 Toolkit, Module 2
53 Toolkit, Module 2. Pg. 68.
traded catastrophe bonds, represent a compelling opportunity for investors to support financial resilience in the face of the multiplying physical impacts of climate change. While most issuers of ILS today are commercial insurers, a growing number of such transactions are originating from public sector insurers, non-financial corporations, and public entities, many of which have at their core a social mission. The ILS market today is small – 30 times smaller than the climate-aligned bond market at just $30 billion in debt outstanding – but the capacity of the global capital markets to assume more weather and catastrophe risk is immense. This capacity could be put to use plugging the widening catastrophe insurance gap, though a broader array of corporate and public-sector issuers will first need to recognize the merits of ILS in helping them manage their contingent weather/catastrophe liabilities.

- Environmental Impact Bonds: Social impact bonds are not all structured as bonds per se, and so defy simple aggregation, but by most estimates they represent a very small investable market (less than $1 billion in total issuance outstanding). These bonds follow a “pay for success” model whereby investors receive a higher rate of return if a certain predetermined social objective is met. Recently, the DC Water and Sewer Authority issued what is believed to be the first Environmental Impact Bond globally, the proceeds of which will be used to support green infrastructure improvements (such as permeable pavement). If storm water runoff reduces by a certain amount in the years post-issuance, then investors will receive a one-time additional payout when the bond reaches maturity.

- Resilience Bonds: While resilience bonds are still just a concept, the elegance of the solution has distinct appeal, and several pilot programs are rumored to be in the works. In short, a resilience bond would act like a catastrophe bond for a municipality but with a built-in contingent premium discount for the issuer based on the completion of an infrastructure improvement which would make the covered location(s) less susceptible to damage from the covered peril(s). Using premium discounts to incentivize long-term decision making for individual policyholders is a time-worn concept in the personal insurance industry, though it has yet to be

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applied effectively in the catastrophe bond market.61

Case Study: Community Utilizing MA Municipal Vulnerability Preparedness Program

Massachusetts introduced its Municipal Vulnerability Preparedness program, which helps local communities identify climate vulnerabilities and community strengths, develop and prioritize resilience actions and then implement these priorities with bond funding. The City of Holyoke was awarded a $26,000 grant through the Municipal Vulnerability Preparedness Program to conduct Community Resilience Building (CRB) workshops in the City. Conducting the workshops allowed Holyoke to achieve “MVP” designation from the Commonwealth—a designation that gives the City access to further funding to implement resilient actions. Specific actions the community is now embarking on, as voted by the members at the workshop, include: coordinating and implementing city plans to ensure standards and capacities are met, installing alternative power supplies at critical facilities, rebuilding the right of way for climate resiliency, conducting a public education campaign, and developing a tree management, maintenance, and planting program with appropriate species.

Many resilience initiatives are not necessarily additional expenditures. Most resilience strategies are combined with existing operations or already needed renovations of facilities, updates to town planning documents and business management decisions. Building resilience into these processes requires a different planning that threads consideration of climate impacts in decision making. For the resilience measures that do require daunting upfront investments, there are a number of funding options, depending on the project.62 The finance options below are measures that reward resilient building:

- Many federal and state insurance offices and private insurers offer reduced premiums for taking steps to reduce climate risks. For instance, Chubb offers reduced premiums for policy holders using resilience strategies: https://www2.chubb.com/_global-assets/documents/2016-chubb-environmental-report.pdf. Similarly, in the National Flood Insurance Program, communities that are rated well for their floodplain management and disaster preparedness can qualify for discounted flood insurance rates.63
- Infrastructure, green and resilience banks are used by cities and states to leverage resources to boost investment in infrastructure and sustainability. The Rhode Island Infrastructure Bank issues bonds, loans and grants to finance infrastructure projects with a growing focus on resilience and sustainability. The State of New Jersey established an Energy Resilience Bank to invest in decentralized, renewable energy sources and a more resilient power

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infrastructure: http://www.riib.org/  
- Carbon pricing (cap-and-trade or carbon taxes) can raise funds for climate resilience efforts. The State of Delaware has used proceeds from the northeast’s Regional Greenhouse Gas Initiative to implement climate change policy, including recommendations related to sea-level rise, flood avoidance strategies and design guidance to reduce current and future flood risks to structures and infrastructure. California has not specifically set aside proceeds from its cap-and-trade program for resilience, but has used funds to restore wetlands, create open space, and promote urban tree planting, which all have resilience co-benefits. The NAACP does not endorse carbon pricing as a solution to solve climate change or fossil fuel pollution. With that said, in areas where carbon pricing programs are implemented, generated revenue should be invested equitably with equity and resilience in adaptation in mind.

Relevancy of Insurance in the Pre-Disaster Stage
Insurance in the pre-disaster stage is important to mitigate the consequences of a potential disaster. According to FEMA, there is no more important or valuable disaster recovery tool than insurance. Insurance can be used to prevent damage, and to motivate adaptation. Unfortunately, to be protected from the financial costs of the changing environment and its side effects, people must purchase a range of insurance product. Also, depending on what property you own, lease, occupy, or otherwise possess will determine your access to insurance products.

If a community wants to be proactive and create a Community Recovery Fund, which functions as insurance, individual community members would form a trust that only pays for out for specific types of damage. A community recovery fund can be set up by community or state leaders. There are strong benefits to setting up a community recovery fund before disaster which include:
- Clearer thinking and rational decision making
  - Having a fund in place before a disaster allows your community to create an efficient strategy that is fueled by careful thought rather than reacting to the pressures of immediate needs and emotions.
- Better response to the generosity of others
  - Setting up a community recovery fund before a disaster assures that donations will be directed immediately to an account specifically for your community. Fundraising before a disaster is also a way to secure resources for the needs of your community and neighbors.
- Simpler paperwork and a more organized process
  - Coordinating a communicated plan will help support recovery efforts post-disaster.

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64 Center for Climate and Energy Solutions. Financing Resilience. Retrieved from https://www.c2es.org/content/financing-resilience/
65 Center for Climate and Energy Solutions. Financing Resilience. Retrieved from https://www.c2es.org/content/financing-resilience/
**Recommendations**

- Communities should follow the resilient building strategies outlined in this section to minimize damage in the event of a natural disaster. State and local governments should implement policies to reduce the social inequities that leave low income communities especially vulnerable to climate change. For example, local government initiatives to provide resources to build resilient structures and to make sure that buildings meet all building code guidelines in low income communities can be a helpful start to make communities resilient against natural disasters.

- Communities should also sponsor training programs to teach individuals and organizations about resilient structures and the benefit that they can provide in their community and for their families in the event of a natural disaster. The education offered through these programs can help make community members more aware of resilient structures and also can help make communities more self-sufficient.

- Furthermore, state and local government programs focused on creating opportunities for participation in government decision making and for creating relationships with low income communities and communities at risk for extreme weather will be beneficial to strengthening the resilience of these communities in the face of natural disasters.

**During the Event & Immediately After**

Communities of color, lower income communities, and other frontline communities experience the impacts of disasters most acutely because of a range of economic, social, political, and geographic factors. Recognizing this, recovery efforts cannot just Band-Aid the immediate damage of a disaster or put things back to the way they were before the disaster struck. Efforts must advance a long-term vision for our communities that puts justice at the core.

**Equity Considerations**

If a group or population is already being treated as disposable, this is heightened during a disaster. Examples of population groups most egregiously disregarded include prisons populations, elderly persons, undocumented persons, those experiencing homelessness, and other marginalized groups who are neglected or completely abandoned during a disaster. More specifically, undocumented persons often do not qualify for disaster support services. Even in cases where undocumented immigrants do qualify for services, many are unlikely to pursue those benefits due to fear of immigration enforcement, a lack of familiarity with official institutions, and limited English proficiency. In order to have equitable emergency management systems that account for the needs of all people, emergency response and relief practices must benefit everyone while also accounting for the specific needs of vulnerable populations.

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67 Recognizing the barriers that undocumented populations face in recovering from disasters, the UndocuFund was created to support undocumented immigrants impacted by the fires that devastated Sonoma Count in 2017. Check it out at undocufund.org.
• Women arguably face additional hardships in higher numbers during global disasters. Data has shown that during the 2003 European heatwave, the majority of the lives lost belonged to older women.68 Women are also more at risk for sexual assault post-disaster and should be provided safe shelter environment.69 Pregnant women who go through disaster events have been shown to give birth to children with low birth weight and have higher rates of giving birth before term.70 Shelters should have trained nurses or medical professionals on staff who can help victims of sexual assault or assist pregnant women with any difficulties in their pregnancies.71

Example: The Centers for Disease Control and Prevention surveyed 14 counties designated as Federal Emergency Management Agency areas and discovered that there was a large increase in the number of pregnant women who did not receive prenatal care in the aftermath of Hurricane Katrina. The impacts were seen in Mississippi, where there was an increase from 2.3% to 3.3% of insufficient prenatal care.72 Hispanic women in Louisiana experienced a higher percentage increase of insufficient prenatal care, from 2.3% to 3.9%.73

• Individuals from more economically disadvantageous backgrounds may have a more difficult time receiving government funds to rebuild their homes because they may have difficulties speaking English or were not aware of certain laws (like needing to have floor insurance in some areas) that would allow them to receive the federal funds.74 The sprawling federal and state disaster relief programs are winding and complicated, which can be a barrier for some to even be able to understand how to receive relief funds.75 FEMA even had a study that showed that lower-income individuals are more likely to live in flood zones that require flood insurance to get FEMA relief money, but are less likely to purchase the flood insurance if the median income is $55,000 or below.76

• Individuals and families experiencing homelessness are more likely to have problems arise during and after a disaster because individuals experiencing homelessness have fewer resources and rely on social programs that are halted during an emergency.77 Individuals experiencing homelessness may be less

70 Id.
71 Id.
75 Id.
76 Id.
likely to evacuate or take precautionary measures before a disaster because they are unable to receive vital information or are skeptical. Shelters may be more likely to turn away individuals who are exhibiting signs and symptoms of mental distress. Individuals experiencing homelessness may also be left out of the post-disaster process because they did not have a home to rebuild.

- Young children and infants require supervision and increased aid during and after a disaster. Young children and infants are at a higher risk of lacking food, clean water, and health care following a disaster. Children may also experience psychological harms from a disaster but do not have the resources to acquire counseling. Infants should also not be separated from their parents if the infant is taken to a hospital for medical treatment.
  - Example: During Hurricane Katrina, ill and hospitalized infants were flown out of New Orleans to receive further medical treatment. However, mothers were not flown with the infants, which created stress for both mothers and babies.

Community Groups can help with food, water and shelter by:

- Delivery of Goods to Citizens
  - Immediately after a disaster takes place, fire and police units, emergency medical personnel, and rescue workers are the first to provide aid to disaster victims. During the short-term recovery phase, the local government works to ensure public order and deliver or publicize pickup locations for vital services such as water, power, communications, transportation, shelter, and medical care. However, not every citizen may be able to make it to where the food, water, and shelter are being provided. Community groups can determine who will help bring food and water to people and who will bring people to shelters.
    - Example: Some community groups and organizations already prioritize meal delivery post-disaster. One such organization is Citymeals On Wheels, which delivers food to elderly New Yorkers even after emergencies.

- Have a food pantry available to give out bottled water and food
  - A community or individuals can have a stockpile of non-perishable foods and bottled water that can be reserved for emergencies. Beforehand, the pantry can collect information about the citizens who reside in the impacted area and ensure there will be enough resources for those who

78 Id.
81 Id.
82 Id.
will need additional assistance.

- **Having Designated Places to Use the Restroom**
  - In the wake of a disaster, restrooms or designated places to use the restroom may be destroyed or unavailable. Water sources can be easily polluted by individuals who use the restroom in rivers, streams, or other watersheds. A community should provide a designated restroom area to prevent both unsanitary conditions, contaminated water, and give ensure that community members have dignity after an emergency.

- **Working With D-Snap**
  - The Disaster Supplemental Nutrition Assistance Program (D-SNAP) gives food assistance to low-income households with food loss or damage caused by a natural disaster.

- **Working with The Summer Food Service Program**
  - The Summer Food Service Program (SFSP) provides free, healthy meals to children from low-income families when school is not in session. After a disaster, state agencies, food authorities, and sponsors may decide to open emergency program feeding sites when schools or daycare centers must stay closed.

- **Creating Relationships with the Dept. of Agriculture**
  - The NAACP has designated liaisons by conference level with the Department of Agriculture to monitor and ensure the equitable distribution of programs, resources, and services. The NAACP also works with the government to make sure that as redevelopment plans are being designed, land loss, gentrification, and predatory acquisition of property is minimized. Community members should have relationships with the NAACP liaisons in order to bring information from the community to the liaison and information from the liaison to the community.

- **Allocate Money to Youth Water Distribution**
  - Youth within the community would be able to help out their neighbors through water distribution. This would also provide local jobs or volunteer opportunities for youth in disaster-hit communities.

- **Set Community-Wide Prices for Food, Water, and Shelter**
  - Price-gouging can occur after a disaster and take advantage of hard-hit communities. The community could implement a community-wide price cap on food, water, and shelter to ensure that citizens are not taken

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87 Toolkit, Appendix F, Page 165.
89 Toolkit, Appendix F, Page 165.
Community groups can help with access to emergency services by:

- **Engaging with Existing Emergency Management**
  - Community organizations can form relationships with existing emergency management personnel before an emergency occurs. This can help the community better understand how the emergency management teams work with federal, state, and municipal governments during an emergency. It can also help the community formulate a disaster management plan that takes into account the existing plan developed by emergency management teams and compliment those plans. For example, representatives from the Red Cross and Salvation Army are already in communities.

- **Provide Assistance for Filling Out Applications for Disaster Relief**
  - Studies show that upper middle-class white people are more likely to receive assistance than people of color and people with lower incomes because they know how to navigate the complicated relief system—including filling out the forms and working within the government system. Local community groups can help this disparity by providing assistance to lower-income residents who are applying for disaster relief.

- **Provide Advocacy for Filling Out Applications for Disaster Relief**
  - Even when people of color and people with lower incomes traverse the same processes in the same way, their applications for assistance can be handled differently—either met with suspicion or otherwise not deemed worthy of the level of urgency and support as upper middle class white applicants. Another barrier to recovery services is legal residency status. Following disasters, many undocumented immigrants avoid recovery assistance for fear of deportation. Local community groups can assist these groups of people by advocating and encouraging the community members to fill out applications for disaster relief.

- **Create Community Non-Profits for Disaster Management**
  - Community-based non-profits that help funnel funds and volunteers to communities impacted by disasters can increased equitable relief. This is because it has been clear from past disasters that that the “recovery” that comes to some of the most devastated areas is for-profit and not meant for the people who lived in the neighborhood prior to the disaster. Developers and other private industries often seek opportunities to profit from the redevelopment of an area—earning the name “disaster

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93 Toolkit, Module 5, Page 76.

94 Toolkit, Module 5, Page 76.
capitalists."\textsuperscript{95}

- **Create Relationships and Lobbying Groups for Local Politics**
  - Community-based activists and lobbyists can help bring the issues of community members to local politicians. Politicians have taken advantage of instability to push through unpopular policies like those that strip environmental or labor protections. But just as disaster recovery efforts can deepen inequality, recovery also provides an opportunity to improve the conditions that existed before the disaster occurred.\textsuperscript{96}
  - Calls to rebuild open up possibilities to a Just Transition—that is, to shift toward the regenerative, resilient way of life our communities need to survive and thrive. This is a just recovery—one that accounts for and addresses the underlying problems that lead to disproportionate disaster impacts.\textsuperscript{97}

- **Learn the Language of Disaster Management**
  - Community groups can show other emergency management teams that the community wants to understand how disasters are dealt with. The language of emergency management is unique to the emergency management field and can help bring more services to individuals who may need them.
  - For example, if a community member needs more supplies of some sort, they can request the materials using the language of emergency management.\textsuperscript{98}

- **Conduct A Racial Equity Impact Assessment (REIA)**
  - The community can conduct an REIA in order to ensure that relief is distributed equitably or find areas that could improve its equitable relief. An REIA is an examination of how different racial and ethnic groups will likely be affected by a proposed action or decision. REIAs can be used in various contexts across the emergency management continuum to prevent institutional racism and for identifying options to remedy inequities.\textsuperscript{99}

In order to pay for all of the community-based initiatives proposed above, the community should seek assistance from within the community and outside funding. A non-profit in the community could be set up to receive donations that will be used expressly for disaster relief. Outside groups, such as the NAACP, the Red Cross, and the Salvation Army could provide tools, funds, or people on the group to help.\textsuperscript{100}

There are funds through the federal government and state governments for disaster relief. FEMA provides monetary assistance to government organizations and some

\begin{itemize}
  \item \textsuperscript{95} Toolkit, Module 5, Page 77.
  \item \textsuperscript{96} Toolkit, Module 5, Page 109.
  \item \textsuperscript{97} Toolkit, Module 5, Page 77.
  \item \textsuperscript{99} Toolkit, Module 5, Page 88.
  \item \textsuperscript{100} Toolkit, Module 5, Page 57.
\end{itemize}
nonprofits through the Public Assistance Grant Program.\footnote{FEMA. Public Assistance to Local, State, and Tribal Non Profits. Retrieved from https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit.} State programs, such as Maryland’s MEMA state public assistance program, can provide further funds or distribute federal funds through FEMA.\footnote{MEMA. About MEMA. Retrieved from https://mema.maryland.gov/Pages/default.aspx.}

Another option is for local, community-based individuals and organizations to bid for and receive federal, state, and local government contracts for cleanup and disaster-related management. (Though the NAACP does not accept federal funds). There are cleanup crews, electrical crews, and housing crews that all come in post-disaster.\footnote{FEMA. Doing Business After Disaster. Retrieved from https://www.fema.gov/media-library-data/1508269679450-2923130bba077b238960b3d6a5bd06a3/DoingBusinessAfterDisaster.pdf.} If those crews can be from the community and not from outside the community, it would help ensure that the community is reinvesting back into itself post-disaster.\footnote{Small Business Administration. Disaster Response Contracts. Retrieved from https://www.sba.gov/disaster-assistance/disaster-response-contracts.}

Through the Stafford Act,\footnote{FEMA. The Stafford Act. Retrieved from https://www.fema.gov/media-library-data/1519395888776-af5f95a1a9237302af7e3fd5bd0d7d7/StaffordAct.pdf.} FEMA tries to contract with local business for a variety of post-disaster initiatives such as debris removal, transportation services, and housing assistance. Local businesses in the community should not wait for disasters to happen before registering online with FEMA in order to be vetted to get work approval.\footnote{FEMA. Doing Business After Disaster. Retrieved from https://www.fema.gov/media-library-data/1508269679450-2923130bba077b238960b3d6a5bd06a3/DoingBusinessAfterDisaster.pdf.} There is an online application process. This way, the local companies can bid in post-disaster relief projects.

If a company is interested in being a contractor for FEMA or other federal agencies after a disaster, the company needs to register with the System for Award Management and select the “Disaster Responses Registry.”\footnote{Association Of Procurement Technical Assistance Centers. Disaster Response Registry. Retrieved from http://www.aptac-us.org/news/disaster-response-registry-in-sam.} FEMA will post contracting opportunities on the Federal Business Opportunities website. Small businesses can get more information as well from the U.S. Small Business Administration.\footnote{FEMA. Doing Business After Disaster. Retrieved from https://www.fema.gov/media-library-data/1508269679450-2923130bba077b238960b3d6a5bd06a3/DoingBusinessAfterDisaster.pdf.}
Recommendations
Currently, FEMA does not give funds to faith-based or religious organizations after a disaster strikes. Faith-based organizations are typically the first on the ground in their communities and provide invaluable and immediate relief in the form of food, shelter, and support. However, FEMA does not give federal emergency funding to religious institutions, even though FEMA gives funds to other nonprofit grounds, community centers, and organizations.¹⁰⁹ The Stafford Act does not ban FEMA from giving religious organizations federal disaster funds and aid. Instead, FEMA has issued regulation that states that a religious organization that uses more than 50% of its space for religious purposes cannot even apply for disaster aid.¹¹⁰ Since religious organizations are typically on the front line of disaster relief in a community, it would make sense if they too would receive FEMA funds post-disaster. A church or other religious institution would also be damaged by a local disaster. Communities (and FEMA, which sometimes partners with religious institutions during disaster relief) rely on religious institutions for immediate aid.¹¹¹

After the Event: Recovery
As extreme weather events are on the rise across the nation, recovery plans are crucial for communities to get back to its normal functions and everyday life. Throughout the recovery process, communities should keep in mind the equity framework as introduced in this module. With regards to recovery, procedural equity requires communities to

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¹¹⁰ Id.
¹¹¹ Id.
participate in the opportunities for recovery that this section will discuss, which will rebuild their communities into what they would like to see for the future. Distributive equity highlights a community’s consideration in recovery for benefits, costs, and risks. Contextual equity in recovery is critical when making considerations about rebuilding a city for the long term to ensure that those who were in low- and moderate-income communities are not left in a continued vulnerable position.

Even if a disaster lasts just a few hours, the impact the event has on a community can be significant and lasting, especially for already unstable neighborhoods. The burdens of major damage and displacement fall particularly hard on communities of color and lower income communities for various reasons. For example:

- These communities tend to live in marginalized areas (often as a result of housing discrimination) that are hit harder by disaster events (i.e. in a flood zone or in close proximity to an industrial site).
- Low-income housing is poorly equipped to withstand the impacts of extreme weather events because of its age and quality.
- Housing and personal property recovery assistance tends to favor homeowners, excluding renters who tend to be people with lower incomes and people of color.
- Navigating government-assistance programs is often complex, and information about programs can be inaccessible, especially for people for whom English is not their primary language.

Opportunities in Recovery

Infrastructure

- **Housing**: As local and state governments begin to make decisions on rebuilding infrastructure within their communities, the planning process provides an opportunity for communities to rebuild affordable housing for low-income community members in higher opportunity neighborhoods. A house is not just a shelter for most, this structure provides food, water, comfort and safety. One of the greatest avenues for opportunity after an extreme disaster is housing infrastructure. A decision many families must make is whether or not they want to rebuild or relocate.\(^\text{112}\)

- **Transportation**: Extreme weather also damages transportation infrastructure. Infrastructure such as roads and railways are vital to get people and supplies back to a community. With a broken road, emergency management systems will not be able to reach the communities as quickly and efficiently as possible. In the long run, this broken infrastructure will hinder economic re-development of a city. Transportation infrastructure serves as a physical asset, but also a necessity to a community. In the recovery process, communities have opportunities to consider building stronger, more reliable infrastructure. Most transportation infrastructure was developed without the immediate impact of extreme weather in mind. As a community begins to redevelop infrastructure, it can assess recovery needs by

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considering the following questions:\textsuperscript{113}
\begin{itemize}
  \item Are the originally identified recovery objectives and desired outcomes still applicable?
  \item Have any new recovery needs been identified?
  \item What recovery activities will have the greatest daily impact on livelihoods?
  \item Are the current recovery priorities aligned with the affected community’s transport needs?
  \item How can transport sector recovery activities promote the recovery of businesses and economic development?
  \item Are there redundancies in the transport network to allow linkages between communities and hospitals, fire stations, schools, shelters, etc. in the event of a future disaster?
\end{itemize}

\textbf{Cities can be the engine of social equity and economic opportunity. They can help us reduce our carbon footprint and protect the global environment. That is why it is so important that we work together to build the capacity of mayors and all those concerned in planning and running sustainable cities.}

\textbf{–Ban Ki Moon}

\textbf{Green Infrastructure}
There are also opportunities to rebuild communities as models for sustainability. This is also known as green recovery.\textsuperscript{114} Green recovery encompasses energy efficiency, renewable energy and sustainability. In addition, recycling and reusing to minimize environmental impact in the design and construction process are a part of green recovery. Communities will benefit in the long run from these strategic infrastructure\textsuperscript{113} P Benavidez, M. Transport Sector Recovery: Opportunities to Build Resilience. Disaster Recovery Guidance Series, 11. Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/transport-sector-recovery.pdf\textsuperscript{114} U.S. Department of Energy (2009). Rebuilding after a Disaster: Going Green From the Ground Up. Retrieved from https://www.energy.gov/sites/prod/files/2013/11/f5/45136.pdf
designs, through lower energy bills, cleaner energy sources, lower carbon emissions, and economic development\textsuperscript{115}. Green infrastructure has an extremely broad scope as it can be used in both housing and community infrastructure. Typical forms of green infrastructure include bio-walls and solar panels as sources of energy.

After a disaster, it is crucial to determine the recovery process with regards to clean up and rebuilding. Communities can redevelop the work force by providing those affected and displaced by the extreme weather with new job opportunities. Instead of deploying large corporations from outside the state and city to assist in the rehabilitation process, governments should contract with local businesses, especially businesses that are minority- and women-owned business enterprises. This effort will help reinvigorate the local community and provide opportunities to businesses who may not have had these opportunities before.\textsuperscript{116}

\textbf{Case Study: New Orleans, LA Rebuilding Away from Flood Risks\textsuperscript{1}}

Following Hurricane Katrina, the Veterans Administration Medical Center and Charity Hospital was catastrophically damaged leading patients to be evacuated to a temporary clinic and leaving buildings severely damaged. The Veterans Administration designed and rebuilt a new structure that allowed for the hospital to be a teaching hospital. The facility was designed to incorporate resilience strategies that deal with the risks post-Karina. The design specifically focused on mission-critical mechanical and electrical infrastructure components of the facility in upper levels of the hospital away from flood risks. In addition, the plan included a ramp that allows for ambulances to use a ramp to reach the facility that can double as a boat launch. The Roof of the hospital serves as a heliport to support helicopters in an evacuation.

\textsuperscript{115} \textit{Id.} at 3.
\textsuperscript{116} To understand the requirements of Green Infrastructure visit: https://www.georgetownclimate.org/adaptation/toolkits/green-infrastructure-toolkit/introduction.html
Innovative Recovery Models

- **Community Land Trusts (CLT)**\(^{117}\)
  - Community Land Trusts are nonprofit organizations that own land and lease it for a nominal fee to individuals who own the buildings on the land. These trusts provide homeowners nominal fee to individuals who own the buildings on the land. Community Land Trusts provide homeowners with financial counseling and other support to ensure that families are able to stay in their homes, as well as address gentrification issues to keep land affordable and in control of the community. When communities have the opportunity for redevelopment after an extreme weather disaster, this puts low- and moderate- income families at risk. Grassroots efforts for CLTs aim at informing the community that there are permanent affordability options for housing and a chance for home ownership.

- **Developing Vacant and Blighted Properties**\(^{118}\)
  - After a disaster, cities must determine ways to mitigate the rise in vacant and blighted properties. In cities like Baltimore, where there are thousands of vacant properties, the government may see that number multiply after a disaster. In New Orleans, the city government created numerous programs to address these vacancies. One program is the Lot Next Door Program. This program allowed residents in adjacent properties to properties controlled by the New Orleans Redevelopment Authority the first opportunity to purchase and redevelop these properties.
  - Another program created by Project Home Again gave families a new house in exchange for a lot or home that they already won. The houses come with a fully forgivable five-year mortgage equal to the difference between the appraised values of the old, fully constructed, landscaped and furnished. As a result of this project, the foundation gave 101 homes following Hurricane Katrina.

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\(^{118}\) *Id.* at 379
Developing vacant and blighted properties not only creates a home but also creates a community that has a potential to grow. By clustering homes this gave homeowners a better chance to participate with one another in the neighborhood and come together after a disaster.

- **Volunteer Construction Model**\(^{119}\)
  - Following a disaster, many nonprofit organizations pull in efforts for volunteers to rebuild these communities. Volunteers decrease labor costs over time. Since nonprofit organizations would not have to pay for these volunteers, this money can be used to building more homes. These volunteers are unskilled but they can be taught basic skills to help in the recovery process.
  - The volunteer model also provides that volunteers must contribute a monetary donation through fundraising or other means to help pay for coordination and homeownership costs.
  - The volunteer model serves as a way to promote leadership development and job training, and builds empathy among volunteers who are all working towards the same goal.

- **Title Clearing**\(^{120}\)
  - Title Clearing is a process by which attorneys and nonprofits help clients find the title for their homes. After an extreme weather disaster, many homeowners are required to prove they own their homes to receive grants, but they are not sure where to begin in retrieving their title.
  - During the recovery process of Hurricane Katrina, many local legal aid lawyers and Save New Orleans Homes, met with 2,500 people to resolve title cases. The collaborative, Save New Orleans Homes, trained dozens of attorneys to work on issues relating to successions, liens, and property tax sales.\(^{121}\) This collaboration between governments, small organizations, and legal service providers left a direct impact on a seemingly difficult issue for many homeowners. In addition, it created opportunities for attorneys to learn how to tackle new issues and created a greater bond and comradery between community organizations.

\(^{119}\) Id. at 380
\(^{120}\) Id. at 383
\(^{121}\) Id. at 384
Financing Recovery
There are several Federal Government programs that provide communities with recovery funds after an extreme weather disaster:

- **Community Block Development Grants – Disaster Recovery Funds:** In the event of a disaster, Congress can appropriate CDBG-DR funds. The funds are administered by HUD as grants to local and state governments. These funds were created to address three objectives: (1) benefit low- and moderate-income people; (2) aid in the prevention or elimination of slums or blight; and (3) meet other urgent community development needs because the conditions pose a serious and immediate threat to the community.

- **HOME Funds:** These funds are authorized under the HOME Investment Partnerships Act. These funds provide for a participating jurisdiction to receive an annual allocation based upon a formula grant to create low income housing in a community.

- **Section 108 Loan Guarantee Program:** The Loan Guarantee provision of the Community Block Grants – Disaster Recovery Program. This loan guarantees an equal or up to five times an entitled amount of funds to be used...
for property acquisition, rehabilitation of publicly owned property, infrastructure housing rehabilitation, public facilities and economic development.

- **Capital Fund Emergency/Natural Disaster Funds/Disaster Housing Assistance Program**:\(^\text{126}\) This source of funds provides housing authorities in states and local governments with capital for unforeseen emergencies and natural disasters in the amount of $20 million. These funds are available to Public Housing Authority to be used for safety and security reasons.
  - The Disaster Housing Assistance Program is a solution to provide long term rental housing for people who were affected by Katrina and RIA. People that received rental assistance from FEMA were transferred to DHAP and were aided through vouchers for families.
  - Small Business and USDA Loans can be used to replace real estate, business property, machinery and equipment and other inventory damaged or destroyed as a result of a disaster.

- **US Department of Commerce Disaster Relief Opportunity**:\(^\text{127}\) provides a long-term disaster recovery grants, but it is extremely competitive. In 2012, Congress appropriated $200 million in Disaster Relief Opportunity Funds for the EDA to allocate to local communities across 3 categories:
  - Strategic Planning and Technical Assistance
  - Infrastructure Design and Development
  - Capital to Leverage Additional Funds

Applicants must also prove that their funds with community resiliency to meet their definition of disaster resiliency. In addition, these funds must also be used to reduce the probability of system failure after a disaster in the future.

- **US Department of Labor National Emergency Grants**:\(^\text{128}\) These grants are authorized as part of Workforce Investment Act of 1998 (WIA). When a community’s needs exceed the funding available through WIA. The applicants are state workforce agencies, local workforce boards or Indian and Native American tribes. They provide temporary employment humanitarian services and re-training for workers affected by natural disasters and other catastrophic events.

Congress has expanded HUD’s roles in providing recovery resources through supplemental appropriations. Congress uses supplemental appropriations to respond to immediate housing and disaster recovery needs, rebuild areas, and to provide money to stimulate recovery.129

Case Study: State of Louisiana, Following Hurricane Isaac

In 2012, Hurricane Isaac hit Louisiana causing significant flooding throughout parishes in the state. The State of Louisiana created an action plan in response for using the Community Development Block Grant funds following Hurricane Isaac. The state used the unmet needs assessment to evaluate the allocation of funds to develop housing, the economy, and infrastructure. Under the Housing Assessment, the state used HUD-Defined levels of damages to determine real-property damage in parishes throughout the state. The damage is broken up by number of homes damaged and the average Real Property FEMA Verified Loss.

To determine Infrastructure damage, the State defined the needs of each parish by type of public assistance program FEMA provided: Debris Removal, Emergency Protective Measures, Road Systems and Bridges, Water Control Facilities, Public Buildings and Contents, Public Utilities, and Parks, Recreational and Other Items. For example, St. John the Baptist Parish was an affected parish with a need in many public assistance categories of over $46 million in obligations.1

After determining the needs of each parish, Louisiana applied the HUD formula to calculate direct allocation of the CDBG-DR funds that will impact St. John the Baptist and Plaquemines parishes. These two parishes did not receive an initial direct allocation. Each parish was allocated $32,674,000 and $16,953,000 respectively. The local governments were given free rein to use the funds but they had to choose from the list of CDBG-DR programs to streamline the implementation process. The state also planned to used recovery funds to other impacted parishes that did not meet the unmet needs estimate threshold of $10 million.

Louisiana created an action plan that clearly identified a strategy for administering CDBG-DR disaster recovery funds. This plan highlighted goals for the funding program to identify and stay on track in the recovery and resiliency process for the future of the state.

Saving our planet, lifting people out of poverty, advancing economic growth... these are one and the same fight. We

129 Id.
must connect the dots between climate change, water scarcity, energy shortages, global health, food security and women’s empowerment. Solutions to one problem must be solutions for all.

-Ban Ki Moon

Recommendations

In order for communities to become more resilient, the financial structures available to these communities must be resilient to climate change as well. Financing structures are crucial to the development of economic resilience. As communities work towards resiliency, they can begin by educating local, state, and federal governments of resources and financing opportunities available to them. As seen through this module, many federal financing tools are available for these government leaders to adequately prepare for the recovery process.

In addition, state and federal governments can provide programs that encourage local businesses to carry out various forms of recovery services. By informing businesses of ways they can help the community in the event of the disaster, the community will able to give back financially to itself. Currently, there are very few plans in place that detail how to acquire or carry out financing mechanisms following a disaster.\(^\text{130}\) On a smaller scale, state and local governments can provide financing tools to small towns and resource-strained communities, as these communities have different needs than larger cities.\(^\text{131}\) Many times, these small towns require more financial support for displacement and infrastructure than larger cities with structured recovery plans. These small cities also do not have as many staff and opportunities to implement recovery practices. Therefore, funding planning programs and opportunities will allow these communities to be more efficient with the planning process and be more efficient in the recovery process.

Financial education and support are crucial to the economic development and social revitalization of a community in the recovery process. Community leaders must consider and weigh options throughout the planning process in recovery to most efficiently benefit community members in the long-term future.


**Storm Water Management**

As mentioned in Module 1, the present state of our climate has created the need for increased adaptation efforts to combat the negative effects that it produces. For example, the major hurricanes of this millennium have brought about massive flooding that could have been mitigated by effective storm water management. In most extreme weather events, disadvantaged communities bear the worst of this flooding, often causing damage that takes years to repair. This can be attributed to inequitable implementation and funding for storm water management operations in historically disadvantaged communities. As the climate change continues to create more unpredictable weather patterns, more extreme weather events that lead to flooding will occur, increasing the need for equitable storm water management.

Although storm water management is seen as a solely governmental issue, there are ways that communities may influence the way their storm water management programs are implemented and funded. These methods require community involvement in government storm water management planning stages and focus on considering a number of factors that address the needs of the community and its citizens. For these reasons, equitable storm water management must be advocated early and often in the development of storm water management plans.

**The Increasing Need for Equitable Water Management**

Effective storm water management within a community is essential because many extreme weather events bring about increased rainfall and flooding. The ability to redirect accumulated surface water from private and public lands through storm water management systems to natural bodies of water is vital to preserving a community. However, equitable access to efficient storm water management systems for local governments and communities have decreased over time due to the evolution of its functions. According to the National Association of Flood and Stormwater Management Agencies, municipal storm water management originally functioned solely as a flood control measure, carrying sanitary sewage and pollutants to natural bodies of water. With the passage of the Clean Water Act, local governments recognized the need to diversify municipal storm water systems in order to successfully facilitate resource management and environmental protection in addition to flood control. This diversification brought about several structural changes to municipal storm water management in an effort to achieve each of its new responsibilities. In order to address the complexity of these responsibilities, local officials were forced to develop

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133 Hereinafter “NAFSMA”
134 *Id.*
135 *Id.*
more efficient means of storm water system implementation, management, and financing. The changes improved the efficiency of storm water management systems but made it difficult for local taxes alone to continue to fully fund its operations, creating the need for “multi-faceted” financing systems to combat inequitable effects to less-advantaged communities. Creating these financing systems requires a local government and the communities it serves to consider several issues related to cost-effectiveness, funding, and equality to combat the effects of extreme weather.

Planning for Efficient and Equitable Storm Water Management Funding

According to NASFMA, there are two principal categories of storm water management funding consisting of expensed and debt funding: expensed funding and debt funding. Expensed funding addresses costs as they occur while utilizing revenues from citizens’ utility fees and taxes, while debt funding utilizes intergovernmental loans, grants, and other borrowing systems. While most local governments use a mix of these methods, neither will be effective in equitably funding storm water management operations without adequate strategic planning. NAFSMA characterizes successful storm water management funding strategies as those which account for strategic objectives, linkages and dependencies, community expectations, adaptation, resource stability, and service fee management tactics in its planning process. It is important for communities to remain engaged in the planning stages of a storm water management system to ensure that their local governments provide proper funding to the operation.

- **Strategic Objectives:** Successful storm water management programs are planned with heavy consideration on the initial goals and needs of the community. This requires a careful reflection of projected costs, resource requirements, and timing issues in order to tailor a funding strategy to meet the community’s needs. An effective local government will address these needs accordingly. However, communities should still be active in displaying their needs to their local government to combat inadequate assessments that may lead to insufficient funding decisions that will result in ineffective storm water management implementation.

- **Identifying Linkages and Dependencies:** NAFSMA recommends storm water management funding plans to recognize the link between program components and processes in existing governmental infrastructure planning. NAFSMA provides the example that infrastructure improvements may be delayed by “master planning studies, prioritization processes, engineering of specific projects, land acquisition, and contracting.” This requires the funding and planning process to be proactive on timing issues, even if the storm water

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136 Id.
137 Id. at 1-7
138 NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-2
139 Id.
140 Id.
141 Id. at 2-2 – 2-5
142 Id. at 2-2
143 Id.
144 NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-3
145 Id.
management program is a local government’s highest priority.\textsuperscript{146} Existing regulations and laws may also delay storm water management projects and funding.\textsuperscript{147} It is important for communities to seek education on storm water management and participate in public forums related to the issues that may delay the funding and implementation of their storm water management systems.\textsuperscript{148}

- **Community Expectations:** NAFSMA acknowledges that storm water management planning "rarely captures public support unless the problems impact the daily lives of citizens."\textsuperscript{149} Because storm water management systems are mostly underground and unseen by the public, NAFSMA recommends that the government be transparent in publicizing storm water issues that they have identified and "seek public participation and support" in order to tailor their plans to the concerns of the public.\textsuperscript{150} Especially after a severe extreme weather event, communities should inquire about the issues that are affecting their community and voice their concerns to their representatives.\textsuperscript{151} Doing so can keep a local government accountable in funding, repairing, and planning storm water management operations.

- **Adapting to Change:** NAFSMA states that local governments should financially plan for flexible storm water management systems to properly adjust for changes in the community related to instances such as extreme weather or funding changes.\textsuperscript{152} Having a flexible funding strategy that utilizes user fees along with taxes for storm water services is an effective funding source for storm water management plans because it facilitates a long-term strategy that accounts for any changes that may arise over the course of the program.\textsuperscript{153} Communities should be active in displaying the need for flexible financing plans in the early stages of storm water management planning so that the local government has the capital to address their needs in the event of an extreme weather event.

- **Resource Stability:** In addition to flexible financial planning for storm water management projects, NAFSMA recommends that storm water utility user fees are "separate and apart from the funding of general public services."\textsuperscript{154} Doing so promotes the stability of the storm water management project and ensures that the project has the proper funds to account for repairs after extreme weather.\textsuperscript{155} Communities are encouraged to promote a storm water management fund separate from general public services in order for local governments to be prepared to adequately address storm water issues in the event of extreme weather events.

- **Service Fee Management:** It is important for communities to acknowledge that a storm water management plan that utilizes more efficient funding sources like the

\begin{flushright}
\textsuperscript{146} Id.\\
\textsuperscript{147} Id.\\
\textsuperscript{148} Id.\\
\textsuperscript{149} NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-4.\\
\textsuperscript{150} Id.\\
\textsuperscript{151} Id.\\
\textsuperscript{152} Id.\\
\textsuperscript{153} Id.\\
\textsuperscript{154} Id.\\
\textsuperscript{155} NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-4
\end{flushright}
abovementioned tax and user fee funding are cost-based. This means that the heightened qualities of storm water management planning requested by communities and utilized by the government directly affect the amount of user fees they will have to pay in order to finance the storm water management plan that fully addresses their needs. Communities should be involved in the government’s determination of a storm water management funding plan in order to ensure that a proper user fee calculation is fair and reasonable to the community in the event that a local government neglects this issue.

Altogether, equitable storm water management begins with the initial planning stages of storm water management and requires local governments to consider a number of factors pertaining to the needs of the community, existing legal procedure and laws, and specifically tailored financial considerations in order to select the proper funding mechanism and implementation plan that protects the community from the potential harms of extreme weather. It is also vital that community groups remain engaged in the planning process. This helps ensure that the community’s needs are addressed when governments fail to adequately and equitably plan storm water management projects in a way that properly addresses the specific needs of the community.

Our investments in social justice and basic needs are as vital to our future as fiscal and macroeconomic reforms. A nation deeply divided will not stand. And it certainly will not move forward.

-Gloria Macapagal Arroyo

Existing Avenues for Stormwater Management Funding
NAFSMA states that local governments are usually authorized to implement and
operate stormwater management through state legislation. In addition to this authorization, the expanding regulatory role of local governments in protecting water quality provides greater flexibility and authority for employing different stormwater funding strategies. Local governments have utilized their broadened authority to fund stormwater management in several ways. However, the most common primary funding methods used for stormwater programs in a community include general revenue appropriations, stormwater user fees, and bonding for capital improvements.

- **General Revenue Appropriations**: According to NAFSMA, “general tax revenues remain the most common source of stormwater management funding.” After tax collection, the property, sales, income tax, and exaction revenues are collected; revenues are placed into the state’s funds and further allocated to local governments through the budgeting process. Final approved budgets specify the amount of money that local governments can spend on certain programs. NAFSMA states that “components of what might be collectively considered a consolidated stormwater program are often embedded in operational units such as public works, engineering, transportation, street maintenance, wastewater treatment, and even recreation.” However, “such dispersion of functions and costs may obscure any discernable relationship between demands for stormwater services and facilities and how the cost burden is apportioned” for stormwater management programs. Due to this shortcoming and the reality that tax revenue can significantly decrease in the event of economic downturns, using general revenue appropriations alone can affect consistent stormwater management funding. NAFSMA also warns that local governments and officials are more likely to address more visible public concerns before deciding to dedicate funds to stormwater management. Lastly, NAFSMA argues that tax-exempt state and privately owned properties place a burden on stormwater management systems that they are not funding through taxes, furthering the disparity between stormwater needs and funding. For these reasons, NAFSMA recommends that general revenue appropriations should be used as a supplement to a more consistent long-term stormwater funding plan.

- **Stormwater User Fees**: NAFSMA favors stormwater user fees as a funding source because it requires users to pay for their proportional effects on the stormwater management system. However, calculating stormwater user fees can be difficult because most states do not mandate a specific fee calculation process. Consequently, most stormwater management planners calculate user fees using a standardized method that accounts for “conditions on properties that

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159 NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-9
160 id.
161 id.
162 id. at 2-10
163 id. at 2-10
164 NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-10
165 id. at 2-11
166 id.
167 id. at 2-11 - 2-12
168 id. at 2-12 – 2-13
169 NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-12
affect the peak rate of runoff, total volume” of water “discharged, and pollutant loadings on receiving waters.” A majority of user fee calculations that depend on this standard are based on “the amount of impervious area (roofs, paved areas, etc.),” which determines both the proportion of rainfall that runs off and the peak rate of discharge during and following storms. Other user fee plans depending on the abovementioned standards are based on the total area of properties and factors that account for the effects of their development. A few local governments have decided to consider all factors, including land use and zoning classes. NAFSMA favors the user fee approach because of its flexibility and its ability to be “tailored to individual situations and coordinated with other funding measures.” As mentioned in the Planning for Efficient and Equitable Stormwater Management Funding section, the combination of user fees and general revenue appropriations is the best method for stormwater management funding because allows governments to address specific service zones, improve areas that require the most attention, and provide the community with a stable source of stormwater funding to ensure maximum efficiency. NAFSMA recommends that governments be transparent with their citizens about user fees, stating that a defined stormwater user fee might “be beneficial if it convinces a community that long-standing user flooding or pollution problems will be addressed.”

- **Bonding for Capital Improvements:** Local governments with limited stormwater management funding can utilize bonds to fund major improvements to the stormwater system. Local governments seeking to make capital improvements, especially after an extreme weather event, can borrow money through a bond to fund its stormwater repair and improvement endeavors and repay the bond through general tax revenues, service fees, and other mechanisms. Because bonds greatly increase capital for stormwater management plans, repairs and improvements can be made much sooner than regular funding sources would allow. NAFSMA recommends “expediting a capital project by several years through bonding may result in significant public and private savings if flooding, other damaging impacts, and inflation of land acquisition and construction costs are avoided.” An important issue to note is the interest rate of bond loans and its effects on the community’s user fees. It is vital for local governments to assess whether a bond is appropriate for specific communities that may to be able to pay increased user fees and taxes in order to repay creditors. However, NAFSMA notes that the bond market has noticed the

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170 Id.
172 NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-12
173 Id. at 2-13
174 Id.
175 Id.
176 Id.
177 NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-13
178 Id. at 2-15
179 Id.
180 Id. at 2-16
181 NAFSMA Guidance for Municipal Stormwater Management Funding. at 2-16
182 Id.
stability of user fee income from stormwater systems and has adjusted rates and prices favorably in response.\textsuperscript{183}

It is imperative that local governments implement multi-faceted funding sources to ensure stability and quality within the stormwater management system. A mixture of general tax revenues, user fees, and bonds/loans creates the most effective and equitable stormwater management system. This conclusion, and the conclusions from the \textit{efficient and equitable stormwater management planning} section can be exhibited through the following case study.

**CASE STUDY:** \textit{Tulsa, Oklahoma:} In 1984, Tulsa, Oklahoma received 9 inches of rain in an eight-hour period.\textsuperscript{184} The flooding resulted in 14 fatalities, 288 injuries, and about 200 million dollars in damage.\textsuperscript{185} The City of Tulsa Responded by strengthening its stormwater management system and has continued improving its infrastructure and operations since 1984.\textsuperscript{186} Located in the “Tornado Alley” region, Tulsa experiences increased extreme weather in the spring including “extraordinarily intense rainfall” during those events.\textsuperscript{187} In addition, Tulsa is situated on the “flood prone” Arkansas River.\textsuperscript{188} Prior to Tulsa’s efforts to improve stormwater management in 1984, extreme flooding consistently made Tulsa the “poster child example” of stormwater management struggles.\textsuperscript{189} The flood of 1984 and the events that preceded it displayed a severe need for a more efficient stormwater management plan.

In response to this need, the acting Tulsa Mayor created the Flood Hazard Mitigation Team tasked with creating a stormwater management plan that ensured Tulsa’s safety in the event of flooding.\textsuperscript{190} Initial actions included relocating flooded homes, implementing temporary flood control systems and developing a long-term stormwater management system using 30 million dollars from tax revenue, flood insurance claims, and federal bonds and loans.\textsuperscript{191} After the aforementioned initial actions, Tulsa implemented a user fee program to fund its new Department of Stormwater Management.\textsuperscript{192} This user fee, established by a city ordinance, provided stable funding for the stormwater management system when tax revenues fluctuated and allotted all revenues for floodplain and stormwater management infrastructure.\textsuperscript{193} Revenues from the user fee implementation resulted in the addition of 28 detention ponds, conveyance channels, and several other stormwater management facilities.\textsuperscript{194}

To retain the early successes of the new stormwater management plan, the Tulsa

\textsuperscript{183}Id.
\textsuperscript{185}Id.
\textsuperscript{186}Id.
\textsuperscript{187}Id. at A-18
\textsuperscript{188}NAFSMA Guidance for Municipal Stormwater Management Funding. at A-19
\textsuperscript{189}Id. at A-19
\textsuperscript{190}Id.
\textsuperscript{191}Id.
\textsuperscript{192}Id.
\textsuperscript{193}Id.
\textsuperscript{194}Id.
Department of Stormwater Management worked in conjunction with several governmental departments and citizen groups to develop long-term city drainage plans. Tulsa again utilized a combination of user fees, tax revenue appropriations, and bond issuances to carry out their well-established master plans for an efficient and equitable stormwater management system. By the 1990s, FEMA ranked Tulsa’s flood management program first in the nation along with an acknowledgment that Tulsa had the lowest flood insurance rates. Tulsa has perpetuated this success, “recording no flood damages to any building that complies” with their stormwater management plans. This success was brought about by efficient and equitable planning, a mix of funding mechanisms (most notably the user fee), and involving the community in “many of the major decisions as it formulated and implemented its stormwater utility program and associated funding mechanisms.”

Recommendations
To ensure that a government operates, plans, and funds an efficient stormwater management system, communities must be involved in every step of the process. In the planning stages, communities and individuals must:

- Advocate for multifaceted funding mechanisms including a mixture of tax revenue appropriations, user fees, and bonds/loans to ensure long term stability and efficiency.
  - User fees must be equitably and proportionally calculated to ensure that the proper individuals and groups are paying for their burden on the stormwater management system. Communities should advocate for equitable user fees.
  - Communities should encourage their government to take bonds and loans that have appropriate interest rates and can be repaid.
- Be active in displaying their needs to their local government to combat inadequate assessments that may lead to insufficient funding decisions that will result in ineffective storm water management implementation.
- Seek education on storm water management and participate in public forums related to the issues that may delay the funding and implementation of their storm water management systems
- Inquire about the particular issues that are currently affecting their stormwater management system and voice their concerns to their representatives
- Be active in displaying the need for flexible financing plans in the early stages of storm water management planning so that the local government has the capital to address their needs in the event of an extreme weather event.
- Be involved in the government’s determination of a storm water management funding plan in order to ensure that a proper user fee calculation is fair and reasonable to the community in the event that a local government neglects this

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195 Id.
196 NAFSMA Guidance for Municipal Stormwater Management Funding. at A-23
197 Id.
198 Id.
199 Id. at A-24 – A-25
Encourage the government to work closely with the community to achieve the abovementioned concepts.

Rise Up
You Mighty Race.
You Can Accomplish What You Will.

-Marcus Garvey

Managed Retreat
Extreme weather events are sure to increase in frequency and severity with climate change, and when disaster strikes, frontline communities will continue to be among the hardest hit because of existing inequities. A single extreme weather event has the ability to instantly displace whole communities, and if this isn’t managed well, it could further perpetuate those inequities. As mentioned in the previous modules, some areas are already grappling with the effects of extreme weather events with far greater frequency than was the case in previous generations. North Carolina, for example, now has more than 1,100 properties that are considered “severe repetitive loss properties.” On average, these properties flood every few years and have been rebuilt five times, partially at the expense of taxpayers. Still, even for communities that have been forced to rebuild multiple times because of extreme weather, homeowners bristle at the idea of pulling up roots and moving to safer ground. People have a strong psychological connection to the place they call home, and for some communities, such as fishing towns, their livelihoods are inextricably linked to their physical location. The harsh reality, however, is that for areas that are vulnerable to repetitive loss from extreme weather, retreat may be the most cost-effective adaptation strategy.

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Communities that experience repeated instances of extreme weather may face a situation where it makes better financial sense to retreat, and knowing when and how to do this is a challenge. In literal terms, retreat usually occurs after a disaster, but it can be more effectively set into motion if a community has a plan before disaster strikes. The question then becomes, how does a community know when conditions have deteriorated to a point where retreat should be considered? Using that framework, when to retreat is usually answered when mounting expenses related to extreme weather effectively price a community out of the place it calls home.

Costs pile up quickly in places that are repeatedly hit with extreme weather events. Insurance may not cover all the repairs or rebuilding efforts a homeowner requires, which forces the homeowner to pay out of pocket for some expenses. In hurricane and flood zones, rebuilt structures may have to comply with costlier design specifications, which could be cost-prohibitive for some homeowners. Some homeowners are taken advantage of by unscrupulous contractors who might skip town before the work is done, perform shoddy work or use substandard materials, all but ensuring that the rebuild will not weather the next storm. Job security and income can be uncertain as businesses, too, are left reeling in the aftermath of a storm. Families with the means to move sometimes do, which threatens to fracture the community and can result in a checkerboard-like distribution of vacant and occupied properties. Property values decrease as the land becomes a less and less attractive investment. At the same time, insurance costs increase as the risks associated with the land increase. This is particularly true in high-risk flood zones, where homeowners are required to have flood insurance. As the National Flood Insurance Program reduces subsidies in those high-risk areas, policyholders are likely to be hit with increases in their premiums—from $400 to $5,000 annually, according to estimates for some areas. Such increases may make it impossible for low- to moderate-income families to stay where they are.

Communities may decide that managed retreat is their best option but may be lost as to how to proceed. How to retreat is a more difficult question. Retreat has been employed with varying degrees of success for years, typically in the form of government buyouts, which are discussed below and in previous modules. Retreat is only successful where the community shares the belief environmental risks are too great; where the retreat offers broad societal benefit; where there is strong political will for retreat; and where the

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societal benefits of retreat will outweigh the costs.\textsuperscript{211}

For communities facing the harsh reality that there may be no choice but to retreat, previous examples provide lessons in what works and what does not. The following are cost elements to consider, previously discussed in Module 2, when assessing when and how to retreat:

- **Site Selection**: Where will you go, and who will decide this? In the example of Superstorm Sandy discussed in the case study below, there is some suggestion that New York City was not in favor of communities relocating outside city limits because the city did not want its tax base to suffer.\textsuperscript{212} Whether or not you are restricted in your search for a new location, you likely will need to pay someone to evaluate the land and determine whether it is a good fit for your community.

- **Land acquisition**: Cheaper land may be cheaper for a reason. If you have the time and the resources, buying cheap, less desirable land can be beneficial, because you have time to develop it the way you want. Alternatively, if your needs are such that you need to move soon, buying cheap land might prove more expensive and hazardous in the long run.

- **New construction**: It is unlikely that your new location will be built to suit your needs as a community. In some instances, it may be a blank slate. If your entire community is relocating, you will likely need to construct new structures. This will be costly, but it presents an opportunity for your community to build with resilience in mind from the start.

- **Jobs**: Will your new home be so far removed from people’s places of employment that they will have to find new work? Should finding a place with existing job opportunities be a priority? This will depend on a variety of factors, especially the skillset of your community members. In some cases, the act of retreat itself might help to employ people, at least temporarily. In the context of Superstorm Sandy, New York City’s Sandy Build it Back program aimed to assist low-income residents and communities of color that were affected by the storm by offering career-track jobs that supported storm recovery and rebuilding efforts.\textsuperscript{213}

- **Logistics of moving**: Is your community equipped to move everyone’s belongings, or will hiring moving resources be an additional expense to account for?

- **Mental health services**: Will your new location have the health and social infrastructure your community will need to cope with the many intangible consequences of leaving a home behind? Will religious, cultural, and community centers already be there, or will you need to build them? Will there be adequate


financial resources to help those who are particularly traumatized by the move?

- **Relocating structures**: In some cases, it may be possible to relocate physical structures instead of building replacements. Consider weighing whether transport costs to move existing structures might actually be cheaper than new construction.

As previously discussed in Module 2, there are numerous methods for communities to finance managed retreat:

- **Hazard Mitigation Grant Program**: This allows Individual Homeowners, Businesses, and Nonprofits to apply through “subapplicants” (which can include nonprofits) for up to be “bought out” by the government. This funding is available only after presidentially declared disasters (for more information, see https://www.fema.gov/hazard-mitigation-grant-program).

- **Community Development Block Grant-Disaster Recovery Assistance Program (CDBG-DR)**: This program is a specific piece of the broader CDBG financing tool, discussed in detail in the previous modules, through which Congress appropriates funds to help communities to recover after presidentially declared disasters. Like HMGP, CDBG-DR grants are not awarded to individual homeowners, but to government agencies, which are required to submit action plans that detail how funds will be used. These CDBG-DR funds allow the administrator to decide whether homeowners accepting buyouts will get a pre- or post-storm purchase price, unlike buyouts under the HMGP, which requires that homeowners get the pre-storm value for their homes.

- **State and local buyouts**: As mentioned in Module 2, coastal and floodplain states often offer to purchase property to incentivize people to move, though the funding for such programs is not always there. For Louisiana as an example of a state with a plan but no money, check out this NPR story: https://www.npr.org/2018/01/04/572721503/louisiana-says-thousands-should-move-from-vulnerable-coast-but-cant-pay-them.

- **Other ways to finance**:
  - Traditional home sale: You could sell your home and use the money to buy a new one. Consider, though, how the value of your home might change in a disaster context. Some federally assisted buyouts are attractive because they promise to pay homeowners the pre-storm value of the property.
  - Land Trusts: Communities that decide it is time to retreat can “sell” their property to a land trust, use the assets from the sales to access financial resources that no individual community member could access, and then use those financial resources to fund retreat efforts. Land trusts have not been widely used to finance retreat thus far, and there are some equity concerns associated with this type of financing. For and in-depth look at...

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214 [https://www.academia.edu/15137720/Anatomy_of_a_Buyout_Program_New_York_Post-Sandy](https://www.academia.edu/15137720/Anatomy_of_a_Buyout_Program_New_York_Post-Sandy)
215 [https://www.academia.edu/15137720/Anatomy_of_a_Buyout_Program_New_York_Post-Sandy](https://www.academia.edu/15137720/Anatomy_of_a_Buyout_Program_New_York_Post-Sandy)
216 [https://www.academia.edu/15137720/Anatomy_of_a_Buyout_Program_New_York_Post-Sandy](https://www.academia.edu/15137720/Anatomy_of_a_Buyout_Program_New_York_Post-Sandy)
land trusts, see the previous discussion in Module 1.

- Pay-as-you-save: As discussed in Module 1, “pay-as-you-save” refers to saving money because of some new-found efficiency and using those savings to pay for the project that created the efficiency. In the context of retreat, this could occur, for example, through an insurer, who might be willing to pay for relocation costs up front if community members agree to slowly repay the costs through their premiums.

- Green bonds: These bonds have been typically used to fund sustainability projects like infrastructure upgrades, but they could be put to use to finance managed retreat.\(^{217}\)

- Mortgage contingent loans:\(^{218}\) Essentially, the government issues a loan based on home value, not income, and the recipient can use the money to buy new land; the government gains title to the house, but the occupant may stay in the home. For a brief discussion, visit: http://www.climigration.org/blog/2017/11/30/how-novel-financing-strategies-can-help-make-sense-of-managed-retreat.

  - Equity issue: Tying a loan to property value, as opposed to income, would logically help to properly value the loan, since the loan funds will be used to replace existing property. However, we know that communities of persons of color are likely to have lower property values than whiter communities, even accounting for differences in income. This means that, generally, a white person and a black person with the exact same income living in houses that are otherwise identical would receive different amounts for their mortgage contingent loan (with the black person receiving less), this could perpetuate inequality and segregation (the white person will have a larger loan and be able to move into a more affluent neighborhood, again). A more equitable system would account for this.

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A true revolution of values will soon cause us to question the fairness and justice of many of our past and present policies. ... A true revolution of values will soon look uneasily on the glaring contrast of poverty and wealth. With righteous


\(^{218}\) This type of loan is just an idea put forth by the Lincoln Institute of Land & Policy
indignation, it will look across the seas and see individual capitalists of the West investing huge sums of money in Asia, Africa, and South America, only to take the profits out with no concern for the social betterment of the countries, and say, "This is not just."

-Dr. Martin Luther King Jr.
Case Study: Valmeyer, IL Residents Move to Higher Ground After 1993 Flood

A historic flood in Valmeyer, Illinois, led the mayor of Valmeyer to realize that most residents would not be interested in rebuilding. Floodwater remained in some parts of the waterlogged village for two months. In sections of the community where the water had been less deep, residents began mopping up as soon as the river began to recede. However, when a second wave of flooding in September brought the water levels back up, the mayor brought up the idea of relocation at a community meeting. After residents overwhelmingly expressed their support for moving the town, the process began in haste, driven by a specific requirement to move to higher ground. The residents decided to use FEMA’s property acquisition program to move their entire community up onto the bluffs. In a solution unique to the town, FEMA and other federal and state organizations purchased nearby, vacant land and relocated residents.

Case Study: Money, but Reluctance, in Princeville, North Carolina

The small town of Princeville, situated along the Tar River in North Carolina, suffered serious damage when Hurricane Floyd hit in 1999. After Floyd, the state of North Carolina floated the idea of using federal disaster money to buy the entire town, but residents protested and rejected the proposal. Instead, those who stayed in Princeville decided to rebuild, believing that the storm was a once-in-a-lifetime event, and not wanting to leave a place behind that is home to so much history. Princeville is thought to be the oldest town chartered by freed slaves, who founded the community that today has some 2,100 residents, 96% of whom are African American. There is deep pride among Princeville residents about the town’s history and survival, and conversations about leaving home are not easy to have. When Hurricane Matthew tore through the area in 2016, however, it forced the town to talk about retreat. The state of North Carolina has more than $88 million available in HMGP funding to buy out, relocate, or rebuild homes affected by Hurricane Matthew. Whatever path the people of Princeville decide upon, the HMGP funding would finance it. Princeville can use the money to rebuild with elevation, it can use the money for buyouts and demolition of damaged structures, or it can use the money for retreat. In Princeville, therefore, the conversation is not so much one about how retreat would be paid for, but whether retreat is right for the community.
When the community becomes involved in financing managed retreat, it is important for individuals and community groups to make major equity considerations:

- Who is buying the land? Is it a private party? A private buyer may be set on purchasing devalued property and redeveloping it to turn a profit, thereby benefiting from a community’s loss. Contrast this with some programs that would prohibit rebuilding and would require that the land go back to nature.
- Who decides the land acquisition process? Are community members involved?
- Who sets the price for buyouts? Why those people? Is the community involved? How transparent is this process?
- Who decides where to move? Does the community have input? Why does anyone else have input? A local government may appreciate the need for retreat but be reluctant to lose its tax base.
• When will the move occur? Who sets this timeline? Why is it being set this way?
• Will the new location be one that is capable of retaining the cultural aspects of the community? Who decides this? How do they decide?
• Should the present value of your property really be what determines how much money you get to move? Does this mean that wealthier people, who are less needy of government support, get more money to move than lower income people? Why?
• If the state or local government makes it too expensive or challenging to adapt current structures, who is the primary beneficiary of this? Who bears the most cost? If there is an expensive permitting or other process, where does that money go? Why there?

Insurance
In the context of extreme weather, insurance is often thought of as an indicator that retreat may be necessary. This is especially true in high-risk flood zones, where skyrocketing insurance premiums may force people to move. As noted in Module 1, however, insurance can also operate as a financing mechanism. Insurance policies protect homeowners who are impacted by extreme weather events by paying for repairs and rebuilding. Insurers also cover costs for temporary displacement in disasters, but permanent relocation is a different matter. At least one recent proposal seeks to alter the existing insurance framework to guarantee retreat financing.

The Natural Resources Defense Council’s has put forth a proposal in which a voluntary buyout would become a benefit of a homeowner’s existing coverage under the National Flood Insurance Program (NFIP).219 Under this model, participating homeowners would also qualify for lower insurance premiums, because the agreement to relocate means less risk of future damage in the long run.220 Under the proposal, FEMA and the local or state government would set a purchase price for the property. FEMA would then fund the purchase, and the local or state government would be responsible for buying the property, razing it, and restoring it as open space. An important aspect of this insurance-backed buyout is that the agreement to relocate is made before disaster strikes.221 This keeps the homeowner from having to navigate options in times of desperation, during and immediately after an extreme weather event.222 It also benefits local governments by planning for purchases pre-disaster, expediting the purchases

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once the disaster occurs. One caveat to this proposal is that it calls for voluntary buyouts, meaning that individuals in a community would set up their own exits, versus the community as a whole organizing a retreat. This could lead to fractured communities because the homeowners who opt in will benefit from retreat while those who declined this benefit will be left behind. Additionally, NRDC’s program relates specifically to flooding and federal insurance programs. Similar deals might be tested with private insurers in other disaster contexts and could offer innovative financing solutions for retreat.

**Recommendations**

- **Designate a leader and organize:** Chaos and misinformation thrive in the wake of disasters. Part of why the retreat of the Oakwood Beach in Staten Island is considered a success is that real estate broker Joseph Tirone, who owned property in Oakwood Beach, was knowledgeable about HMGP and other funding options, as well as what could be accomplished if the community tapped into it. Tirone took it upon himself to inform and rally the community around the idea of retreat. He educated residents about the aid that might be available and polled residents about the conditions that would be necessary for the entire community to sign on to such a drastic adaptation measure. Communities considering managed retreat should have a resident (or someone otherwise invested in the community) to act as a spokesperson and organizer to ensure that the community receives accurate, updated, and balanced information about options from someone who shares their interests. Having an active, informed member can help ensure that the community will benefit from the funding available.

- **Adopt NRDC’s flood insurance proposal—and expand upon it:** As discussed above, NRDC envisions voluntary buyouts as a benefit that could be incorporated into existing coverage under the National Flood Insurance Program. Not only should buyouts be an option for residents required to have NFIP coverage, but this model should be expanded into the broader insurance market. Instead of a private homeowner policy covering only repairs and rebuilding, policies in high-risk areas should include the option of permanent relocation at the insurer’s expense. Such an option would benefit homeowners and insurers. Homeowners would know that they have an independent means to finance a move to safer ground if circumstances require. Insurers would presumably pay for one relocation, versus a potential handful of repair and rebuilding claims as the property falls victim to successive extreme weather events.

- **Incentivize community-wide relocation versus piecemeal moves:** HMGP and CDBG-DR funding can facilitate voluntary buyouts, so if one resident decides that she cannot endure another storm that forces her to rebuild, she can take advantage of the aid and retreat from her property and her neighbors who

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choose to remain. Buyouts designed in this manner benefit the individual, but threaten to unravel close-knit communities. Federal and state programs should offer incentives that encourage a community to move together and remain whole. Such incentives could, in practice, be similar to incentives offered to Staten Island residents after Sandy. Qualifying Staten Island residents were offered a “boost” in aid if they chose to relocate within city limits; this helped the city in its effort to maintain its tax base. Under a plan that values community over individual relocation, residents could receive a base relocation amount for individual retreat, but additional money if the entire community, or a majority of it, decides to go as a group. There may be conditions set on such a scheme—for instance, the group may have to relocate within designated boundaries. The benefit of such a plan, however, is that it helps preserve communities, which is a paramount concern in places such as Princeville, North Carolina, discussed in the case study above.

- Local industry should help finance relocation for its neighbor-workers: Some communities are dependent upon the jobs that local businesses provide. Hundreds of residents in Sidney, New York, for example, relied on a local aerospace products manufacturer for work. When repeated flooding made Sidney eligible for FEMA aid, the manufacturer decided it would relocate, putting hundreds of local jobs on the line. This news further complicated the already difficult conversation happening among residents about whether it was time to retreat. While residents and state and local officials were able to successfully lobby for the manufacturer to stay, other similarly situated communities may not be so lucky. In cases where a business that employs many local residents decides to retreat, the business should offer incentives for its employees to retreat as well. Such an incentive could take the form of a relocation stipend for employees who qualify for aid under the state and federal programs previously discussed. This arrangement would help the relocating business ensure that it had an ample workforce upon relocation. It also would help homeowners to finance their own retreat, and to guarantee them jobs once they settled in the new location. To learn more about the retreat efforts in Sidney, New York, check out https://static1.squarespace.com/static/580df9afe4fcb5fdf27a053a/t/5847109c414fb5bcc4cad096/1481052316441/Sidney_casestudy.pdf.

**Conclusion**

Altogether, climate change is leading to an increase in extreme weather events. This increases the need for communities, which includes local organizations and individuals, to create and sustain adaptation plans. In addition to maintaining extreme weather disaster plans and assisting community members with disaster relief, it is of utmost importance for local organizations and individuals to ensure that the plans implemented

225 https://static1.squarespace.com/static/580df9afe4fcb5fdf27a053a/t/5847109c414fb5bcc4cad096/1481052316441/Sidney_casestudy.pdf
226 https://static1.squarespace.com/static/580df9afe4fcb5fdf27a053a/t/5847109c414fb5bcc4cad096/1481052316441/Sidney_casestudy.pdf
227 https://static1.squarespace.com/static/580df9afe4fcb5fdf27a053a/t/5847109c414fb5bcc4cad096/1481052316441/Sidney_casestudy.pdf
are equitable for all people within the community.

The few own the many because they possess the means of livelihood of all ... The country is governed for the richest, for the corporations, the bankers, the land speculators, and for the exploiters of labor. The majority of mankind are working people. So long as their fair demands – the ownership and control of their livelihoods – are set at naught, we can have neither men's rights nor women's rights. The majority of mankind is ground down by industrial oppression in order that the small remnant may live in ease.

-Helen Keller
Module 4

Strengthening Food & Water Security
Module 4: Strengthening Food & Water Security

Introduction
According to the U.S. Global Change Research Program, the United States produces $330 billion per year in agricultural commodities. Agricultural commodities play an important role in society and impact our communities on a daily basis as they are fundamental in feeding our communities. Climate change poses a very serious risk to our communities and their ability to feed themselves as rising temperatures and the frequency of severe weather has the potential to alter the stability of food supplies and availability of food. For example, Nebraska experienced a bomb cyclone, which caused an estimated $400 million in livestock and crops. The impact of this severe weather event will have a devastating financial impact on farmers in the area. The flooding also poses a challenge to the ultimate consumers of their agricultural goods. Climate change reduces agricultural yields by reducing access to water used for farming. Experts have studied the possible effects of climate change on agricultural yields and have found that by 2050, there will be up to a 3% decrease in global food availability and up to a 4% decrease in fruit and vegetable consumption. As a result, food scarcity will contribute to a public that is less healthy due to lack of access to food. It is likely that traditionally underserved and low-income communities will be hit hardest by the changes in agricultural yields due to a lack of resources.

The effects of water and food scarcity trickle down to the consumer. Water contamination and scarcity are particularly concerning because there are very few alternatives to pouring water out of a home tap. The drinking water crisis in Flint, Michigan, for example, provides a disturbing case study on the effects of contaminated drinking water. In addition to obvious and immediate health concerns, water contamination has proven to increase cognitive deficiencies in children. Experts have confirmed that the effects of the Flint Water Crisis will impact the community for decades to come.

Adapting to the consequences of climate change on water access and food supply begins with community level engagement and an emphasis on both small and large scale infrastructure projects. Some examples highlighted in this module include:

1. Developing vegetated buffers to reduce water runoff;
2. Developing centralized water distribution systems such as rainwater collectors; and
3. Creating community gardens that provide fruits and vegetables. Local community groups can use these methods to adapt to a changing climate while also
providing healthy foods to underserved communities.

This module is organized into two sections: (1) Food Security; and (2) Water Security. As with other modules in this toolkit, the format of this module outlines a problem and subsequently provides solutions and financing options for those solutions, as well as recommendations for equity-based reform.

| What principles and practices should undergird food and water insecurity? |
|---|---|---|
| Rural and agricultural communities have a unique relationship with water, and people, particularly farmers, depend on water. Therefore, droughts and flooding have the ability to make an impact on community health and the local economy. How have communities strengthened their infrastructure to ensure proper water quality for drinking, cooking and showering; as well as preparing for changes in rainfall, whether that be drought or flooding? Some of these changes will involve building new infrastructure, while others will include actions like planning and changing the crops your community will plant once rain increases. | Climate-change-induced reduction in agricultural production may increase food prices and market volatility which in turn affects food availability, accessibility, and stability in areas that are already food insecure. This problem extends throughout the entire food production chain. In other words, effects on farmers have effects on consumers. Quality—especially sustained and affordable quality—of food and water should be of primary importance when considering solutions for your community. | Across the country, there are many wonderful examples of community owned gardens, big and small, that provide fresh and healthy fruits and vegetables to food insecure communities. Community gardens and similar solutions are common and effective solutions that highlight the importance of sovereignty and agency in the food and water access process. |

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228: [https://www.seeker.com/climate/how-climate-change-is-forcing-changes-on-the-farm](https://www.seeker.com/climate/how-climate-change-is-forcing-changes-on-the-farm)
Financing Food and Water Security Adaptation
Achieving optimal outcomes within each of the above principles and practices comes at a price. Existing options for communities to adapt to climate change impacts on food and water security is currently most often through a combination of public and private projects, with different proportions of public and private funding depending on who benefits most and who is best positioned to pay, and when.

Evaluating the Risks
The importance of food and water do not need to be stated. They are, of course, indispensable. However, the lack of healthy food and water presents different risks to different communities. If your community’s financial resources are limited, it is extremely important to accurately determine what adaptation projects should be prioritized.

Some of the major threats to food scarcity are:
1. Long term health concerns: lack of access to healthy food unquestionably increases the risks of obesity, heart problem, and low life expectancy
2. Economic downturn: one of the obvious concerns with climate change is the effect on food. The effect on growing food has potentially extreme economic impact on famers.
3. Unsafe and inaccessible water: as displayed by the Flint Water Crisis, there is a need for universal access to clean drinking water within the US to promote public health and safety and uphold human rights.

Risk Identification
Low food-access communities are identified as urban census tracts where at least 500 people or more than one-third of the population live over one mile from the nearest supermarket or large grocery store (extended to ten miles in rural around to account for higher vehicle ownership and lower population density).

A 2009 report from USDA’s Economic Research Service estimated the 23.5 million people live in food insecure areas, representing over eight percent of the U.S. population. More than half the population in these food insecure areas is estimated to be low-income. Although most Americans travel by car to do their grocery shopping, individuals living in food insecure areas without a vehicle likely face even greater difficulties in accessing healthy food, a situation that is more common among low income households.

A community is democratic only when the humblest and weakest person can enjoy the highest civil, economic, and social rights that the
biggest and most powerful possess.

–A. Philip Randolph
Food Insecurity
Frontline communities are disproportionately affected by the consequences of food insecurity. Persons who live in urban food insecure communities and isolated rural areas typically have worse overall health beginning with poor nutrition in pregnant women manifesting itself in newborns and continuing through to long-term illnesses and shorter life expectancies.

Rural and urban frontline communities face risks that make them particularly vulnerable to experiencing challenges associated with climate change. Rural communities for example are generally isolated, have high rates of poverty, and suffer from “limited economic diversity.” Urban communities, on the other hand, tend to face indirect impacts stemming from climate change, at least in the context of food access. For example, a climate-change-induced reduction in agricultural production may increase food prices and market volatility which in turn affects food availability, accessibility, and stability in areas that are already considered food insecure communities.

There are few programs that explicitly fund work at the intersection of climate change, access to food, and health and wellness. Instead, general programs that can be used to finance adaptation, include the EPA’s Healthy Communities Grant Program (“HCGP”). HCGP can be used to “build institutional and community capacity to understand and solve environmental and human health problems.” Thus, grants of this type could be used to (a) study the effects of climate change on local agricultural yields, and (b) hire experts to put forth adaptation-focused solutions. The solutions and programs discussed below fall both into the category of general public health programs, such as the HCGP, and, to a lesser extent, specific solutions that improve access to food and water—for example, community farming.

A Review of Food Security Solutions

Farmers Markets
Farmers markets are a “public and recurring assembly of farmers or their representatives selling the food that they produced directly to consumers.” These markets create bonds between the producers of food and the communities that purchase and eat their food. This connection is both socially based and economically based.

Benefits
Farmers markets can benefit communities located in food deserts by making healthy fruits and vegetables accessible to communities who lack access to supermarkets. Farmers markets may also benefit local food producers economically as they can sell...
their produce directly to the end consumer as opposed to relying on intermediate parties to bring their produce to market. Farmers markets can help to create healthier communities by providing access to fruits and vegetables to those who do not currently have access to fresh groceries.

While Farmers markets provide a way for communities to access fresh produce and other food products, there may still be an economic barrier to many within the community. Therefore, some farmers markets allow for individuals to use their Supplemental Nutrition Assistance Program (SNAP) benefits at local farmers markets. In 2017 alone, $24.4 million dollars were redeemed at local farmers markets across the country. If you are interested in learning more about SNAP benefits and how to have them implemented at your potential farmers market, you can follow this link: https://farmersmarketcoalition.org/advocacy/snap/

Challenges:

- Time required to transport and sell at the market takes away from the farm operation.
- Market hours are controlled by the policies set for the farmers' market, which may not be ideal for individual producers. Also, advertising—or lack of it—is controlled by the market. Markets that are poorly located may not attract consumers and other vendors may operate in a manner that depresses price.
- Injuries to people and damage to property might be the two greatest risks any farmers market faces. These risks are likely to materialize at some point, and when they do, they are likely to be expensive.
- As vendors are usually the ones handing the food, they generally bear most of the legal responsibility for food safety. But, even when an injury is caused by a vendor’s actions, the market may still bear some responsibility. For example, the farmers market’s rules can be so lenient that food safety incidents become more likely. Also, a farmers market may not adequately screen vendors for safe food practices before admitting vendors, or sufficiently enforce existing food safety rules. Each of these things can lead to legal liability for the farmers market, even though the vendor’s actions directly caused the problem.
- Conflicts between vendors can lead to an array of undesirable outcomes, including unpleasant interactions between vendors and/or market leaders, and vendors withdrawing or being ejected from the market. In a worst-case scenario, a conflict can escalate into a lawsuit. Although vendor lawsuits against markets are uncommon and usually difficult to succeed upon, the stress and bad publicity alone can negatively impact a farmers market.
- Farmers markets may have a hard time making profit when they are located in rural areas with little to no foot traffic.

Potential Costs:

- Many vendors don’t have a good accounting of the true costs of participating in farmer’s markets. Variables:
  - The profitability of the market
  - Amount of product needed to be profitable
Lack of knowledge in setting prices/appraising viability of the market.
Time management assessing for time invested vs. the financial returns

Costs to participating farmers (non-farming expenses):
- Labor: Time to pack his coolers, set-up, work the market, and tear down (6 hours) time to unpack the coolers.
- Spread over a 20 week market season—table, table covers, tent, coolers, signage
- Transportation costs
- Product liability insurance
- State and County Licenses and Permits (Processing, vending, sampling)
- Actual cost of produce to consumers tends to be similar to retail values at grocery stores.

Recommendations
- Communities looking to bring farmers markets to their communities to create greater access to healthy foods should evaluate whether the community is capable of supporting a farmers market.
  - Community leaders should reach out to local food producers and inquire as to whether they would be interested in participating in a farmers market.
- It would be beneficial to create an analysis as to whether having a food market in your area would be economically feasible.
- After arranging a farmers market to be held in your area, raise awareness for the market within the community through traditional forms of marketing.

Case Study
Cities like Dayton, Ohio, Tampa, Florida, Louisville, Kentucky, and Atlanta, Georgia have created farmers markets at major transit hubs, which has provided easy access to the produce being sold by local farmers. By placing farmers markets in easily accessible areas of their communities, people have been able to easily access these new sources of food, which has helped to reduce the negative effects of food deserts.

In addition, these farmers markets help leverage community assets by providing volunteers to staff the farmers markets. The market in Tampa, Florida also helps community members learn how to cook and grow their own food.

Foodshare Programs
An example of a foodshare program are food hubs. Food hubs are defined by the USDA as “community spaces anchored by a food store where other social and financial
Food hubs allow food producers to cooperatively manage the supply chain, marketing, and sale of food to communities. This increases the supply of food available to communities and makes direct sales of food by food producers to consumers cost effective.

Benefits
- Establishment of food hubs allows for greater access to healthy foods in regions with a lack of food retailers.
- Food hubs permit food producers to share the retail costs associated with bringing their food directly to the consumer.

Challenges
- Getting funding from grants can be competitive.

Potential Costs
- “Foodshare Program of Philadelphia” is funded primarily through grant programs.
  - Foodshare of Philadelphia in particular had an operating budget of ~$6 million in 2017.

Recommendations
- Community organizations should advocate for policies that incentivize food suppliers to conduct business in areas that are designated food deserts.

Case Study
Baltimore, Maryland has used government policy to help bring grocery stores to food deserts. Baltimore’s Department of Planning’s Baltimore Food Policy Initiative found that grocery retailers were hesitant to conduct business in the city due to high taxes. In 2015 the Baltimore City Council approved a policy that would allow grocery stores moving into the city to receive an 80% credit against their personal property taxes. This policy has resulted in one supermarket being built in Baltimore with more to come in the near future.

Other examples:
- In California, a new public-private partnership loan fund called Fresh Works works with a $200 million dollar investment pool to provide loans and grants to grocers wanting to build or expand in underserved neighborhoods.
- This example seems to touch many aspects of the supply chain: includes producers, distributors, aggregators, food hubs, and retailers.
- A risk of relying on this program for funding or nutrition is that communities may not have all of the requirements for eligibility, outlined here: [http://www.cafreshworks.com/eligibility/](http://www.cafreshworks.com/eligibility/).

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235 Id.
Available Financing for Food Security

Federal Funds and Programs

Environmental Protection Agency:
- The office providing general information related to grants: EPA’s Office of Grants and Debarment
- EPA’s grant information can be found at: https://www.epa.gov/grants/how-apply-grants
- Specific Programs:
  - Healthy Communities Grant Program
    - This is an EPA New England regional program aimed at reducing environmental risks and improving health and quality of life.
    - The program funds projects that reduce environmental risks through collaborative, community-based projects
    - https://www3.epa.gov/region1/eco/uep/hcgp.html

Department of Housing and Urban Development:
- Specific Programs:
  - Community Development Block Grant Entitlement Program
    - The CDBG program allocates funds to entitled cities and counties
    - Entitled grantees may use the funds to develop economic opportunities, provide housing, and improve the general living environment
    - Individuals apply to the local governments who administer the grant funds
    - https://www.hudexchange.info/programs/cdbg-entitlement/cdbg-entitlement-program-eligibility-requirements/
  - Section 108 Loan Guarantee Program
    - This program enables state and local governments to turn a portion of their Community Development Block Grant funds into loans guaranteed by the federal government
    - These loans can fund revitalization projects such as housing rehabilitation and public facilities construction
    - https://www.hudexchange.info/programs/section-108/

Challenges to Engaging in this Program
- There exists some uncertainty about funding for the CDBG program in the current political climate; a recent White House budget proposal called for ending the program
- The CDBG program is vulnerable to poor direction, with funds going to projects that are not necessarily beneficial to social and economic justice programs
Resourcing Revolutionary Resilience: Transformational Climate Adaptation Finance Toolkit

United States Department of Agriculture: National Institute of Food and Agriculture

- Food Insecurity Nutrition Incentive (FINI) Grant Program
- Purpose:
  - FINI supports the increase of the purchase of healthful foods amongst low-income consumers that participate in SNAP by providing incentives at the point of purchase
- Why Using FINI is beneficial to grantors:
  - FINI-approved projects present an opportunity to bring stakeholders from various parts of the food system to reach an understanding of how to improve the nutritional status of households participating in SNAP.
- Who Receives Funding for FINI Projects & Award Amounts
  - 1. FINI Pilot Projects
    - Awards may not exceed a total of $100,000 over one year
  - 2. Multi-year, community-based FINI projects; and
    - Award may not exceed a total of $500,000 over no more than four years
  - 3. Multi-year, FINI Large-Scale Projects
    - Awards of $500,000 or more over no more than four years.

- Requirements of all FINI project are as follows:
  1. Have the support of the State agency responsible for the administration of SNAP
  2. Increase the purchase of fruits and vegetable by low-income consumers participating in SNAP by providing incentives at the point of purchase
  3. Operate through authorized SNAP retailers
  4. Agree to participate in the FINI comprehensive evaluation program
  5. Ensure that the same terms and conditions apply to purchases made by individuals with SNAP benefits and with incentives under the FINI grants as apply to purchases made by individuals who are not members of households receiving benefits as provided in 7 C.F.R. 278.2(b); and
  6. Include effective and efficient technologies for benefit redemption systems that may be replicated in other states and communities.\(^\text{236}\)

- Crop insurance can be purchased by farmers to protect their crops from disaster. The Federal Crop Insurance Corporation subsidizes, or underwrites private crop insurance programs for hundreds of types of crops and livestock. There are generally three types of crop insurance Multiple Peril Crop Insurance (MPCI), Crop Hail Insurance and Crop Revenue Insurance. MPCI is the most popular form of crop insurance as it generally protects against destructive weather,\(^\text{236}\)

\(^\text{236}\) https://nifa.usda.gov/program/food-insecurity-nutrition-incentive-fini-grant-program

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Case Study: Benton Harbor, Michigan
CDBG funds are being used to fund, in part, the construction of a farmer’s market and the renovation of a community center in Benton Harbor
disease, fire, drought, flooding and insect damage. This form of insurance is available for over 120 different forms of crops but coverage does vary on region.

○ Crop Hail Insurance is not part of the FCIC program, but may be purchased privately. Many farmers use Crop-Hail insurance to supplement their MPCI if they live in an area where hail is prevalent.

○ Finally Crop Revenue insurance can be purchased and utilized in years where farmers may have a low yield. To calculate how much the farmer will receive, the insurance company compares how much money

○ Farmers should consider purchasing flood insurance to ensure protection of their crops, but also to ensure they are protected economically. If you, or members of your community are interested in purchasing crop insurance you may want to consider reaching out to an insurance agent who can help you make an informed decision regarding which policy is most beneficial for your region of the country.

Challenges to Engaging in this Program

● Successful engagement requires support from the state government

● Ongoing funding may also be a challenge, if the FINI grant does not cover the cost of the program

Case Study: Massachusetts’ Healthy Incentives Program (HIP)

HIP was established using a FINI Grant awarded in 2015. The program provides beneficiaries of SNAP with an automatic credit to their account when they spend money on food from a qualified community-based agricultural program (such as a farm stand or farmer’s market). One important distinction to HIP is that it provides automatic integration with the SNAP system.

See also: https://nifa.usda.gov/program/food-insecurity-nutrition-incentive-fini-grant-program

State Funds and Programs

Every state is different, and this toolkit will not list out specific programs like it did for the federal government. By contacting the local agencies and departments, you can find out which options are available to you. For example:

Local Funds and Programs

Usually, local governments receive their funding from the state and federal governments, then they contract with local private entities to carry out the given adaptation project. For example:

Baltimore Office of Sustainability

● The office is focused on improving the long-term social, environmental, and economic viability of the city of Baltimore

● For general information, see: https://www.baltimoresustainability.org
Specific Programs:

- **Land Leasing Initiative**
  - The program’s goal is to encourage urban farming on vacant lots
  - Farmers with at least one year of experience are eligible to lease vacant property for five years at $100 per year
  - Challenges to Engaging in this Program
    - Program requires that one member of the applicant organization have at least one year of experience in agricultural production
    - Applicants must secure their own financing
    - A successful application is only the first step, the lease must still be negotiated with the city government

- **Urban Agriculture Tax Credit Program**
  - This program grants farmers a 90% reduction in property taxes for property used in urban agriculture
  - Property must be used for urban agriculture for five years, the property may not be used for another purpose that would subject it to property taxes, and the property must produce a minimum threshold value
  - Application: Urban Agriculture tax credit application
  - Challenges to Engaging in this Program
    - Tax credit is available only to farmers who make at least $5,000 annually on a maximum of 5 acres of land
    - Property must not be used for another purpose that would incur property taxes
    - Farmers must continue to submit annual eligibility certification forms to keep the tax credit

- **Baltimore City Health Department**
  - Baltimarket is a program of the Baltimore City Health Department

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**Case Study: Strength to Love II Farm**

This is the first farm established in Baltimore under the Land Leasing Initiative. Located in the Sandown-Winchester neighborhood of Baltimore, Strength to Love II is a nonprofit organized to provide fresh produce to the community and support for returning citizens.

**Case Study: Civic Works’ Real Food Farm**

Real Food Farm’s mission is to improve local access to healthy foods through sustainable agricultural practices.
It is comprised of a set of programs designed to transform communities through equitable access to healthy food

Specific Programs:
- Baltimarket Virtual Supermarket Program
  - The program enables residents to place online orders for groceries and have those groceries delivered to a local community site with no delivery charge
  - For more information, see: https://www.baltimarket.org/virtual-supermarket/

Private Funds and Programs

Foundation: The Community Trust Foundation
- This foundation seeks to build stronger communities in Allegany, Garret, and Mineral Counties (Maryland and West Virginia)
- Health and Wellness Fund
  - The Fund is directed towards programs that provide health and wellness education, opportunities for exercise and nutrition, and disease prevention
  - Link to grant application: http://ctfinc.org/ctf/big-blue-business/grants#grantapp

Maryland Food Bank
- The Maryland Food Bank (MFB) is a non-profit organization leading the movement to end hunger in Maryland. They have an extensive network of community and organizational partners across the state that distribute food to the Marylanders who need us.
- The MFB the food to hundreds of food pantries, soup kitchens, shelters, and faith-based organizations that serve food-insecure Marylanders.
- The MFB also supplements the aforementioned work with outreach programs that provide direct food assistance, educate the public on the importance of good nutrition, and fight hunger through innovative means.
- Information about corporate sponsorship can be found here: https://mdfoodbank.org/about/corporate-partners/

Future Harvest CASA
- By enlisting farmers, chefs, and other foodshed actors who grow and source food sustainably to lead our peer-to-peer education programming (see Field School: https://www.futureharvestcasa.org/foodshed-field-school), they contribute the effort to fighting food insecurity.
- Additionally, they advocate for policies that help small farmers succeed as well as a resilient regional food economy, and policies that protect the environment and communities (see Advocacy: https://www.futureharvestcasa.org/advocacy).
- This community calendar lists regional events related to sustainable food and farming. https://www.futureharvestcasa.org/events
Public Charity: Community Health Charities

- Community Health Charities is a nonprofit that raises money and awareness related to health and wellness
- They work with individuals, employers, nonprofits, and communities through a variety of programs
- Health Disparities Program
  - This program comprises a selection of resources designed to improve health equity.
  - Information is available here: https://healthcharities.org/causes/health-disparities/
  - Other (this is a big category, as it includes self-finance, which is more useful in this module than any other module)

The essence of capitalism is to turn nature into commodities and commodities into capital. The live green earth is transformed into dead gold bricks, with luxury items for the few and toxic slag heaps for the many. The glittering mansion overlooks a vast sprawl of shanty towns, wherein a desperate, demoralized humanity is kept in line with drugs, television, and armed force.

-Michael Parenti
**Community Based Agriculture**

Community based agriculture ("CBA") transcends all of the solutions and problems discussed in Module 4. CBA is a common and attainable solution for frontline communities suffering from food scarcity.

This section highlights that community farming, especially if carried out through cooperative structures, can (a) build resilience and capacity by serving as a means of local wealth generation; and (b) combat extractive economic practices by creating a circular system for goods that everyone in the community needs.

One way to think of this: producer, distributor, and consumer are one group of community owned and operated entities—for example, a cooperative community farm produces food sold at a worker-consumer hybrid cooperative grocery store. Another way is small- to moderate-scale community owned entities transacting with each other, such as one community farm specializing in herbs and spices while another focuses on vegetables, and they both sell to worker-owned cooperatives.

A community farm can serve as the focal point for community equity development (this is exemplified by the Jackson case study in Module 1). Some communities may not benefit from a community farm, or simply lack access to the resources needed for one, but could still benefit from broader community equity development. Your community should use this section to analyze the feasibility and potential success of a community garden or farm in your area.

**Review of Community Based Agriculture Projects**

**Community Gardens**

Community gardens are plots of land, usually in urban areas, that are rented by individuals or groups for private gardens or are for the benefit of the people caring for the garden. (https://www.nal.usda.gov/afsic/community-gardening)

- **Benefits:** There are several benefits of community gardens and farms, some of which include:
  - Contributing to a more resilient food system
  - Supporting social cohesion and building a sense of community
  - Promoting safer neighborhoods by repurposing vacant lots and lands into attractive spaces where both people and plants can flourish
  - Offering job training and economic opportunity for low-income individuals and families
  - (https://foodcommunitybenefit.noharm.org/resources/implementation-strategy/program-community-gardens-and-farms)
Case Studies
There are three areas in particular where community gardens have demonstrated palpable success. These areas include Flint, Michigan; Chicago, Illinois; and Brooklyn, New York:

1. Flint, Michigan
   a. According to a study published in a March 2008 article in the National Institute of Health, the study found that “adults with a household member who participated in a community garden consumed fruits and vegetables 1.4 more times per day than those who did not participate, and they were 3.5 times more likely to consume fruits and vegetables at least 5 times daily.” (https://www.ncbi.nlm.nih.gov/pubmed/18314085)
   b. The aforementioned provides at least one example of how the establishment of a community garden may lead to accomplishing the goal of increased consumption of fruits and vegetables.

2. Chicago, Illinois
   a. Known as the Windy City Harvest and Chicago Botanic Garden, in 2016, this garden harvested 100,000 pounds of produce
   b. This produce was shared by garden participants and distributed to recipients of the local Veggie Rx program.
   c. Offers job training opportunities, internships, apprenticeships, and accredited certificate programs
   d. Part of the initiative in Chicago goes towards youth development programs that help to educate and employs 80 to 90 low-income teenagers each year.

3. Brooklyn, New York
   a. Known as “Added Value Farms,” this community farm harvested 20,000 pounds of produce at their Red Hook Community Far location by selling fruits and vegetables to local community members at farmers markets, farm stands, and through they CSA program.
   b. Specifically accepts Women, Infants, and Children (WIC) and Supplemental Nutrition Assistance Program (SNAP) benefits, Farmer’s Market Nutrition Program (FMNP) vouchers, and Health Bucks to ensure that low-income consumers can afford the healthy foods offered.

- American Community Garden Association (ACGA): https://communitygarden.org/resources/funding-opportunities/ (a compilation of funding opportunities for community farms and gardens)
  - Backyard Community Supported Agriculture creates a system where people can pay for fresh produce a week in advance and have it delivered to them, kind of like Hellofresh
  - ACGA recommendations for implementing Community Gardens:
- Tips for addressing challenges:
Avoid areas where water collects—vegetables will not grow well and mosquito and microbial contamination risks increase. Avoid sites that receive surface drainage from parking areas.

Test the soil for lead. All soils will have a natural, background level between 5 ppm and 40 ppm. Don’t grow food in soils where the total estimated lead level is above 400 ppm. In those cases, use containers or raised beds filled with clean soil and compost, or soilless growing media and compost.

Dogs and cats should not be allowed in community gardens. Their feces can harbor and spread human pathogens to vegetable crops.

Use caution when irrigating food gardens with water collected from the roofs of nearby buildings to. Contaminants, like animal feces, could be present on roofs and get in to collected water. Don’t sprinkle rain barrel water on leafy green vegetables.

**Potential Costs associated with Community Gardens according to ACGA:**

A community garden’s startup costs are between $3,750 and $7,500. Costs include establishing the garden near a source of water, maintaining city fees, insurance and contractor wages. A large community garden can even cost as much as $30,000.

Another breakdown of itemized costs can be found here.

A community garden is an organic establishment, so you’ll need to maintain the premises by taking care of the garden’s individual lots. A successful community garden will also have a lot of growing options, membership options, and seasonal highlights. In other words, costs associated with maintenance and personnel.

More information on obtaining land for the garden can help defray costs:

- Once you have determined that your potential site is feasible, write a letter to the landowner asking for permission to use the property for a community garden. Be sure to mention to the landowner the value of the garden to the community and the fact the gardeners will be responsible for keeping the site clean and weed-free (this saves landowners from maintaining the site or paying city weed abatement fees).  
- Involving youth volunteers can help reduce maintenance costs and also strengthen community.

**Co-ops**

A co-operative is an autonomous association of persons, here, farmers, that unite voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise. ([https://nfca.coop/definition/](https://nfca.coop/definition/))

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● **Benefits**
  o Farmers in cooperatives have more bargaining power, lower transaction costs in getting loans, and better access to information.
  o Additionally, farmers have more individual power and control over production, including inputs and land use, than they do through contract farming, and therefore may be more food secure within a cooperative.
  o Since cooperatives are based on values of democracy, equality and equity, they can play a particularly strong role in empowering women.
  o Cooperatives also provide farmers with training on production and post-harvest handling, as well as education in literacy, business or marketing that can build their human capital.

**Case Study**
UC Davis Small Farm Program has assembled compilation of publications on: [http://sfp.ucdavis.edu/cooperatives/pubs/#hous](http://sfp.ucdavis.edu/cooperatives/pubs/#hous) (on the right-hand filter, “finance” is one of the topic choices)

  o Agricultural cooperatives are organized as corporations, but rather than maximizing profits, the co-op’s goals tend to be focused on maximizing benefits to the co-op members.
  o Co-ops can be useful in order to share costs among farmers for otherwise cost-prohibitive machinery and sharing marketing-related costs such as transportation of goods to consumers or other marketing streams.

● **Challenges (farmers’ co-op generally):**
  o Not properly vetting members of a co-op could lead to an inefficient member generally being a drain on the resources of other members. In other words, risks can involve any risk inherent to any joint enterprise.

● **Potential Costs (farmers’ co-op generally):**
  o The basic factors in starting a farmer co-op can be found [here](http://agrisk.umd.edu/blog/the-dynamics-of-cooperatives?rq=cooperatives). Actual money costs will depend on factors such as number of participating farms, the expense of equipment specific to a type of farming, etc.
  o In general, the costs of the co-op should be lower than costs of individual farming, because the aim is to share costs among members to make farming more economically feasible in the first place.

● **Recommendations**
  o Co-ops have been associated with corruption in different parts of the world,
Some cooperatives have not performed well as the result of poor governance structures, multiple and competing goals, but also problems that arise from insufficient trust between members. Therefore, ensuring to safeguard against the aforementioned is advisable.

Additionally, safeguarding from top-down approaches where cooperatives have been established by external agents, rather than farmers themselves, can ward against producing unfavorable results.

Lastly, elements for successful agricultural cooperatives include: appropriate legal frameworks and governance aligned with national policies; support for business development, business skills and governance capacity; access to markets and trading links, especially for competing in international markets; and the need for improved understanding of the dual nature of cooperatives as business and civil society members.

Revolution is about the need to re-evolve political, economic and social justice and power back into the hands of the people, preferably through legislation and policies that make human sense.

—Bobby Seale
Case Studies

Although the two case studies below are from African countries, their models of implementation can be easily adopted for functionality within the United States.

1. Kibinge Coffee Farmer’s Cooperative Society, Uganda (KCFCS)
   • In 1995, 4 coffee farmers in Kibinge, Central Uganda, formed an association in the hope that collectively they could improve the quality and volume of their coffee production.
   • In 2009 the management decided that the business should be converted into a member-owned, registered cooperative.
   • The cooperative has since grown rapidly, and currently has around 2,000 registered members, one-third of whom are women. In 2011 the Kibinge Coffee Farmer’s Cooperative Society (KCFCS) became Fairtrade certified.
   • With the extra funds generated from Fairtrade certification price premiums, KCFCS decided to establish a KCFCS Farm Supply Shop in 2013 that is conveniently located and offers inputs at competitive prices.
   • Members can also buy inputs using credit obtained through the KCFCS Savings & Credit Unit, also established in 2013.
   • Additionally, the cooperative runs social, economic and environmental projects in the local area such as a project to supply the local health center with electricity and improve, grade and repair local roads. In 2014 KCFCS won the Fairtrade Africa small-producer of the Year award.

2. Ghana Grains Partnership (GGP)
   • By focused interventions, the Ghana Grains Partnership aims to improve productivity. The intention is to make a significant and lasting impact on rural livelihoods.
   • A key measure was the establishment of a farmers’ association – Masara N’Arziki (‘Maize for Prosperity’ in Hausa). Entering 2013, more than 8,000 farmers had joined, having seen yield levels triple compared to the average.
   • The more than 8,000 members of Masara N’Arziki and their families are the direct beneficiaries.
   • For additional resources regarding domestic farmers co-ops, visit: https://cooperativesforabetterworld.coop/learn-about-co-ops/types-of-cooperative-businesses/agricultural-co-ops/
Collaborative Farming
Definition: Collaborative farming refers to situations where farmers partner up to help defray costs of farming and reduce risk. Similar to co-ops, farming collaboratively allows farmers to pool resources and work together for mutual benefit. It requires cooperation, compromise, and trust.

- **Benefits**
  - Resource sharing for mutual benefit is one of the main advantages of collaborative farming arrangements.240
  - Potential shared resources could include, land, equipment, personnel, farming practices, or marketing distribution chains.
  - Center for Agriculture and Food Systems (CAFS) overview of collaborative farming: [https://farmlandaccess.org/collaborative-farming/](https://farmlandaccess.org/collaborative-farming/)
  - Challenges identified by the CAFS:
    - Although farming collaboratively does have benefits, it also has some potential disadvantages. Farmers should keep these in mind, including241:
      - Potential for disputes among collaborators
      - Profit sharing (especially when money is tight)
      - Personality conflicts
      - Unequal effort, labor, or resources (real or perceived)
      - Lack of shared expectations around money, management, or future farming plans
      - Difficulty leaving a collaborative arrangement
      - Shared customer base may be split (or may be taken over by one collaborator) if the collaboration collapses
      - Potential liability for the actions of collaborative business associates, especially if sharing profits
      - Lack of sole control over your farm business
      - Different ideas about farming practices or marketing strategies

- **Potential Costs:**
  - The costs of collaborative farming are tied to the risks - the point of this model is to share resources and thus reduce actual material cost to farming operations.

- **Recommendations**
  - Methods of formation242
    - Informal Arrangements: Informal arrangements are probably the most common type of collaborative farming. Farmers often work together with their neighbors on an informal basis.
    - Legal Cooperative: A legal cooperative is a legal entity formed under state law that is owned and controlled by its members. Farms

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240 [https://farmlandaccess.org/collaborative-farming/#prosandcons](https://farmlandaccess.org/collaborative-farming/#prosandcons)
241 [https://farmlandaccess.org/collaborative-farming/#prosandcons](https://farmlandaccess.org/collaborative-farming/#prosandcons)
242 [https://farmlandaccess.org/collaborative-farming/#typesoffarmcollaborations](https://farmlandaccess.org/collaborative-farming/#typesoffarmcollaborations)
can benefit from the cooperative model because it allows producers to share processing and distribution costs.
  - Limited Liability Company
  - For a small group planning to farm collaboratively, forming an LLC (limited liability company) may be a more flexible and less expensive approach that can—if properly set up—achieve the same collaborative goals and incorporate the same values as a legal cooperative.

**Case Study: Northeast Farm Access, LLC**
Northeast Farm Access, LLC, brings together farmers, social investors and local allies, especially conservation land trusts, to revive and transform sustainable agriculture—yielding not just abundant clean, local food, but also a new generation of successful organic farmers.¹

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**Green Roofs**
Definition: A “green roof” is an extension of the existing roof which involves high quality water-proofing, drainage systems, and is completely covered in vegetation.²⁴³
- **Benefits:**
  - Storm water management²⁴⁴
    - With green roofs, water is stored by the roof and then taken up by the plants, where the water is returned to the atmosphere.
    - In summer, green roofs can retain 70-90% of the precipitation that falls on them.
    - Green Roofs not only retain rainwater, but also moderate the temperature of the water and act as natural filters for any of the water that happens to run off.
  - Urban Agriculture²⁴⁵
    - Using green roofs as the site for an urban agriculture project can reduce a community’s footprint through the creation of a local food system.
    - These projects can serve as a source of community empowerment, give increased feelings of self-reliance, and improve levels of nutrition.
- EPA on green roofs: https://www.epa.gov/soakuptherain/soak-rain-green-roofs
- Funding for green roofs:
  - https://www.buildings.com/articledetails/articleid/21454/title/how-to-pay-for-your-green-roof

- **Challenges:**
  - A lot of the risks are related to cost:

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¹ https://greenroofs.org/about-green-roofs
²⁴³ https://greenroofs.org/about-green-roofs
²⁴⁴ https://greenroofs.org/about-green-roofs
²⁴⁵ https://greenroofs.org/about-green-roofs
Green roofs are structurally heavy and require more maintenance to keep in good repair. Also require more structurally sound roof to bear the additional weight.

- **Potential Costs:**
  - Based on GSA report:\(^{246}\):
    - The longevity of green roofs has the greatest effect on savings, whereas installation and maintenance have the greatest effect on cost (maintenance costs are even greater than the installation premium).
    - Basically, green roofs are expensive but have other benefits beyond monetary, such as conservation, stormwater management, gardening.

- **Recommendations**

**Case Study: American Society of Landscape Architects headquarters\(^{1}\)**

The green roof retained thousands of gallons of storm water, reduced building energy costs by hundreds of dollars a month, and significantly lowered outdoor air temperature.

**Other Resources:**
- USDA’s National Agricultural Library’s compilation of small farm funding resources: [https://www.nal.usda.gov/ric/small-farm-funding-resources](https://www.nal.usda.gov/ric/small-farm-funding-resources)

**Financing for Community Based Agriculture**

**Federal Funds & Programs**

**U.S. Department of Agriculture’s Farm Service Agency**
- The FSA provides resources and programs for agricultural producers

\(^{246}\) [https://www.gsa.gov/cdnstatic/Cost_Benefit_Analysis.pdf](https://www.gsa.gov/cdnstatic/Cost_Benefit_Analysis.pdf)
FSA Farm Loan Programs cover a variety of loan options for farmers; there are loans available to youth, women, and minority farmers.

The FSA’s guides to these programs can be reviewed by following this link: https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/index

The USDA (as mentioned above) has a toolkit providing information on a variety of funding sources: https://www.usda.gov/sites/default/files/documents/urban-agriculture-toolkit.pdf

Challenges to Engaging in this Program
- Like all grants, your community will need to pay interest if it decides a Farm Loan Program is the best option for it. As of April 1, 2019, these interest rates range from 1.50% to 4.00%. Additionally, like any government program, there will are conditions and limitations regarding what your community can do with any money it receives. This means your community group may lose some of its autonomy and independence with respect to using the money as it pleases. Furthermore, the USDA may deny your community’s loan application. If this happens, your community group might be entitled to reconsideration, mediation or an appeal to the National Appeals Decision within the USDA; however these options will not only delay your community in gaining funding, it can also be an expensive process. Finally, it is likely that the government will take a security interest in some of your assets. This means if you, or a member of your community, cannot make payments, the government will be able to seize your property (e.g. livestock, equipment, and real estate).

Case Study

In 2005, Koua Thao, who moved to America from Laos, received a Guaranteed Farm Ownership loan from FSA to purchase 40 acres of property with two hen houses. In 2017, he received a microloan to purchase cattle to graze the 40 acres of pasture. Ultimately, using the microloan, he purchased 22 cows and one bull to help supplement his income and raze the grass. If you are interested in learning more about Thao’s story, you can follow this link: https://fsa.blogs.govdelivery.com/2017/10/20/arkansas-producer-diversifies-breeder-hen-operation-using-usda-microloan/.

U.S. Environmental Protection Agency
- The EPA’s Brownfields Program provides resources to help communities clean up and reuse contaminated properties
- The EPA provides a step-by-step guide to turning a Brownfields site into a community garden: https://www.epa.gov/brownfields/steps-creating-community-garden-or-expand-urban-agriculture-brownfields-site
- Funding sources for a project like this may be found here: https://www.epa.gov/brownfields/types-brownfields-grant-funding
- Challenges to Engaging in this Program
The primary problems communities will likely face comes down to the fact that the EPA typically only provides Brownfield Assessment Grants to local and state government agencies. While 501(c)(3) entities are eligible to receive the grant, the EPA does not appear to give money to non-profits for the purpose of revitalizing brownfields, and or turning condemned spaces into community farms. Community groups may face an up-hill battle when applying for a Brownfield Assessment Grant. However, residents within communities have successfully been able to join state/city run councils who then apply to the EPA for funding. This

Case Study

Multnomah County, Oregon, used EPA’s Brownfield Assessment Grant to turn an abandoned urban lot in the city into a community garden. While a community group did not apply and receive this grant, once it received the money, the county transferred ownership of the property to Oregon Sustainable Agriculture Land Trust (OSALT). Once the transfer occurred, OSALT recruited Groundwork Portland, a local chapter of Groundwork USA, a national non-profit organization, to assist in engaging the community and leveraging funds. If you are interested in learning more about this specific project, click here: https://www.epa.gov/sites/production/files/2015-09/documents/bf-ss-emerson-street-032911.pdf.

State Funds & Programs

New York Department of Agriculture and Markets Office of Parks, Recreation and Historic Preservation

- The Office of Parks, Recreation and Historic Preservation administers the Environmental Protection Fund Grant Program
- The EPF helps to fund acquisition and development of land for recreation or conservation
- Community gardens are included in the list of eligible projects
- Detailed information and application can be found here: https://parks.ny.gov/grants/parks/default.aspx

Challenges to Engaging in this Program

- Despite the fact community gardens are listed, as projects that are available to receive funding, and listed as priority projects, very few recipients of this grant appear to be community gardens. Rather, grant recipients include several trail development initiatives, county parks, and building rehabilitations. Furthermore, the Environmental Protection Fund Grants seem geared towards large-scale projects. While the state issued a few smaller grants (less than $20,000) the majority of the grants were six figures.
Case Study

While not specifically a “community group” or a “community garden,” the state of New York granted the New York Restoration Project, a 501(c)(3) non-profit organization, $500,000 in 2017 for “Vital Brooklyn Communities.” The non-profit is dedicated to ensuring green spaces within walking distance of all New York residents. The Vital Brooklyn Communities Initiative will create over 2,000 new homes in Brooklyn. The project has received money from many avenues, and has dedicated $3.1 million to make capital improvements to 22 community gardens in the Central Brooklyn. You can learn more about the Open Space and Recreation aspects of the project here: https://www.ny.gov/transforming-central-brooklyn/funding-vital-brooklyn-initiative.

Private Funds and Programs

Foundations:
The Sustany Foundation
- The Sustany Foundation is a nonprofit that seeks to promote sustainability in Tampa Bay, Florida
- The foundation has a community gardens matching fund that helps to fund sustainable food projects
- Application information can be found here: https://sustany.org/community-gardens-matching-fund/

Public Charity:

American Community Gardening Association
- The ACGA aims to improve quality of life in communities through the promotion of community gardens
- They have organized a list of grants available to fund community gardens: https://communitygarden.org/resources/funding-opportunities/
- The grants are available to teachers, neighborhoods, community groups, commercial producers, and 501(c)(3) organizations

Foundation of Southern Cooperatives Land Assistance Fund
- FSC’s mission is to assist family farmers, particularly African Americans, to retain and develop their land
- FSC sponsors a variety of programs from their center in Epes, Alabama
- A list of those programs can be found here: http://www.federationsoutherncoop.com/files%20home%20page/programs.htm
Water Security
On August 3, 2010, the United Nations adopted Resolution 64/292, which recognized a human right to “safe and clean drinking water and sanitation… that is essential for the full enjoyment of life and all human rights.” Access to clean drinking water as a public health issue was put in the public spotlight after it was found that Flint’s water supply was contaminated with pollutants such as bacteria and lead. Access to clean drinking water is imperative to maintaining public health. The American Journal of Public Health has emphasized the need for clean drinking water and has explained that lack of access to clean drinking water may have the effect of reducing obesity, promote dental health, and reduce the effects of dehydration. Furthermore, non-Hispanic Black and Hispanic adults were more likely to report that their local tap water was not safe to drink and that total water intake is lower among non-Hispanic Black and Hispanic adults than among non-Hispanic White adults. As displayed by the water contamination in Flint, Michigan, there is a need for universal access to clean drinking water within the United States to promote public health.

Even outside of urban areas, communities of color and low-income communities are disproportionately impacted by contaminated drinking water. For example, in rural communities like Lowndes County, Alabama, a primarily African American community, only 20% of the residents are connected to the town’s sewer system. These populations are then forced to purchase bottled water at a greater expense. Rural communities also have the added difficulty of dealing with water pollution that is primarily connected to farming and agriculture. For example, many factors like soil erosion, manure runoff, overuse of fertilizers and excessive phosphorus can cause pollution of groundwater.

Lack of access to clean water in Lowndes County, Alabama shows the severe health consequences of communities not having access to clean water. The Environmental Finance Center at the University of North Carolina at Chapel Hill found that in the majority African American county approximately 34% of the residents were infected with hookworm—a disease thought to have disappeared in the 1980s.

Along with addressing the direct negative effects of lack of access to clean drinking water, equitable green water policy must also include the creation of green infrastructure to control stormwater management. As the effects of climate change increase the frequency of hurricanes and other events that are capable of flooding populated areas, impermeable surfaces can increase the financial devastation to...
One example that emphasizes the need to create stormwater runoff solutions was in Houston, Texas, after Hurricane Harvey. Impermeable surfaces such as concrete exacerbated the destruction of property and threat to life. Stormwater runoff in urban areas presents negative public health consequences due to the fact that storm water “picks up” pollutants on impermeable surfaces, which can subsequently pollute water sources used for drinking.

Lack of access to water due to climate change has the capacity to cause a decline in agricultural yields. The Food and Agriculture Organization of the United Nations estimates that yields for staple crops may fall dramatically as a result of reduced water availability due to weak CO2 fertilization. Frontline communities will likely be most severely impacted by the lack of staple crops as the supply becomes less as the planet warms.

Rural and agricultural communities also have a unique relationship with water, and many people, particularly farmers, depend on water. Therefore, droughts and flooding have the ability to make an impact on community health and the local economy. The cost of reduced agricultural yields due to a lack of water are enormous. Not only will the lack of water to grow crops have a negative effect on the economics of farming, but this cost will be shared with frontline communities and consumers of food products. Due to there being less supply of food and a growing population, food will become more expensive and may become inaccessible to low income populations. The overall cost of a reduced food supply will have a devastating effect on the U.S. economy and will likely most impact low-income households that are already facing challenges with accessing healthy foods.

So, the question then becomes, how have communities strengthened their infrastructure to ensure proper water quality for drinking, cooking and showering; as well as preparing for changes in rainfall, whether that be drought or flooding. Some of these changes will involve building new infrastructure, while others will include actions like planning and changing the crops your community will plant once rain increases.

In attempting to find solutions to poor water quality and lack of access to water, communities may struggle in finding solutions, as many private funding sources are dedicated to international development. This section will highlight examples of adaptation measures community organizations can utilize in order to increase their access to water. Like the prior sections, this section will utilize case studies to review what other communities have done, as well as risks, costs and financing sources available for funding the project.

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253 (Center for Climate and Energy Solutions. Hurricanes and Climate Change. https://www.c2es.org/content/hurricanes-and-climate-change/).
256 https://www.seeker.com/climate/how-climate-change-is-forcing-changes-on-the-farm
To overcome poverty and the flaws of the economic crisis in our society, we need to envision our social life. We have to free our mind, imagine what has never happened before and write social fiction. We need to imagine things to make them happen. If you don't imagine, it will never happen.

–Muhammad Yunus

Green Infrastructure Projects to Enhance Stormwater Management

Social/Environmental Impact Bonds

Social Impact Bonds are a relatively new phenomenon in the field of financing community equity development. SIBs are meant to encourage private sector investment in government priorities through the use of public-private partnerships that are capable of creating innovative solutions to social problems. The goal of SIBs is to allow private investors to fund social programs that are intended to prevent social problems before they arise.

SIBs work by allowing private investors to loan money to the government in order to fund a government initiative. A preselected service provider then operates and manages the initiative through the use of the invested funds. After the program’s prearranged lifecycle comes to an end, an independent evaluator will make a determination about whether the program has met its performance metrics that were agreed upon by the investors and the government. If the program has met its performance metrics, the government will repay the private investor’s initial investment plus interest. Governments have an incentive to participate in SIBs because

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259 Id. at 2.
261 Id.
262 Id.
263 Id.
successful preventative programs have the ability to result in potential savings by not having to allocate resources once a problem has already occurred. SIBs also reduce the risk to the taxpayer because if a program is not successful, the investors are not returned their initial investment or any interest.

First used in Washington, DC to create green infrastructure to reduce stormwater runoff into DC’s sewer system. The project created vast permeable green areas intended to absorb stormwater flow, which will in turn, fix the problem of excess stormwater entering the sewage system and entering the waterways of the Potomac and Anacostia Rivers, which would have caused major water quality and environmental issues for local residents.


Note that social/environmental impact bonds may not be best suited for smaller organizations as they typically require institutional investors. However, nonprofits and other community-based groups may find it beneficial to bring together institutional investors and city governments to advocate an infrastructure plan using this method of financing.

Federal Financing for State Water Infrastructure Projects
Clean Water State Revolving Fund (CWSRF)
This program provides federal dollars to states to allow for the construction of water infrastructure projects. Community groups may advocate for state legislatures to develop a water infrastructure project to benefit from these funds. For more information on the CWSRF fund see https://www.epa.gov/cwsrf/learn-about-clean-water-state-revolving-fund-cwsrf

Establish vegetated buffers to reduce flooding, runoff and erosion. Another method on a micro community level to mitigate the effects of polluted stormwater runoff is for community groups to work to plant vegetation and vegetative buffers to reduce flooding runoff, and erosion.

In 2011, community groups in Detroit were able to mitigate the effects of stormwater runoff by acquiring nonprofit grants from nonprofit organizations such as Freshwater Future and the Erb Family Foundation to create green infrastructure. Through these grant funds, these community groups designed urban gardens in order to collect

264 Dear et al., supra note 1, at 23.
rainwater and permit it to percolate into the soils as opposed to running off into city sewer systems\textsuperscript{267}

Form a local community group/committee to create and finance water infrastructure projects (exact steps and additional information available in the link in the footnote)\textsuperscript{268} → rural communities

For rural communities who lack convenient access to clean water in rural areas, community members can organize together to create an organization to develop decentralized water distribution systems. By forming an organization that allows the community to pool their own resources together, community members can create water infrastructure in the form of rain collectors and wells.\textsuperscript{269} These small scale infrastructure projects allow for a community to take control of their own water sources for drinking water and farming.

Centralized Water Distribution Systems with Public-Private Partnerships\textsuperscript{270}

Community groups, both urban and rural, can leverage their pool of resources to try and create public private partnerships with local government for water infrastructure projects.

The Hilton Foundation has brought together funders to the address global water crisis. http://washfunders.org/?_ga=2.143790581.1333356364.1548022074-328942916.1548022074


For a more in-depth discussion regarding Storm Water Management Fees, see Module 3.

Financing for Improving Water Security

Federal Funds and Programs

- Water & Waste Disposal Loan & Grant Program (USDA)
  - This loan/grant provides financing for clean drinking water systems, sanitary sewage disposal, sanitary solid waste disposal and storm

\textsuperscript{267} \url{https://www.cakex.org/case-studies/using-green-infrastructure-prevent-sewage-overflows-detroit}
\textsuperscript{268} \url{http://12.000.scripts.mit.edu/mission2017/solutions/engineering-solutions/increasing-water-access-in-rural-and-urban-communities/}
\textsuperscript{269} \url{http://12.000.scripts.mit.edu/mission2017/solutions/engineering-solutions/increasing-water-access-in-rural-and-urban-communities/}
\textsuperscript{270} \url{http://12.000.scripts.mit.edu/mission2017/solutions/engineering-solutions/increasing-water-access-in-rural-and-urban-communities/}
water drainage to households and businesses in rural towns with less than 10,000 people, tribal lands in rural areas and colonies.
○ Eligible applicants include state/local and private nonprofits.

- **SARE funding and grants**
  ○ SARE is a program that provides grants to farmers, ranchers, extension agents and educators, researchers, nonprofits, students, communities and other groups. These grants provide funding for a range of programs, including programs to assist in access to water and improving water quality.
  ○ To learn about the specific grants in your state, you can follow this link.

- **Agriculture and Food Research Initiative - Water for Agriculture Challenge Area**

**State Funds and Programs**

- **California State Water Efficiency & Enhancement (SWEEP) Program:**
  ○ This program provides financial assistance to create and implement irrigation systems. These irrigation systems help reduce GHGs and ultimately save farmers money and water.
  ○ The program can help fund soil moisture monitoring, drip systems, low pressure irrigation systems, pump retrofits, micro irrigation systems, variable frequency drives and the installation of renewable energy to reduce on-farm water use and energy.
  ○ Funded by the California Department of Food and Agriculture
  ○ Learn more: [https://www.cdfa.ca.gov/oefi/sweep/](https://www.cdfa.ca.gov/oefi/sweep/).

- **Private Onsite Wastewater Treatment Systems (POWTS)**
  ○ Provides money to homeowners and small commercial businesses to help mitigate the cost for repair, rehabilitation or replacement of existing failing Private Onsite Wastewater systems.
  ○ Learn more about the program and eligibility here: [https://dpsw.wi.gov/Pages/Programs/POWTS/Default.aspx](https://dpsw.wi.gov/Pages/Programs/POWTS/Default.aspx)

**Private Funds and Programs**

**Foundations:**

- **Kresge Foundation Climate Resilient & Equitable Water Systems (CREWS) Program**
  ○ An initiative to transform urban stormwater and wastewater systems so they provide reliable, equitable and innovative services to communities despite the uncertainties introduced by climate change.
Resourcing Revolutionary Resilience: Transformational Climate Adaptation Finance Toolkit

- Consists of 24 nonprofits working to advance equitable solutions to climate-related storm and flood impacts on low-income communities in U.S. cities. Many of the partner nonprofits work on CREWS projects in multiple locations across the nation.
  - For example, the Chesapeake Bay Foundation engages municipal leaders about green stormwater infrastructure and environmental impact bonds (see above for more on environmental impact bonds) to promote infrastructure such as rain gardens, green roofs, and permeable pavement to mitigate flooding, reduce storm water pollution, improve air quality and build climate resilience. A CREWS grant is being used to support pre-development work for pilot projects demonstrating the feasibility of using innovative finance mechanisms to advance green infrastructure solutions for low-income communities in the Chesapeake Bay region.

- Your community can look into available CREWS funding here: https://kresge.org/opportunities

- Water Foundation
  - Water Foundation grantmaking aims to secure safe, clean water for people, restore and sustain freshwater ecosystems, and build resilience to a changing climate. This work is organized into two integrated programs, Healthy Communities and Healthy Watersheds.
    - The Healthy Watersheds program advances groundwater recharge, floodplain restoration, and headwaters forest management as the renewable energy solutions of the water space. This program supports projects that accelerate and scale up these ways help nature and people thrive together.
    - The Healthy Communities program is driven by the fact that millions of Americans live in places where clean and safe water is not available, or where they are increasingly threatened by floods, droughts, fires, and climate change. This program supports projects that advance equity in water policy and strengthen the health and resiliency of small towns, large cities, and rural areas.


- Pisces Foundation
  - The Pisces Foundation provides grants to nonprofit organizations to accelerate to a world where people and nature thrive together. They “support early movers, innovative ideas, and bold leaders and organizations, adapting based on what [they] learn.”
  - In 2018, the Pisces Foundation provided over 130 grants, including four grants in excess of $500,000
  - Search grants and submit proposals here: https://piscesfoundation.org/portal/
• Global Greengrants Fund\textsuperscript{271}
  o Background: Global Greengrants Fund is different from other international organizations in that they do not dictate an agenda from afar, but rather, they trust local people to advance solutions and strategies that will best fit their needs, providing them the resources to make their ideas a reality.\textsuperscript{272}
  o Who Makes the Decision for Dispersing the Funds: funding decisions made by our trusted network of dedicated volunteer experts, who act as our eyes and ears on the ground. They deliver knowledge of context and first-hand expertise, connecting our resources to local solutions that promote environmental justice
    o For at least 40 percent of grantees, Global Greengrants Fund is their very first funder.
    o Global greengrants prides themselves in their ability to connect to frontline solutions that other organizations have no way of finding or supporting is wholly unique.
  o Track Record: Since 1993, they have given more than 12,000 grants in 168 countries that total more than $84 million dollars.
  o Examples of local rural grant recipients: Have provided funds to 5 continents: Africa, Asia, Latin America, North America, and the Pacific Islands
    o Across the Northern Hemisphere, Global Greengrants Fund supports indigenous societies and activists striving to preserve their changing ecosystems and lives. We fund directly resident-led campaigns to prevent oil development and the clear cutting of forests and rainforest, efforts to protect access to water and resources, and action to defend the human rights of communities and environmentalists.

\textsuperscript{271} https://www.greengrants.org/who-we-are/supporters/support-clean-water/
\textsuperscript{272} Id.
Case study: Grassy Narrows First Nation, Ontario, Canada

Judy DaSilva is a well-known indigenous leader in her community of Grassy Narrows First Nation. She has led a blockade to stop logging that would negatively impact her community, and has actively led efforts to persuade the Canadian government to clean up mercury that is contaminating the Wabigoon River her community depends on for fish, water, and their livelihoods. At 55 years old, Judy is in a wheelchair, and suffers from loss of muscle coordination and tunnel vision as a result of mercury poisoning. She, and the Grassy Narrows Women’s Drum Circle has used seven grants from Global Greengrants Fund and Aveda to urge the government to take action.

How Global Grants has helped: In the four decades since the original contamination, the Grassy Narrows people have led a series of blockades, protests, and actions to demand clean-up of the soil and water affecting their health. With money raised through Aveda, the Grassy Narrows people have received seven grants since 2001 through the partnership between Aveda and Global Greengrants Fund to support their struggle.

- Land and Water Conservation Fund (LWCF) of the U.S. Department of the Interior
  - Background: The Land and Water Conservation Fund was established by Congress in 1964 to fulfill a bipartisan commitment to safeguard our natural areas, water resources and cultural heritage, and to provide recreation opportunities to all Americans. Using zero taxpayer dollars, the fund invests earnings from offshore oil and gas leasing to help strengthen communities, preserve our history and protect our national endowment of lands and waters. The LWCF program can be divided into the "State Side" which provides grants to State and local governments, and the "Federal Side" which is used to acquire lands, waters, and interests therein necessary to achieve the natural, cultural, wildlife, and recreation management objectives of federal land management agencies. [https://www.nps.gov/subjects/lwcf/index.htm](https://www.nps.gov/subjects/lwcf/index.htm)
  - How to Access: The state and local side of the LWCF is administered by the State and Local Assistance Programs Division

- The Rural Economic Development Loan and Grant Program
  - Background: The Rural Economic Development Loan and Grant program provides funding for rural projects through local utility organizations. USDA provides zero-interest loans to local utilities which they, in turn, pass through to local businesses (ultimate recipients) for projects that will create and retain employment in rural areas. The ultimate recipients repay

273 [https://www.doi.gov/lwcf/about/overview](https://www.doi.gov/lwcf/about/overview)
the lending utility directly. The utility is responsible for repayment to USDA.

- How to Access: Criteria for Applying to this program:
  - A former Rural Utilities Service borrower who borrowed, repaid or pre-paid an insured, direct, or guaranteed loan
  - Nonprofit utilities that are eligible to receive assistance from the Rural Development Electric or Telecommunication Programs; or
  - Current Rural Development Electric or Telecommunication Programs borrowers

**Conclusion**

Agricultural commodities play an important role in society and impact our communities on a daily basis as they are fundamental in feeding our communities. Climate change poses a very serious risk to our communities and their ability to feed themselves as rising temperatures and the frequency of severe weather has the potential to alter the stability of food supplies and availability of clean water. As a result, food and water scarcity will contribute to a public that is less healthy due to lack of access to safe food and water. It is likely that traditionally underserved and low-income communities will be hit hardest by the changes in agricultural yields due to a lack of resources.

Adapting to the consequences of climate change on water access and food supply begins with community level engagement and an emphasis on both small- and large-scale infrastructure projects. With the assistance of this Module, your community can research solutions and financing options for equity-based reform.
Module 5

Putting It All Together: Liberatory Economy Principles and Practices in Action in Communities
Module 5: Putting It All Together: Liberatory Economy Principles and Practices in Action in Communities

Introduction

I. Extractive Investment—Financial input provided with the sole purpose of extracting more money and moving it to investors and shareholders elsewhere. While it meets some community needs, it operates on its own terms rather than taking the community’s interests into consideration. (Ex. Large chain businesses, absentee landlords that prioritize high end retail, etc.)

II. Inward Investment—Money that comes into a community from various sources with the intent of trying to stimulate economic activity. This form of investment can sometimes be used to stimulate increased resilience, but it can also lead to economic growth at the expense of community resilience. (Ex. Special Enterprise Zones, government grants, state supported infrastructure to attract large businesses, etc.)

III. Internal Investment—Revenue derived from a community investing in itself. It means establishing new institutions and finding creative ways to enable money to cycle locally as many times as possible. It’s about sourcing a growing proportion of your needs in a way that supports the local economy and weaving this thinking through as many local institutions as possible—not as some worthy exercise but as the economic development model of the future. (Ex. Community enterprises, community ownership of assets, etc.)

As demonstrated by the review of financial tools detailed in this toolkit and the numerous examples of how those mechanisms are being utilized, far too many of our communities are financed by extractive investment. Some are funded by inward investment but often without the measures put in place to ensure that community resilience is the outcome. Almost none have independent, self-driven revenue generation through internal investment which creates a sustainable, resilient, circular economy that is regenerative.

Maulana Karenga draws from a Pan Africanist cultural foundation in developing the “Nguzo Saba” or Seven Principles as a framework and focus for how African American communities should seek to organize our communities, society, and our economy with a view toward increasing cooperation and advancing liberation. His view was that the political and economic system in the United States was not only damaging in its rootedness in exploitation and domination, but that it also ran counter to the cultural milieu of African Americans and that we must re-center ourselves based on these foundational values and shift the locus of control and ownership of our communities and
our wellbeing to ourselves:

1. **Umoja**—Unity
2. **Kujichagulia**—Self Determination
3. **Uiima**— Collective Work and Responsibility
4. **Ujamaa**— Cooperative Economics
5. **Nia**—Purpose
6. **Kuumba**—Creativity
7. **Imani**—Faith

In Jamaica “throwing a partner” is a popular informal cooperative economic practice which serves as a revolving loan fund in small self-formed community member groups. The informal economy is common in Jamaica where the proliferation of people who sell their goods in markets, otherwise known as ‘higglers’, arose from marketing activities that, according to Davor Bailey, served as important and effective tools for enslaved persons to resist the economic and social oppressions of the plantation system. Similarly, the informal economy in sub-Saharan Africa comprises 41% of the gross domestic product and represents 72% of total employment.

For African Americans in the United States, we are looking to cultural traditions and practices that have been instrumental in our history of resistance and critical to our building of the resilience that has allowed us to survive as a people. In order to achieve liberation from the oppressive systems that continue to hold our communities in grinding poverty, joblessness, unsafe streets, housing insecurity, polluted environments, low quality public services, and substandard infrastructure, all of which is exacerbated by climate change impacts, we must achieve a transformational shift away from the status quo of how investments are made in our communities, even as we must access capital to engage in climate change adaptation. In so doing, to achieve true, sustainable resilience, we must put communities in the driver’s seat.

*The master’s tools will never dismantle the master’s house.*

~~Audre Lorde~~

**Advancing a Liberatory Economy**

Modern day evolution of traditional principles and practices can be found in the rise of “new economy”, “solidarity economy”, and “sharing economy” movements, which have given rise to frameworks, trainings, structures and numerous projects where concepts have been actualized. As we build a revolutionary pathway to liberation, our leadership in movements that were born out of our own cultural traditions and practices is critical.

Below is a composite review of the values, principles, and intended outcomes of the
solidarity/sharing/new economy movements.

I. VALUES:
Underlying the principles and practices of a solidarity/sharing/new economy are the following tenets:

- Caring
- Democracy
- Social Justice
- Sharing
- Equality
- Openness
- Self-Reliance
- Learning
- Liberation
- Honesty
- Ecological
- Consciousness

II. PRINCIPLES:
Solidarity/sharing/new economy frameworks are guided by the following operational principles:

- Solidarity, mutualism, and cooperation
- Collective ownership
- Sustainability
- Self-management
- Control of capital
- Eco-centric practice
- Community benefit
- Social and Economic Participatory democracy
- Equity in all dimensions: race/ethnicity/nationality, class, gender, LGBTQ
- Primacy of social welfare over profits and the unfettered rule of the market
- Pluralism and organic approach, allowing for different forms in different contexts, and open to continual change driven from the frontlines

III. GOALS:
Solidarity/sharing/new economy processes seek to achieve the following outcomes:

1. Collective self-organizing to sustain life (human and non-human)
2. Democratic coordination of economic and social enterprises
3. Self-managed enterprises
4. Worker and collective ownership
5. Participatory civic and social action
6. Ongoing education and learning for progress
7. Social transformation centered on human need and the environment
Putting the Nguzo Saba and the Solidarity/Sharing/New Economy Values into Action

The solidarity/sharing/new economy movements as well as the societies whose traditions gave rise to these movements already have a multitude of communities that have operationalized the values of the Nguzo Saba, as well as these expanded principles of these new formations.

I. PROJECT MODELS: Solidarity Economy Enterprises

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Description</th>
<th>Solidarity Enterprise in Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Exchange Trading Systems</td>
<td>A local exchange trading system is a locally initiated, democratically organized, not-for-profit community enterprise that provides a community information service and records transactions of members exchanging goods and services by using locally created currency.</td>
<td>BNote—Baltimore Green Currency Association—Local Money, Local Change&lt;br&gt;<a href="http://baltimoregreencurrency.org/">http://baltimoregreencurrency.org/</a>&lt;br&gt;“With over 240 businesses accepting and using BNotes across the city, it’s easy to support your local economy every day. Friends don’t let friends buy low-quality Corporate food or mass-produced big-box retail crap!”</td>
</tr>
<tr>
<td>Consumer Cooperatives</td>
<td>Consumer cooperatives help to fill a need in the community. They allow consumers the opportunity to supply their own needs, gain bargaining power, and share earnings. They are organized to give members more control over the services that are offered.</td>
<td>Durham Co-op Market&lt;br&gt;<a href="http://durham.coop/">http://durham.coop/</a>&lt;br&gt;Cooperatively owned grocery store and café.</td>
</tr>
<tr>
<td>Worker Cooperatives</td>
<td>A worker cooperative is a values-driven business that puts worker and community benefit at the core of its purpose. The two central characteristics of worker cooperatives are: workers own the business and they participate in its financial success on the basis of their labor contribution to the cooperative.</td>
<td>Core Staffing Cooperative--&lt;br&gt;<a href="https://www.corestaffing.us/">https://www.corestaffing.us/</a>&lt;br&gt;Co-re staffing is a cooperative staffing agency for returning citizens that uses temporary work, open occupational-focused education, and shared ownership to achieve the entrepreneurial, educational, and career goals of its members while delivering affordable talent to its clients.&lt;br&gt;New Era Windows&lt;br&gt;<a href="http://newerawindows.com/">http://newerawindows.com/</a>&lt;br&gt;New Era is a worker-owned cooperative</td>
</tr>
<tr>
<td><strong>Producer Cooperatives</strong></td>
<td>Resourcing Revolutionary Resilience: Transformational Climate Adaptation Finance Toolkit</td>
<td>specializing in energy-efficient vinyl windows.</td>
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<tr>
<td>---------------------------</td>
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</tr>
<tr>
<td><strong>Producer Cooperatives</strong></td>
<td>Producer Cooperatives. Producer owned and democratically-controlled organizations that serve their members (who may or may not be themselves cooperatives) through cooperative marketing, support and/or purchasing.</td>
<td>Ujamaa Collective <a href="http://www.ujamaacollective.org/">http://www.ujamaacollective.org/</a> A 501(c)3 non-profit organization founded with a social mission to create spaces, opportunities, networks, education and support for Africana women to grow as entrepreneurs, artisans, and servant-leaders so that we may &quot;lift as we climb.&quot;</td>
</tr>
</tbody>
</table>
| **Credit Unions** | A credit union is a member-owned financial cooperative, controlled by its members and operated on the principle of people helping people, providing its members credit at competitive rates as well as other financial services. | Black Owned Credit Unions [https://www.watchtheyard.com/life/black-owned-banks/](https://www.watchtheyard.com/life/black-owned-banks/)  
- Omega Psi Phi Credit Union – Lawrenceville, Georgia  
- Phi Beta Sigma Federal Credit Union – Washington, DC  
- Hill District Credit Union – Pittsburgh, Pennsylvania  
- Toledo Urban Credit Union – Toledo, Ohio  
- FAMU Federal Credit Union – Tallahassee, Florida  
- Credit Union of Atlanta – Atlanta, Georgia |
| **Cooperative Banks** | Cooperative banking is retail and commercial banking organized on a cooperative basis. Cooperative banks hold deposits, makes loans and provides other financial services to cooperatives and member-owned organizations. | One Pacific Coast Foundation/Beneficial State Bank [https://beneficialstatebank.com/](https://beneficialstatebank.com/) Its commercial lending business focuses on such sectors as specialty agriculture, renewable energy, green building, and low-income housing. Foundation activities include programs to “help eliminate discrimination, encourage affordable housing, alleviate economic distress, stimulate community development and |

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<table>
<thead>
<tr>
<th>Resource Bank</th>
<th>Funds that advance economic development through cooperative enterprise. The mission is to promote community, economic, and social development through cooperative enterprises.</th>
</tr>
</thead>
</table>
| Cooperative Development Funds | Shared Capital Cooperative [https://sharedcapital.coop/](https://sharedcapital.coop/)  
Shared Capital Cooperative is a national CDFI loan fund that connects co-ops and capital to build economic democracy. Working with capital invested by the cooperative sector and its allies, we provide financing for the expansion and startup of cooperatively-owned businesses and housing throughout the United States. We are a cooperative ourselves with over 237 members nation-wide in 35 states who are aligning their needs and goals with each other and their co-operative lender. We understand cooperative capital needs and have supported member-led co-op structures with more than $50 million in loans to cooperatives since 1978. We believe that cooperatives are an important economic tool for equitable community development and community wealth building. Our financing supports local communities that are starting and growing co-ops to create living wage jobs, support sustainable food systems, expand access to healthy foods, provide affordable housing, and develop democratic workplaces and community ownership. |
| Communal Property Associations | People Power Solar Cooperative [https://www.peoplepowersolar.org/](https://www.peoplepowersolar.org/)  
People Power Solar Cooperative announced the construction of its first solar project in Oakland on March 21, piloting a new model for community-owned energy in California. The residential-sized 7 kW project is financed entirely by small investments from over 50 local community members and leaders -- the cooperative’s increase financial literacy.”  
A California based B-corporation (“Benefit”) with $171 million in assets, which focuses its lending and banking services on local green and sustainable businesses. |
| **Community Trusts** | Community land trusts are nonprofit, community-based organizations designed to ensure community stewardship of land. Community land trusts can be used for many types of development (including commercial and retail), but are primarily used to ensure long-term housing affordability. | Owners -- who have each purchased up to ten $100 shares of People Power. **It is the first residential energy project in California to be owned by members of the broader community.**

Interboro Community Land Trust [https://www.interboroclt.org/](https://www.interboroclt.org/)

Interboro Community Land Trust is a new model for permanently affordable homeownership in New York City that creates a pathway to financial stability for families while preserving economic and racial diversity in spite of gentrification. Interboro CLT is a collaboration between the Center for NYC Neighborhoods, Habitat for Humanity New York City, the Mutual Housing Association of New York, and the Urban Homesteading Assistance Board.


The **Black Family Land Trust, Inc.** (BFLT) incorporated in 2004, based in North Carolina, is one of the nation’s only conservation land trust dedicated to the preservation and protection of African-American and other historically underserved landowners’ assets. The BFLT utilizes the core principles of land conservation and land-based community economic development to achieve our goals.

| **Local Community Markets** | Community Market is a local community producers’ market with Vendors who sell items that are locally grown, caught, harvested, raised, hand-crafted, or hand-baked, as well as artisan work and local services. | Phat Beets Produce, Oakland, CA [www.phatbeetsproduce.org](http://www.phatbeetsproduce.org)

Phat Beets Produce is a food justice collective. The collective was started in North Oakland in 2007 as a guerrilla produce stand in a North Oakland park. We now support two certified, clinic-based farmer’s markets, one youth-led school farm stand and community nutrition hub, and a youth market garden in partnership with a local hospital obesity prevention program. As a collective, we strive to support social businesses, small-scale farmers, and farmers of color. |
MODEL SOLIDARITY ECONOMY COMMUNITIES:
People of Color Led Whole Community Models (EcoVillages, Transition Towns, and other formations where foundational cooperative principles and multiple practices have been integrated into a holistic model)

**COOPERATION JACKSON**—Jackson, MS
https://cooperationjackson.org/
Cooperation Jackson is engaging a transformational strategy to both resist and build through three spheres: 1) Building the solidarity economy through cooperative and community controlled enterprises and initiatives; 2) Organizing the community through People’s Assemblies; and 3) Engaging in a political/electoral strategy to take power through local government and grassroots organizing. Cooperation Jackson’s Sustainable Communities Initiative (SCI) is about how we collectively develop place, space, culture, institutions and businesses in ways that sustain our communities socially, culturally, ecologically and economically. Our aim is to help stabilize rents, provide affordable “green” housing, create quality living wage jobs, and lay a foundation for the sustainable transformation of Jackson’s economy through cooperative enterprise and solidarity economics. We know this is related to and will serve the practice building towards self-governance models, community control and self-determination. SCI encompasses an eco-system of not only cooperatives, but interconnected systems. Insync with our work to build a caring, social, solidarity economy, SCI sets out to establish a Community Land Trust, Housing Cooperatives and an “Eco-Village” model.

**UJIMA PROJECT**—Boston, MA
https://www.ujimaboston.com/
The Boston Ujima Project is building an equitable, community-based local economy led by Boston’s working class residents of color. Their innovative model for cooperative, community-based economic development blends grassroots organizing with finance. Ujima is a membership based organization that brings together a wide variety of unlikely allies including residents, small business owners, activists, workers, local organizations, and impact investors (including non-accredited investors). Project organizers aim to make the process of economic development planning fair, equitable, and fun for everyone involved. The Ujima Fund, which they believe to be the first democratic investment vehicle in the United States, is financing small businesses, and real estate and infrastructure projects in Boston’s working-class Black, Indigenous, and other communities of color. They source their deals directly from the communities that the fund invests in. Every investor in the Boston Ujima Fund, whether they contributed $50 or $50,000, has an equal say in how the fund is invested.

**KHEPWR INSTITUTE**—Indianapolis, IN
http://kheprw.org/
Kheprw Institute (KI) is a community organization that works to create a more just, equitable, human-centered world by nurturing youth and young adults to be leaders, critical thinkers and doers who see the people in any community as the most valuable assets and are committed to working with marginalized communities to bring about change that leads to empowered self-sustainable communities. Key to the Institute’s approach are its four social enterprises, which aim to help youth become self-driven and passionate social entrepreneurs. One such enterprise is Express Yourself Rain Barrels, which engages youth in the construction, marketing, and sales of custom-made rain barrels. Other businesses include KI NuMedia (a web, social media, and graphic design company), Africhart Products (which sells charts that depict history from an African perspective), and KI Aquaponics (an aquaponics farm). The Institute is currently raising funds to develop a Youth Center that can provide youth housing and space to launch new businesses, and serve as a model of sustainability with solar panels, rain barrels and urban agriculture projects.

**PUSH BUFFALO**
[https://www.pushbuffalo.org/mission/](https://www.pushbuffalo.org/mission/)

The mission of PUSH Buffalo is to mobilize residents to create strong neighborhoods with quality, affordable housing; to expand local hiring opportunities; and to advance economic and environmental justice in Buffalo.

**PUSH Buffalo’s Beliefs:**
- Real people have real power
- We know what we want where we live
- We deserve a seat at the table
- When turning our neighborhoods around, we are all in this together
- When we show up in big numbers, people listen

**PUSH Buffalo’s Goals:**
- Create strong neighborhoods.
- Develop neighborhood leaders.
- Decrease the rate of housing abandonment.
- Create a solar future independent from utilities.

“When morality comes up against profit, it is seldom that profit loses.”

- Shirley Chisholm
### Solidarity Economy Policy Recommendations

The Sustainable Economies Law Center provides a useful set of recommended policies geared towards access to the commons through a sharing economy. These recommendations are geared towards municipalities and include some examples of where these policies are already being implemented.

<table>
<thead>
<tr>
<th>Shareable Economy Policy Recommendations</th>
<th>Examples</th>
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<tbody>
<tr>
<td><strong>FOOD SYSTEM POLICIES</strong></td>
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</table>
| Allow and encourage urban agriculture by removing zoning barriers to growing and selling produce. | **San Francisco, CA** – San Francisco created a new land use category called “Neighborhood Agriculture” and permitted the activity in most residential, commercial, and industrial areas.  
**Oakland, CA** – Oakland amended the Home Occupation Permit rules to enable the sale of food crops grown on residential properties.  
**Seattle, WA** – Seattle permits urban farms of any size to sell produce grown on the premises in all zones, so long as neighborhood livability requirements and standards are met.  
**Philadelphia, PA** – Philadelphia implemented a new zoning code that defines urban agriculture in four subcategories. Under the new code, community gardening is permitted in all zoning districts. Market and community-supported farms are permitted almost as broadly, but require a special review in certain districts. |
| Provide a tax credit to property owners who farm vacant or under-utilized lots, as such activities create food sources, economic opportunity, and civic engagement in otherwise blighted areas. | **Maryland** – Maryland passed a bill allowing municipalities to provide a tax credit for real properties used for urban agriculture. To be eligible for the tax credit, urban real property in a “Priority Funding Area,” between one-eighth of an acre and two acres in size, must be used exclusively for agriculture.  
**Philadelphia, PA** – Philadelphia utilizes a carrot and stick approach for owners of vacant and abandoned lots – assessing a yearly vacant lot registry fee, which is reduced if the land is cultivated and which may be eliminated altogether if the garden is registered under the new zoning code. Philadelphia also charges higher fees on properties if they have a greater area of impervious surface, recognizing that all impervious surfaces generate runoff that overtaxes the storm water drainage system. This incentivizes all property owners in the city to decrease pavement where possible, and indirectly incentivizes creation of gardens. |
| Conduct or support land inventories that explore the potential for food cultivation on | **San Francisco, CA** – In 2009, former Mayor Gavin Newsom issued a directive asking the city to conduct... |
| **unused land.** | an audit of unused land—including empty lots, rooftops, windowsills, and median strips—that could be turned into community gardens or farms. Portland, OR – In 2004, the city council unanimously passed Resolution 36272 calling for an inventory of city-owned lands suitable for agricultural uses. The end result was a publication entitled “The Digtable city: Making Urban Agriculture a Planning Priority.” |
| **Allow food distribution points in order to increase access to local food while protecting zoning interests** | Portland, OR – In 2012, Portland updated its zoning code to make food distribution an accessory use in all zones. CSA supporters, food buying clubs, and market gardens lobbied for the code change to ensure diverse methods of food access. In order to preserve the character of neighborhoods, the ordinance delineates the types of food distribution activities that are allowed, and includes regulations addressing the size and frequency of distribution, hours for pick-up, and locations for outdoor activities. |
| **Remove restrictions on food sharing in public places because these rules only criminalize people who are poor, burden our public institutions, and reduce a community’s capacity to respond to local hunger.** | Ft. Myers, FL – In 2007, Ft. Myers attempted to implement an ordinance that would limit food sharing in public parks. The city abandoned the ordinance after receiving a negative public response, and instead turned to food advocates to collaborate on a new approach to food sharing. Out of this collaboration came a Hunger Task Force which coordinates public food sharing efforts. |
| **Support the establishment of food gleaning and redistribution centers to reroute some of the 40% of food Americans throw away each year.** | Iowa City, IA – The public school district in Iowa City received funding from the USDA to test a food gleaning initiative. In order to allow safe and easy transportation of recovered food, they used the money to purchase transport pans and carriers, a freezer to store their frozen food, and training materials on safe handling procedures for the staff and students. |
| **Recognize mobile markets and food trucks as a low-cost way for food entrepreneurs to enter the market, reach consumers, and create a diverse and resilient food economy.** | Chicago, IL – An ordinance passed on June 6, 2012 allows licensed produce vendors to sell “whole and uncooked agricultural, plant-based items, including, but not limited to, fruits, vegetables, legumes, edible grains, nuts, spices, herbs and cut flowers” on moveable stands. The city-funded Neighbor Carts program grew out of this decision: it helps get food into food deserts and creates new food vending jobs. Licenses cost $75, and the Neighbor Cart program provides carts for lease, training support, and a product-sourcing channel. Austin, TX – Austin has developed a reputation for its vibrant food truck (or food cart) scene. Low barriers to entry and the city’s clear forms and instructions enables entrepreneurs with limited startup capital to try out food business ideas. |
| **Allow certain food production as a home occupation** | California Homemade Food Act – The state recently adopted a law that places a mandate on cities and counties to issue home business permits to individuals engaged in cottage food production. |
Create or subsidize local commercial kitchens that can be economic incubators for budding food enterprise.

New York, NY – Entrepreneur Space is a city-sponsored business incubator in Queens that helps food-related and general business start-ups across New York City. It is open 24 hours a day, and serves more than 100 entrepreneurs working to establish their businesses in New York. In its first two years, the incubator contributed an estimated $5 million to the local economy.

<table>
<thead>
<tr>
<th>SHAREABLE HOUSING</th>
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<td>Help form more housing cooperatives, which offer an effective, participatory approach to affordable housing that can boost urban innovation and resilience.</td>
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<td>Your pilot policy can fill this space!</td>
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<td>Reduce fees and simplify permitting processes for adding new units to existing homes, often called accessory dwelling units (ADUs).</td>
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<td>Portland, OR – Portland amended its ADU ordinance in 1998, relaxing development standards and eliminating minimum square footage and owner occupancy requirements. ADUs are permitted in every residential zone in the city and may be constructed on lots containing single-family homes if the ADU is smaller than the primary residence and under 800 square feet.</td>
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<td>Promote development of smaller homes including micro-apartments, tiny houses, yurts, container homes, and other humble abodes, which produce more affordable and sustainable housing options, and promote sharing.</td>
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<td>San Francisco, CA – The city recently approved an ordinance to reduce minimum dwelling unit size from 290 square feet down to 220 square feet, and to allow construction of up to 375 such tiny apartment units.</td>
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<td>Permit residents to use their homes for short-term renters or guests as a way to diversify local tourism opportunities and to help residents offset high housing costs.</td>
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<td>Palm Desert, CA – A 2012 ordinance provides for the licensing of residential property for short-term rentals. Any property rented for three to twenty-seven days must obtain a special Rental Permit ($25) on an annual basis and must remit a nine percent Transient Occupancy Tax to the city.</td>
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<td>Cape Elizabeth, ME – The city’s 2013 short-term rental ordinance establishes a permitting process, requires health and safety inspections, restricts the number of guests, and limits each separate rental period to seven days. The regulations create a detailed complaint process, and include a $50 permit fee.</td>
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<td>Amend or remove any zoning laws that restrict co-habitation in order to facilitate more affordable, sustainable, and shared housing.</td>
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<td>Mental Health Advocacy Services, Inc. has issued a set of recommendations for how cities can redefine family and occupancy standards to better include contemporary families and living needs. For example, cities should eliminate distinctions between related and unrelated individuals for the purpose of occupancy standards and repeal numerical limits on the number of unrelated people who may live together.</td>
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<tr>
<td>Establish zoning ordinances that enable the creation of cohousing and eco-villages, which facilitate more affordable and sustainable</td>
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<td>Bloomington, IN – Plans to create Bloomington Cooperative Plots Eco-Village (also known as Dandelion Village) on 2.23 acres of land were initially...</td>
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growth and development. halted because the eco-village was not permitted under Bloomington’s residential single-family zone in which the land was located. Dandelion members revised the proposal and reduced the number of proposed housing units, and the city ultimately approved rezoning for the development of a mixed cooperative housing community for up to thirty unrelated adults, plus children; the plan included installation of renewable energy sources and preservation and restoration of native habitats.

Amherst, MA – Amherst’s zoning ordinance supports the creation of cohousing communities through Open Space Community Developments (OSCD), which “allow organized groups of households to construct dwelling units and common facilities for their collective and individual ownership and use. In addition, the zoning code provides density bonuses for OSCDs that incorporate affordable dwelling units.

Adopt policies to encourage that new housing developments foster sharing and resident interaction. London Grove Township, PA – London Grove Township’s zoning ordinance “encourage[s] the development of environmentally and socially sustainable and responsible neighborhoods” and recognizes that specific design standards are essential in meeting this goal. The code thus sets standards for development of an Eco-Village, including the design and structure of individual residential units, carports, and common houses as well as setback, height, access roads, and construction methods and design.

JOB CREATION

Expand allowable home occupations to include income generating activities made possible by communities and technologies that connect people to provide for each other in new ways. See the Food and Housing sections for examples of ways that cities have granted citizens the ability to operate small-scale home businesses in the sharing economy.

Reduce permitting barriers and fees, and prioritize conditional use permitting for shared workspaces, cooperatives, community-owned businesses, and other projects that create locally-controlled jobs and local wealth. San Diego, CA – Market Creek Plaza is a model for community-owned commercial spaces. On the surface, Market Creek Plaza may look like most shopping malls; yet, the primary shareholders of the mall are a local nonprofit and individual members of the local community. When the mall was developed, 50,000 shares were offered to local community members at $10 per share.102 It is not clear whether the city of San Diego took into account community-ownership when granting approvals for this development; however, we recommend that cities prioritize permitting for similar community-owned and locally crowdfunded developments.

Facilitate the temporary use of empty commercial spaces by offering incentives for temporary leases and by penalizing property owners and banks for allowing spaces to Richmond, CA – In 2008, the City Council passed the Foreclosure Fine Ordinance, which fines banks $1,000 a day for vacant properties with code violations. The law, which aims to reduce the blight
| remain vacant. | from foreclosed properties, also brought in about $780,000 for the city last fiscal year. Similarly, we recommend that cities impose fines on banks or other property owners that allow commercial spaces to sit empty. By creating a disincentive for waste, cities thereby create an incentive for property owners to share their spaces with community groups or small enterprises. |
| Equip economic development departments with the knowledge and resources to support cooperatives and other community enterprises. | **Cleveland, Ohio** – The Evergreen Cooperatives in Cleveland’s low-income neighborhoods are models in urban wealth building. They provide services to anchor institutions, like local hospitals and universities, and include a green industrial laundry, a solar installation firm, and the largest urban greenhouse in the US. The Mayor’s Office connected the Cleveland Foundation and other Evergreen partners to Cleveland’s Department of Economic Development for help finding innovative sources of funding. The city’s Sustainability Office helped identify energy incentives like Solar Tax Credits. The support of these departments was key to accessing the financing necessary to launch Evergreen.  

**Richmond, California** – In 2011, the City of Richmond hired a consultant to create, support and expand worker cooperatives. Inspired by a visit to the large and successful Spanish network of Mondragón cooperatives (which similarly inspired the Evergreen Cooperatives), Richmond’s Mayor decided that a small-scale version of that network could create meaningful economic opportunity in her city, which suffers from high unemployment. The consultant, a co-founder of the worker cooperative Arizmendi Bakery Lakeshore, has worked with Richmond residents to form a health food co-op, an electric bicycle co-op, and a hydroponically grown organic food co-op.  

**Madison, Wisconsin** – In June 2012, the City of Madison’s Office of Business Resources partnered with the University of Wisconsin’s Center for Cooperatives to host the Madison Cooperative Business Conference. The conference focused on business conversions to employee ownership, co-op best practices, and a census of local cooperatives. It drew economic development professionals, entrepreneurs, and members of existing cooperatives.  

**New York, NY** – For several years, the Center for Family Life (CFL), a non-profit social service organization, had been incubating new worker cooperatives in its largely immigrant Sunset Park, Brooklyn neighborhood. In 2012, the New York City Council awarded CFL a $147,000 grant to train two additional non-profits in other New York City neighborhoods. |
| Provide grants, loans, and in-kind support to cooperatives, and facilitate or act as intermediaries to secure other financing opportunities for cooperatives. | **San Francisco, CA** – In 2012, the city and County of San Francisco’s Office of Economic and Workforce Development provided People Organized to Demand Environmental and Economic Rights (¡PODER!), a non-profit organization, a $76,000 grant to invest in its co-op development project in the low-income Latino neighborhoods of South Mission and Excelsior.  

**Richmond, CA** – After reading a press account of the city’s commitment to fostering worker cooperatives, a member of the public made an anonymous $50,000 donation to establish the Richmond Worker Cooperative Revolving Loan Fund. The city established an independent non-profit to administer the fund in collaboration with the city’s economic development department. The purpose of the fund is to increase support for a growing network of Richmond-based cooperatives through a regenerating pool of funding.  

**Cleveland, OH** – The city of Cleveland was instrumental in assisting the Evergreen Cooperatives to secure financing to develop its ambitious network of worker-owned cooperatives. The Evergreen Cooperatives provide goods and services to local anchor institutions like hospitals and universities. They relied on a series of investments from private foundations to get off the ground. Cleveland’s Economic Development Department acted as an intermediary for lending institutions securing New Markets Tax Credits, and the city also dedicated its own funds through the Federal Section 108 Loan Guarantee Program. Cleveland also played a major role in providing and securing land that became the Green City Growers, a 3.25 acre hydroponic greenhouse and worker cooperative that is part of the Evergreen Cooperatives network. |
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<tr>
<td>Prioritize worker cooperatives whenever the city contracts with private businesses for procurement of goods and services.</td>
<td><strong>New York, NY</strong> – Since 1985, Cooperative Home Care Associates has provided home care services to chronically ill, disabled, and elderly New Yorkers while creating good jobs in a sector known for its low wages, instability, and lack of career mobility. The cooperative employs nearly 2,000 workers, about half of whom are worker-owners, and the cooperative has contracts to provide services to several New York City agencies. Workers earn wages about ten to twenty percent higher than the market rate, have 401(k) plans, and are unionized.</td>
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<td>Integrate topics related to cooperative enterprise into local high schools, vocational schools, and other public education programs.</td>
<td><strong>NY, New York</strong> – The Bronx Compass High School is partnering with Green Worker Cooperatives to bring a version of the organization's Co-op Academy to high school students. Students in the cooperative</td>
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| **SHAREABLE TRANSPORTATION** | **Washington, D.C.** – D.C. began offering free on-street parking spaces to carsharing operators in and later auctioned 84 curbside spots to three operators, generating almost $300,000 in revenue.  
**San Francisco, CA** – San Francisco extended its earlier six month on-street carshare parking pilot as a part of its proposed carsharing policy. |
|-----------------------------|-----------------------------------------------------------------------------------------------------|
| **Designate parking spaces for carsharing vehicles, particularly near public transit facilities and multi-unit housing.** | Washington, D.C. – D.C. began offering free on-street parking spaces to carsharing operators in and later auctioned 84 curbside spots to three operators, generating almost $300,000 in revenue.  
**San Francisco, CA** – San Francisco extended its earlier six month on-street carshare parking pilot as a part of its proposed carsharing policy. |
| **Subsidize, incentivize, or require carsharing programs in new multi-unit developments.** | **San Francisco, CA** – The city’s Planning Code now requires that newly constructed buildings provide permanent carshare parking spaces and that certain nonresidential developments dedicate five percent of their parking spaces to “short-term, transient use by vehicles from certified car sharing organizations” or other similar “co-operative auto programs.” |
| **Allow residents to lease residential parking spaces for the purpose of parking shared vehicles.** | **Fill in this blank with your pilot!** |
| **Align taxes on carsharing with the general sales tax for other goods and services.** | **Chicago, IL, Boston, MA, and Portland, OR** – These cities have made noteworthy efforts to lower carsharing tax rates with political success. They make distinctions between carsharing and traditional car rental in their municipal codes.” |
| **Create and promote economic incentives for ridesharing, like high-occupancy vehicle (HOV) lanes, designated or discounted parking, or waived or reduced tolls.** | **Fill in this blank with your pilot!** |
| **Help meet demand for ridesharing by designating convenient locations as casual carpool pick-up spots and park-and-ride lots.** | **Fill in this blank with your pilot!** |
| **Offer a Guaranteed Ride Home program to serve carpoolers in the event of unexpected emergencies.** | **Minneapolis, MN** – The Guaranteed Ride Home program offers four rides or up to $100 (whichever comes first) each year to commuters who ride the bus, light rail, or carpool, vanpool, bicycle or walk to work or school at least three times per week.  
**Other Cities with Similar Programs: Atlanta** (five free rides per year), **Baltimore/Central Maryland/D.C. Area** (four per year), **Alexandria, Virginia** (four per year), **Los Angeles** (two per year), and **many other cities.** |
| **Create and manage citywide bike sharing programs to provide that access.** | **Washington, DC**: The $6M Capital Bikeshare program is funded by the U.S. Department of Transportation’s Federal Highway Administration under their Congestion Mitigation and Air Quality Improvement fund and other local funding.  
**Boston, MA**: Boston’s Hubway bikeshare program is completely funded by grants totaling $4.5 million including $3 million from the Federal Transit Administration (FTA), $450,000 from the Boston Public Health Commission (BPHC) and $250,000 |
An economy based on extracting from a finite system faster than the capacity of the system to regenerate will eventually come to an end—either through collapse or through our intentional re-organization. Transition is inevitable. Justice is not.

-Movement Generation
Conclusion
While continuing to weather and resist the storm of an oppressive political and economic system, our communities face the compounding challenge of the differential impact of climate change with its increase in the frequency and severity of extreme weather, the shifts in agricultural yields, and sea level rise. As stated, achieving true, deep resilience is impossible in the context of a system that is designed to criminalize, displace, exploit us, and in the most extreme circumstances, take our very lives whether its through pollution, disaster, or state sponsored violence via police brutality and otherwise.

True resilience is only possible when it is advanced on the terms of communities. A values-based economy that prioritizes human wellbeing and harmony with the environment is critical to the survival of humanity and the sustainability of an inhabitable planet. Through resisting the corporatocracy and greed for wealth and power that has given rise to the proliferation of exploitation and domination while simultaneously advancing solidarity/sharing/new economy principles and practices, we can achieve the systems change necessary to cease the progression of climate change, adapt to the existing and coming impacts of climate change, and build a caring, cooperative, independent society that embodies deep democracy.

Even if the lines are a bit blurry, we can broadly distinguish between resist work that seeks to fight back against an oppressive, unjust and unsustainable social/economic system, and the build work of the solidarity economy that seeks to build ‘another world’ beyond capitalism to one that puts people and planet, equity, justice and sustainability front and center. Resistance without knowing where you’re going is likely to lead only to reform of the current system. Building a solidarity economy without being grounded in grassroots organizing runs the risk of losing touch with the struggle that impels the need for a solidarity economy in the first place.

~~Cooperation Jackson and Black Lives Matters~~
### Resources

**People of Color Led/Multiracial Micro-Communities/Homes Practicing Sustainable, Shared Economy**

<table>
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<th>Oak Park Intergenerational Co-Housing—Oak Park, IL</th>
<th>Cornerstone Village Co-Housing—Cambridge, MA</th>
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<tr>
<td>Audre Lorde Cooperative House—Madison, WI</td>
<td>Dacha Project—Freeville, NY (not POC but great model)</td>
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<tr>
<td>Backyard Neighborhood—San Francisco, CA</td>
<td>Dogtown EcoVillage—St. Louis, MO</td>
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<td>Baltimore Free Farm—Baltimore, MD</td>
<td>East Lake Commons—Decatur, GA</td>
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<td>Bean Tree Farm/Dancing Rocks—Tuscon, AZ</td>
<td>EcoVillage SIL—St. Louis, MO</td>
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<td>Berkeley Co-Housing—Berkeley, CA</td>
<td>EcoVillage Charlottesville—Charlottesville, VA</td>
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<td><a href="https://www.ic.org/directory/berkeley-cohousing/">https://www.ic.org/directory/berkeley-cohousing/</a> (interesting limited equity arrangement with the city prevents gentrification driven displacement)</td>
<td><a href="https://ecovillagecharlottesville.org/intentional-community/who-are-we/">https://ecovillagecharlottesville.org/intentional-community/who-are-we/</a></td>
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<td>Berkeley Student Cooperative Housing—Berkeley, CA</td>
<td>Ella Jo Baker Intentional Community Cooperative—Washington, DC</td>
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<td>Bitternut Homestead Urban Collective</td>
<td>Eno Commons—Durham, NC</td>
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<td>Bread and Roses Collective Housing—Syracuse, NY</td>
<td>Enright Ridge Urban EcoVillage—Cincinnati, OH</td>
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<td>Bull City Commons—Durham, NC</td>
<td>Greenrise Intentional Community—Chicago, IL</td>
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<td>Caballos de las Estrellas Eco-Community—Rodeo, New Mexico</td>
<td>Halcyon Commons Cooperative Urban Neighborhood—Berkeley, CA</td>
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<td>Harambee Hive—Lansing, MI</td>
<td>Haley House—Boston, MA</td>
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<tr>
<td>Hedonisia Portland EcoFeminist Micro Community—Portland, OR</td>
<td><a href="https://ecofeministentrepreneur.com/">https://ecofeministentrepreneur.com/</a></td>
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<tr>
<td>Resourcing Revolutionary Resilience: Transformational Climate Adaptation Finance Toolkit</td>
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<td>Kingfisher Cohousing on Brookdale—Oakland, CA <a href="https://www.ic.org/directory/kingfisher-cohousing-on-brookdale/">https://www.ic.org/directory/kingfisher-cohousing-on-brookdale/</a></td>
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<td>N Street Co-Housing—Davis, CA <a href="https://www.ic.org/directory/n-street-cohousing/">https://www.ic.org/directory/n-street-cohousing/</a></td>
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<tr>
<td>Planet Repair Institute—Portland, OR <a href="https://planetrepair.wordpress.com/">https://planetrepair.wordpress.com/</a></td>
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<tr>
<td>Reba Place Fellowship—Evanston, IL <a href="https://rebabplacefellowship.org/">https://rebabplacefellowship.org/</a></td>
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<td>Richmond Co-Housing—Richmond, VA <a href="https://richmondcohousing.com/">https://richmondcohousing.com/</a></td>
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<td>Rocky Hill Co-Housing—Northampton, MA <a href="https://www.rockyhillcohousing.org/">https://www.rockyhillcohousing.org/</a></td>
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<tr>
<td>Sherwood Cooperative—Seattle, WA <a href="https://sherwoodcooperative.org/">https://sherwoodcooperative.org/</a></td>
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<td>Sophia Community—Chicago, IL <a href="https://www.ic.org/directory/sophia-community/">https://www.ic.org/directory/sophia-community/</a></td>
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<tr>
<td>St. Louis EcoVillage—St. Louis, MO <a href="https://www.ic.org/directory/st-louis-ecovillage-network/">https://www.ic.org/directory/st-louis-ecovillage-network/</a></td>
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<tr>
<td>The Crow’s Nest—Minneapolis, MN <a href="https://www.ic.org/directory/the-crows-nest/">https://www.ic.org/directory/the-crows-nest/</a></td>
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<tr>
<td>The Mothership—Portland, OR <a href="http://www.mothership.us/">http://www.mothership.us/</a></td>
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The Midden—Columbus, Ohio [https://www.ic.org/directory/the-midden/](https://www.ic.org/directory/the-midden/) |
The Nettle Bed—Minneapolis, MN [https://www.ic.org/directory/the-nettle-bed/](https://www.ic.org/directory/the-nettle-bed/) |
The Orchard—Oakland, CA [https://www.ic.org/directory/the-orchard/](https://www.ic.org/directory/the-orchard/) |
The Sugar Shack—Los Angeles, CA [https://www.ic.org/directory/the-sugar-shack/](https://www.ic.org/directory/the-sugar-shack/) |
SOLIDARITY/SHARING/NEW ECONOMY ORGANIZATIONS

The New Economy Coalition
https://neweconomy.net/
At the New Economy Coalition, we’re driven by a belief that all our struggles—for racial, economic, and climate justice; for true democratic governance and community ownership; for prosperity rooted in interdependence with the earth’s natural systems—are deeply interconnected. Rising to the challenge of building a better world demands that we fundamentally transform our economic and political systems. We must imagine and create a future where capital (wealth and the means of creating it) is a tool of the people, not the other way around. What we need is a new system—a new economy—that meets human needs, enhances the quality of life, and allows us to live in balance with nature. Far from a dream, this new economy is bursting forth through the cracks of the current system as people experiment with new forms of business, governance, and culture that give life to the claim that another world is possible.

Transform Finance
http://transformfinance.org/
We envision a world where capital is a tool for the advancement of real, transformative social change. Through thought leadership, trainings, convenings, and the Transform Finance Investor Network, we support all stakeholders, from community leaders and activists to investors and entrepreneurs, who are exploring that vision.

US Solidarity Economy Network
https://ussen.org/
The mission of the U.S. Solidarity Economy Network is to connect a diverse array of individuals, organizations, businesses and projects in the shared work of building and strengthening regional, national and international movements for a solidarity economy. Through publications, a website, mailing list, and face-to-face gatherings, the network will facilitate: ongoing communication and dialog relating to the development of solidarity economy ideas, values and practices; the sharing of experiences, models and skills; and the creation of collaborative, movement-building projects between network members.

Global EcoVillage Network—Catalyzing Communities for a Regenerative World
https://ecovillage.org/
The Global Ecovillage Network envisions a world of empowered citizens and communities, designing and implementing their own pathways to a sustainable future, and building bridges of hope and international solidarity. The mission is to innovate, catalyze, educate and advocate in global partnership with ecovillages and all those dedicated to the shift to a regenerative world. To advance the education of individuals from all walks of life by sharing the experience and best practices gained from the networks of ecovillages and sustainable communities worldwide. Goals are: 1) To advance human rights, conflict resolution, and reconciliation by empowering local
communities to interact globally, while promoting a culture of mutual acceptance and respect, effective communications, and cross-cultural outreach; 2) To advance environmental protection globally by serving as a think tank, incubator, international partner organization, and catalyst for projects that expedite the shift to sustainable and resilient lifestyles; and 3) To advance citizen and community participation in local decision-making, influencing policy-makers, and educating the public, to accelerate the transition to sustainable living.

**Fellowship for Intentional Community**
https://www.ic.org/
We believe that community is an essential building block for creating a cooperative and sustainable world. The structures and wisdom of community are both a means and an end to meeting the needs of all people and the planet, and must be available, understood, appreciated, and developed. We envision cooperative communities of all kinds working together to meet these needs. Objectives: 1) To provide and facilitate access to resources that support the creation, development, and maintenance of intentional communities; 2) To provide accurate and comprehensive information about all forms of intentional community; 3) To make significant contributions to the articulation and promotion of cooperative culture; 4) To create opportunities for the public to learn about and experience intentional communities and cooperative culture; 5) To disseminate broadly what is being learned in intentional communities; 6) To develop the network of intentional communities for the sharing of innovations, information, and other forms of mutual benefit; 7) To identify and import into the world of intentional communities innovations in technology, economics, governance, cooperative culture and other areas that can benefit them; 8) To ally with other movements and organizations that share our values, learn from them, share what we have learned, work together for mutual benefit and to raise awareness of the worldwide movement towards sustainability, cooperation, and social justice.

**The REconomy Project**
http://reconomy.org/
The REconomy Project is here to help you do the same where you live – to take on the exciting challenge of transforming the economic destiny of your local community – moving away from the doomed ‘business as usual’ model and towards something that helps build resilience rather than destroy it, that offers opportunity and hope despite the challenges we face, and that demonstrates a system of trade and exchange that’s more sustainable, equitable and anchored in wellbeing, rather than economic growth at any cost.

**The Transition Network**
https://transitionnetwork.org/
Transition is a movement that has been growing since 2005. It is about communities stepping up to address the big challenges they face by starting local. By coming together, they are able to crowd-source solutions. They seek to nurture a caring culture, one focused on supporting each other, both as groups or as wider communities. In practice, they are reclaiming the economy, sparking
entrepreneurship, reimagining work, reskilling themselves and weaving webs of connection and support. It’s an approach that has spread now to over 50 countries, in thousands of groups: in towns, villages, cities, Universities, schools. One of the key ways it spreads is through telling inspiring stories, and that’s what we aim to do on this website. We really hope you feel inspired to take part, we’d be honored if you did.

Post Growth Alliance
http://postgrowth.org/connect/post-growth-alliance/
The Post Growth Institute is an international group exploring and inspiring paths to global prosperity that don’t rely on economic growth. Our Mission is to build and empower a broad-based global movement for identifying, inspiring and implementing new approaches to global well-being.

The Next System
https://thenextsystem.org
The Next System Project is an initiative of The Democracy Collaborative aimed at bold thinking and action to address the systemic challenges the United States faces now and in coming decades. Deep crises of economic inequality, racial injustice and climate change—to name but three—are upon us, and systemic problems require systemic solutions. Working with a broad group of researchers, theorists and activists, we are using the best research, understanding and strategic thinking, on the one hand, and on-the-ground organizing and development experience, on the other, to promote visions, models and pathways that point to a “next system” radically different in fundamental ways from the failed systems of the past and present and capable of delivering superior social, economic and ecological outcomes.

Federation of Southern Cooperatives
http://www.federationsoutherncoop.com/
The Federation in its long history has successfully provided self-help economic opportunities and hope for many low-income communities across the South. They are the only organization in the Southeast United States that has as its primary objectives the retention of black owned land and the use of cooperatives for land-based economic development. Cooperatives are businesses that are locally controlled and build wealth through the participation of people. Coops are an ideal means of helping poor people to advance their own interests and provide for their own destinies.

In 1984 the Emergency Land Fund, the pioneer organization in Black land retention, merged with the Federation which led to a much stronger and more comprehensive Federation program that retains, acquires, manages, and develops land and other resources using cooperative principles.

Their extended membership includes 12,000 Black farm families, who individually own small acreage, but collectively own over half a million acres of land and work through 35 agricultural cooperatives to purchase supplies, provide technical assistance, and market their crops. It also includes 10,000 small savers in 19 community development credit unions that have accumulated over $5 million in savings and made over $52 million in
loans since their inception.

They also work with handicraft producers, fishermen, consumers, people who need housing and other rural residents interested in developing self-help cooperatives as a solution to their problems. We assist groups beyond our membership through various coalitions and partnerships designed to advance rural development needs, issues and concerns.

**Movement Strategy Center**  
[https://movementstrategy.org/program-profile/next-economy/](https://movementstrategy.org/program-profile/next-economy/)

MSC’s Next Economy program supports the transition to an economy based on interdependence, abundance and regeneration. Next Economy program focuses on discovering, building, and supporting what is feasible, scalable and replicable, while staying rooted in the needs and interests of local communities. Our current global economic system is based on exploitation and profit maximization that

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*Capitalism does not permit an even flow of economic resources. With this system, a small privileged few are rich beyond conscience, and almost all others are doomed to be poor at some level. That's the way the system works. And since we know that the system will not change the rules, we are going to have to change the system.*

— Dr. Martin Luther King Jr.