



The Ironton Vision and Recovery Plan

October 2022



Cover photo: Aerial view of Ironton (top, left), viewed from the southeast. Source: Getty Images.

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1. Executive Summary

Prior to Hurricane Ida there were 50 houses in Ironton, LA. Now there are 10.

Almost all Ironton residents are houseless. In the months following Ida, it became clear to the community that it would have to become self-reliant to ensure its recovery. Residents banded together to create the Ironton Reconstruction and Development (IRAD) Committee, and on August 23, 2022, IRAD was granted 501(c)3 tax-exempt status.

IRAD's mission statement is "To pursue community recovery and development based on a deep-rooted, local approach that embraces housing, economic development and health, while recognizing the value of culture, diversity, inclusion, equity, and justice."

This is IRAD's plan to meet not only the community's immediate recovery needs but also to serve the long-term needs of Ironton, including mental health services, a community center with programmed social and recreational activities, housing development, and low-interest mortgages. IRAD has the potential to eventually expand its service area to include other small unincorporated communities in the parish.

Through the formation of IRAD, Ironton is choosing to focus its efforts on recovery from the Hurricane Ida disaster, and to become a resilient, livable, tranquil community.

With input from its community, IRAD has identified 15 projects that fall into three categories: Community Services, Advocacy, and Infrastructure, described in Chapter 8, Projects.

Community Services projects include mental health services, programmed social and recreational activities, outdoor recreation, and low-interest loans through the formation of an entity that becomes certified as a Community Development Financial Institution or CDFI, like Habitat for Humanity, that makes low interest loans available to the community.

Advocacy projects include advocating for improved levee protection and ensuring that Plaquemines Parish qualifies for the National Flood Insurance Program.

Infrastructure projects include the reconstruction (replacement) of the houses that were lost during Hurricane Ida, drainage improvements, street paving, sidewalks, streetlights, gateway and wayfinding signs, broadband, landscape improvements, a recreation / community center, and outdoor recreation facilities. The infrastructure projects serve in the short-term to assist the recovery of the community and support the community services goals. The reconstruction / replacement of houses is seen as the highest priority since without houses, there are no residents, no community.

As an unincorporated community, IRAD seeks to support Ironton by developing strong relationships with both Plaquemines Parish officials, the State of Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), Louisiana Office of Community Development (OCD) as well as other non-governmental organizations which may assist in its recovery. Local Initiatives Support Corporation (LISC) will be supporting IRAD in the implementation of resourcing the recovery projects within the IRAD Recovery Plan. This plan is a living document owned locally by IRAD and locally developed by their work, their views and their community priorities.

2. Introduction

Ironton is an unincorporated community that shares its zip code and census tract with other communities, making it difficult to describe Ironton's specific demographic profile. The population of Ironton is estimated to be about 250 and is an all-Black community. The median income is \$28,534.00, which is 36% lower than the state average and 50% lower than the national average.

Prior to Hurricane Ida on August 29, 2021, there were 50 houses in Ironton, LA. Now there are 10. Ironton experienced flood levels as high as 12-14 feet during Hurricane Ida. Floodwaters lingered for weeks, making the community inaccessible to residents and destroying every house that had not been elevated following Katrina. Most residents have been living with relatives or in some other form of temporary housing since Ida (14 months as of this writing).

In the months following Ida, it became clear to the community that it would have to become self-reliant to ensure its recovery. Residents banded together to create the Ironton Reconstruction and Development (IRAD) Committee and on August 23, 2022, IRAD was granted 501(c)3 tax-exempt status by the IRS.

IRAD determined that it would need technical assistance to help formulate a mission statement, goals, by-laws, etc., and the applications needed to become a non-profit with tax-exempt status. As a 501(c)3, IRAD could be of service to the community by assisting it to meet not only its immediate recovery needs, but also serve the long-term needs of the community. Examples include mental health services, development of a community center with programmed social, educational, and recreational activities, housing development, and low-interest mortgages. IRAD has the potential to eventually expand its service area to include other small unincorporated communities in the parish.

This document describes the history of Ironton, the development of the IRAD committee, its current state, future goals, and strategic priorities. It identifies projects that are meant to assist in overall economic recovery and the physical, financial, and mental health resiliency of its residents.

At the end of this document there are several appendices intended to provide all Plaquemines Parish communities with resources to assist in their recovery efforts.

As an unincorporated community, IRAD fully intends to coordinate with Plaquemines Parish officials, the State of Louisiana Governor's Office of Homeland Security and Emergency Preparation (GOHSEP) and the Louisiana Office of Community Development (OCD) in addition to collaborating with other non-governmental organizations which may assist in its recovery.

3. IRAD Formation

As Ironton reeled from the devastation in the months immediately following Hurricane Ida, there were some outside the community who were aware of its plight and reached out to help.

District Representative Carlton LaFrance searched for someone who would commit to a leadership role in the recovery of the community. After several meetings, he convinced Audrey Salvant to fill the informal role as an Ironton community representative. Following this agreement, Salvant met with Sandra Irons and they jointly decided Ironton needed a broad-based community organization. They decided to form a committee which could support Ironton’s recovery and represent the Ironton community with external agencies.

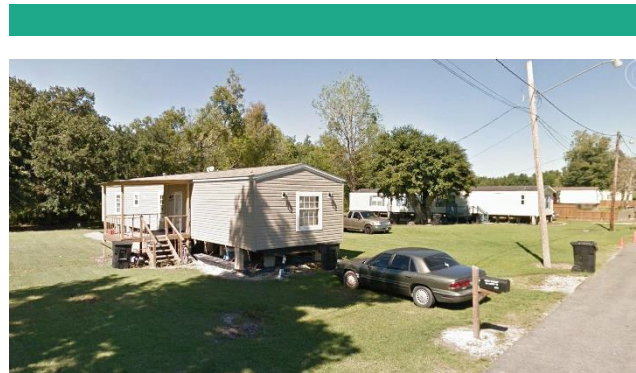
Meanwhile, after hearing of Ironton’s devastation, in late September 2021, a member of the Taproot Foundation, solicited donations for the residents of Ironton. The Taproot representative, Chris Battle, delivered funds totaling \$55,000 to Audrey Salvant who then distributed the funds to Ironton residents on October 16, 2022.

This demonstration of support helped convince Ironton residents that they needed formal representation when dealing with external agencies.

At a March 2022 Ironton Town Hall meeting, Audrey Salvant and Sandra Irons asked Ironton residents to nominate board of directors nominees from members of the newly created Ironton Reconstruction and Redevelopment Committee (IRAD). Through that nomination process, Audrey Salvant became the first chairman and Sandra Irons the first co-chair. Subsequently, they submitted their articles of incorporation to the Commercial Division within the Office of Secretary of State for the State of Louisiana.

On June 7, 2022, the State of Louisiana gave notice to IRAD they have received their articles of incorporation.

Also in June, IRAD met with members of the FEMA Equity Office, followed by meetings with FEMA’s Community Planning and Capacity Building (CPCB) representatives on July 15, 2022.



Views of Ironton, summer of 2022. The only remaining houses are the few that were elevated on piers in the years following Katrina, and a handful of temporary trailers. The gaps between houses mark the locations of the houses that were destroyed by Hurricane Ida. Source: Google Earth.

On August 11, 2022, IRAD board members held a visioning workshop at which they described their hopes and vision for the future Ironton. It included items like mental health support for those traumatized by the disaster, replacement of the homes lost to the flooding and high winds, and paved streets.

August 19, 2022, IRAD submitted their 501(c)3 application to the IRS. On August 23, 2022, IRAD was granted IRS tax exempt status as a 501(c)3 non-profit foundation. IRAD received formal notice via mail on September 8, 2022.

On August 24, 2022, the Rural LISC began providing technical assistance to IRAD which includes a) expertise and technical guidance on nonprofit development, project management, housing and disaster recovering planning b) introductions and connections to resources, networks, and programs c) assistance designing and facilitating forums and meetings, as needed d) access to rural LISC suite of products and programs.

September 26, 2022, IRAD and the Foundation for Louisiana initiated a formal relationship with a foundation to act as their fiscal sponsor. This is still in process at the time of this written draft.



4. Location



Ironton is an unincorporated community in Louisiana in Plaquemines Parish, on the west bank of the Mississippi River, between the river and State Highway 23, about 25 miles south of New Orleans. Ironton contains about 50 residential properties on approximately 20 acres.

Aerial photo showing Ironton in relationship to New Orleans.
Source: Google Earth



Ironton, bottom center. Source: Google Earth



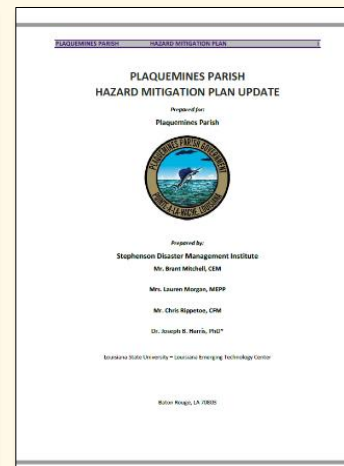
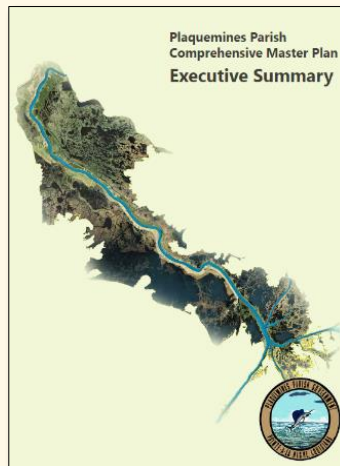
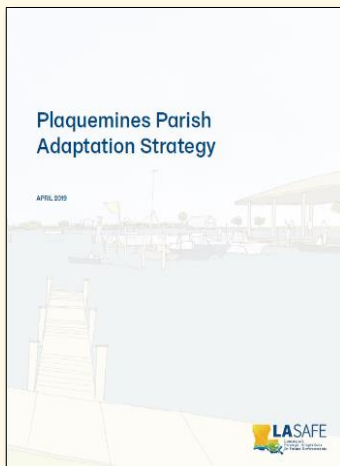
Aerial view of Ironton. Source: Google Earth



5. Plaquemines Parish Plans

The **Ironton Vision and Recovery Plan** complements existing plans already adopted by the Plaquemines Parish. It is hoped that the parish will adopt the **Ironton Vision and Recovery Plan** as an amendment to the Comprehensive Master Plan and that it will serve to guide decisions and policies of the Plaquemines Parish in the years to come. Projects described in this plan support many of the implementation strategies listed in the Plaquemines Parish Hazard Mitigation Plan Update and are noted in the project descriptions. The plan documents currently adopted by the parish include:

- Plaquemines Parish Comprehensive Master Plan
- Plaquemines Parish Adaptation Strategy
- Plaquemines Parish Hazard Mitigation Plan Update



6. History of Resilience

Founded by Freed Slaves

Ironton is situated on the west bank of the Mississippi River, in Plaquemines Parish on acreage that was adjacent to the St. Rosalie Plantation. The 600-acre plantation was owned by a free man of color, Andrew Durnford, who used slave labor to raise sugarcane from 1828, until his death in 1859. In the financial downturn that followed the Civil War, his heirs sold the land. The plantation immediately south of St. Rosalie was acquired by emancipated slaves, eventually becoming the community of Ironton.

Source: Edwards, Tyrone, [The Forgotten People: Restoring a Missing Segment of Plaquemines Parish History](#), Xlibris Corporation, March 2017.

1920's to the 1980's

Plaquemines Parish was governed with an anti-desegregationist policy from the 1920's through the 1960's. These policies continued to be enforced through the 1980's. Throughout that period, Black leaders in the parish fought back against voter-suppression tactics through whatever legal means they had at their disposal. In the 1950's, they founded the Underground Right to Vote Movement and became plaintiffs in a federal lawsuit that was decided in their favor in 1961. IRAD board member Sandra Irons was among the first Black students to attend the first integrated high school in Plaquemines Parish in the 1960's.

Residents of Ironton did not receive running water until 1980. Per Reckdahl (reference below) water lines were installed following the public outcry that arose after news articles publicized by *Time Magazine* and CBS' *60 Minutes* highlighted and brought attention to this inequity. In subsequent decades, Plaquemine Parish installed a sanitary sewer system and natural gas lines, paved the community's roadways, and put in streetlights.

Sources:

Reckdahl, Katy, "The Levee Is the Problem", 64 Parishes, 2022.

Edwards, Reverend Tyrone, [The Forgotten People: Restoring a Missing Segment of Plaquemines Parish History](#), Reverend Tyrone Edwards, March 22, 2017.



Historical photo of the St. Rosalie plantation house. Source: NOLA.com



The blue line shows the boundaries of the St. Rosalie Plantation. Ironton is shown in the lower right corner.

Challenges from Oil and Coal

Following the discovery of offshore oil in the 1920s, Plaquemines Parish became a strategically-located hub for services related to the oil and gas industry. The parish's economy benefited greatly, and population and infrastructure investments grew significantly, but at a cost to the environment and the health of Ironton residents.

In 2014, Ironton led the charge against the proposed RAM Terminals coal terminal that was proposed to be built next door to Ironton. With the terminal, a proposed rail extension, and the RAM terminal, Ironton would have been surrounded by coal facilities. The RAM terminal would have poisoned their air and accelerated the climate crisis, but Ironton fought it off. Residents who later became members of IRAD were key players in the successful campaign to block the proposal.

In 2020, Ironton faced the Tallgrass Plaquemines Liquids Terminal project, proposed for the very same site as the RAM project. The Tallgrass project would have been built directly on top of historic cemeteries at St. Rosalie, where ancestors of Ironton residents lived and were buried.

Residents from Ironton, Myrtle Grove, and other communities near the proposed Tallgrass site teamed up to fight the terminals. Locals helped organize dozens of meetings to educate residents. The local nonprofit Gulf Restoration Network (GRN) sued the state for giving a permit for the Tallgrass terminal despite a state-funded study that said it would have a direct impact on Louisiana's government-mandated coastal restoration. Eventually, the Tallgrass proposal was dropped.

Sources:

[Stand with Ironton, One of Coastal Louisiana's Oldest Black Communities - Healthy Gulf](#)

[Rubiano A., Maria Paula, Energy Company cancels \\$2.5 billion oil export terminal in Louisiana, Grist, November 24, 2021](#)

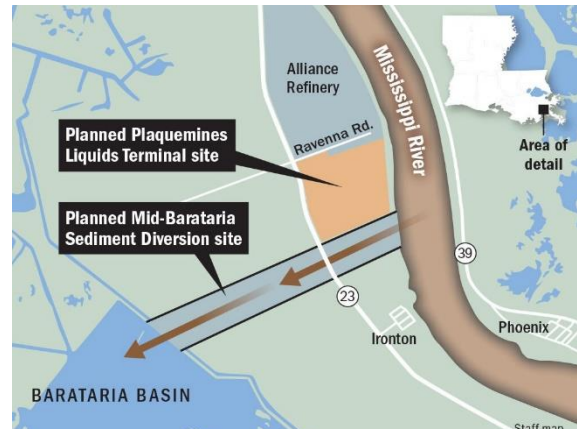


Diagram showing the location of the abandoned Tallgrass Liquids Terminal proposal and the planned Mid-Barataria Sediment Diversion Site. Source: NOLA.com



The Phillips Alliance Refinery north of the proposed RAM/Tallgrass development property. Source: Oil & Gas Journal.

From Katrina to Isaac to Ida

The residents of Ironton had to rebuild their lives in 2005, after Hurricane Katrina, and again in 2012, after Hurricane Isaac. Some residents chose not to return following Katrina, and some chose not to rebuild after Isaac, but most residents remained. Ironton was promised a better levee after Hurricane Katrina, but the levee has not yet been built, and when Hurricane Ida made landfall on August 29, 2021, the small community took on more than eight feet of floodwater. Nearly all the residents' homes and the community church were either destroyed, seriously flooded, or seriously damaged by wind and water. Caskets of family members were dislodged and scattered across the landscape.



Ironton Park under water after Hurricane Ida. Credit: Audrey Salvant.



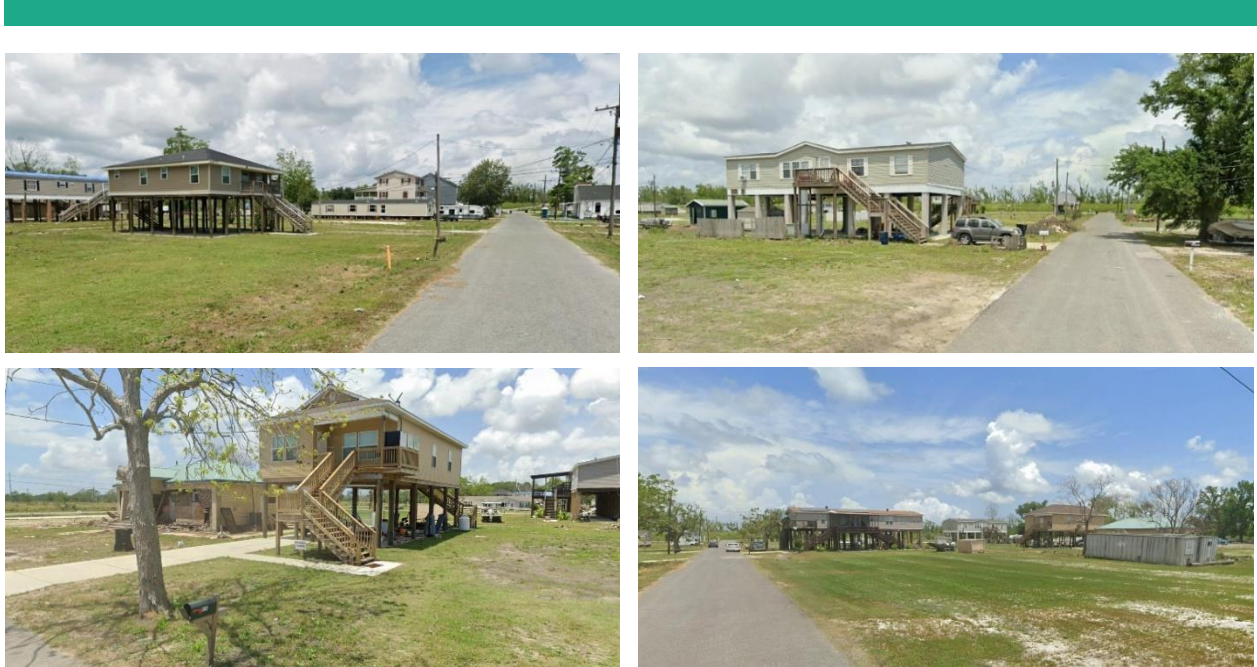
Photos of Ironton taken on 9/10/2021. Credit: Julie Dermansky.

Ironton Today

Most Ironton’s residents feel strongly that the community should remain in place, as this is their historical home. They are determined to keep what they have repeatedly fought to protect for the past 150 years.

IRAD wants to honor Ironton’s legacy as a community founded by freed slaves. Ironton residents have strong ties to the land where multiple generations have lived and died. IRAD members share a strong desire to continue to fight off environmental degradation by the coal and oil industries, and indirectly, climate change.

Ironton residents know that generational wealth is real, and that land and home ownership are not easy and should not be taken for granted. They believe the path to helping the community of Ironton thrive is to reconstruct, redevelop, “build back better”, and make Ironton a “tranquil, livable space”.



Views of Ironton, summer of 2022. The only remaining houses are the few that were elevated on piers in the years following Katrina, and a handful of temporary trailers. The gaps between houses mark the locations of the houses that were destroyed by Hurricane Ida. Source: Google Earth.

7. Long Term Recovery Planning

Long Term Recovery Issues

Ironton was built over a span of 150 years and recovery will not occur overnight. A long-term community recovery plan, based on community involvement, helps to plan for recovery and rebuild in a manner that will minimize damage when future flood events occur. The long-term flood recovery issues, listed below, were identified by the Ironton Reconstruction and Development Committee.

Community Planning and Capacity Building

- Lack of community planning documents that specifically address Ironton's needs.
- Lack of advocacy for Ironton's needs.

Housing

- Loss of 42 houses due to Hurricane Ida.
- Need for reconstruction / replacement of housing that is affordable.
- Need to elevate replacement housing.
- Need to provide lifts for accessibility of replacement housing.
- Need for affordable mortgages.
- Need for low-cost flood insurance.

Health and Social Services

- Seniors struggle to apply for help due to difficulties with FEMA, contractors and additional debt.
- Low- and moderate-income families are stretched thin as they deal with flood recovery.
- There is a need for mental health services in the community.
- Flood recovery adds stress on individuals and families, and there is a lack of resources to support them.

Economic

- Loss of retail in the area.
- Long-term decline of Ironton due to repeated disasters.
- Lack of information and signage to direct visitors to Ironton.
- Need to attract new businesses.

Infrastructure

- Poor drainage due to debris in ditches and lack of maintenance.
- Lack of paved streets.
- Lack of sidewalks in the community; low level of walkability.
- Missing streetlights due to hurricane damage.
- Lack of driveways to provide access to houses.
- Lack of pedestrian and bicycle infrastructure and connectivity.
- Local drainage problems and stormwater accumulation.
- Damage to roadways and drainageways.

Natural and Cultural Resources

- Need for landscape improvements and beautification.
- Need for additional outdoor recreational facilities.
- Need for a community and recreation center.
- Need to create a distinct Ironton identity.

8. Visioning Workshop

To decide the path forward, IRAD held its first collective visioning workshop at Fresh Breath of Life meeting hall in Belle Chasse on August 10, 2022. At this workshop, IRAD committee members:

- Developed and adopted a mission statement
- Formulated goals for the community's redevelopment
- Developed a list of projects that they would like to implement
- Prioritized the projects according to how well they would fulfill the most urgent needs of the community.



IRAD Board members at the Visioning Workshop on 8/11/2022 at Fresh Breath of Life Community Center.

Please see below for IRAD's mission statement, goals, ranked projects, and strategic prioritization.

Mission Statement

IRAD adopted the following declaration as their mission statement:

"To pursue community recovery and development based on a deep-rooted, local approach that embraces housing, economic development and health, while recognizing the value of culture, diversity, inclusion, equity, and justice."

Goals

The IRAD board identified the following five goals to support the mission statement:

- *Get everybody back home.*

Forty out of 50 houses were destroyed by Hurricane Ida. The highest priority project is to get every homeowner back to Ironton, including the owners of houses that are still standing but who were so traumatized by the event that they still cannot move back into their homes.

- *Establish Ironton as a retirement community.*

This means that the residents of Ironton want to spend the rest of their lives in a place that is and feels safe, that does not experience an existential threat every hurricane season.

- *Make Ironton livable again, and tranquil.*

Ironton residents want the community to be made whole, to be a place where they can live in peace, raise their children, and grow old gracefully.

- *Create an Ironton 'Sense of Place'.*

Residents of Ironton want their community to reflect their character and history, have its own identity, and to have a place in the world that is uniquely Ironton.

- *Set an example for other unincorporated communities to follow.*

The residents of Ironton want to blaze a trail for other similarly disadvantaged communities to follow. They want to set an example by showing other communities that not just recovery but “build back better” is possible and attainable.

List of Projects

IRAD identified the following projects in this order of priority:

Tier 1 Projects

- 1.A. Reconstruction / Replacement of Houses (elevated, with covered lifts)
- 1.B. Drainage Improvements
- 1.C. Levee Protection (500-year flood protection) Advocacy

Tier 2 Projects

- 2.A. Affordable Home Mortgages
- 2.B. Affordable Flood Insurance Advocacy

Tier 3 Projects in order of priority and suggested sequence

- 3.A.1. Street Pavement
- 3.A.2. Streetlights
- 3.A.3. Sidewalks
- 3.A.4. Mental Health Services
- 3.A.5. Gateway and Wayfinding Signs
- 3.B.1. Driveways
- 3.B.2. Landscape Improvements
- 3.B.3. Broadband Infrastructure
- 3.C.1. Recreation / Community Center
- 3.C.2. Outdoor Recreation Facilities

The 15 identified projects fall into three categories: Community Services, Advocacy, and Infrastructure, described in Chapter 8, Projects.

Community Services projects include mental health services, programmed social and recreational activities, outdoor recreation, and low-interest loans through the formation of an entity that becomes certified as a Community Development Financial Institution or CDFI, like Habitat for Humanity, that makes low interest loans available to the community.

Advocacy projects include advocating for improved levee protection and ensuring that Plaquemines Parish qualifies for National Flood Protection Insurance.

Infrastructure projects include the reconstruction (replacement) of the houses that were lost during Hurricane Ida, drainage improvements, street paving, sidewalks, streetlights, gateway and wayfinding signs, broadband, landscape improvements, a recreation / community center, and outdoor recreation facilities. The infrastructure projects serve in the short-term to assist the recovery of the community and support the community services goals. The reconstruction / replacement of houses is seen as the highest priority since without houses, there are no residents, no community.

Prioritization Strategy

While it can be argued that houses cannot be reconstructed until the levee is improved by the state, and the levee is scheduled to be improved by 2026, there are no guarantees. The committee determined that Ironton cannot afford to wait until the levee improvements are done and needs to be working on getting houses replaced and elevated now. Accordingly, the reconstruction and elevation of houses was assigned a higher priority than the levee improvements.

IRAD looked at the projects and developed a strategy for accomplishing them based on various factors. Projects were judged on how they fit into an overall sequence of accomplishment, cost vs. availability of funds, short-term vs. long-term, and how they might tend to spark interest, and create and sustain momentum going forward. Projects were evaluated in terms of sequence, potential for creating early momentum, and catalytic potential. These considerations were factored into the implementation matrix below.

Beyond those considerations, it is recognized that some projects may be combined with others or become separate phases of a project. For example, driveways could and probably should be combined with the reconstruction of houses. Street paving, sidewalk paving, streetlights, gateway, and wayfinding signs could be combined into a single project or phases of a project.

For funding purposes, drainage improvements could be broken into two or three projects: a conceptual design study, final engineering, and construction.



IRAD Board members receiving a second donation from the Taproot Foundation at the Town Hall meeting held on September 7, 2022.

9. Projects

1.A. Housing Reconstruction (Replacement)

Problem or issue: Today, there only 10 houses that are standing in Ironton that is the result of being elevated 12 feet. Forty-five houses have disappeared because of Hurricane Ida. This proves that reconstructed homes that are elevated can survive a hurricane.

Remedy or solution: Reconstruct housing to replace the houses lost due to Hurricane Ida. Reconstruction will include elevating the structures to the base elevation level plus freeboard. The structure will have covered outdoor lifts to make them accessible.

Benefits: Residents of Ironton will be able to return to Ironton to live there. It will be a model for future generations and other communities with similar circumstances. It will restore dignity to Black residents in this majority Black community.

Estimated cost: TBD

Responsible party and potential project sponsors: IRAD plus FEMA, the State of Louisiana, Plaquemines Parish, Coastal Protection and Restoration Authority (CPRA), and volunteer agencies.

Post-disaster recovery value: Reconstruction of houses (elevated) will have the single largest impact on reducing post-disaster recovery regardless of whether or when the levee is improved.

This project supports Plaquemines Parish Hazard Mitigation Plan mitigation actions:

OP3: Elevation and acquisition, and

NP4: Mitigation of repetitive loss and severe repetitive loss properties.



An example of an elevated house with a covered lift.

Source:

<http://www.elslifts.com>

1.B. Drainage Improvements

Problem or issue: The drainage system that is being used in Ironton is ditches. These ditches are controlled by the parish and are often unkempt, resulting in flooding. The pumping station that is designated to the ditches in Ironton is too far from the community to adequately pump the water out of the community.

Remedy or solution: Underground drainage will replace the surface drainage (ditches). Underground drainage would ensure that wastewater is flushed out of the community which will further reduce flooding. There is a need to hold the parish accountable. This project supports the Plaquemines Parish Hazard Mitigation Plan through mitigation drainage projects: Widen drainage ditches and upgrade culverts.

Benefits: Underground drainage will drain faster and result in reduced flooding. It will also protect the community's personal property.

Responsible party and potential project sponsor: Plaquemines Parish

Post disaster recovery value: TBD

Estimated cost: TBD



Drainage improvement construction. Source: [How Much Slope When Installing a Commercial Underground Drainage System \(frenchdrainman.com\)](https://www.frenchdrainman.com)

1.C. Levee Improvements (500-year flood protection) Advocacy

Problem or issue: Ironton is currently protected by a levee that is 3 to 6 feet tall, well below what is needed to protect the community.

Remedy or solution: Improved levee protection will greatly reduce the chances of Ironton being flooded. The "500-year flood" corresponds to an AEP (Annual Exceedance Probability) of 0.2-percent, which means that a flood of that size or greater has a 0.2-percent probability (or 1 in 500 chance) of occurring within a period of one year. IRAD's role is as an advocate for the levee construction.

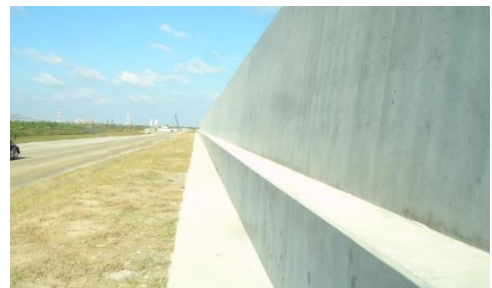
Benefits: Levee improvements will protect Ironton from future flood events and should have a positive impact on flood insurance costs once the flood plain delineation maps are updated.

Estimated cost: TBD

Responsible party and potential project sponsors: US Corps of Engineers, FEMA.

Post-disaster recovery value: If the levee improvements protect Ironton as projected, there will be no flooding and no post-disaster recovery.

This project supports the Plaquemines Parish Hazard Mitigation Plan mitigation actions:
OP1: Levee: Maintain and expand existing levee protection to ensure levees do not fall during a storm surge event.



An example of an improved levee. Source: [LPV-145 Chalmette Levee Flood Wall | Mobile Enterprises](https://www.mobileenterprises.com)

2.A. Affordable Home Mortgages

Problem or Issue: Commercial home mortgages are not generally affordable to Ironton residents.

Remedy or solution: One idea is to form an entity that becomes certified as a Community Development Financial Institution or CDFI, like Habitat for Humanity, and make low interest loans available to the community.

Benefits: Resilience, stability, generational wealth.

Responsible party and potential project sponsors: IRAD and partners to be determined.

Post-disaster recovery value: Resilience, stability, generational wealth for Ironton residents initially, and once established, for other unincorporated communities in the Plaquemines Parish.

Estimated cost: TBD



2.B. Affordable Flood Insurance Advocacy

Problem or Issue: Residents that want to return to Ironton are finding that they can't afford the high cost of insurance premiums.

Remedy or solution: Community participation in the National Flood Insurance Program (NFIP). Elevated homes, drainage improvements, and levee improvements should all have positive impacts on the cost of flood insurance. The role of IRAD will be as an advocate for affordable flood insurance in the parish.

Benefits: When homeowners have flood insurance, it improves the chances of homeowners being able to reconstruct their houses because the cost of reconstruction is reduced by the insurance pay-out amount.

Responsible party and potential project sponsors: IRAD plus FEMA NFIP.

Post-disaster recovery value: Affordable flood insurance will reduce the burden of post-disaster recovery on the entire community.

Estimated cost: TBD

This project supports Plaquemines Parish Hazard Mitigation Plan mitigation actions:

OP11: NFIP: Continue parish participation in the NFIP, and

OPO: NFIP Establish a public outreach campaign to ensure all homeowners in floodplains are aware of the various types of coverage options under the NFIP.



3.A.1. Street Pavement

Problem or issue: The streets in Ironton today are all gravel roads. With the constant flooding, these gravel roads have become a hazard to the community. The gravel causes wear and tear on residents' vehicles. On dry days the dust makes it unbearable to be outside in the community. Driving on the gravel is very noisy.

Remedy or solution: Replacing the gravel roads with paved streets would eliminate these conditions.

Benefits: Driving in the community will be easier, safer, and smoother. There will be less wear and tear on residents' personal vehicles. Paved streets will reduce the noise level.

Responsible party and potential project sponsors: IRAD plus Plaquemines Parish

Post-disaster recovery value: Paved streets will provide a better driving surface for (emergency) vehicles entering and moving around the community.

Estimated cost: TBD



Street paving in progress. Source: <https://giantdevelopmentinc.com/services/subdivision-paving>

3.A.2. Streetlights

Problem or issue: The existing streetlights were severely damaged by Ida. They need repairs and/or replacement.

Remedy or solution: Replace the streetlights in Ironton with new streetlights that are decorative, like the streetlights on Terry Parkway in Belle Chasse. The new streetlights will be night-sky compliant, decorative streetlights that will contribute to Ironton's safety, character, and 'sense of place'. Power lines will be placed underground to reduce the possibility of power outages due to fallen poles and trees during high winds.

Benefits: Improved safety and beautification of the community,

Responsible party and potential project sponsors: IRAD plus Plaquemines Parish.

Estimated cost: TBD



The Terry Parkway streetlight, an example of the kind of streetlight preferred in Ironton. Source: Google Earth.

3.A.3. Sidewalks

Problem or issues: There aren't any sidewalks in the community of Ironton. Ironton is not a walkable community. Walking in Ironton is hazardous because one must share the streets with vehicles and walk on gravel.

Remedy or solution: Construct sidewalks in the community.

Benefits: Sidewalks will address the safety issue and make Ironton walkable. Sidewalks will beautify the community and bring residents closer together.

Responsible party and potential project sponsor: IRAD and Plaquemines Parish.

Post disaster recovery value: Sidewalks will make Ironton a walkable community and offers health benefits, both mental and physical.

Estimated cost: TBD



Example of a sidewalk. Source: <https://burnabyblacktop.ca/blog/concrete-sidewalk-vs-asphalt-sidewalk/>

3.A.4. Mental Health Services

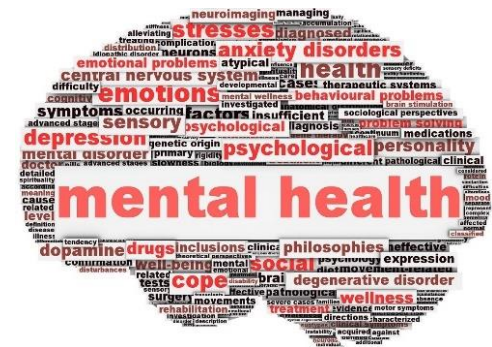
After years of oppression, being subjected to racism, and being repeatedly traumatized by recurring hurricane disasters, the community has a real need for mental health services. Many residents who have had to live elsewhere since Ida find that they cannot come back to live in their homes because of the trauma they experienced.

This project is intended to provide a mental health specialist to come into the community to counsel the residents.

Post disaster recovery value: Mental health is often overlooked as a part of recovery disasters and is an important part of building a community's resiliency.

Estimated cost: TBD

Responsible party or potential project sponsors: IRAD plus Plaquemines Parish, FEMA's Health and Social Services Recovery Support Function (HSS RF).



3.A.5. Gateway and Wayfinding Signs



Existing entrance to Ironton from Highway 23.
Source: Google Earth.



An example of a gateway monument and wayfinding sign. Source: <https://www.cityofbartlesville.org/gateway-wayfinding-sign-project-advances/>

Problems or issues: Ironton is difficult to find. The only sign that tells passing motorists where it is, is a small handwritten cardboard sign stapled to a power pole on Highway 23.

Remedy or solution: This project consists of the design and construction of features intended to A) create a gateway to Ironton at the intersection of State Highway 23 and Ironton Road that will include monuments, signage, and landscaping, and B) wayfinding signs at key locations along streets that direct visitors to important features within Ironton, including the church and the cemetery.

Benefits: Visitors will know how to locate the community. It will give the residents a sense of place. It will be a sign that the community is proud of its existence and deserving of respect.

Responsible party or potential project sponsors include: IRAD and Partners

Post-disaster recovery value: Emergency service providers will be able to find Ironton.

Estimated cost: TBD

3.B.1. Driveways

Problem or Issue: Today, Ironton's aging residents are prone to slips and falls. Moving gravel from driveways increases the possibility of accidents. Many residents park on the streets. Cars parked on the streets is a safety hazard for kids.

Remedy or solution: Replace the gravel with concrete driveways and create driveways where there are none.

Benefits: Driveways will reduce the probability of slips and falls and reduce parking on the streets.



Example of a driveway. Source: <https://qldsheetsmetal.com.au/how-to-protect-your-home-from-flooding/>

Responsible party and potential project sponsors include: IRAD and Community

Post-disaster recovery value:

Estimated cost: TBD

3.B.2. Landscape improvements

Problem or issue: Currently there is little in the way of landscaping at Ironton since it was almost entirely destroyed by the hurricane. Except for the few houses that survived Ida because they were already elevated, the place has a barren appearance, with so many concrete pads where houses once stood. There are few trees left in Ironton.

Remedy or solution: The addition of trees to line the streets would beautify the community and give a sense of hope to the residents. Tree species will include palm, cedar, and magnolia.

Benefits: Beautification of the community, oxygen regeneration, shade, visual buffering, and part of a broader green infrastructure initiative that includes drainage improvements.

Responsible party or potential project sponsors: IRAD plus Plaquemines Parish

Estimated cost: TBD



Two examples of landscaping in a residential community. Sources: Left: <https://freedomsquarefl.com>, Right: <https://www.aplaceformom.com/community/freedom-square-of-seminole-a-ccrc-49542>

3.B.3. Broadband Infrastructure

Problem or issue: The quality of broadband service in Ironton is very poor. Residents typically have internet service for about two hours each day while the oil refinery next door has excellent broadband service.



Remedy or solution: High-speed broadband or internet infrastructure.

Benefits: Fast and reliable broadband service will enable residents of Ironton to participate in the nation’s economy, shop, learn, conduct business from home, give access to health services, allow residents to communicate with and be connected to the world.

Responsible party and potential project sponsors: Plaquemines Parish, internet providers, school district, USDA.

Post-disaster recovery value: The existing broadband service is very poor and hindered recovery efforts in the past. Good quality broadband service is essential to facilitate early recovery efforts.

Estimated cost: TBD

3.C.1. Recreation / Community Center

Problem or issue: The community of Ironton has no place today where they can gather besides their homes to meet. To host meetings or other indoor gatherings the community must secure venues outside the community.



Example of a community / recreation center. Source: <https://www.cor.net/departments/parks-recreation/recreation-centers/huffhines-recreation-center>

Remedy or solution: Secure funding to build a Recreation\Community center where the community can meet as a group out of the elements.

Benefits: The community would have their own space to gather inside of the community. This place can serve as a meeting room, senior citizen place, after school care center, etc. This center can serve as a place where outside resources (mental health, physical health, food, clothes, etc.) can meet with the community.

Responsible party and potential project sponsors: IRAD Community

Post-disaster recovery value: After a disaster this center can serve as the meeting place/staging area for the community.

Estimated cost: TBD

3.C.2. Outdoor Recreation Facilities

Problem or issue: All the recreational facilities in Ironton were damaged by Ida. But there is also a need to add other facilities.

Remedy or solution: The existing ballfield and basketball court need to be renovated and improved. In addition, the community needs new trails, and track & field facilities.

Benefits: The renovated ballfield and basketball court will be outdoor areas where the community can meet for outside recreational activities. This will provide the community a gathering area where all ages can interact and socialize, and attend picnics, reunions, and festivals. The track & field facilities will provide other options for children to get exercise. Trails will provide opportunities for everyone to run, walk, and explore.

Responsible party and potential project sponsors: IRAD.

Estimated cost: TBD



Examples of the kind of recreational facilities Ironton needs. Sources: [Parks and Recreation – City of Lincoln, NE](#)



Examples of the kind of recreational facilities Ironton needs. Sources: [Northside Park Fall Sports Registration Starts On Monday in Philadelphia - Kicks96news.com - Central Mississippi News 24/7](#)



Examples of the kind of recreational facilities Ironton needs. Sources: [Our Favourite Toronto Bike Paths for Families - SavvyMom](#)



Examples of the kind of recreational facilities Ironton needs. Sources: [Free Photo | Young millennials african friends on playground slide and swing happy black people having fun together generation z friendship concept \(freepik.com\)](#)

10. Implementation Matrix

This recovery plan is not intended to be a detailed roadmap for implementation of projects. Rather, it is intended as a bridge or “hand-off” to other entities such as Foundation for Louisiana, Rural LISC, a division of Local Initiatives Support Corporation (LISC), Southern University of New Orleans, and Louisiana State University, that will provide various kinds of support to IRAD as it moves through the next phases of its development, culminating in the implementation of projects and on-going programs.

IRAD recently established a formal relationship with **Foundation for Louisiana** who will be the fiscal sponsor for IRAD. Foundation for Louisiana will serve as the back-of-house by providing fiduciary oversight, financial management, and other administrative services to help build IRAD’s capacity.

Rural LISC partners with rural community-based organizations and financial intermediaries, helping them identify challenges and opportunities and delivering the most appropriate support to meet local needs. Rural LISC will support the formation and capacity-building of IRAD by providing:

- Expertise and technical guidance on nonprofit development, project management, housing, and disaster recovery planning
- Introductions and connections to resources, networks, and programs
- Assistance designing and facilitating forums and meetings
- Access to Rural LISC’s suite of products and programs
- Hire a consultant to help IRAD complete their 501c3 (the full 1023 application)
- Connect IRAD with the standing Long-Term Recovery Group
- Ensure Disaster Case Management is available and accessible
- Complete the identification and implementation of the board of directors and leadership structure, to include training and technical assistance to members
- Assist IRAD in identifying resources, networks, expertise, and partnerships to support the top three critical projects (while building internal capacity)
- Assist in the development of a 1- to 2-year strategic plan/recovery plan that includes a financial management strategy, a fundraising strategy, and procurement and contracting assistance
- Execute a pass-through grant to support reconstruction, including affordable housing and non-profit capacity building

Louisiana State University is in conversations with IRAD to provide mental health counseling services.

Southern University of New Orleans (SUNO) has tentatively committed to assist IRAD with grant writing, by-laws, civil engineering, mental health services, and 501c3 tax-exempt status. SUNO has also offered to develop a written history of Ironton, an oral history program, and incorporate an outdoor art program to extend its on-campus art exhibit.

The Implementation Matrix on the following pages identifies potential implementing organizations and potential sources of funds (through state and federal recovery support functions (RSF’s)). These are suggestions since the precise identity of the funding sources for most of the projects is not known.

Project	Timeframe	Potential Implementing Organizations	Potential State and Federal RSF Support
Reconstructing houses	Short-term	IRAD plus FEMA, the State of Louisiana Governor’s Office of Homeland Security and Emergency Preparedness (GOHSEP), Louisiana Office of Community Development (OCD), Plaquemines Parish, Coastal Protection and Restoration Authority (CPRA), and volunteer agencies.	FEMA
Drainage improvements	Short-term	IRAD plus Plaquemines Parish	EPA, FEMA,
Levee protection	Short-term	US Corps of Engineers, FEMA	U.S. Army Corps of Engineers, EPA, FEMA
Affordable home mortgages	Long-term	IRAD	Louisiana Housing Corporation, USDA, HUD, USDA
Affordable flood insurance	Short-term	FEMA, Plaquemines Parish	HUD, Louisiana Housing Corporation, USDA
Street paving	Mid-term	IRAD plus Plaquemines Parish	FEMA
Streetlights	Long-term	IRAD plus Plaquemines Parish	FEMA
Mental health services	Mid-term	IRAD plus Plaquemines Parish	Health of Human Services, Louisiana Dept. of Health,
Gateway & wayfinding	Mid-term	IRAD	
Driveways	Short-term	IRAD	Department of Transportation,
Landscape improvements	Long-term	IRAD plus Plaquemines Parish	SBA, U.S. Department of the Interior

Broadband	Mid-term	Plaquemines Parish, internet providers, school district, USDA	USDA
Recreation/community center	Long-term	IRAD plus Plaquemines Parish	SBA, U.S. Department of the Interior
Recreation improvements	Mid-term	IRAD plus Plaquemines Parish	SBA, U.S. Department of the Interior, Coastal Protection and Restoration Authority

APPENDIX A: Resources

IRAD has developed relationships with the following organizations who have assisted with various aspects of capacity-building and recovery.

Taproot Foundation

Taproot Foundation is a non-profit that connects communities with skilled volunteers who donate their time and expertise pro bono. Taproot Foundation has been instrumental in the recovery of Ironton through charitable donations at key moments.

Website: [Home - Taproot Foundation](#)

Fresh Breath of Life Community Center

Fresh Breath of Life's central focus is to educate, encourage, and enlighten children to become the person he/she was designed to be. Fresh Breath of Life has supported IRAD by making its community center available for IRAD to use.

Website: [Fresh Breath of Life - Home | Facebook](#)

Sierra Club

Sierra Club works to get stronger environmental and energy laws that will reduce our dependence on fossil fuels, protect our oceans and fragile coastal environments, and help protect millions of jobs.

Website: [About the Sierra Club | Sierra Club](#)

Endeavors

Endeavors connects emergency or disaster victims to services to help them recover after an emergency or disaster situation.

Website: [DISASTER CASE MANAGEMENT - Endeavors®](#)

Rural LISC

Rural LISC partners with rural community-based organizations and financial intermediaries, helping them identify challenges and opportunities and delivering the most appropriate support to meet local needs.

Website: [Rural LISC | LISC Rural LISC](#)

Team Rubicon

Team Rubicon utilizes the skills and experiences of military veterans with first responders to rapidly deploy emergency response teams.

Website: [Team Rubicon | Built To Serve \(teamrubiconusa.org\)](#)

Southern University of New Orleans (SUNO)

Southern University of New Orleans (SUNO)

Website: [About SUNO | Southern University at New Orleans](#)

Louisiana State University (LSU)

Louisiana State University (LSU)

Website: [About LSU](#)

Deep South Center for Environmental Justice



Deep South Center for Environmental Justice

Website: [Our Story - Deep South Center for Environmental Justice \(dscej.org\)](https://www.dscej.org)

APPENDIX B: Recommended Articles, Books, and Videos About Ironton and Plaquemines Parish

Reckdahl, Katy, The Levee Is the Problem, 64 Parishes, 2022.

Sneath, Sara, 4-Year old Coal company Deal Compromises Louisiana’s Biggest Coastal Restoration Project, NOLA.com, July 22, 2019.

Esealuka, Michael, Stand with Ironton, One of Coastal Louisiana’s Oldest Black Communities, Healthy Gulf, September 28, 2021.

Williams, David, Caskets Are Still Scattered Around a Louisiana Community as Residents Struggle to Recover from Hurricane Ida, September 25, 2021, CNN.

Parker, Halle, Three Weeks After Ida Toppled Tombs in Ironton’s Cemetery, Caskets Remain Scattered Across the Community, September 20, 2021

Dermansky, Julie, Ironton Residents Blame Environmental Racism for Hurricane Ida’s Catastrophic Damage to Their Historic Black Community, September 14, 2021, DeSmog.

Anonymous, Ironton, LA Still Continues to Experience Long Lasting Effects of Hurricane Ida, St. Vincent de Paul, New Orleans, March 7, 2022.

Snell, John, Coastal Parishes hope to tap into billions of federal dollars for restoration and flood projects, August 4, 2022, FOX 8.

Rich, Nathaniel, Destroying a Way of Life to Save Louisiana, July 21, 2020, The New York Times Magazine.

Savka, Natalya, Enough Is Enough: Ironton, Louisiana, Nixes New Coal Terminal, April 6, 2015, Sierra.

Hawwer, David, Oil Company Files Plan to Build Tanks over Historic Slave Cemeteries, February 10, 2021.

Alexander-Bloch, Benjamin, Plaquemines Parish Proposed Coal Terminal to Get Coastal-use Permit from State, NOLA.com, August 12, 2022.

Anonymous, Coffins in the Street; Black Louisiana Town Forgotten After Ida, September 16, 2021. Nexus Media News.

Flin, Briana, Ravaged by Hurricanes, a Historic Black Community Fights for Survival, <https://www.theguardian.com/us-news/video/2022/sep/16/ravaged-by-hurricanes-a-historic-black-community-fights-for-survival>, the Guardian, September 16, 2022.

APPENDIX C: Case Studies

Case Study 1: Princeville, NC



Photo Source: WRAL News

Former slaves settled Princeville in 1865 on a floodplain that white landowners considered so undesirable that they were willing to sell it to Blacks. In 1885, Princeville became the first incorporated Black town in the country; and it thrived.

Hurricane Matthew swept across eastern North Carolina on October 8, 2016, resulting in massive floods devastating many small towns, among them Princeville. Hurricane Matthew left 80% of the town underwater and marked the seventh major flood the town has experienced since 1919.

18 months after Hurricane Matthew, only \$40,000 of the \$400 million in federal community development grants allocated to the State of North Carolina had been distributed to affected communities.

In the wake of numerous recent natural disasters, it is imperative that the rebuilding needs of small and rural towns be considered. Considering the realities of small, low-wealth communities is especially critical because they often lack urban areas' access to the human and financial resources needed for rebuilding, including ways to bridge the funding gaps over long periods of time that typify many recovery efforts and programs. While the immediate threat has passed in Princeville, concern about maintaining community cohesion and character continues, given that resources are few and the potential for flooding is ever present.

The process of building and rebuilding homes, businesses, and civic structures has been a common theme for generations in Princeville, which loses a piece of its rich history with each rebuilding effort. Recently, Princeville has taken important steps toward rebuilding the community beyond its physical

structures. Community members are now focusing on preserving the culture and sense of place that makes Princeville home for long-term residents.

The North Carolina Emergency Management approached the town of Princeville with an offer of a complete buyout after the 1999 flood, but not everyone was in favor of the buyouts. Many residents felt that accepting a buyout meant giving up on the town that their ancestors fought hard to build. The town had another option because the US Army Corps of Engineers offered to rebuild the levee, and federal officials concluded that the repaired structure would keep Princeville out of the 100-year floodplain. Some town leaders, therefore, believed that they had a way to preserve the community, its residents, and its tax base while also protecting the town from future flooding. After much public debate, the board of commissioners voted against participating in the buyout program. Instead, the town accepted the offer from the ACE to rebuild the levee. Although residents did not have the opportunity to receive a buyout, they were able to receive assistance from federal, state, and charitable disaster recovery funding sources.

Princeville's experience highlights the importance of history and memory in communities' decisions to accept buyouts or relocate. In Princeville, the buyouts were framed as an abandonment of the town's history. Interviews conducted after Hurricane Matthew devastated Princeville in 2016 revealed that those external to Princeville saw the decision made in 1999 against buyouts as a missed opportunity. Some residents of the Princeville community, however, did not express regret regarding their decision to rebuild in place, only frustration that the levee failed to protect them.

Oral history and open-ended interviews conducted in 2019 and 2020 supported these findings. When asked why they chose to stay in Princeville after the floods, residents reflected on their childhoods,



Source: ReBUILD NC

their families, and their sense of belonging in and commitment to the historic town. During analysis,

three main themes emerged, reflecting aspects of place attachment and place identity: (1) the town’s historical importance; (2) importance for self-identity; and (3) dedication to the future of the town.

As one town official explained: “We are a resilient people. I don’t know of anybody that could have withstood ’99 and then 17 years later, 2016, and still not talking about leaving, not talking about uprooting, not talking about going anywhere. Because we realize what our forefathers went through in 1865... it’s just mind boggling for me. For my forefathers to come across that Tar River Bridge as free people for the first time in their life with absolutely nothing, nothing but their God-given talents. And to swamp land, Princeville was absolutely swamp land. And to build Freedom Hill and to thrive in Freedom Hill. We used to have, there was 35 black owned businesses in the town of Princeville in 1885. In 1885 they petitioned Congress. Look, we’re going to change our name from Freedom Hill to Princeville after Turner Prince, and we want to be incorporated. To be initially told, ‘No, we’ll give you the incorporation, but we’re gonna change the name to Garfield after the 20th President of the United States.’ And these people said, ‘No, we’re gonna name it Princeville.’ And we know the outcome: We are Princeville. They used their blood, sweat, and tears to build houses, to build businesses. And for us to say, no because of what might happen in the future, we’ve got to turn our backs on what they did for us and move someplace else? Cannot happen. Cannot happen.”

Sources:

Virginia Fall, Andy Fox, & Lindsey Naylor, [Damaged by Hurricanes, a Historic North Carolina Town Plans for a Resilient Future](#), February 6, 2019

Cynthia A. Grace-McCaskey, Susan C. Pearce, Lynn Harris, Mamadi Corra, Kayla J. Evans, [Finding voices in the floods of Freedom Hill: innovating solutions in Princeville, North Carolina](#), 21 May 2021



Source: Leoneda Inge/WUNC

Case Study 2: Oakridge Mobile Home Park, Sylmar, CA



On November 15, 2008, the Sayer Fire engulfed the Oakridge Mobile Home Park, a beautiful, gated community in Sylmar. Of the park's 600 homes, 480 were destroyed.

As of April 2010, the Federal Emergency Management Agency (FEMA) had awarded over \$1.9 million through the Individuals and Household Program to the residents who lost their homes in the fire. FEMA also approved applications from 113 residents for

housing assistance (\$1.75 million) and from 34 applicants for Other Needs Assistance \$150,000).

With consideration for the safety of the park's residents and guided by California's Wildland-Urban Interface (WUI) regulations for "ignition-resistant" building materials, Oakridge is rebuilding "smarter and safer." Although the park is not situated within a WUI area, the owners decided using the stricter codes made sense.

The homes in Oakridge are constructed with several fire resistant and fire-retardant types of materials. Additionally, fire-resistant landscaping is encouraged. Decomposed granite or rock mulch instead of grass lawns, and cacti and succulents instead of leafy shrubs also conserve water. Both WUI and Oakridge mandate that awnings, fences, porch posts, and railings be constructed of material that is or is sheathed in non-combustible material. Masonry skirting is required on the full width of the front wall and at least three feet around both front corners on most houses. Vents in this type of skirting are frequently camouflaged as trim bricks with narrow vertical openings. Screening of quarter-inch metal must back up the vent openings to prevent fire embers from blowing under the homes during a fire. Los Angeles County requires brush clearance twice a year (in May and September), 200 feet back from residential areas. Maintenance crews at Oakridge cut back further - another 25 to 50 feet for extra protection.

Before the Sayer Fire, the park was hit by the 1994 Northridge Earthquake (magnitude 6.9 with the epicenter less than 10 miles away). The violent shaking caused 97 mobile homes to shift from their foundations during the earthquake and 45 of them were lost to fires caused by ruptured gas lines.

To prevent the mobile homes from shifting off their foundations during earthquakes they are supported now with "lock-top" piers and pads. The tops of the heavy-duty metal piers bolt into the steel beams below the mobile home. Below the plywood are concrete footings that anchor the piers and prevent lateral shifting during earthquakes.

The fire-resistant materials and lock-top piers are more costly than regular building materials. However, when the market value of each home protected is taken into consideration, the savings are substantial.

Flood protection for Oakridge Mobile Home Park includes two catch basins located at the foot of each canyon at the back of the park. These catch basins were constructed and are maintained by Los Angeles County Public Works. The hills above the park were burned over in the Sayer Fire, leaving unstable soils, rocks, and charred plant debris. During the 2010 floods, the catch basins were approximately half full. The water and debris otherwise would have cascaded through the park endangering homes and residents.

In April 2010, less than two years following the Sayer Fire, about 50 percent of the previous residents had moved back in, either in their unharmed or replacement homes. With an additional 306 reservations in place, the park was looking forward to being full again with old neighbors reacquainted and new neighbors being welcomed in. Remnants of old brick stairways and concrete patios waiting to be cleared for new homes were a reminder of why the mitigation measures are an important part of this community. With an eye to the future, Oakridge is now protected with multiple mitigation for wildfires, earthquakes, and floods.

Source:

<https://www.fema.gov/case-study/rising-ashes-mobile-home-park-rebuilding-safer-and-stronger>

Case Study 3: Ponderosa Community Stabilization Project, Boulder, CO



Ponderosa Mobile Home Park was annexed into the City of Boulder in 2019 and is located near West Fourmile Canyon Creek. In 2017, the city purchased the site with plans to preserve long-term affordability, replace outdated infrastructure and reduce flood risk to the community. Using findings from the West Fourmile Canyon Creek Study, city staff explored options for stability and minimizing future flood impacts at Ponderosa. Options ranged from "no action" to "city purchase with infrastructure replacement, identification of home

replacement options and a long-term owner to maintain affordability."

The central goal of the project is to create long-term stability for Ponderosa. As documented in the Ponderosa Resolution, the city was committed to collaborating with the individuals and families that make up the Ponderosa community. Current residents of Ponderosa can choose to stay in their home or move into a new affordable and highly energy-efficient home.

A resident engagement process focused on co-creation with the community, to ensure minimal resident displacement and the future Ponderosa neighborhood fits the needs and desires of current residents.

Sources:

<https://bouldercolorado.gov/projects/ponderosa-community-stabilization-project>

<https://www.dailycamera.com/2021/04/26/as-boulder-continues-work-on-ponderosa-mobile-home-park-project-residents-remain-hopeful-but-uncertain-about-what-the-future-holds/>

<https://www.colorado.edu/cedar/community-design-workshop-ponderosa-mobile-home-park>

<https://www.cuindependent.com/2019/12/01/ponderosa-mobile-home-boulder/>

APPENDIX D: Foundations

Program Name	Type of Assistance	Improvements Covered	For More Information
Albertson's Companies Foundation	Food, volunteering, and grants	Food insecurity, disaster relief and other causes	Albertsons Companies, Inc. - Community
Baptist Community Ministries	Funding in a five Parish region which includes Plaquemines	Mental health , flood relief, capital projects	Grants - Baptist Community Ministries (bcm.org)
Blue Cross Blue Shield Foundation of Louisiana	A variety of grant opportunities as well as volunteering, sponsorships, and expert assistance	Disaster response , health, education, and various others	Grant Programs Blue Cross Foundation Louisiana (bcbslafoundation.org)
Delta Regional Authority	Provides grants in a variety of areas including infrastructure and workforce development	Infrastructure, health , innovative partnerships, small business, and workforce	Investing in the Delta Delta Regional Authority Delta Regional Authority (dra.gov)
Entergy	Open grants and grants by invitation	Community improvements including blighted housing . Also, emergency relief by invitation	Open Grants Entergy We Power Life
Ella West Freeman Foundation	A variety of grant opportunities	Community development, civic affairs; they will cover capital projects but primarily serves the Greater New Orleans area	The Ella West Freeman Foundation Application
Equal Justice Works	Legal assistance to underserved communities	Their goal is to bring lasting change to underserved communities	Inspiring a Lifelong Commitment to Equal Justice and Public Service - Equal Justice Works
Foundation for Louisiana	Appears to be programmatic and campaigns	Racial and Economic Justice	What We Do – Foundation For Louisiana
Foundation for the Mid-South	Grants	Education, wealth building, health , and community development	Grants - Foundation for the Mid South (fndmidsouth.org)

Goldring Family Foundation	Provide grants in the Greater New Orleans area	The Goldring Family & Woldenberg Foundations primarily fund non-profits in the Greater New Orleans area. The areas of giving are Animals & Environment, Arts & Culture, Civil Affairs, Education/ Recreation & Opportunities for Children, Human Services, Health , and Jewish Causes.	Goldring Family & Woldenberg Foundations (goldringfoundation.com)
Greater New Orleans Foundation	Grants and expertise	Economic opportunities, nonprofit leadership, and disaster response	Program Areas Greater New Orleans Foundation (gnof.org)
Fluor Corporation	Grants and funding	Economic development, public health , education, and the environment	Fluor Community Relations Employee and Fluor Foundation Giving
Freeport-McMoRan Foundation	Grants and funding	Community Development	Freeport-McMoRan Foundation Investments Freeport-McMoRan Copper & Gold (freeportinmycommunity.com)
Frost Foundation	Grants and funding	Human service needs, environmental and education	The Frost Foundation
Pennington Family Foundation	Provide grants. Largely focused in the Baton Rouge area and surrounding Parishes	Focus is in the areas of human services, health and chronic diseases, the arts, public safety/community development, disasters/community resilience , and the environment.	Pennington Foundation Apply (penningtonfamilyfoundation.org)
RosaMary Foundation	Provide grants primarily in the New Orleans area	Support educational, charitable, community improvement and literary programs	The RosaMary Foundation - Application
Stuller Family Foundation	Direct grants, matching grants, collaborative grants, partnerships, or donations	Appears they invest in parks and recreation in the Acadian region	Apply Stuller Foundation

United Way of Southeast Louisiana	Has grants and resources available	A mixture of opportunities including disaster relief	Grant Opportunities United Way of Southeast Louisiana (unitedwaysela.org) READ: Hurricane Ida Stories United Way of Southeast Louisiana (unitedwaysela.org)
Wells Fargo Foundation	Grants, volunteering	Local community grants that strengthen resiliency, environmental justice, etc.	Community Giving - Corporate Social Responsibility - Wells Fargo
Huey and Angelina Wilson Foundation	Provides grants mainly in the Baton Rouge area	Invests in programs that seek to eliminate barriers and address the root causes of problems including healthcare , re-entry from prison and education	Online Reporting Huey And Angelina Wilson Foundation (hawilsonfoundation.org)
Mary Freeman Wisdom Foundation	Provide funding primarily in the Greater New Orleans area	Provides financial assistance to educational, cultural, civic, philanthropic, and charitable organizations	Mary Freeman Wisdom Foundation

APPENDIX E: Federal Grant Programs

EPA

Program Name	Type of Assistance	Improvements Covered	For More Information
Smart Growth Implementation Assistance (SGIA) Program	Direct technical assistance from a team of national experts	Policy analysis (e.g., reviewing state and local codes, school siting guidelines, transportation policies, etc.) or public participatory processes (e.g., visioning, design workshops, alternative analysis, build-out analysis, etc.).	https://www.epa.gov/smartgrowth https://www.epa.gov/smartgrowth/smart-growth-implementation-assistance
Clean Energy Financing Programs	Webpage offers resources to help local governments find financing for clean and renewable energy projects.	Clean and renewable energy projects	https://www.epa.gov/statelocalenergy/clean-energy-financing-programs-decision-resource-states-and-communities

FEMA Hazard Mitigation Assistance (HMA) Programs

Program Name	Type of Assistance	Improvements Covered	For More Information
Hazard Mitigation Grant Program (HMGP)	Funding to state, local, tribal, and territorial governments	Hazard mitigation plans for rebuilding in a way that reduces, or mitigates, future disaster losses	https://www.fema.gov/grants/mitigation
HMGP Post Fire Grant	Funding to state, local, tribal, and territorial governments	Implementation of hazard mitigation measures after wildfire disasters	https://www.fema.gov/grants/mitigation
Flood Mitigation Assistance (FMA) Program	Funding to state, local, tribal, and territorial governments	Projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program (NFIP)	https://www.fema.gov/grants/mitigation
Flood Mitigation Assistance (FMA) Grant Program	Funding to state, local, tribal, and territorial governments	Projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program (NFIP).	https://www.fema.gov/grants/mitigation
Building Resistant Infrastructure and Communities (BRIC) Grant Program	Funding to state, local, tribal, and territorial governments	Funding for mitigation projects to reduce the risks from disasters and natural hazards	https://www.fema.gov/grants/mitigation

HUD

Program Name	Type of Assistance	Improvements Covered	For More Information
CDBG-DR Program	Funding to state and local governments for disaster relief, long-term recovery, and restoration of infrastructure, housing, and economic revitalization	Restoring and improving housing stock, and rebuilding or replacing impacted infrastructure such as water and wastewater facilities	https://www.hud.gov/program_offices/comm_planning/cdbg-dr

CDBG-DR MIT Program	Funding to state, local, tribal, and territorial governments	Activities that increase resilience to disasters and reduce or eliminate the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship	https://www.hud.gov/program_offices/comm_planning/cdbg-dr/cdbg-mit
State Administered Community Development Block Grant (CDBG) Program	Funding to state, local, tribal, and territorial governments	Activities that ensure decent affordable housing, to provide services to the most vulnerable in our communities, and to create jobs through the expansion and retention of businesses	https://www.hudexchange.info/programs/cdbg-state/state-cdbg-program-eligibility-requirements/
Neighborhood Stabilization (NSP) Program	Grants to state, local, tribal, and territorial governments	To purchase, rehabilitate, or redevelop homes and stabilize neighborhoods	https://www.fema.gov/assistance/individual/housing
HOME Investment Partnership Grant Program	Formula grants to states and localities	Activities that build, buy, and/or rehabilitate affordable housing for rent or homeownership or provide direct rental assistance to low-income people	https://www.hud.gov/hudprograms/home-program
Title 1 Property Improvement Loans	Insures private lenders against loss on property improvement loans they make	To finance alterations, repairs, and improvements for a home, including a manufactured home, which has been occupied at least 90 days; a nonresidential purpose; or to finance the construction of a new exclusively nonresidential, and structure	https://www.hud.gov/program_offices/housing/sfh/title/ti_about
Manufactured Home Loan Insurance (Title I)	Mortgage loan insurance through a HUD-approved lender or through a lender's approved manufactured home dealer	Insures mortgage loans made by private lending institutions to finance the purchase of a new or used manufactured home	https://www.hud.gov/program_offices/housing/sfh/title/manuf14
203(k) Rehabilitation Mortgage Insurance Program	Mortgage loan insurance through a HUD-approved lender to finance both the purchase (or refinancing) of a house and the cost of its rehabilitation through a single	Rehabilitation or reconstruction of a home that has been demolished or will be razed as part of rehabilitation is eligible, for example, provided that the existing foundation system remains in place. Section 203(k) insured loans can finance the rehabilitation of the residential portion of a property that also has non-residential uses; it can also cover	https://www.hud.gov/program_offices/housing/sfh/203k/203k-df

	mortgage or to finance the rehabilitation of an existing home	the conversion of a property of any size to a one- to four- unit structure	
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USDA

Program Name	Type of Assistance	Improvements Covered	For More Information
Single Family Housing Repair Loans & Grants (Section 504 Home Repair Loan and Grant Program)	Loans and grants to very-low-income homeowners	To repair, improve or modernize their homes or grants to elderly very-low-income homeowners to remove health and safety hazards	https://www.rd.usda.gov/programs-services/single-family-housing-programs/single-family-housing-repair-loans-grants/co
Water and Waste Disposal Guaranteed Loans	Guaranteed loans	Provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas	https://www.rd.usda.gov/programs-services/water-environmental-programs/water-waste-disposal-loan-grant-program/co
Emergency Community Water Assistance Grants	Grants to most state and local governmental entities, private nonprofits, and federally recognized tribes	Clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas	https://www.rd.usda.gov/programs-services/water-environmental-programs/emergency-community-water-assistance-grants
Water and Environmental Program (WEP) Direct Loans and Grants			
Circuit Rider Program	Technical assistance	For rural water systems that are experiencing day-to-day operational, financial, or managerial issues	https://www.rd.usda.gov/programs-services/water-environmental-programs
Emergency Community Water Assistance Grants	Grant funds	To help eligible communities prepare, or recover from, an emergency that threatens the availability of safe, reliable drinking water	https://www.rd.usda.gov/programs-services/water-environmental-programs
Rural Decentralized Systems Grant Program	Grant funds	To help qualified nonprofits and tribes create a revolving loan fund to increase access to clean, reliable water and septic systems for households in eligible rural areas	https://www.rd.usda.gov/programs-services/water-environmental-programs

Individual Water & Wastewater Grants	Grant funds	For households in an area recognized as a Colonia before October 1, 1989. Grant funds may be used to connect service lines to a residence, pay utility hook-up fees, install plumbing and related fixtures	https://www.rd.usda.gov/programs-services/water-environmental-programs
Revolving Funds for Financing Water and Wastewater Projects (Revolving Fund Program)	Helps qualified nonprofits create revolving loan funds	For financing to extend and improve water and waste disposal systems in rural areas	https://www.rd.usda.gov/programs-services/water-environmental-programs
Individual Water & Wastewater Grants	Grant funds	For households in an area recognized as a Colonia before October 1, 1989. Grant funds may be used to connect service lines to a residence, pay utility hook-up fees, install plumbing and related fixtures	https://www.rd.usda.gov/programs-services/water-environmental-programs
Special Evaluation Assistance for Rural Communities and Households (SEARCH) Grants	Grant funds	Helps very small, financially distressed rural communities with predevelopment feasibility studies, design and technical assistance on proposed water and waste disposal projects	https://www.rd.usda.gov/programs-services/water-environmental-programs
Solid Waste Management Grants Water & Waste Disposal Grants to Alleviate Health Risks on Tribal Lands and Colonias	Grant funds	Reduces or eliminates pollution of water resources by providing funding for organizations that provide technical assistance or training to improve the planning and management of solid waste sites	https://www.rd.usda.gov/programs-services/water-environmental-programs
Water & Waste Disposal Loans & Grants	Loans and grant funds	For clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas	https://www.rd.usda.gov/programs-services/water-environmental-programs
Water & Waste Disposal Loan Guarantees	Loan guarantees	Helps private lenders provide affordable financing to qualified borrowers to improve access to clean, reliable water and waste disposal systems for households and businesses in rural areas	https://www.rd.usda.gov/programs-services/water-environmental-programs
Water & Waste Disposal Predevelopment Planning Grants	Grant funds	Assists low-income communities with initial planning and development of applications for USDA Rural Development Water and Waste	https://www.rd.usda.gov/programs-services/water-environmental-programs

		Disposal direct loan/grant and loan guarantee programs	
Water & Waste Disposal Technical Assistance & Training Grants	Technical assistance and training	To identify and evaluate solutions to water and waste problems; helps applicants prepare applications for water and waste disposal loans/grants; and helps associations improve the operation and maintenance of water and waste facilities in eligible rural areas	https://www.rd.usda.gov/programs-services/water-environmental-programs

APPENDIX F: Additional Publications and Information

Multiple Floodproofing Techniques

Protecting Your Home and Property from Flood Damage: Mitigation Ideas for Reducing Flood Losses, FEMA P-805 (2010)

https://www2.illinois.gov/dnr/WaterResources/Documents/Protecting_Home_Book_09-08_yellow_book_950314331.pdf

Information about repairing a flood-damaged house and reducing the risk of future flood damage.

Homeowner's guide to Retrofitting: Six Ways to Protect Your House from Flooding, FEMA P-312 (2009)

https://www.fema.gov/sites/default/files/2020-08/FEMA_P-312.pdf

Information about flood proofing options and guidance to help in decision making; designed for readers who have little or no knowledge about flood protection methods or building construction techniques.

Repairing Your Flooded Home, FEMA P-234 (2010)

<https://dec.vermont.gov/sites/dec/files/wsm/rivers/docs/Repairing%20Your%20Flooded%20Home%20FEMA%20234r.pdf>

Detailed advice on post-flood cleanup and repair; includes information about preparing for the next flood.

Flood Proofing: How to Evaluate Your Options, U.S. Army Corps of Engineers (1993)

<https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/356/>

Information to assist with determining whether flood proofing is appropriate and which technique is the best measure to consider; includes a benefit/cost analysis technique.

Selecting Appropriate Mitigation Measures for Floodprone Structures, FEMA 551 (2007)

https://www.fema.gov/sites/default/files/2020-08/fema_551.pdf

Guidance for community officials developing mitigation projects that reduce or eliminate identified risks for flood-prone structures.

Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures, FEMA 259 (2001)

https://www.fema.gov/sites/default/files/2020-08/fema259_complete_rev.pdf

Detailed manual (over 800 pages) for engineers, architects, and building officials on engineering considerations for retrofitting flood-prone buildings; includes information about evaluating structures, hazard identification, economic analysis, alternative selection, and design criteria.

Flood Proofing Systems and Techniques: Examples of Flood Proofed Structures in the United States

<https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/7/>

Illustrates various types of flood proofing techniques with numerous examples for new construction and retrofitting of existing buildings.

Flood Resistant Materials and Construction

Flood Damage-Resistant Materials Requirements for Buildings Located in Special Flood Hazard Areas, Technical Bulletin 2 (2008)

https://www.fema.gov/sites/default/files/2020-07/fema_tb_2_flood_damage-resistant_materials_requirements.pdf

Information about requirements for flood-damage resistant materials and a table describing five classes of building materials ranging from those that are highly resistant to floodwater damage to those that have no resistance to flooding.

Flood Resistant Design and Construction, American Society of Civil Engineers (ASCE) 24-05

Purchase at www.asce.org.

<https://ascelibrary.org/doi/book/10.1061/9780784413791>

Elevation and Relocation of Buildings

Above the Flood: Elevating Your Floodprone House, FEMA 347 (2000)

<http://www.fema.gov/library/viewRecord.do?id=1424>

Description of alternative techniques that can be used to elevate existing flood prone buildings and case studies of homes in south Florida that were elevated above the 100-year flood level following Hurricane Andrew.

Protecting Manufactured Homes from Floods and Other Hazards, FEMA P-85 (2009)

https://www.fema.gov/sites/default/files/2020-08/fema_p85.pdf

Technical guidance on elevating and anchoring manufactured homes.

Raising and Moving the Slab-on-Grade House with Slab Attached, U.S. Army Corps of Engineers (1990)

<https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/4/>

Description of the steps taken to raise and relocate a slab-on-grade structure.

Dry Floodproofing

Non-Residential Floodproofing-Requirements and Certification for Buildings Located in Special Flood Hazard Areas, Technical Bulletin 3-93 (1993)

https://www.fema.gov/sites/default/files/2020-07/nfip_t3_04011993_o.pdf

Guidance on the NFIP regulations concerning watertight construction and the required certification for flood proofed non-residential buildings.

Below-Grade Parking Requirements for Buildings Located in Special Flood Hazard Areas, Technical Bulletin 6-93 (1993)

https://www.fema.gov/sites/default/files/2020-08/tb6_below_grade_parking_requirements.pdf

Guidance on NFIP regulations concerning the design of dry-floodproofed below-grade parking garages for non-residential buildings.

Wet Floodproofing

Wet Floodproofing Requirements for Structures Located in Special Flood Hazard Areas, Technical Bulletin 7-93 (1993)

https://www.fema.gov/sites/default/files/2020-07/tb_7_wet_floodproofing_requirements-1993.pdf

Guidance on regulations concerning wet floodproofing; includes planning, safety, and engineering considerations Protecting Utilities and Equipment.

FEMA fact sheets about various techniques for Protecting Your Property from Flooding

https://www.fema.gov/sites/default/files/documents/fema_protect-your-home-from-flooding-brochure_2020.pdf

Protecting Building Utilities from Flood Damage: Principles and Practices for the Design and Construction of Flood Resistant Building Utility Systems, FEMA P-348 (1999)

[https://www.fema.gov/sites/default/files/2020-07/fema_p-](https://www.fema.gov/sites/default/files/2020-07/fema_p-348_protecting_building_utility_systems_from_flood_damage_2017.pdf)

[348_protecting_building_utility_systems_from_flood_damage_2017.pdf](https://www.fema.gov/sites/default/files/2020-07/fema_p-348_protecting_building_utility_systems_from_flood_damage_2017.pdf) Technical guidance for the design and construction of flood-resistant utility systems for new buildings and modifications to utility systems in existing buildings; includes HVAC systems, fuel systems, electrical systems, sewage management systems, and potable water systems.

Elevator Installation for Buildings Located in Special Flood Hazard Areas, Technical Bulletin 4 (2010)

https://www.fema.gov/sites/default/files/2020-07/fema_tb4_elevator_installation.pdf

Guidance concerning the installation of elevators below the Base Flood Elevation Flood Vents.

Openings in Foundation Walls and Walls of Enclosures, Technical Bulletin 1 (2008)

[https://www.fema.gov/sites/default/files/2020-](https://www.fema.gov/sites/default/files/2020-07/fema_tb1_openings_foundation_walls_walls_of_enclosures_031320.pdf)

[07/fema_tb1_openings_foundation_walls_walls_of_enclosures_031320.pdf](https://www.fema.gov/sites/default/files/2020-07/fema_tb1_openings_foundation_walls_walls_of_enclosures_031320.pdf)

Provides guidance for non-engineered and engineered flood openings.

Floodplain Management

Floodplain Management Bulletin on Historic Structures, FEMA P-467-2 (2008)

https://www.nj.gov/dep/hpo/Index_HomePage_images_links/FEMA/FEMA%20historic_structures.pdf

Regulatory information and flood proofing options for historic structures located in regulated floodplains.

Certificates

FEMA Elevation Certificate and Instructions

https://www.fema.gov/sites/default/files/2020-07/fema_nfip_elevation-certificate-form-instructions_feb-2020.pdf

Floodplain Management Bulletin on the Elevation Certificate, FEMA 467-1 (2004)

<https://www.fema.gov/sites/default/files/2020-07/fema467-6-10-04.pdf>

Frequently asked questions about use of the Elevation Certificate to verify compliance with floodplain development standards.

FEMA Floodproofing Certificate for Non-Residential Structures

https://www.fema.gov/sites/default/files/2020-07/fema_p-936_floodproofing_non-

[residential_buiildings_110618pdf.pdf](#)

Additional Resources

FEMA's Benefit-Cost Analysis Toolkit

<https://www.fema.gov/grants/guidance-tools/benefit-cost-analysis>

Methodology and tools are used to evaluate cost effectiveness for grant applications.

National Nonstructural/Flood Proofing Committee

<https://www.usace.army.mil/Missions/Civil-Works/Project-Planning/nnc/>

Supervises research and provides technology transfer on floodproofing techniques.

Climate Adaptation and Resilience Overall Strategies

EPA's Local Climate Action Framework: A Step-by-Step Implementation Guide

https://19january2017snapshot.epa.gov/statelocalclimate/local-climate-action-framework-step-step-implementation-guide_.html

Has case studies, tools, and other resources to help local governments plan, implement, and evaluate climate, energy, and sustainability projects and programs. The framework's implementation phases include communications, setting goals and selecting actions, obtaining resources, and tracking and reporting.

EPA's Local Government Climate and Energy Strategy Series

<https://www.epa.gov/statelocalenergy/local-government-strategy-series>

Offers greenhouse gas reduction strategies related to energy efficiency, transportation, community planning and design, solid waste and materials management, and renewable energy.

EPA's RE-Powering America's Land

<https://www.epa.gov/re-powering>

Initiative offers tools to help site renewable energy projects on contaminated land.

EPA's Climate Smart Brownfields Manual (2016)

<https://www.epa.gov/land-revitalization/climate-smart-brownfields-manual>

Helps communities consider climate change when assessing, cleaning up, or redeveloping brownfield sites. It includes case studies and links to resources that communities can use as they develop brownfields project plans.

Adapting to Flooding and Extreme Precipitation

EPA's Flood Resilience Checklist (2014)

<https://www.epa.gov/smartgrowth/flood-resilience-checklist>

Can help a community assess its preparedness for flooding and determine areas for improvement.

EPA's "Green Infrastructure for Climate Resiliency" webpage

<https://www.epa.gov/green-infrastructure/green-infrastructure-climate-resiliency>

Offers information about how green infrastructure practices can help communities prepare for and manage various climate change impacts.

EPA's "Learn About Green Streets" webpage

<https://www.epa.gov/G3/learn-about-green-streets>

Links to green and complete streets resources.

EPA's Flood Resilience: A Basic Guide for Water and Wastewater Utilities (2014)

<https://www.epa.gov/waterutilityresponse/floodresilience-basic-guide-water-and-wastewater-utilities>

An interactive guide that outlines simple measures water utilities can take to become more resilient to flooding, along with funding options for communities.

Adapting to Sea Level Rise

EPA's Rolling Easements (2011)

<https://www.epa.gov/sites/default/files/documents/rollingeasementsprimer.pdf>

A primer that explains tools communities could use to implement rolling easements.

Adapting to Extreme Heat

EPA's Heat Island Program

<https://www.epa.gov/heatislands/what-epa-doing-reduce-heat-islands>

A database of community actions, including code changes, demonstration projects, and other actions.

Reducing Urban Heat Islands: A Compendium of Strategies

<https://www.epa.gov/heatislands/heat-island-compendium>

EPA's Heat Island Program also offers this guidebook which gives an overview of heat islands, describes key heat island reduction strategies, and discusses voluntary and policy efforts undertaken by state and local governments to mitigate heat islands.

Smart Growth

EPA's Smart Growth Program

<https://www.epa.gov/smartgrowth>

Tools, publications, research, technical assistance, and other resources to help implement smart growth strategies.

EPA's Essential Smart Growth Fixes for Rural Planning, Zoning, and Development Codes (2012)

https://www.epa.gov/smartgrowth/essential-smart-growth-fixes-communities#Rural_Planning_Zoning_and_Development_Codes

Specific fixes that can help local rural governments amend their codes and ordinances to promote more environmentally and economically sustainable growth.

EPA's Essential Smart Growth Fixes/or Urban and Suburban Zoning Codes (2009)

https://www.epa.gov/smartgrowth/essential-smart-growth-fixes-communities#Rural_Planning_Zoning_and_Development_Codes

Specific fixes that can help local urban and suburban governments amend their codes and ordinances to promote more environmentally and economically sustainable growth.

Green Building

EPA's Tribal Green Building Toolkit

<https://www.epa.gov/green-building-tools-tribes/tribal-green-building-toolkit>

Tools to help tribes implement green building strategies. The Resilience and Adaptability Section might be particularly relevant.

EPA's Sustainable Design and Green Building Toolkit for Local Governments (2013)

<https://www.epa.gov/smartgrowth/sustainable-design-and-green-building-toolkit-local-governments>

Helps local governments, developers, and other building professionals identify and remove barriers to sustainable design and green building in permitting processes.

Social Equity

EPA's EJSCREEN

<https://www.epa.gov/ejscreen>

Screening and mapping tool provides a nationally consistent dataset and approach for combining environmental and demographic indicators. Users can identify areas with minority or low-income populations, possible environmental quality problems, and related factors.

EPA's "Climate Change, Health, and Populations of Concern"

<https://climatechange.chicago.gov/climate-impacts/climate-change-health-and-populations-concern>

Materials summarize key points from the U.S. Climate and Health Assessment for eight populations that are disproportionately affected by climate change impacts.

Equity in Building Resilience in Adaptation Planning (2015)

<http://action.naacp.org/page/>

https://climateaccess.org/system/files/NAACP_Equity%20in%20Resilience.pdf

The NAACP developed this sample list of indicators that communities can use to help make sure they are considering equitable climate adaptation.

Climate Adaptation

EPA's Climate Change Adaptation Resource Center

<https://www.epa.gov/arc-x>

A tool for local government decision-makers to create a package of information tailored to their needs. Users can find information about the risks posed by climate change to the issues they are concerned about, relevant adaptation strategies, case studies illustrating how other communities have adapted to those risks and tools to replicate their successes, and EPA funding opportunities.

EPA's Being Prepared for Climate Change, A Workbook for Developing Risk-Based Adaptation Plans (2014)

<https://www.epa.gov/cre/being-prepared-climate-change-workbook-developing-risk-based-adaptation-plans>

Provides guidance for conducting risk-based climate change vulnerability assessments and developing adaptation action plans. It is aimed at organizations that manage places, watersheds, or coastal environments.

EPA's Hazard Mitigation for Natural Disasters: A Starter Guide for Water and Wastewater Utilities (2016)

<https://www.epa.gov/waterutilityresponse/hazard-mitigation-natural-disasters-starter-guide-water-and-wastewater>

Describes how water utilities can integrate with community hazard mitigation plans for greater climate resilience and potentially pursue federal funding opportunities.

EPA's Resilience and Adaptation in New England database (RAINE)

<https://www.epa.gov/raine>

Provides examples of codes, ordinances, and policies that communities have used to become more resilient.

Smart Growth Fixes for Climate Adaptation and Resilience

EPA's Climate Change Impacts by State

https://19january2017snapshot.epa.gov/climate-impacts/climate-change-impacts-state_.html

Fact sheets that provide an overview of climate impacts by U.S. state and territory.

EPA's Climate Change Indicators

<https://www.epa.gov/climate-indicators>

A compilation of key indicators that show the causes and effects of climate change.

EPA's Scenario-Based Projected Changes Map

<https://epa.maps.arcgis.com/apps/MapSeries/index.html?appid=3805293158d54846a29f750d63c6890e>

An easy-to-use mapping tool that provides local projected changes in annual total precipitation, precipitation intensity, annual average temperature, 100-year storm events, and sea level rise.