

2025

NEWPORT NEWS

Community Flood
Preparedness Fund
Study Application
FloodREADY Homes

2025 Community Flood Preparedness Fund FloodREADY Homes Study Application

Executive Summary

The City of Newport News, Virginia, is pleased to submit this application for consideration for **a FloodREADY Homes Study that will provide Resilience Assessments and Recommendations to 150 homeowners in low-income and high-flood-risk neighborhoods.** Participating homeowners will receive a customized list of cost-effective flood mitigation strategies that are designed to protect inhabitants, property, and the surrounding environment. The three-year project will draw from successful models implemented in the District of Columbia, Mecklenburg County, NC, and New York City to develop a tailored approach for Newport News in alignment with City and Commonwealth resilience priorities. The 2022 Hampton Roads Hazard Mitigation Plan documents the need for this Study, which is directly related to Mitigation Actions 1, 2, and 6.



Figure 1 The proposed study area where homeowners will be eligible to enroll. In Newport News, 175 census blocks are low-income (per the CFPF definition).

This initiative will inform and expand Newport News' existing efforts to address the City's persistent challenges with urban, riverine/overbank, and coastal flooding, considering current and future conditions. Newport News has over 3,600 acres designated as Special Flood Hazard Areas (SFHAs), about 1,200 properties in repetitive loss areas, and widespread flood risks in socioeconomically vulnerable neighborhoods. Based on the City's sea level rise (SLR) modeling, **Newport News estimates that there will be a 10-times increase in Average Annualized Losses from baseline condition to 3 ft of SLR; it is critical that residential structures be protected to prevent life safety issues, economic challenges, and social disruption.** Economic flood risks are projected to increase tenfold, with Average Annualized Losses rising from \$3.1 million under baseline conditions to \$33.9 million with 3 feet of sea level rise.¹ Additionally, 45 water treatment/pump stations and 7 community lifeline assets are projected to experience flooding under these conditions, highlighting the critical need for targeted resilience measures.²

Newport News is currently in the final stages of a comprehensive stormwater and climate change resilience strategic planning effort, which has – among other activities – already resulted in a significant outreach program to technical experts and residents, enhanced stormwater modeling, revisions to local ordinances higher standards in the City's Design Criteria Manual, and the identification and prioritization of dozens of flood protection projects.

Newport News is also undertaking a Newmarket Watershed Study and Stoney Run Flood Reduction Project. The proposed FloodREADY Homes Study activities are also directly aligned with Community Rating System activities and can contribute towards Newport News' ongoing efforts to improve its CRS standing and decrease insurance premiums for residents. **This FloodREADY Homes study will complement and expand citywide resilience efforts by focusing on individual property resilience and drainage in low-income neighborhoods with persistent flooding challenges.**

Key Study Components

The proposed study will evaluate the feasibility and cost-effectiveness of offering property-level, mitigation measures. FloodREADY Homes will prioritize one- and two-family dwellings and townhouses, focusing on repetitive loss, low-income communities, and the 100-year floodplain.

Key Study activities include:

1. **Outreach and homeowner engagement** using a mix of customized and Community Rating System (CRS)-integrated outreach letters, surveys, social media graphics/posts, community newsletters, a study website, online

¹ Dewberry Engineers Inc. (2023). Newport News vulnerability assessment technical memorandum: Task No. 3.A.3.e, Newport News climate change and resilience master plan. Submitted to the City of Newport News, Department of Engineering. Fairfax, VA: Dewberry Engineers Inc.

² Ibid.

registration systems, and in-person meetings to recruit, educate, and engage program participants.

2. **Comprehensive Flood Resilience Assessments and Recommendations for up to 150 properties**, conducted by specialist contractors, to identify vulnerabilities and recommend site-specific mitigation measures. An Elevation Certificate will be developed and provided to the property owner as part of the Assessment.
3. **Benefit-Cost Analyses (BCAs) for each property** using FEMA-approved methodologies to evaluate the cost-effectiveness of proposed interventions.
4. **Implementation Vision and Requirements Report** to analyze the results of the first round of resilience property assessments and BCAs (completed in year 1), document initial lessons learned, and identify potential local partners and financial resources to support homeowners in installing the recommended cost-effective mitigation measures.
5. **Final Study Memo** summarizing findings, including prioritized actions, cost estimates, evaluation against the study's measures of success, and recommendations for potentially scaling the program. Study findings will influence updates to the City's Stormwater and Resilience Master Plans, Hazard Mitigation Plan, Repetitive Loss Plan, and Flood Assistance Program to inform future resilience efforts and align with state and federal flood mitigation priorities.

CFPF Alignment

This FloodREADY Homes Study is directly aligned with the goals of the Community Flood Preparedness Fund and Virginia's Resilience Planning Principles. By focusing on low-income households and neighborhoods with limited resources, the study prioritizes equity, ensuring that resilience-building measures are accessible to the most vulnerable populations. The study will produce strategies that can be implemented by Newport News and/or property owners to mitigate damage from coastal and riverine flooding. This alignment is underscored by vulnerability assessments showing that high-risk assets, including the Police Department and Jefferson Science Associates, have received high vulnerability scores, reflecting both their exposure and limited adaptive capacity in current and future flood scenarios.³

The concept for this study arose through community planning and is informed by recent flood and stormwater data gathering and scenario modeling. The project will be driven by fiscal realities and result in recommendations for cost-effective solutions for properties that are unlikely to be improved without this study's results; the implementation of these solutions will better protect residents and the surrounding area as well as potentially reduce the need for public assistance during flood events. This study will help fulfil the CFPF goal to prioritize resilience actions in low-income communities.

³ Dewberry Engineers Inc. (2023). Newport News vulnerability assessment technical memorandum: Task No. 3.A.3.e, Newport News climate change and resilience master plan (p. iii). Submitted to the City of Newport News, Department of Engineering. Fairfax, VA: Dewberry Engineers Inc.

While the Resilience Assessment will be focused on structural improvements to the properties, the specialists will also evaluate any drainage issues leading to flooding in the homes. The mitigation recommendations are likely to include nature-based solutions that are on the Chesapeake Bay TMDL BMP list. These measures may include runoff reduction practices such as rain gardens, rain barrels, and pavers in place of concrete or asphalt. By launching this study in 2025, Newport News can also integrate with and amplify the benefits of a Virginia Conservation Assistance Program ([VCAP](#)), which will be launching on a similar timeline and focuses on improving drainage and water quality.

Anticipated Outcomes

The CFPF award for this study (matched by city General Funds) will address resident requests for assistance and information, as heard in earlier resilience outreach programs (see attached [Repetitive Loss Plan](#)), by providing access to technical experts and practical guidance for homeowners. Other key outcomes include:

- Enhance property-level flood resilience, contributing to the City's commitment to reduce repetitive losses and build a comprehensive flood resilience program.
- Increase homeowner flood risk awareness, knowledge of mitigation measures, and engagement.
- Demonstrate the need and feasibility of mitigation measures to support future scaling and a community resourcing program.
- Community Rating System alignment for providing flood protection advice and performing home visits (Activity 360) and flood protection of buildings (Activity 530).

By achieving these outcomes, this study represents a pivotal step in Newport News' commitment to flood resilience. By addressing property-specific risks and empowering homeowners to act, the city aims to reduce future flood losses, build trust between the community and government, enhance community resilience, and serve as a model for property-specific flood mitigation efforts. **Newport News aims to address immediate needs while laying the foundation for sustained resilience improvements and future floodplain management advancements.**

A. Appendix - Application Form

See the provided application form.

B. Scope of Work Narrative

General Narrative

a. Specific problem being solved.

Newport News is experiencing significant flooding and must take decisive action to fully address the life safety issues, economic challenges, and social stresses of a changing climate and more frequent extreme storms. From March 2013 to August 2022, Newport News residents made over 6,500 calls to the 311 system regarding flooding and drainage issues. These calls identified flooding in 116 of the City's 128 neighborhoods (about 90%), sometimes with multiple calls about a single flood instance. This community feedback aligns with documented trends in repetitive losses, which increased by 47 properties between 2015 and 2022, resulting in \$17 million in payouts. Nine of these were severe repetitive loss properties, totaling \$4 million in damages.

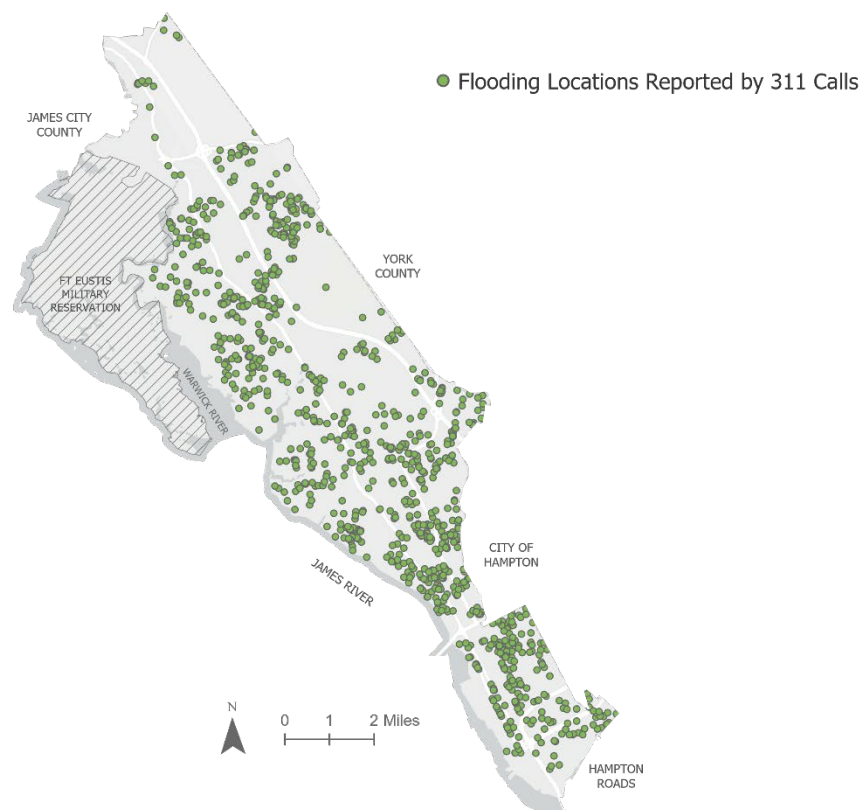


Figure 2 Locations throughout the City with flooding issues, reported by calls to the Newport News 311 Contact Center between 2013 and 2022.

Over 3,600 acres of the City (containing about 976 buildings) are designated as FEMA Special Flood Hazard Area (SFHA), and at least 20 neighborhoods have experienced repetitive losses. The reoccurring flooding at these properties (and at additional unreported properties) represents significant life safety, economic, and social disruption risks for homeowners and the City.

Newport News' Repetitive Loss Plan (attached as a supporting document) identifies that between 2015 and 2022 there was an increase of 47 repetitive loss properties (\$17 million in payouts). Nine of those losses were severe repetitive losses, totaling \$4 million.

Two areas in Newport News contain the majority of the repetitive loss properties: Salters Creek and Newmarket Creek. Most of the properties in these areas have not been mitigated and most are not insured under the NFIP. Since the publication of the Repetitive Loss Plan, the City has also counted at least a dozen additional homes added to the RL list. Many more properties are in the RL areas and are at-risk from flooding.

While the city's Flood Assistance Program (FAP) has removed 84 properties from floodplains since 1999, its current focus on property acquisition limits its broader impact. The FloodREADY Homes study will conduct in-home assessments to identify cost-effective, property-specific mitigation measures that will address gaps, particularly for underserved communities with high-flood-risk, enhancing flood protection citywide.

b. Factors which contribute to the identified problem.

The City has a complex water environment with 244 total miles of shoreline, two major tidal-influenced rivers, a dozen tributaries, and a robust but aging municipal stormwater system. Most of the City is flat with elevations ranging from sea level up to 60 feet. With a projected sea-level rise of 3 feet, over 976 buildings, 3,600 acres, and 15 miles of roadways are expected to experience significant flooding, further exacerbating existing vulnerabilities and straining the City's infrastructure. Low-lying areas lack protective barriers, making them vulnerable to flooding from rising Chesapeake Bay and James River levels.

Flooding in the Hampton Roads region of Virginia, including the City of Newport News, has historically been the result of coastal storms and heavy rains. Additionally, as a part of the Hampton Roads region, Newport News has been impacted by six Presidential Disaster Declarations for Hampton Roads following severe tropical storms and hurricanes.

Table 1 Major flood events impacting Newport News, including the proposed study areas.

DATE OF OCCURRENCE	EVENT DESCRIPTION	IMPACT
8/1933	Flood	Greatest known flood in the area occurred as a result of a hurricane that swept north past Newport News on a path along the axis of the Chesapeake Bay. This hurricane established a record high tide of 9.8 feet above Mean Lower Low Water and resulted in 18 deaths.
3/1962	Flood	The March 1962 Nor'easter, or the Ash Wednesday Storm of 1962, was one of the most destructive storms to strike Mid-Atlantic states. The storm killed 40 people, injured approximately 1,000 people, and caused hundreds of millions of dollars across six states. The storm occurred during spring tide conditions and stalled over the Mid-Atlantic region through five high tides, resulting in near-record-breaking high tides. In some areas of Virginia, dunes were moved back 20 to 40 feet by the storm.
5/1956	Flood	Large floods due to nor'easter.
10/1957	Flood	Floods due to Tropical Storm Eight.
9/1960	Flood	Floods in the area due to Hurricane Donna.
09/1964	Flood	Floods related to the remnants of Hurricane Cleo.
9/8/1972	Tropical Storm Agnes	Presidential Disaster Declaration issued for Hampton Roads – Newport News impacted.
9/6/1996	Hurricane Fran	Hurricane Fran and associated severe storms; Presidential Disaster Declaration issued (10/23/96).
4/23/1997	Coastal flood	Minor coastal flooding.
10/19/1997	Coastal flood	Minor flooding.
1/27/1998	Coastal flood	Nor'easter caused high tides and moderate coastal flooding.
2/4/1998	Coastal flood	Nor'easter caused gale and storm force winds and high tides with moderate to severe coastal flooding.
9/15/1999	Hurricane Floyd	In September of 1999, Hurricane Floyd produced flash floods in Newport News due to heavy rainfall and storm surge. The storm brought torrential rainfall across eastern Virginia, reaching sixteen inches of rain in Newport News. High winds of up to fifty-one miles per hour caused downed trees and power lines. The combination of heavy rain and high tides with pre-existing saturated conditions due to Hurricane Dennis, which had occurred a week prior, resulted in heavy flooding in the area.
10/17/1999	Hurricane Irene	Heavy rainfall from Hurricane Irene and flash flooding.
2/28/2000	Severe winter storms	Presidential Disaster Declaration issued for Hampton Roads – Newport News impacted.
7/24/2000	Flash flood	Widespread flooding of main and secondary roads in Newport News.
6/14/2002	Flash flood	Flooded streets

DATE OF OCCURRENCE	EVENT DESCRIPTION	IMPACT
8/28/2002	Flash flood	Roads closed at the intersection of 27th and Buxton streets; flood barricades used at the City Line Apartment Complex in Newport News.
4/10/2003	Storm surge/tide	Flooding at high tide resulted in water in the streets.
7/19/2003	Flash flood	Heavy rains caused street flooding.
8/5/2003	Flash flood	Six families evacuated due to flash flooding.
9/3/2003	Flash flood	Streets were closed due to high water, including 27th and Buxton Streets.
9/18/2003	Hurricane	In September of 2003, Hurricane Isabel caused major flooding and wind damage in Newport News. Strong winds from the storm produced a high storm surge, inundating rivers that flowed into the Chesapeake Bay across Virginia. Additionally, due to the hurricane's strong winds, significant beach erosion occurred in Newport News. The magnitude of Hurricane Isabel's impact was historic, with storm surge values reaching more than eight feet, and causing millions of dollars in damage to the region as the costliest disaster in Virginia's history.
5/19/2004	Flash flood	High water and street flooding.
5/22/2004	Flash flood	High water at Flint Drive and Tillerson Drive.
9/12/2005	Hurricane	Hurricane Katrina and associated severe storms.
10/8/2005	Flood	Buxton Avenue closed at 25th Street.
6/23/2006	Flood	High water and street flooding.
9/1/2006	Flash flood	In early September of 2006, Virginia experienced severe storms and flooding associated with Tropical Storm Ernesto. The storm began as a hurricane in the Caribbean, but as it moved north to the United States, it decreased in intensity, eventually reaching Southeast Virginia as a Tropical Depression on September 1. Low-lying areas in Newport News experienced heavy flooding because of the tropical storm. Street flooding with a couple of feet of water – Route 664 at 35th Street to Jefferson Avenue.
9/22/2006	Tropical Depression Ernesto	Presidential Disaster Declaration issued for Hampton Roads – Newport News impacted. Unofficially considered at least a 100-year storm.
8/14/2009	Flash flood	Isolated thunderstorm with heavy rains that caused flash flooding across parts of the City.
11/11/2009	Severe storms, flooding	Flooding and severe storms associated with Tropical Depression Ida and a nor'easter.
11/12/2009	Coastal flood	Nor'easter produced moderate to severe coastal flooding.
12/9/2009	Tropical Depression Ida and a Nor'easter	Presidential Disaster Declaration issued for Hampton Roads – Newport News impacted.
8/27/2011	Flood	Hurricane Irene produced heavy rains and widespread flooding. Rainfall totals ranged from four to twelve inches across the region.
5/15/2012	Flash flood	Flooding on Interstate 64 at Jefferson Avenue. Street flooding at several different locations with floating cars.

DATE OF OCCURRENCE	EVENT DESCRIPTION	IMPACT
8/25/2012	Flash flood	Thunderstorms produced extremely heavy rain that led to street flooding and submerged cars on Warwick Boulevard, just west of Mercury Boulevard. To date, this is the second highest rainfall amount from a storm in Newport News. Unofficially considered a 500-year storm.
10/28/2012	Coastal flood	Tropical cyclone Sandy produced very strong winds, which caused flooding.
9/8/2014	Flood	Flooded roads including 26th Street near Interstate 664 and Warwick Boulevard and 35th Street.
10/2/2015	Coastal flood	Severe storms and associated flooding.
10/8/2016	Flood, flash flood, coastal flood	Severe storms and associated surges and wave action. The combination of a cold front and Tropical Cyclone Matthew just off the coast produced heavy rainfall and flash flooding as well as coastal flooding from strong winds. Roads were impassable and streams/rivers overtopped their banks.
11/7/2016	Hurricane Matthew	Hurricane Matthew and associated flooding.
9/8/2018	Hurricane Florence	Hurricane Florence and associated flooding; Presidential Disaster Declaration issued (10/15/18).
8/15/2020	Flash flood	The center of Tropical Storm Isaias tracked north just inland of the Middle Atlantic Coast from August 3 to August 4, 2020. The storm produced tropical storm-force winds and associated wind damage across portions of eastern Virginia. Tropical storm winds downed and uprooted several trees and power lines, produced significant structural damage, and caused power outages across the Hampton Roads region. Wind gusts of 46 knots (53 mph) were measured.
07/07/2021	Tropical Storm Elsa	The Tropical Storm produced tropical storm-force winds and associated wind damage across portions of eastern and southeast Virginia. Tropical storm winds downed several trees and power lines, produced minor structural damage, and caused scattered power outages across the Hampton Roads region. Wind gusts of 35 knots (40 mph) were measured in Newport News.

c. Why the activity is needed either locally or regionally.

The City of Newport News, Virginia, is uniquely vulnerable to multiple types of flooding: urban, overbank, and coastal flooding. Historical flooding events have highlighted the need for diverse, robust mitigation strategies including down to the level of property-specific strategies. To address these challenges, Newport News has actively participated in FEMA's CRS program, earning residents a 15% discount on flood insurance premiums by implementing policies that exceed NFIP standards. However, the City has identified gaps that remain in addressing repetitive loss properties, assisting homeowners with low incomes, addressing risk in the 100-yr floodplain, and promoting resilience at the individual building scale.

The FloodREADY Homes study enhances the City's individual scale flood resilience efforts. While the City has removed 84 properties from the SFHA since 1999 through its Flood Assistance Program (FAP), the FAP's focus on property acquisition limits broader impact. This Study will expand the City's efforts by providing more options for property-specific resilience assessments and mitigation measures for underserved communities and repetitive loss areas. With sea-level rise projections of up to 6 feet by 2100, this study addresses both near-term and long-term risks, making it a cornerstone of Newport News' climate adaptation efforts.

d. How the activity decreases the risk to public safety through flood risk reduction.

The activities of the FloodREADY Homes study will identify feasible mitigation measures that will protect homes and inhabitants from flooding. The study will focus on nature-based, light utility, heavy utility, and structural mitigation measures (see [Work Plan](#)). These mitigation measures will directly decrease the risk to public safety by directing stormwater away from homes, preventing water intrusion, preventing sewer backups, reducing mold risk, and elevating home components above likely floodwaters. The mitigation measures can also help to maintain electricity (preventing a number of secondary issues that can come from loss of power) and reduce recovery costs. Reducing damages or insurance costs can reduce stress for homeowners, enable them to spend potentially limited income on essentials, and contribute to a more rapid return to normal for the community after a flood event. Additional public health considerations can be found in [The safety threats, or environmental concerns related to flood risk](#).

e. How the activity protects or conserves natural resources.

Newport News has suffered from multiple environmental issues that include flooding in the proposed work neighborhoods, erosion, habitat damage (including for local threatened species), and the spread of trash, pollution, and (potentially) diseases. Over the long term, the repeated flooding, damage, and repair of homes create more debris and use more construction materials, all of which have negative impacts on and increase demand for natural resources.

The study's in-home Resilience Assessments will include consideration of:

- Stormwater mitigation measures to optimally direct floodwaters.
- Nature-based solutions (e.g., rain barrels, rain gardens, permeable pavers) to collect and/or enable infiltration of floodwaters.
- Structural measures to limit damage and reduce the waste of construction material.
- Reduce the impact of erosion, trash and debris, and pollution on natural habitats, shorelines, and waterways.

f. Who or what is protected.

The study will help protect homeowners (as well as their properties and the surrounding communities) who meet one or all of the following criteria:

- Have a low income (at or below 80% of the state median area income) or are in a designated opportunity zone. In Newport News, 175 census blocks meet this definition.
- Experienced repetitive losses.
- Located in the 100-yr floodplain.
- Opted into the program voluntarily.

During the Project Initiation, Management, and Evaluation component of the study, the research team will develop a prioritization framework to proactively prepare for a potential situation where there is more interest in the study than resources (see [Major activities and tasks](#)). The prioritization framework will, at minimum, consider the above listed factors.

Per the above criteria, the FloodREADY Homes Study will be available to a significant portion of Newport News' residents across several high-flood-risk neighborhoods, (see Figure 4). The potential study area will include 175 census blocks that meet the CFPF definition for low-income.



Figure 3 Map of the proposed work area for the study by census block. Specific properties included in the Study will be influenced by voluntary homeowner participation.

g. The safety threats, or environmental concerns related to flood risk.

The FloodREADY Homes study is designed to directly mitigate the life safety and public health issues associated with flooding in homes. Floodwaters in a home can directly harm residents through drowning, injury, respiratory illness, and exposure to chemical hazards in the water, infectious diseases, trash, mold, and sewage. Residents are also likely to experience elevated to extreme levels of stress before, during, and after a flood event. The study will seek to prevent flooding and these safety and health consequences by identifying specific, effective, property-level measures to reduce home flooding.

The mitigation measures identified through the study can also have a positive impact on the surrounding neighborhood environment by reducing, slowing, or containing floodwaters. Past floods have spread pollution and trash within residential neighborhoods and into the surrounding natural areas (see [How the activity protects or conserves natural resources](#)).

h. Groups who might directly benefit from this flood risk reduction effort.

The FloodREADY Homes study will directly benefit residents participating in the program, their surrounding community, and those who receive educational materials through the project. The City expects to accept 150 households into the study, meaning the study is likely to help protect an estimated 495 people in total, using the U.S. Census Bureau's average U.S. family size of 3.3 people. These study participants will have low incomes (earning 80% or less of the state median household income) or will live in a designated opportunity zone. The study will also prioritize participants living in RL or high-risk flood areas.

Newport News will be electronically publishing new materials about the study and about property-level flood mitigation strategies through this initiative. The City will leverage its annual CRS mailings to promote the program. The City's CRS distribution list includes more than 2,000 addresses of households in the SFHA, although only the subset of the households representing one- and two-family dwellings and townhouses will be eligible for the FloodREADY Homes Study.

i. What would happen (or not happen) if the applicant does not receive funding.

The City of Newport News allocates its stormwater funding for public projects that benefit the whole community. While the City has some limited funding allocated for the Flood Assistance (buy-out) program, without CFPF funding, Newport News will not have the resources to initiate this Study and provide property-level flood mitigation support to residents.

Without this Study, there would be no property-level protection program to address the life safety issues, economic challenges, and social stresses associated with

repetitive flooding and flooding for residents with low incomes other than relocation through the Flood Assistance Program. Relocating all the households experiencing flooding is not a feasible solution at this time. Without the FloodREADY Homes study, the City will continue with its citywide resilience efforts, but there will be a gap in Newport News' efforts to establish a comprehensive all level flood resilience strategy.

j. Alternatives analysis of the viability of the project, how selected project reduces risk to populations at risk of flooding. Provide examples of current or previous related projects, data, outcomes, etc. that justify the approach chosen. Include how long and how much protection to be achieved.

The alternative to this Study is relocation through Newport News' current Flood Assistance Program. However, this strategy is not currently feasible (or even desirable) to implement for every at-risk property in the City. The FloodREADY Homes Study is a direct response to resident feedback noted through Newport News' multi-year stormwater and climate change resilience planning process for additional flood protection support. During outreach for Newport News Repetitive Loss Plan, over 70% of survey respondents reported that they feel "extremely concerned" about drainage issues in their property or area.

This Study will leverage the data collected for the City's Sustainability Program, Stormwater and Resilience Master Plan process, and the Repetitive Loss Plan. The Repetitive Loss Plan provides mitigation recommendations based on neighborhood and building characteristics. While these general details are helpful in providing guiding principles for reducing future flood damage, they cannot compare to the property-specific guidance and recommendations that can be offered following the site-specific assessments to be performed under the FloodREADY Homes Study.

The FloodREADY Homes study approach and work plan is based on several successful examples from other localities (see Table 2 on the following page).

Washington, D.C., Charlotte-Mecklenburg, N.C., and New York City, N.Y. are three examples of active programs that offer property-level assistance to residents. Prior to submitting this application, Newport News conducted an interview with the leaders of D.C.'s FloodSmart Homes Study to discuss program approach, management, and guidance for developing the City's own Study.

Table 2 Property-level mitigation assistance programs from other localities

Locality	Program Name	Program Website	Key Components
Washington, D.C. – The Department of Energy & Environment	FloodSmart Homes	https://doee.dc.gov/service/floodsmart-homes	<ul style="list-style-type: none"> • Offers in-home Flood Resilience Assessments and Recommendations • Includes BCAs to support program expansion • Participation is open to any resident but households in the SFHA and 500-yr floodplain get priority
Mecklenburg, N.C. – Mecklenburg County and Charlotte-Mecklenburg Storm Water Services	RetroFIT Floodproofing Program	https://stormwaterservices.mecknc.gov/retrofit-floodproofing-program	<ul style="list-style-type: none"> • Provides financial and technical assistance for stormwater mitigation and property protection • Eligible participants are homeowners in regulated floodplain not served by other mitigation
New York City, N.Y. – The Center for New York City Neighborhoods, Inc. and Governor’s Office of Storm Recovery	Residential Technical Assistance Pilot Program	https://blog.cnycn.org/center-nyc-neighborhoods-governors-office-storm-recovery-announce-launch-8-million-resiliency-program-seven-sandy-affected-new-york-city-communities/	<ul style="list-style-type: none"> • Included at-home resiliency audits and recommendations for structures damaged by Hurricane Sandy • Provided assistance to approximately 1,600 properties

Goals and Objectives

The primary goal of the FloodREADY Homes study is to identify cost-effective flood mitigation measures for high-risk properties in Newport News. In addition, the study seeks to:

- Reduce the risk of property damage and flood insurance claims.
- Empower homeowners to act with knowledge of property flood mitigation options.
- Inform the City's other resilience plans and initiatives, including the Flood Assistance Program and updates to the City's Resilience Master Plan, Hazard Mitigation Plan, and Repetitive Loss Plan.
- Collect sufficient data (e.g., BCAs, participant feedback) and form local partnerships to support a follow-on federal or state grant application for a Phase II that would include implementation of the resilience recommendations.

Overall, a successful study will result in specific recommendations for 150 properties and documentation to support future grant applications for a Phase II. The Recommendations Reports, including BCAs, developed through this Study will produce the data required to submit applications for federal (e.g., BRIC) or potentially state funding opportunities to support residents in implementing the recommended protective measures (see [Work Plan](#)).

k. Goals should be listed as an outcome that solves the problem identified, and objectives must be specific, measurable, and timebound.

Newport News has developed 5 objectives with 14 specific goals/measures of success to guide and evaluate this study. The goals of the FloodREADY Homes Study are intended to address the life safety public health, economic, and environmental problems caused by repetitive and intensifying flooding in Newport News. The City also intends to augment its existing program of flood resilience public outreach and education through this study, with specific measures of success identified for the Study's communications components.

The Work Plan calls for 3 cycles of homeowner outreach, in-home Resilience Assessments, and customized Resilience Recommendations (see [Work Plan](#)). Reflecting this, progress tracking and impact data will be continuously collected throughout the study's duration. Results from year 1 will be reported on in the Implementation Vision and Requirements Report and comprehensive study results will be reported on in year 3 via the Final Report.

Table 3 Study Objectives and Measures of Success

Objective	Description	Measure(s) of Success	Timing of Measures
1.	Identify cost-effective property-level flood mitigation strategies for homes in Newport News that are at high risk of flooding and are owned by residents with low incomes	A. Number of study participants B. Number of residents (total across households) C. Number of completed Resilience Home Assessments annually and for the study	Continuously tracked throughout study, beginning in year 1 with the first round of Resilience Assessments and summarized in the Final Report (year 3)
2.	Reduce the risk of property damage, especially repetitive losses, because of flooding	A. Total number of mitigation recommendations B. Percent of each type of mitigation measure (nature-based, light utility work, heavy utility, work structural)	Continuously tracked throughout study, beginning in year 1 with the first round of Resilience Assessments and summarized in the Final Report (year 3)
3.	Empower homeowners to act with knowledge of property flood mitigation options	A. Number of webinar/workshop attendees B. Number of households receiving program and educational materials C. Number of visits to the study website D. Percent of completed participation feedback surveys E. Participant ratings of the Study	Collected in each year of the study during the outreach phase of each Assessment round and summarized in the Final Report (year 3)
4.	Inform the City's other resilience plans and initiatives, including the Flood Assistance Program, HMP, and Repetitive Loss Plan	A. Completion of Final Report, with planning and policy next steps recommendations (yes/no)	Year 3
5.	Collect sufficient data to support a follow-on federal or state grant application for Phase II, which would include implementing select (cost-efficient) resilience recommendations	A. Completion of the Implementation Vision and Requirements Report B. Identification of funding sources within the Implementation Vision and Requirements Report (yes/no) C. Completed list of identified cost-effective mitigation measures within Final Report (yes/no)	Preliminary analysis and reporting at the end of year 1 and comprehensive analysis and summary in year 3

I. Objectives must be achievable within the agreement period.

Newport News is confident that these goals can be achieved within the 3-year agreement period based on previous outreach, the successful example of other similar programs, and the experience of the proposed contracting team. The City has longstanding communications programs and relationships that are resilience-focused, and it expects to receive enthusiastic and sufficient program participation to meet the goal of 150 participant households.

The Work Plan incorporates lessons learned on schedule, required materials and training, reporting/progress tracking, and mitigation measures from D.C.'s FloodSmart Program and NYC's Residential Technical Assistance Pilot Program. Newport News intends to seek contractor support from entities that have led the implementation of these programs. With this support, Newport News will have support from experienced staff and direct access to example assessments, reports, Standard Operating Procedures, and outreach materials so that the Study's initiation and logistics can be managed efficiently.

Work Plan

The Flood Ready Homes study will occur in 3 phases over 3 years to ensure that the study activities and outputs are delivered consistently and competently.

Newport News will assess approximately 50 homes per year for the duration of the study with a combination of city staff and contractor assistance. A survey team will accompany the Assessment team to develop Elevation Certificates and contribute to Assessment safety protocols (at least 2 staff present at each home visit). Year one will include program setup activities and home assessments, year two will include steady state resilience assessment activities and further outreach, and year three will conclude with the remaining home assessments and development of a final memo on the study and recommendations for future program expansions. This phased approach ensures thorough analysis, effective outreach, efficient allocation of resources, and integration of any early lessons learned to achieve the study's objectives.

Additionally, at the end of year 1, the study team will reflect on the initial lessons learned and work to inform the pursuit of additional funding to implement the recommended protective measures. Findings will be documented in the Implementation Vision and Requirements Report. While the actual implementation (i.e., construction, installation, landscaping, etc.) will not occur under this Study, Newport News believes it is critical to protect these properties and residents as quickly as possible to prevent further flood safety issues and damages. **Completing this initial Study will ensure that the mitigation measures to be implemented are nature-based to the extent possible, cost-effective, and contribute to meaningful flood risk reduction.**

The study team will leverage a variety of tools to complete the activities and tasks. These tools will include, but are not limited to:

- GIS to identify the study area, inform the Prioritization Framework, and support the Resilience Assessment Progress Tracker.
- React JavaScript or ESRI Experience Builder to build a Stormwater Initiatives Webpage.
- Online community survey and registration platform (e.g., ArcGIS Survey 123).
- SharePoint for document management and backup.
- iPads and survey equipment (e.g., total station tools) for immediate and complete Assessment results during the in-home visits.

a. What are the major activities and tasks?

The FloodREADY Homes study will include five main components that will be performed throughout the project: 1) Project Initiation and Management, 2) Program Outreach and Promotion, 3) Resilience Assessments, 4) Implementation Analysis (for development of Phase II), and 5) Study Assessment. The five components will be closely integrated to provide homeowners with a clear and streamlined participation experience.

Table 4 Overview of major study activities, tasks, and outputs

Study Component	Major Activities/Tasks	Major Outputs
Project Initiation and Management	<ol style="list-style-type: none"> 1. Project Management Plan 2. Develop a Prioritization Framework 3. Develop and maintain a Resilience Assessment Study Database/Progress Tracker 4. Provide regular project status updates to City and partner stakeholders 5. Maintain project records and complete administrative grant requirements 6. Oversee project timeline and delivery 	<ol style="list-style-type: none"> 1. Prioritization Framework 2. Resilience Assessment Study Database 3. Project situational awareness among stakeholders 4. Fulfillment of project administrative and delivery requirements
Study Outreach and Promotion	<ol style="list-style-type: none"> 1. Establish participant outreach systems and materials including an online registration system, participation mailings, program flyer, and post-assessment next steps guidance <ol style="list-style-type: none"> a. Initial Survey: <i>Objective:</i> Collect baseline data on homeowners' knowledge, awareness, interest in flood mitigation, and willingness to participate in the study. <i>Outcome:</i> Use the data to tailor study enrollment and outreach strategies and engagement efforts, ensuring the study meets community needs. 	<ol style="list-style-type: none"> 1. Participant Registration System 2. Final Participation/Registration List 3. Program Overview and FAQ Materials 4. Flood Resilience Education Materials

Study Component	Major Activities/Tasks	Major Outputs
	<ul style="list-style-type: none"> b. Study Feedback Survey: Objective: Measure the impact of outreach and education efforts and evaluate homeowner experience in the study. Outcome: and Understand the success of the program and inform adjustments for scalability and future phases. 2. Conduct Study FAQ Workshops (yearly) 3. Develop and distribute flood resilience educational materials 	
Resilience Assessments	<ul style="list-style-type: none"> 1. Develop a SOP and training for conducting the Assessments 2. Schedule the In-Home Assessments 3. Conduct in-home Resilience Assessments 4. Prepare Cost Estimates and the BCA for the mitigation measures 5. Complete Home Recommendations Reports and meet with Homeowner 	<ul style="list-style-type: none"> 1. Completed Assessment SOP and Training 2. 150 In-Home Resilience Assessments 3. 150 user-friendly Home Recommendations Reports with Elevation Certificates, vulnerability and cost findings, and recommendations
Implementation Analysis	<ul style="list-style-type: none"> 1. Year one evaluation (initial reporting on measures of success and lessons learned) 2. Funding opportunities analysis 3. Outreach to potential local partners for implementation 4. Complete the Implementation Vision and Requirements Report 	<ul style="list-style-type: none"> 4. List of potential federal, state, and local funding sources for implementation 5. MOU or MOA (as appropriate) with local partner for implementation 6. Implementation Vision and Requirements Report
Study Assessment	<ul style="list-style-type: none"> 1. Program evaluation (reporting of final measures of success) 2. Complete the Comprehensive Final Report 	<ul style="list-style-type: none"> 7. Comprehensive Final Report with study findings and recommended next steps for City resilience activities/plan and policy updates

Major Activity and Task: Project Initiation and Management

Newport News will initiate this study with a **kickoff meeting** with all involved City staff and contractors to finetune project priorities and to discuss risks, challenges, and safety protocols. Following the meeting, a detailed Project Management Plan (PMP) will be developed for the contract. The PMP will include a detailed description of the planned approach, roles and responsibilities, and schedule.

As noted, homeowners with low incomes within the repetitive loss areas and within the SFHA (or otherwise with high flood risk) are the priority intended participants of this Study. Newport News anticipates that homeowner interest in participating in the program will exceed the capacity and funding available to support the assessments in year one and potentially beyond. To account for this, the City will develop a **prioritization framework** through which candidates for the program will be vetted. The framework will consider the following criteria, at minimum, and rank each candidate home based on the following:

- Household income
- Repetitive Loss status
- FEMA Flood Zone
- SVI (VFIRS)
- Properties with documented flood risk
- Date enrolled in FloodREADY Homes Study

The research team will develop a **study geodatabase** to track, coordinate, and report on Study activities. The database will include an inventory of voluntarily participating households and associated key information such as the FEMA Flood Insurance Rate Map (FIRM) zone and base flood elevation, tax parcel information, and geographical location to inform the Assessments.

This study database will comprise of at least four key components: participation list, scheduling/communications tracker, data collection (see [Evaluation](#)), and study progress tracker.

- The participation list will include a running list of households that have requested to participate in the program. Newport News, with the support of the study team, will maintain a running list of interest and their study status (e.g., applied, accepted, rejected) so that the prioritization framework can be accurately applied.
- The communications/scheduling tracker will facilitate grouping the Assessments at nearby properties to optimize efficiency and minimize study costs. It will also capture the date the property owner is contacted, confirmation of their desire to participate in the program, and where applicable, dates of the site assessment visit and meeting to present the Resilience Report.
- Data collection forms for the Resilience Home Assessment and potential retrofit solutions will be captured for use in further grant application needs.
- The Study progress tracker will provide tools with which the contractor team can input daily or periodic project updates, including the status of each property-specific Resilience Assessment and Recommendations Report.

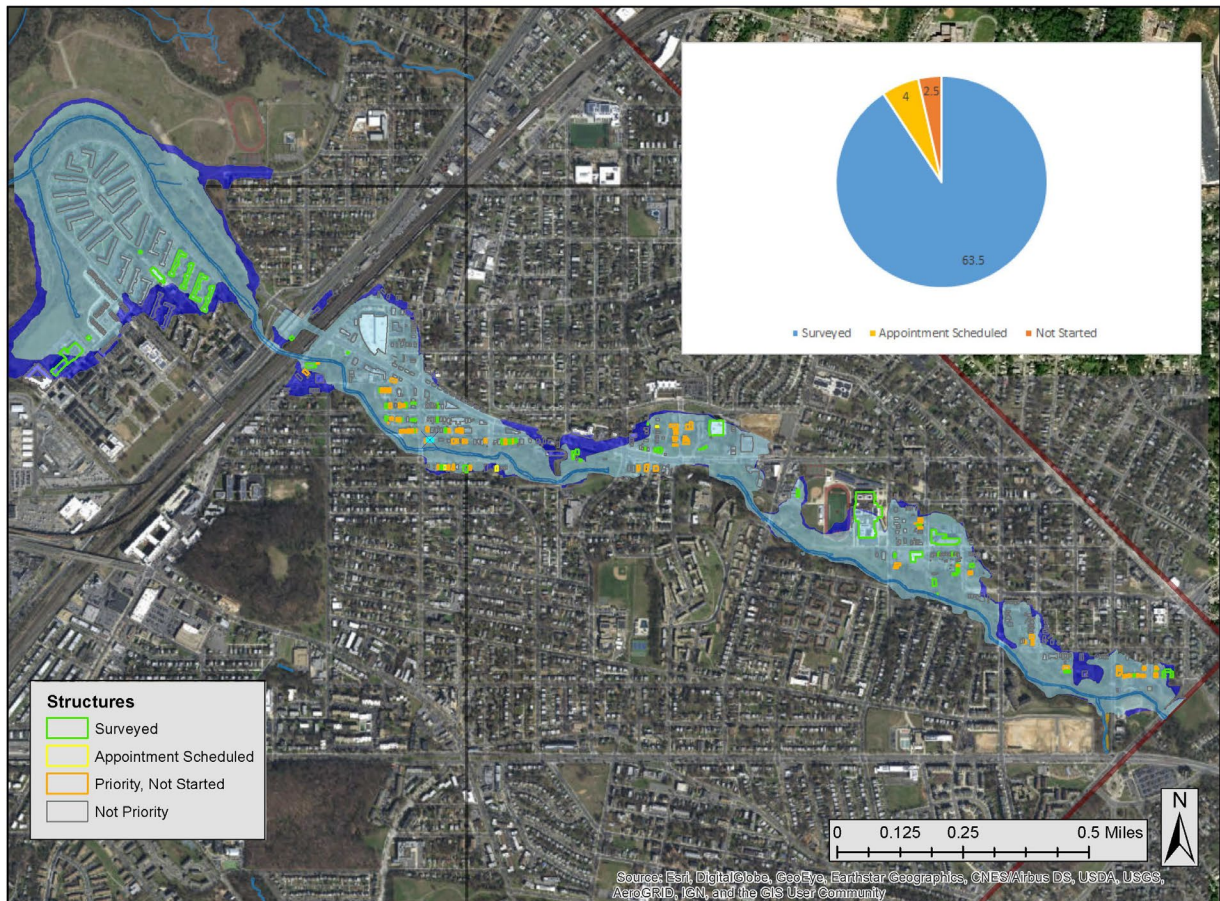


Figure 4 Example of dynamic progress reporting developed by Dewberry to track progress during Elevation Certificate Surveys in Washington, D.C.

Major Activity and Task: Study Outreach and Promotion

Newport News intends for the FloodREADY Homes study outreach and promotion to be **integrated, iterative, and streamlined**. The City is already in communication with many of the homeowners who are likely to participate in this study through outreach with the Stormwater Master Plan effort and CRS activities, including an ongoing Program for Program Information (PPI), advised by a Committee of internal and external stakeholders. Newport News will deepen these relationships, avoid duplication and confusion, and leverage efficiencies by integrating outreach of this study with existing communication channels. All communications will be developed in plain, easy-to-understand language and adhere to City communications protocols.

The City will promote the FloodREADY Homes study **through annual CRS outreach letters, other targeted mailings/program flyers, social media, newsletters, and a website** inviting property owners to participate. Newport News will develop an **online survey and registration system** to promote the study more widely and to streamline homeowner enrollment.

The City will also offer a **hybrid (in-person and virtual) Study FAQ Workshop** with each round of participant outreach to meet with interested participants. The Workshops will be opportunities for homeowners to:

- Learn about their flood risk.
- Hear detailed information about the study.
- Ask and receive answers to any questions or concerns about study participation.
- Understand Resilience Assessment findings.
- Explore funding opportunities and actional next steps (e.g., Flood Mitigation Assistance grants, Flood Assistance Program participation).

Detailed notes of each workshop will be recorded and made available on the City's website for future reference by interested participants. Newport News will also produce an **easy-to-read resource for homeowners describing the mitigation measures** considered and recommended through this study. This resource will be delivered along with the final Recommendations Report.

Major Activity and Task: Resilience Assessments

The Resilience Assessments represent a major effort, which Newport News will oversee, and the contractors will complete. The work plan's annual cycles are designed to ensure a realistic and manageable schedule so that the Assessments are completed well and consistently.

The high-level steps in performing this work are discussed in the sections that follow.

i. Develop a SOP and Training for Completing the Home Assessments

The study team will develop a detailed Standard Operating Procedure (SOP) and Assessment materials to be used for each of the in-home visits. Additionally, a training session will be conducted before the assessment team deploys to the field. This session will cover project objectives and geography, survey methods and approach, information on building types and survey points, checklist items to be captured, property access protocols, safety protocols, and expectations for coordination with property owners.

Technical specialists will accompany the home assessment team during the first week of elevation data collection and several times throughout the data collection process to ensure that elevation data acquired on-site is recorded accurately and as intended.

ii. Schedule the In-Home Assessments

As outlined above, a **survey and registration intake form** will be developed and issued. Once a prioritized list of candidates has been selected, homeowners will be contacted via emails and phone calls (or mailings, if required) and home assessment appointments will be scheduled. To maximize efficiency, neighboring properties will be grouped and scheduled on the same day or consecutive days.

The contractor's prior work on similar projects in D.C. and N.Y. tells us that there are multiple benefits to **deploying the survey team and the mitigation specialists to the households at the same time**. The benefits include:

- Less disruption to the homeowner (one visit and done).
- Greater safety for the team and ability to keep an eye on expensive equipment.
- Greater opportunity for collaboration between the survey and mitigation specialist teams.
- Backup for assistance with lighting when entering crawl spaces and other confined areas.

All participant communications and scheduling will be tracked.

iii. **Conduct In-Home Resilience Assessments**

The Resilience Assessments will be performed to identify retrofitting options to reduce future flood damage. Elevating the lowest floor to Base Flood Elevation plus 2 feet (BFE+2) per [Newport News Floodplain Management Ordinance](#) will provide the highest level of protection and best result in lowering flood insurance premiums. However, in many cases, elevation will not be feasible due to cost constraints or for certain building types (e.g., rowhouses). This is why the city will determine the structural feasibility of this option, along with a range of other possible mitigation measures to fulfill the intended outcomes of the study. The team will focus on low-cost measures in recognition of the high bar for acquiring grant funding for more complex projects.

A survey team will be sent to the field to capture the elevation data necessary to prepare a **FEMA Elevation Certificate**. The surveyors will examine the structure to identify the features that must be identified, such as building diagram, existence of garage, and crawlspace. The surveyor will use tools and equipment to measure elevations at key points around and inside the structure, and record data. The required photos will be taken around the property and at key points in the structure.

The flood mitigation specialist will also conduct a **Focused Building Resilience Assessment**. The mitigation specialists will examine the home inside and out and capture key data inputs and photos to support evaluation of retrofitting options, cost estimating, and BCA analyses using a data capture project checklist (covered in the SOP). The specialist will consider, at a minimum:

- Building age, construction type, and condition.
- Feasibility of elevating.
- Identification of any appurtenances and obstacles to elevation (e.g., attachments) and dimensions and details (e.g. balloon framing v. platform framing) necessary for cost estimating.

The specialist will take extensive color photos of each property to document conditions that have significant impacts on the feasibility of recommended interventions.

Following the in-home Assessment visits, the study team will perform follow-up steps in the office. These follow-up steps will include:

- Record and process assessment data.
- **Data review and approval by a licensed professional Land Surveyor** as well as by a Senior Structural Engineer and BCA expert to ensure data accuracy.
- Signing and sealing of the Elevation Certificate by a licensed professional Land Surveyor.

Once the data has been recorded and verified, the study team will begin **development of feasible mitigation measures**. The study will focus on four categories of property protection measures: nature-based solutions, light utility work, heavy utility work, and structural work.

- **Nature-based Solutions:**
 - Raingarden.
 - Rain Barrels.
 - Berms and swales.
- **Light Utility Work:**
 - Raising equipment such as the air condenser, washer/dryer, and hot water heater on a pad.
 - Anchoring water heaters to prevent buoyancy during floods.
 - Replacing electrical outlets below the Design Flood Elevation with Ground Fault Circuit Interrupter (GFCI) outlets.
 - Sealing HVAC ducts to prevent water intrusion and reduce mold risk.
 - Deployable flood barriers for doors and windows for temporary flood protection.
- **Heavy Utility Work:**
 - Installing backflow prevention valves to prevent sewer backups.
 - Upgrading sump pumps with battery-operated backups.
 - Elevating electrical panels above the lowest floor to reduce flood damage risk.
 - Implementing drainage and grading improvements to direct stormwater away from homes.
- **Structural Work:**
 - Installing flood vents to equalize hydrostatic pressure.
 - Wet floodproofing enclosures to allow controlled water entry during floods.
 - Filling basements to elevate living spaces and reduce flood insurance costs.
 - Elevating or reconstructing homes to exceed Design Flood Elevation standards.

Each household participating in the study will receive a customized, property-level **Recommendations Report** with the mitigation measures (see *Complete Home Resilience Report and Meet with Homeowner*).

iv. Prepare Site-Specific Mitigation Cost Estimates and Benefit Cost Analysis (BCA).

Each home is unique, and configurations will vary, requiring different solutions and cost estimates. The study team will develop a costing template for the possible mitigation scenarios and use that to produce **property-level cost estimates for the identified mitigation measures**. Newport News will include a contingency when developing cost estimates since surprises can and do occur during design and construction, sometimes resulting in the need for a modified benefit cost ratio and risking the feasibility of the project.

Newport News will use the cost estimates developed for each property as the cost basis for the overall project **benefit cost analysis**. This will allow the study team to use consistent backup documentation based on the cost estimating methodology. The study team will also include other supporting documentation such as household location and flood zone.

Where acquisition or elevation projects are being considered, the study team will evaluate using pre-calculated benefits to determine if they can be used to develop the BCA. FEMA currently has pre-calculated benefits of \$323,000 for acquisition projects and \$205,000 for elevation projects that can be adjusted to account for the cost of living in Newport News. If using these pre-calculated benefits will result in a BCR greater than 1.0, the City can complete a BCA quickly without requiring significant backup documentation, which promotes efficiency as well as defensible BCAs.

v. Complete Home Resilience Recommendations Reports and Meet with Homeowners.

The study team will deliver each participating household with a thorough, easy-to-understand **Resilience Assessment and Recommendations Report**, FEMA Elevation Certificate, easy-to-read pamphlet describing the mitigation measures considered and recommended, and will conduct **a follow-up meeting to review the results**. The reports will not assume that the homeowners have technical knowledge about the construction of their home or FEMA terminology; the reports will include these relevant details with simple, plain language explanations and/or visuals. Each household's report will include:

- Select elevation information as presented in the **Elevation Certificate**.
- Key findings from the Resilience Assessment.
- Recommended mitigation measures.
- Mitigation measures cost estimate.

The Report and FEMA Elevation Certificate will be shared with interested homeowners in **one-on-one virtual Report Review meetings** where the findings and recommendations will be discussed, providing a forum for questions and answers and discussion of next steps.

Major Activity and Task: Implementation Analysis

At the end of the first year, the study team will conduct an Implementation Analysis to evaluate preliminary results. This analysis will inform the continuation of the FloodREADY Homes Study and explore how Newport News can further expand support to homeowners in low-income, repetitive loss, and high-flood risk areas. The study team will document the analysis results in the **Implementation Vision and Requirements Report**, paving the way for future financial resourcing and more effective community assistance.

The City aims to inform and empower homeowners through the FloodREADY Homes Study by identifying the specific mitigation measures that would meaningfully reduce flood risk and be cost-effective and feasible to implement. However, Newport News knows that many of the participating households will struggle to independently implement all the potential mitigation measures. It is in public and homeowner interest to invest proactively in mitigation, rather than repeat the cycle of emergency response, repetitive loss, and expensive recoveries.

Newport News will analyze the results of study year one, by:

- Conducting participant feedback surveys for the first ~50 participating households.
- Completing a preliminary analysis of the study measures of success.
- Summarizing initial lessons learned, including the identified list of cost-effective mitigation measures.

Informed by that analysis, the City will then begin to **explore additional funding options** to assist homeowners with implementing the recommended mitigation measures. Newport News anticipates that the solution will likely involve a mix of federal, state, and local resources. Potential funding sources to be considered include FEMA BRIC, FEMA FMA, Round 6 CFPF, the City's Flood Assistance Program, and other options identified through research and select funding agency stakeholder interviews. Newport News will leverage [DCR's Funding Opportunities list in the Coastal Resilience Web Explorer](#).

Newport News will also research and potentially conduct outreach to **identify a partner(s) that could perform the installation of the recommended mitigation measures**. This partner would ideally be a local organization or small business with deep knowledge and connection to Newport News and expertise in the mitigation measure categories (nature-based solutions, light and heavy utility work, and structural measures). The programs implemented in other jurisdictions such as D.C., N.Y.C., and Mecklenburg County, NC used different contractors for the initial study than for the follow-on implementation project. For example, D.C. contracted with

Dewberry for the initial Resilience Assessments and Reports and then partnered with [Rebuilding Together DC Alexandria \(RTDCA\)](#), a nonprofit grantee, to install the resilience upgrades.

Major Activity and Task: Study Assessment

Newport News will compile a **Final Study Comprehensive Report** to synthesize Assessment findings and recommendations, report on the measures of success, and discuss how the results of this study can inform the city's future resilience programs, plans, and policies. As part of this report, the City will consider what funding opportunities are available for it and homeowners to implement the identified mitigation measures. The City will also consider specific implications for – at minimum - the Flood Assistance Program, HMP, Repetitive Loss Plan, and Resilience Master Plan.

b. Who is responsible for completing the activities and tasks?

The key members of the FloodREADY Homes study team include:

- The City of Newport News Engineering Department.
- Contractors experienced with similar household flood resilience programs.
- Licensed survey team.

Newport News Department of Engineering will be responsible for study oversight, contractor management, grant administration, and attending all resident outreach events and Assessment appointments. Newport News anticipates that the contractor team will be GKY, Dewberry, and A D Potts & Associates.

GKY will provide project management, technical expertise, implementation planning, and ensure continuity between the FloodREADY Homes Study and the City's other resilience initiatives. GKY is a current and long-time contractor for Newport News providing stormwater modeling, stormwater engineering, and comprehensive resilience and environmental justice planning services.

Dewberry will conduct the community engagement and in-home Resilience Assessments, develop the Recommendations Reports and BCAs, and support implementation planning. Dewberry brings considerable experience with similar flood resilience programs and Newport News' resilience plans, policies, and programs. Dewberry is supporting the City's comprehensive climate change planning initiatives including through the generation of technical flood data, facilitation of community engagement, recommendation and design of potential flood resilience strategies, and production of technical memos and public plan documents. Dewberry's other qualifications include managing D.C.'s FloodSmart Homes study, completing over 500 Home Assessment and Recommendations Reports for the New York City Residential Technical Assistance Pilot Program, and delivering BCA reviews of thousands of hazard mitigation grant project applications.

A D Potts & Associates, Inc. will be the survey firm working with Dewberry to complete FEMA Elevation Certificates. A D Potts & Associates is a **certified small,**

women- and minority-owned local business that has completed hundreds of FEMA Elevation Certificates in Newport News.

c. What is the timeframe for accomplishing activities and tasks?

As described in the [Major activities and tasks](#), the study will be conducted over three years, with 1-year cycles of Resilience Assessments. Newport News will complete approximately 50 Resilience Assessments in each year of the study. Each round of Assessments will be preceded by an outreach effort and conclude with a follow-up presentation of the Recommendations Report.

An overview of the timeline is on the following page.

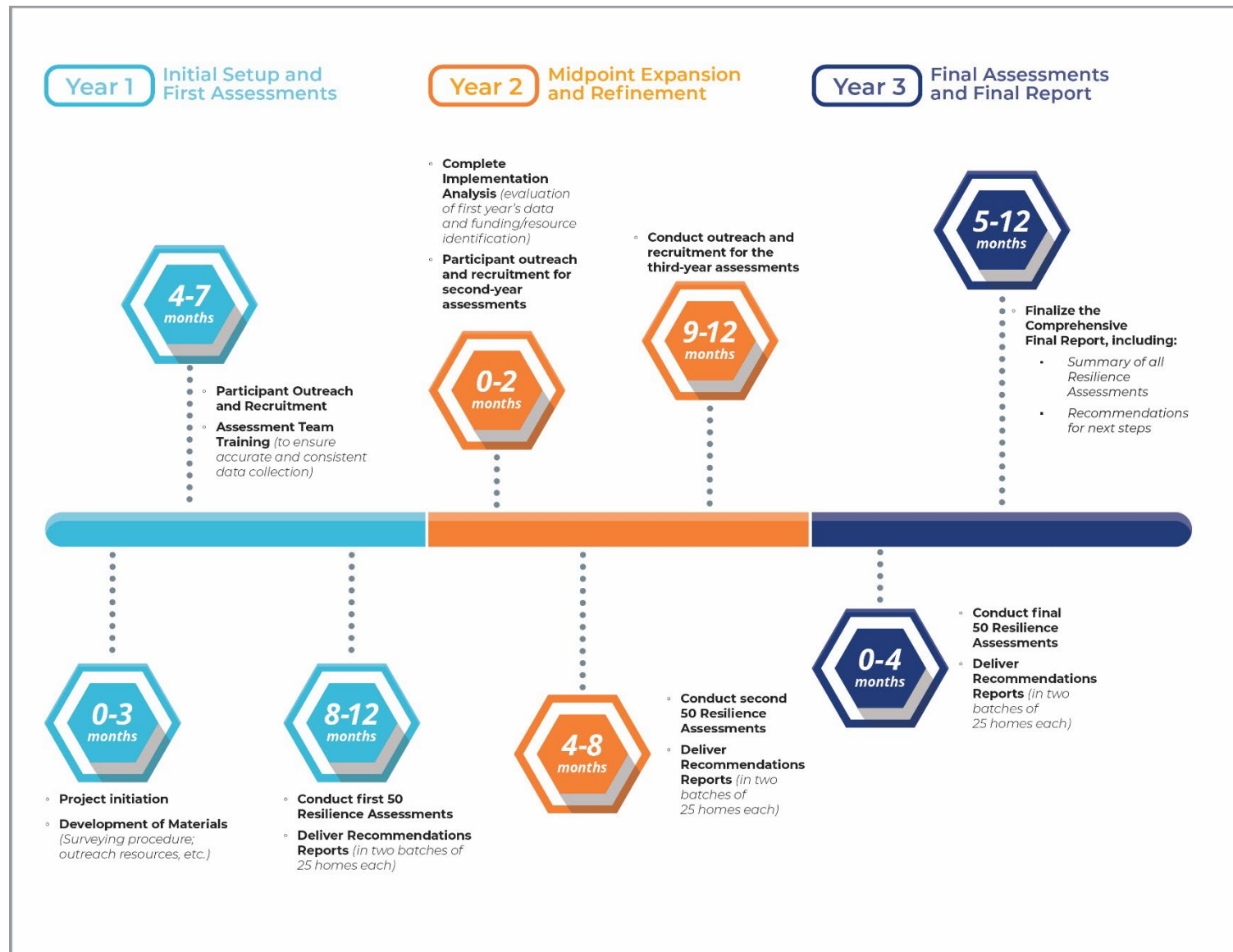


Figure 5 Study timeline and major activities

d. Identify the required partners and where they are represented in the work plan.

The primary entities involved in the study will be the City, contractors (GKY, Dewberry, and A D Potts & Associates), and the 150 participant households.

Newport News also intends to include Neighborhood Associations as part of the homeowner outreach and recruitment efforts and the FAQ Workshops. The City will also explore potential opportunities to cross-promote mitigation programs through Study outreach efforts; for example, Newport News could collaborate with the Colonial Soil and Water Conservation District to cross-promote through the new VCAP program, which will launch on approximately the same timeline as this Study.

e. Deliverables.

The deliverables for the FloodREADY Homes study will include project management materials including the study tracking geodatabase, outreach materials and meetings, 150 household Resilience Assessment and Recommendations Reports, Implementation Vision and Requirements Report, and a Final Study Comprehensive Report.

For a complete explanation of each interim and final deliverable, see [Work Plan](#).

f. Maintenance plan tied to the identified viability of the project. Plan for sustaining the project after the agreement period (if applicable).

The FloodREADY Homes Study will provide homeowners with actionable information about feasible mitigation options to reduce flood damage; after the Study, Newport News hopes to extend the Study's positive impact and continue to support homeowners, especially those with low incomes. The City will use the Implementation Vision and Requirements Report to inform a second federal or state funding application for a follow-up project to support the implementation of the recommended and cost-efficient flood mitigation measures. This two-phase approach has been successful in other cities and will lead to more consistent implementation of mitigation measures (e.g., D.C.'s successful BRIC application for Phase II of the FloodSmart Homes Study). Other study maintenance efforts will be determined by the Study's results and review of lessons learned, as documented in the Comprehensive Final Study Report.

Evaluation

Newport News will provide leadership and oversight of the study, and the contractor team supporting the Resilience Assessments and Recommendations will maintain a **project geodatabase** to provide consistent and transparent record-keeping for study evaluation. Participating households will also have the opportunity to submit written feedback via a **participant survey** to support a well-rounded evaluation.

a. Indicators of success.

As described in [Goals and Objectives](#), Newport News has established 14 measures of success that will be used – at minimum – to evaluate the study. The indicators cover the study's objectives and reflect a focus on achievable flood preparedness, community engagement, and cost-effectiveness. The study team will collect data on the indicators at key milestones throughout the project, according to the [Work Plan](#).

The indicators/measures of success include:

- Number of study participants.
- Number of residents (total across participating households).
- Number of completed resilience Home Assessments annually and for the Study.
- Total number of mitigation recommendations.
- Percent of each type of mitigation measure (nature-based, light utility work, heavy utility work, structural).
- Number of webinar/workshop attendees.
- Number of households receiving program and educational materials.
- Number of visits to the study website.
- Percent of completed participation feedback surveys.
- Participant ratings of the study.
- Completion of the Final Report, with planning and policy next steps recommendations (yes/no).
- Completion of the Implementation Vision and Requirements Report (yes/no)
- Identification of funding sources within the Implementation Vision and Requirements Report (yes/no)
- Completed list of identified cost-effective mitigation measures within Final Report (yes/no).

Monitoring Methods:

Newport News and the study team will use multiple methods to monitor study progress, participant experience, and flood risk reduction results. The Study's monitoring methods will include:

- Best practice project management and oversight (e.g., Project Management Plan, regular team meetings, regular progress/grant reporting).
- Development and maintenance of a study geodatabase with tracking of participation and the status of assessments and recommendations.

- GIS to track property assessments and analyze results.
- Survey to collect homeowner feedback to understand their study participation experience and refine processes if needed.

b. Data that will be collected and how the data will be used to measure success.

The study team will collect data to support monitoring and evaluation of the Study's progress and to analyze progress towards each of the Study's objectives. Newport News anticipates collecting the following types of data:

- Milestone/deadline tracking per the Work Plan timeline.
- Potential and final participant contact information.
- Resident engagement with the study (e.g., attendance at study events, website visits).
- GIS locations of property assessments and status.
- Results from the Resilience Assessments, including photos.
- Select elevation information as presented in the Elevation Certificate.
- Field staff assignments, schedule, location, and contact information (per the safety plan in the Resilience Assessment SOP).

Data will be stored in the Study's geodatabase and/or on the Study's collaborative document sharing site. Newport News will adhere to all City data management policies.

c. How was cost effectiveness evaluated and measured against the expected outcome?

According to the Congressional Budget Office, a September 2024 report (online at <https://www.cbo.gov/publication/60803> and <https://www.cbo.gov/publication/59971>) estimated that the expected damage avoided by elevating, floodproofing, or buying out residential properties was about \$1.75 per dollar spent. Similarly, a May 2024 study (online at <https://www.cbo.gov/publication/58168>) concluded that each dollar spent on property-level adaptations would avoid \$2.69 of expected damage, on average. The FloodREADY Homes Study will be designed to produce similar loss avoidance benefits.

d. What products, services, meetings, outreach efforts, etc. will be conducted and how will success be measured?

This study is focused on engaging with and supporting homeowners in low-income, repetitive loss, and high-risk flood zones across Newport News. The outcomes include products, meetings, and outreach efforts.

- **Key products:** Resilience Assessment SOP, Resilience Property Assessments and Recommendation Reports (150), Elevation Certificates (150), Cost-Benefit

Analysis for Flood Mitigation Recommendations, Implementation Vision and Requirements Report, and Comprehensive Final Study Report.

- **Key meetings:** Resilience Study Workshops (public outreach), in-home property assessments (150), Assessment Recommendations Report Review Meetings (150), and regular project status meetings.
- **Key outreach:** study website, online registration form, participation interest survey, flood mitigation education materials, key meetings with homeowners (see above), and participation feedback survey.

Newport News has identified specific, measurable [indicators of success](#) that the City will use to track interim progress and final results for each of these items. The [Work Plan](#) has a full description of each activity.

e. Project progress monitoring plan to ensure project meets the requirements of the agreement and is delivered on time. Outline how delays or other findings may be used to modify or improve outcomes/deliverables.

This study includes a robust data collection, monitoring, and evaluation approach. The Project Management Plan, developed during the study kickoff, will include a detailed monitoring plan to ensure progress is tracked, risks are recognized, and adjustments are made if needed as the study progresses.

The study Work Plan is iterative, with rounds of participant outreach, property assessments, and participant follow-up planned so that the volume of work can be completed well and consistently, and any delays can most likely be accommodated within the study contract. This approach also provides meaningful, interim opportunities at key checkpoints to collect data on study progress and to adjust as needed. For example, the study team will launch a homeowner feedback survey after the first 50 Resilience Assessments are completed in year 1 of the study; the results of this survey can inform the conduct of the Assessments in year 2 if survey respondents provide negative feedback or productive suggestions.

Supporting Documents

The following documents are attached to the application in the DCR Grants Management Portal:

1. Detailed map of the study area.
2. FIRMette of the study areas.
3. Historic flood images.
4. Current Floodplain Ordinance (also discussed in [Major Activity and Task: Resilience Assessments](#))
5. Current Hazard Mitigation Plan (which can also be found on the HRPDC website [here](#)).

6. Current Comprehensive Plan (which can also be found on Newport News' website [here](#)).
7. Social vulnerability score map for the study area.
8. Authorization to request funding from the chief executive of the local government.
9. Letter of support from City Manager.
10. Newport News Repetitive Loss Plan
11. List of Newport News Census Blocks included in the study area (i.e., census blocks that meet CFPF definition of low income).
12. List of Flood Insurance Rate Map Numbers.

C. Budget Narrative

See the provided application form and Budget Narrative document submitted in the DCR Grants Management Portal.