2022

TOWN OF HERTFORD RESILIENCE STRATEGY

North Carolina Division of Coastal Management

Resilient Coastal Communities Program

Phase 1 and 2 Report

Prepared by SWCA Environmental Consultants

4/15/2022

CONTENTS

Ctrl+Click to jump to each place in the document:

Appendices

Ctrl+Click to jump to each place in the document:

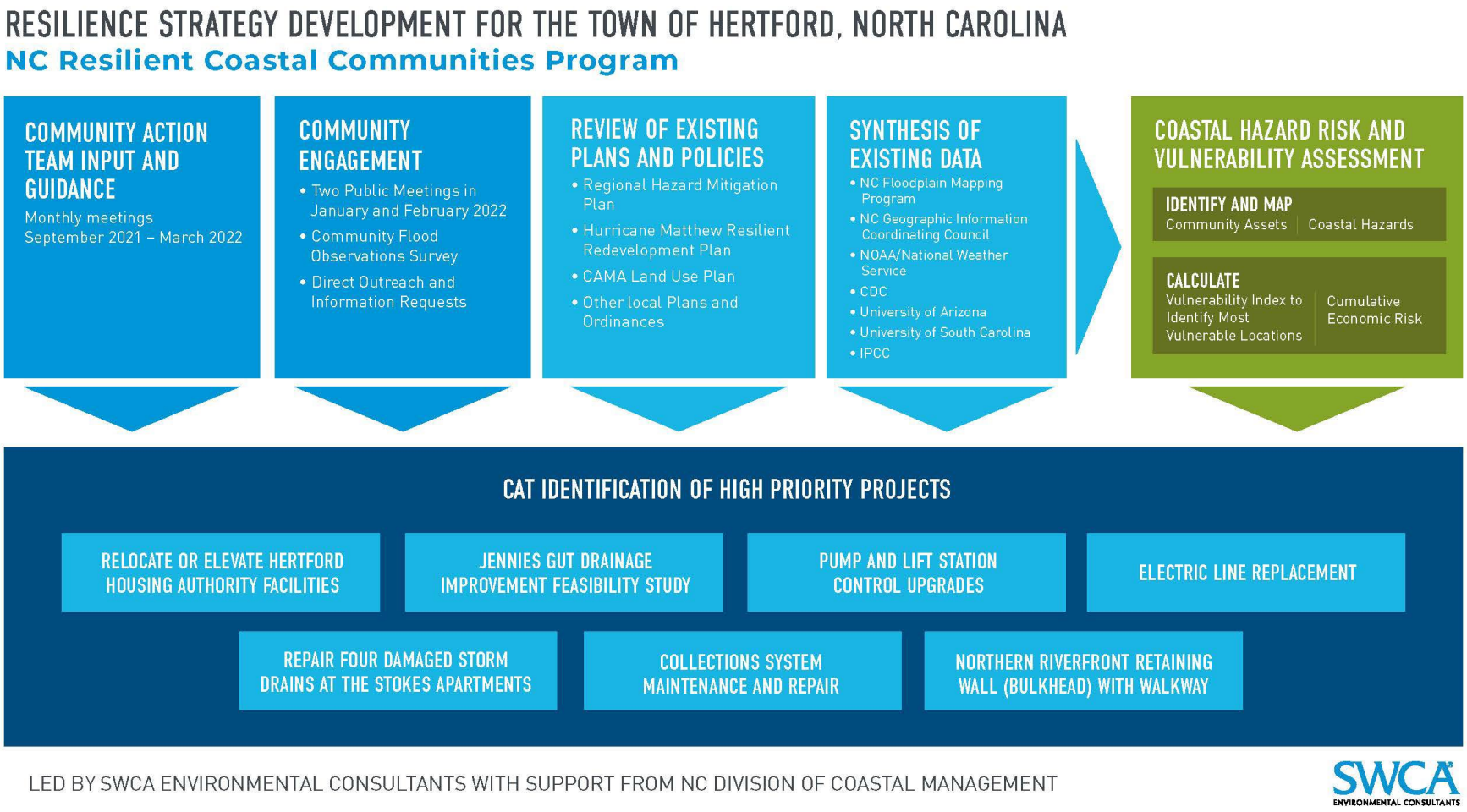
List of Figures

Ctrl+Click to jump to each place in the document:

List of Tables

Ctrl+Click to jump to each place in the document:

SUMMARY


RESILIENCE STRATEGY DEVELOPMENT FOR THE TOWN OF HERTFORD, NORTH CAROLINA
NC Resilient Coastal Communities Program
COMMUNITY ACTION TEAM INPUT AND GUIDANCE
Monthly meetings
September 2021 – March 2022
COMMUNITY ENGAGEMENT
• Two Public Meetings in January and February 2022
• Community Flood Observations Survey
• Direct Outreach and Information Requests
REVIEW OF EXISTING PLANS AND POLICIES
• Regional Hazard Mitigation Plan
• Hurricane Matthew Resilient Redevelopment Plan
• CAMA Land Use Plan
• Other local Plans and Ordinances
SYNTHESIS OF EXISTING DATA
• NC Floodplain Mapping Program
• NC Geographic Information Coordinating Council
• NOAA/National Weather Service
• CDC
• University of Arizona
• University of South Carolina
• IPCC
COASTAL HAZARD RISK AND VULNERABILITY ASSESSMENT
IDENTIFY AND MAP
Community Assets
Coastal Hazards
CALCULATE
Vulnerability Index to Identify Most Vulnerable Locations
Cumulative Economic Risk
CAT IDENTIFICATION OF HIGH PRIORITY PROJECTS
RELOCATE OR ELEVATE HERTFORD HOUSING AUTHORITY FACILITIES
JENNIES GUT DRAINAGE IMPROVEMENT FEASIBILITY STUDY
PUMP AND LIFT STATION CONTROL UPGRADES
ELECTRIC LINE REPLACEMENT
REPAIR FOUR DAMAGED STORM DRAINS AT THE STOKES APARTMENTS
COLLECTIONS SYSTEM MAINTENANCE AND REPAIR
NORTHERN RIVERFRONT RETAINING WALL (BULKHEAD) WITH WALKWAY
LED BY SWCA ENVIRONMENTAL CONSULTANTS WITH SUPPORT FROM NC DIVISION OF COASTAL MANAGEMENT
SWCA
ENVIRONMENTAL CONSULTANTS

1 INTRODUCTION

This Resilience Strategy was developed for the Town of Hertford under the North Carolina Resilient Coastal Communities Program (RCCP) by the North Carolina Division of Coastal Management (DCM) and SWCA Environmental Consultants (SWCA) in consultation with a local Community Action Team (CAT). The objectives of the RCCP are to 1) address barriers to coastal resilience in North Carolina at the local level, such as limited capacity, economic constraints, and social inequities; 2) assist communities with risk and vulnerability assessments and developing a portfolio of planned and prioritized projects; 3) advance coastal resilience projects to be shovel-ready, or ready for implementation; and 4) link communities to funding streams for project implementation. The RCCP includes four phases.

- Phase 1: Community Engagement and Risk/Vulnerability Assessment
- Phase 2: Planning, Project Identification, and Prioritization
- Phase 3: Engineering and Design
- Phase 4: Project Implementation

This Resilience Strategy document includes the results of Phases 1 and 2 of the RCCP: a risk and vulnerability assessment and a priority resilience project portfolio. The process to develop this Resilience Strategy took place between August 2021 and April 2022 and included monthly CAT meetings, community engagement via two public open house meetings, a community flood observations survey, and direct outreach to local stakeholders.

1.1 Community Overview

The town of Hertford is the county seat of Perquimans County. Founded in 1758 along the banks of the Perquimans River, the town now has a population of just over 2,100 people and includes an incorporated area of 2.88 square miles (U.S. Census Bureau 2021). The historic downtown area and most of the residences are situated on a peninsula bordered to the north and east by the Perquimans River and to the south by two smaller tributaries of the Perquimans. One of these, Jennies Gut, is located just south of the historic downtown area and flows east into the Perquimans River (Figure 1). The town's position on the water provides desirable views and recreational and tourism opportunities and makes the core of the town and many individual parcels vulnerable to flooding. In past flood events, there have been significant disruptions to water and sewer service due to these systems being flooded and inoperable. The town's sewer system is connected to the system for the adjacent town of Winfall, so hazard and asset information extending into Winfall is included in many of the maps and assessment information in this report.

***Flood of Record** – In 2003, Hurricane Isabel caused unprecedented flooding in Hertford. Although the wind speeds were only Category 1 by the time the storm reached the town, the combination of rainfall and an extreme storm surge resulting from the prevailing southeast winds caused flooding in much of the town core and resulted in extensive damage.*

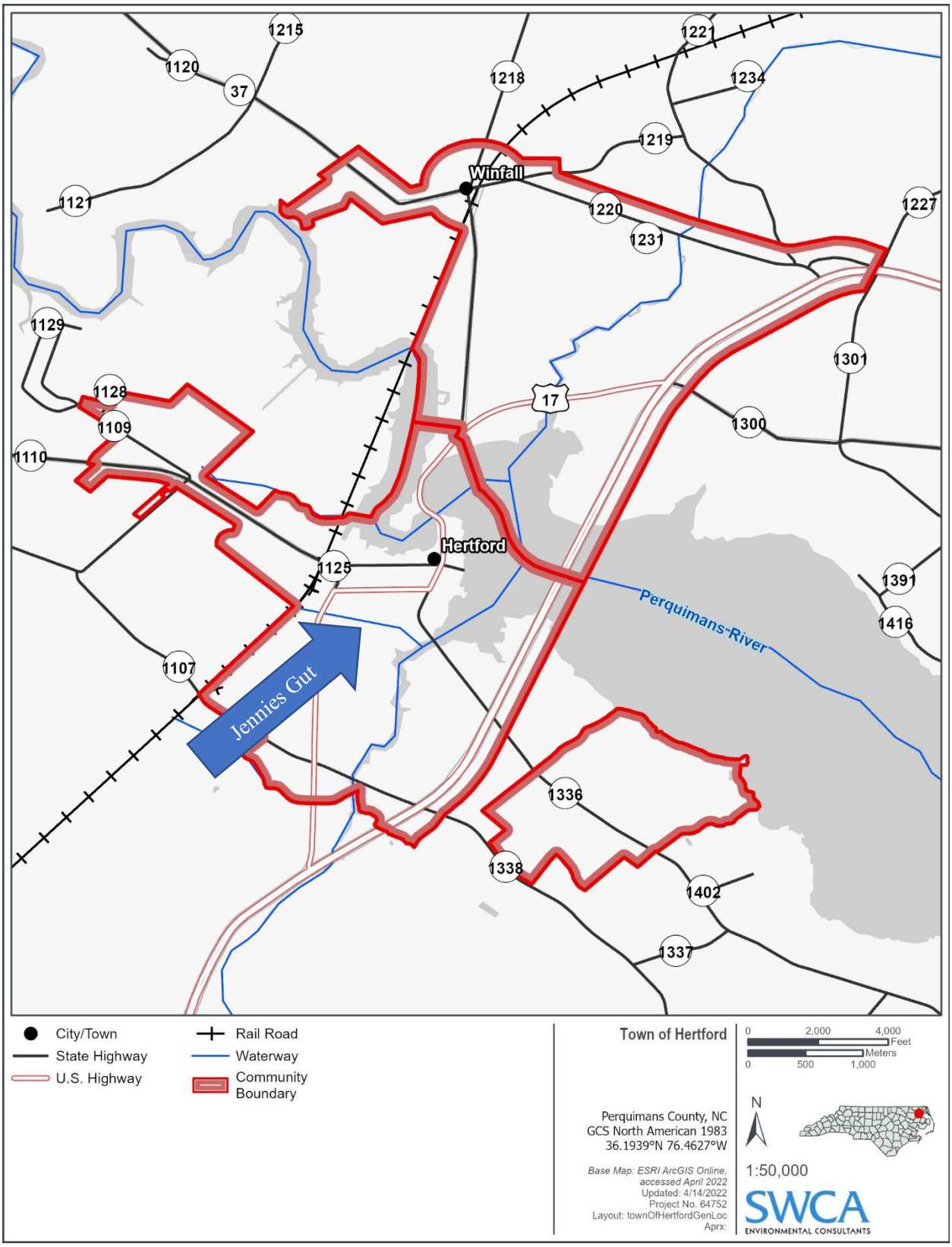


Figure 1. Towns of Hertford (lower two red outlined areas) and Winfall (upper outlined area) along the Perquimans River in Perquimans County, North Carolina.

2 COMMUNITY ACTION TEAM (CAT)

Hertford's CAT was formed as a continuation of an existing Citizen Advisory Council that had been formed to advise on development of the town's Riverfront and Community Plan, completed in September 2021. The CAT membership included the Town Manager, Mayor, one town council member, and several interested citizens, including a retired state national resources specialist and a retired environmental consultant. A complete list of members is provided in Appendix A.

The CAT reviewed and provided feedback on the relevant coastal hazards, helped identify asset locations, identified additional local contacts with information about assets, provided review and feedback on the vulnerability and risk assessment results, supported planning and hosting of public open house meetings, agreed on criteria for prioritization of projects, contributed to definition of candidate projects, and reached agreement on the final list of high-priority projects included in this Resilience Strategy document.

CAT meetings were held approximately monthly between October and March for a total of six CAT meetings. Summaries of all six CAT meetings are provided in Appendix B.

3 VISION AND GOALS

The following vision and goals informed the development of Hertford's Resilience Strategy.

3.1 Vision

The Vision Statement was developed collaboratively by the CAT to reflect their resilience vision for the town:

> *The Town of Hertford is a vibrant diverse community committed to helping its residents thrive, celebrating its riverfront, history, culture, and distinctive character while promoting commercial and residential growth, showcasing the beauty and natural resources of the Perquimans River, and integrating coastal resilience practices to address adverse environmental impacts.*

3.2 Goals

Resilience Goals were developed collaboratively by the CAT following initial review of the Vulnerability and Risk Assessment results and preliminary project list. The goals are intended to reflect the general resilience priorities for the community and identify themes and concerns. Goals are intended to support the vision and to be used to identify priority projects.

1. Pursue phased comprehensive upgrades to public works infrastructure
2. Identify and pursue projects to protect residences from flooding over the next 5 years
3. Ensure that Town of Hertford ordinances are aligned with master planning documents (e.g., Albemarle Region Hazard Mitigation Plan, CAMA Land Use Plan)

The high-priority projects identified by the CAT are intended to align with this vision and move the Town of Hertford toward completing these goals.

4 COMMUNITY ENGAGEMENT STRATEGY

The goals defined by the DCM for community engagement within the RCCP are to:

1. Promote representation and equitable outcomes for marginalized communities and vulnerable populations
2. Build trust, relationships, and partnerships
3. Provide feedback and validation of the Risk and Vulnerability Assessment developed by the CAT
4. Assist with prioritizing projects for Phases 3 and 4 of the Program

To achieve these goals, SWCA worked with the CAT to implement an approach to community engagement during Phases 1 and 2 of the RCCP that included the following elements.

4.1 Ongoing Online Engagement

Online engagement was conducted through the project website (Appendix C). The website included the following specific elements:

Interactive webmap – This map showed all the asset locations and hazard layers and allowed users to pan and zoom and turn on and off hazard layers to create a custom view showing the location and hazards of interest to them.

Online survey – The survey was available online and provided in hard copy at the first public meeting and asked respondents to identify the location, date, and time where they have observed flooding; describe the extend, observed depth, and maximum depth of the flooding; and to identify any critical locations or services they were unable to access during this flood event (e.g., school, workplace, medical facilities, clean water). The online version included an option for respondents to upload photographs of the flooding.

Links to additional resources about risk reduction/preparedness – These included the Ready NC Hurricane Preparedness Guide, guidance from the North Carolina Department of Health and Human Services on preventing and cleaning up mold/moisture, what to do with drinking water wells and septic systems in flooding conditions, and post-disaster resources from Legal Aid NC.

The website also included project contact information, a sign-up field to receive email updates, and information about upcoming public meetings.

4.2 Direct Two-Way Information Sharing

Two-way information-sharing methods included the two in-person public open house meetings (see attendance list in Appendix D), and individual outreach to key stakeholders. SWCA and the CAT members shared information with the community about the RCCP process, the public open house meetings, and the online survey via hard copy fliers, social media postings (Figure 2), emails to project contacts and existing listservs, and notices in local news outlets. Details of

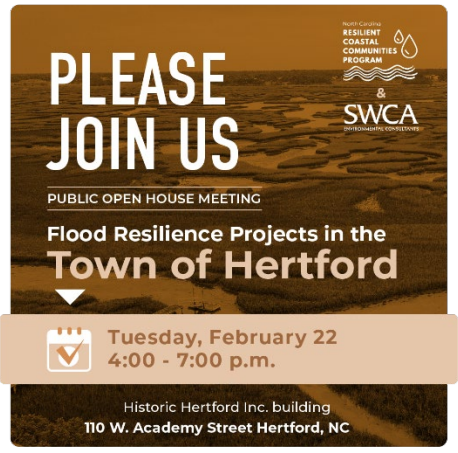


Figure 2. Example social media post used to advertise the February public meeting.

the specific strategies used to engage specific audiences in Hertford during the RCCP process are detailed in Table 1.

Table 1. Engagement Strategies Used for Community Engagement in Hertford, North Carolina

Strategy	Audience and Timing	Goals
Direct Outreach to Individual Stakeholders Via email and telephone	People who may have key information to share, including town and county staff and those who serve or represent vulnerable and underrepresented groups *December–February*	-Gather key information missing from our assessment -Understand perspectives of people otherwise underrepresented in this process
Public Open House No. 1 – Risk Assessment -"Where I live and work" map at sign-in table -Big interactive map for identifying assets and hazards -Posters explaining types of resilience projects -Collect questions for follow-up -Collect survey responses and other information to incorporate -Kids' corner with drawing prompt	Local residents, town and county staff, and business owners *Mid-January*	-Introduce RCCP -Hear and answer questions about hazards and provide personal actions to decrease risk -Ground-truth the asset and hazard information collected and gather feedback and validation of the Risk and Vulnerability Assessment developed by the CAT -Collect contact information for interested parties for updates and follow-up
Survey with Interactive Map -Identifying specific locations on the map that have flooded in the past -Identifying how hazards have impacted assets and access to assets in the past -Online and linked on all public outreach materials -In hard copy at the open house	Local residents and business owners, including those who were unable to attend the open house when it was scheduled *January, during and following first open house*	-Ground-truth the asset and hazard information collected -Gather feedback with which to validate the Risk and Vulnerability Assessment -Gather input on criteria to be used in prioritizing resilience projects -Collect contact information for interested parties for updates/follow-up
Public Open House No. 2 – Priority Projects -Posters conveying preliminary project list -Collect additional project ideas -Collect questions for follow-up -Collect comments to incorporate	Local residents, town and county staff, and business owners *Late February*	-Review preliminary project list -Learn about which projects the community considers highest priority, to assist with prioritizing projects
Provide hazard preparedness activity for children at Public Open House meeting	Youth *At first open house session*	-Engage vulnerable and underrepresented populations
Provide Spanish translations of RCCP program handout and some risk preparedness materials	People with limited English proficiency *For both open house sessions*	
Personal outreach through trusted community leaders	Racial and ethnic minority populations and people living in flood-prone areas *Leading up to both open house sessions*	

5 REVIEW OF EXISTING LOCAL AND REGIONAL EFFORTS

SWCA reviewed existing local and regional plans, ordinances, policies, and programs to identify resilience strategies already in place, previously identified assets, previously identified coastal hazards, and potential resilience projects to inform the RCCP process. Results of this review are summarized below in Table 2.

Table 2. Existing Documents Reviewed for the Town of Hertford

Document Name (Year)	Information Gleaned			
	Asset Locations	**Hazard Information**	**Potential Resilience Projects**	**Resilience Strategies Already in Place**
Hertford Riverfront and Community Plan (2021)	•		•	
Albemarle Region Hazard Mitigation Plan Update (2020)	•	•	•	•
NC State Resilience Plan (2020)				•
Town Council Brief (5/13/2019)			•	
Town Capital Improvement Plan (2019)			•	
State of North Carolina Hazard Mitigation Plan (2018)				•
Hurricane Matthew Resilient Redevelopment Plan – Perquimans County (2017)			•	•
Albemarle Region Hazard Mitigation Plan (2016)	•	•		•
CAMA Land Use Plan – Perquimans County (2005–2006); amended 2017			•	•

6 RISK AND VULNERABILITY ASSESSMENT REPORT

To assess the overall coastal hazard risks and vulnerabilities the Town of Hertford faces, SWCA identified important places in the town (assets) and types of coastal hazards that could impact the town (hazards), with input and oversight from the CAT. SWCA used this information to evaluate the town's vulnerabilities and economic risks. The methods and results of this analysis are detailed below.

6.1 Identification and Mapping of Assets and Hazards

For purposes of this assessment, critical assets, and natural infrastructure (assets) were defined as places that are important for emergency preparedness, response, recovery, and sustaining community life and sense of place. The types of assets identified in Hertford fell into the categories of Banks, Cemeteries, Childcare, Communications, Cultural Sites, Emergency Services, Employers, Food and Supplies, Government Facilities, Health and Medical, Law Enforcement/Corrections, Parks and Recreation (including natural resources), Restaurants, Roadways, Schools, and Utilities.

SWCA developed an initial asset list for the town starting with assets identified from existing information sources including the Albemarle Regional Hazard Mitigation Plan, the Riverfront and Community Plan, and the National Register of Historic Places (NRHP). This list was then reviewed and revised by the CAT

members and shared with other knowledgeable town and county staff for additional feedback. A preliminary map showing asset locations was shared during the first open house meeting in January and meeting attendees pointed out additional important locations, which were added to the asset list.

SWCA also inquired with the State Historic Preservation Office (SHPO) about additional eligible properties not yet listed in the NRHP within the Town of Hertford. The SHPO reported there are 22 sites recorded in the town. Looking at all of these sites was beyond the scope of the RCCP Phases 1 and 2. Should these be of interest to the town in the future to help identify additional community assets, the SHPO can provide more detail about these sites and reports.

To identify relevant coastal hazards, SWCA looked at those identified as [high hazard] in the Albemarle Regional Hazard Mitigation Plan and identified appropriate data sets to represent these hazards at the local level. Hazards evaluated for the town include Sea Level Rise (both along coast lines and in low-lying areas where increases in the water table can result in inland flooding), Storm Surge inundation (coastal storm surge from increasing high tides during simulated storm events), and flooding because of high Precipitation events (areas likely to be flooded such as Federal Emergency Management Agency [FEMA]-defined 100-year and 500-year floodplains as well as historical records of extreme event flooding). Data sets used to represent community hazards were selected after an extensive review of data documentation and similar reports in the region and are detailed in Appendix E.

In total, we identified and assessed vulnerability and risk from coastal hazards to 120 total asset locations for the Town of Hertford (Table 3).

6.2 Vulnerability Assessment

Vulnerability scores, ranked from 0 (no risk) to 10 (extreme risk) for town assets were calculated by expanding on the framework outlined in the RCCP Handbook. The handbook defined an asset's vulnerability as a combination of the risk to the asset from potential hazards based on the asset's location (Exposure), the degree to which an asset would be affected if exposed to hazards (Sensitivity), and any measures already taken to offset the negative impacts if the asset is exposed to hazards (Adaptive Capacity).

Asset Vulnerability = Exposure + Sensitivity – Adaptive Capacity

Exposure, ranked from 0 (no exposure) to 5 (high exposure), represents the combined hazard exposure as an average of Sea Level Rise Exposure, Precipitation Exposure, and Storm Surge Exposure. Individual hazard exposure scores for Sea Level Rise and Storm Surge were calculated by assigning scores 0 to 5 to capture the likelihood of an asset being exposed to a hazard and the severity of that hazard, then using an exposure matrix (Figure 3) to classify the exposure as none (0), low (1), moderately low (2), moderate (3), moderately high (4), and high (5) (see Figure 3). Precipitation Exposure was calculated using a similar approach, but to account for localized flooding during high-intensity storm events, a Reported Event Inundation Factor of 2 or more points was added to each area to reflect the number of times data showed it had been flooded during historical events. Additional information on how hazard severity and probability were assigned for each hazard type is provided below in the description of vulnerability assessment fields.

Sensitivity, ranked 0 (no effect) to 5 (highly affected), is the sum of the asset type sensitivity (0–3) and social sensitivity (0–2) of an asset. Asset type sensitivity scores were assigned categorically using assumptions about how a hazard would affect the physical infrastructure and functionality of an asset. Social Sensitivity was calculated by determining if an asset is in or serves a socially sensitive community

based on social vulnerability index scores and input from stakeholder meetings (1 point) and if an asset inherently serves a socially vulnerable population (1 point).

Adaptive Capacity, ranked 0 (no ability to moderate hazard damage), –1 (minor retrofits to moderate some hazard damage), –3 (retrofitted/modified to moderate most hazard damage), –5 (retrofitted/modified to offset all hazard damage), was assigned on an asset-specific basis from CAT and community input during open house meetings.

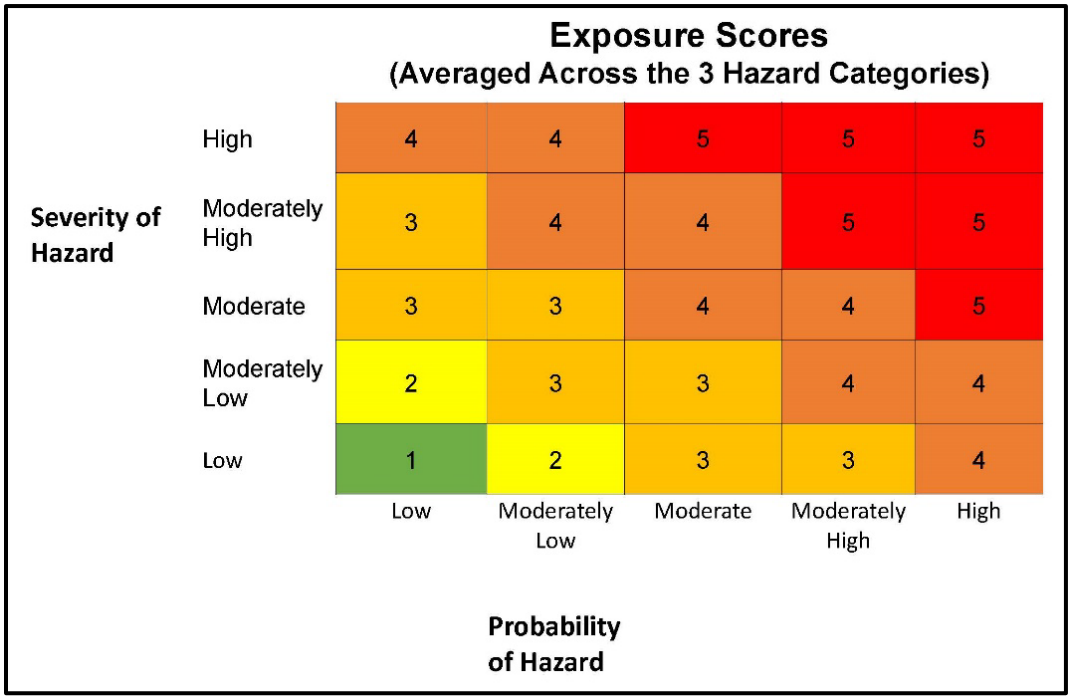


Figure 3. Exposure matrix used to calculate the level of exposure for each of three hazard categories.

All asset vulnerability scores, factors used to calculate asset vulnerability, and asset attribute data have been compiled into a holistic Asset List to provide additional details for planners and community members (Table 3). Fields in this table include the following:

Asset Attribute and Characteristics Fields

- **Asset ID** – Since an asset may function as multiple asset types and the town may have multiple assets with the same name, a singular unique Asset ID was assigned to each asset.
- **Asset Name** – An asset's proper name was used when available, otherwise nondescript names were assigned (e.g., pumping station, solar farm).
- **Asset Type** – Asset types were assigned to categorize assets based on the services they provide to the town. Some locations provide multiple services and, therefore, were assigned multiple asset types. For assets assigned to multiple type categories, all types were considered in analysis, but only the primary asset type was mapped (e.g., a high school that functions as an emergency shelter would be included in both Schools and Emergency Shelters Risk Evaluation but would be displayed in Schools on report figures) Asset type categories are Banks, Cemeteries, Childcare, Communications, Cultural Sites, Emergency Services, Employers, Food and Supplies, Government Facilities, Health and Medical, Law Enforcement/Corrections, Parks and Recreation (including natural resources), Restaurants, Roadways, Schools, and Utilities

- **Jurisdiction** – The physical location of assets in terms of jurisdictional boundaries (Town of Hertford, Town of Winfall, unincorporated)
- **Location** – Throughout the process of compiling assets, addresses and location descriptors such as plats and intersections were collected from text documents, web pages, county parcel data, and the CAT.
- **Ownership** – The ownership of each asset was pulled from ownership information in county parcel data and categorized into Federal, State, County, Town, and Private ownership designations.
- **Estimated Value** – To provide an estimated value for each town asset, values were assigned by finding the maximum value (Parcel Value, Land Value, or Improvement Value) associated with an asset's parcel (maximum values were combined for assets that spanned multiple parcels). The location and types of some assets (e.g., pumping wells, elevated water towers, frequently flooded streets) resulted in an under- or overestimation of value. For those assets, the general cost of infrastructure was assigned based on CAT input and publicly available information about infrastructure values. These values are estimates only, and do not necessarily reflect market value or replacement value for the asset.

Vulnerability Assessment Fields

- **Vulnerability** – Scored 1 through 10 with assets having a score greater than or equal to 5 being considered at risk. Calculated as: Exposure (0–5) + Sensitivity (0–5) + Adaptive Capacity (0, –1, –3, –5)
- **Exposure** – This provides an overall evaluation of how exposed the site is to coastal hazards, calculated as the average of Precipitation Exposure, Sea Level Rise Exposure, and Storm Surge Exposure.
- **Precipitation Exposure (**Figure 4**)** – Calculated as: Floodplain Exposure (Current or Potential) + Reported Event Inundation Factor.
- **Floodplain Exposure** – Current Floodplain Exposure was derived from FEMA DFIRM data (North Carolina Flood Mapping Program 2020) and calculated as a function of the annual probability of precipitation flooding hazard (moderately low, 1% annual probability, for 100-year flooding or low, 0.2% annual probability, for 500-year flooding) and the severity of precipitation flooding hazard (moderately high for assets in the 100-year floodplain during a 100-year flood event, moderately high for assets in the 500-year floodplain during a 500-year flood event, and high for assets in the 100-year floodplain during a 500-year flood event). To account for increases in precipitation due to climate change, low-lying areas (within an elevation range of 0 to 27 feet above mean sea level, defined by reviewing current floodplain elevations) not currently listed as being in a floodplain were given a blanket Floodplain Exposure score of 2 to represent a low probability of flooding hazard and a low severity of flooding hazard.

Interpreting Vulnerability Index Values - *It is not necessarily a problem for a site to have a higher vulnerability index value. Even a site with very high Exposure may still be resilient if it has low Sensitivity. For example, a public boat launch site could have a very high Exposure score of 5 because it is subject to regular flooding, but because the asset can easily recover after flooding, is not located in a socially vulnerable area, and is not providing critical services to vulnerable populations, it has a low Sensitivity score of 1. Though its overall Vulnerability Index value may be on the higher end (6), this is not concerning for this site.*

- **Reported Event Inundation Factor** – Additive factor used to highlight areas of known flooding during large precipitation events as reported from historical satellite imagery (Schaffer-Smith 2020) or community engagement. For areas with a Floodplain Exposure score greater than 0, 1 point was added for each historical flooding event recorded for that area. For areas with a Floodplain Exposure score of 0 that were reported as having historical flooding, 2 points were awarded to areas with at least one reported flooding event and 1 point was added for each additional storm event.
- **Sea Level Rise Exposure (**Figure 5**)** – Maximum Sea Level Rise Exposure score calculated for the asset. This exposure rating evaluated potential inundation from encroaching coastal lines and inland flooding as a result of higher water tables under 1- to 10-foot National Oceanic and Atmospheric Administration (NOAA) sea level rise projections (NOAA Office of Coastal Management 2017). Scores for the probability of an asset being affected by sea level rise were calculated by grouping scenarios into the following categories based off projected sea level rise under different Intergovernmental Panel on Climate Change (IPCC 2014) emission scenarios: high – 1 to 2 feet expected under all scenarios; moderately high – 3 to 4 feet expected under most scenarios, moderately low – 5 to 6 feet expected under some scenarios; low – 7 to 10 feet expected under only the highest scenario). The severity of sea level rise hazards was assigned considering the accumulative effects of subsequent increases in sea level. For example, under 1 to 2 feet of sea level rise an asset may have a moderately low severity, but under 3- to 4-foot sea level rise conditions that asset will see higher inundation levels and would have a severity score of moderate.
- **Storm Surge Exposure (**Figure 6**)** – Maximum Storm Surge Exposure score calculated for the asset. High tide, coastal storm surges from National Hurricane Center Slosh Model Simulated Category 1 through Category 5 storms (Zachry et al. 2015) were evaluated using the annual probability calculated from historical records for the state of North Carolina to assign probability values like Floodplain Exposure (Category 1 – high with greater than 10% annual probability; Categories 2, 3, and 4 – moderate with approximately 5% annual probability; Category 5 – moderately low with approximately 1% annual probability). Severity of exposure was calculated by categorizing simulated feet of inundation (low – 1 foot, moderately low – 2 to 3 feet, moderate – 4 to 5 feet, moderately high – 6 to 7 feet, high – greater than 8 feet)
- **Sensitivity** – Asset Type Sensitivity + Social Sensitivity, where social sensitivity is a function of both the social vulnerability by service type and by the asset's physical location.
- **Asset Type Sensitivity** – For assets that were assigned multiple asset types, the highest categorical sensitivity score was used. Scores for asset categories are as follows: Cemetery, Parks and Recreation, and Restaurants (1); Banks, Cultural Site, Childcare, Employers, Schools (2); Communications, Emergency Services, Food and Supplies, Government, Hazardous Waste, Health and Medical, Law Enforcement/Corrections, Roadways, Utilities (3).
- **Social Vulnerability (geographic)** – Average of Asset Location Social Vulnerability Score and Asset Service Community Vulnerability Score where social vulnerability scores (SoVI) represent the potential negative effects on communities caused by external stresses on human health (calculated by CDC/ATSDR/Division of Toxicology and Human Health Sciences/Geospatial Research, Analysis & Services Program 2020; Hazards and Vulnerability Research Institute 2011), and the asset service community is all Census Blocks or Tracts that intersected a 1-mile radius of the asset (this area was assumed sufficient as vulnerability data is at the Census Block and Tract scale). Social vulnerability of the asset location and community were found by assigning threshold values to already calculated SoVI values as follows: top 10% of socially vulnerable areas (1), top 20% of socially vulnerable areas (0.75), top 30% of socially vulnerable areas (0.5), top 50% of socially vulnerable areas (0.25).

- **Social Vulnerability (by service type)** – Service Type sensitivity scores were assigned to asset locations that have been shown in the documentation to provide services to vulnerable populations, including the elderly (e.g., nursing homes, food distribution systems), chronically ill or physically disabled people (e.g. dialysis centers, medical facilities), less wealthy or food insecure individuals and families (e.g., food pantries, schools, public fishing access, local housing authorities), and historically marginalized groups (e.g., community organizations and cultural sites of significance to African American communities), people without adequate health insurance (e.g., EMS and Emergency Services), incarcerated individuals (e.g., correctional facilities), and those experiencing abuse or violence (e.g., law enforcement, medical facilities), youth and families (e.g., schools and childcare facilities, community centers, parks), and people without reliable internet access (e.g., libraries).
- **Adaptive Capacity** – Scores of 0, –3, and –5 were assigned based on the degree of adaptation described in CAT input.

More details regarding the specific data sets referenced in calculating each of these elements of the Vulnerability Index are summarized in Appendix E.

See Appendix F for detail maps showing assets and hazards in each of the numbered areas below (Figure 7).

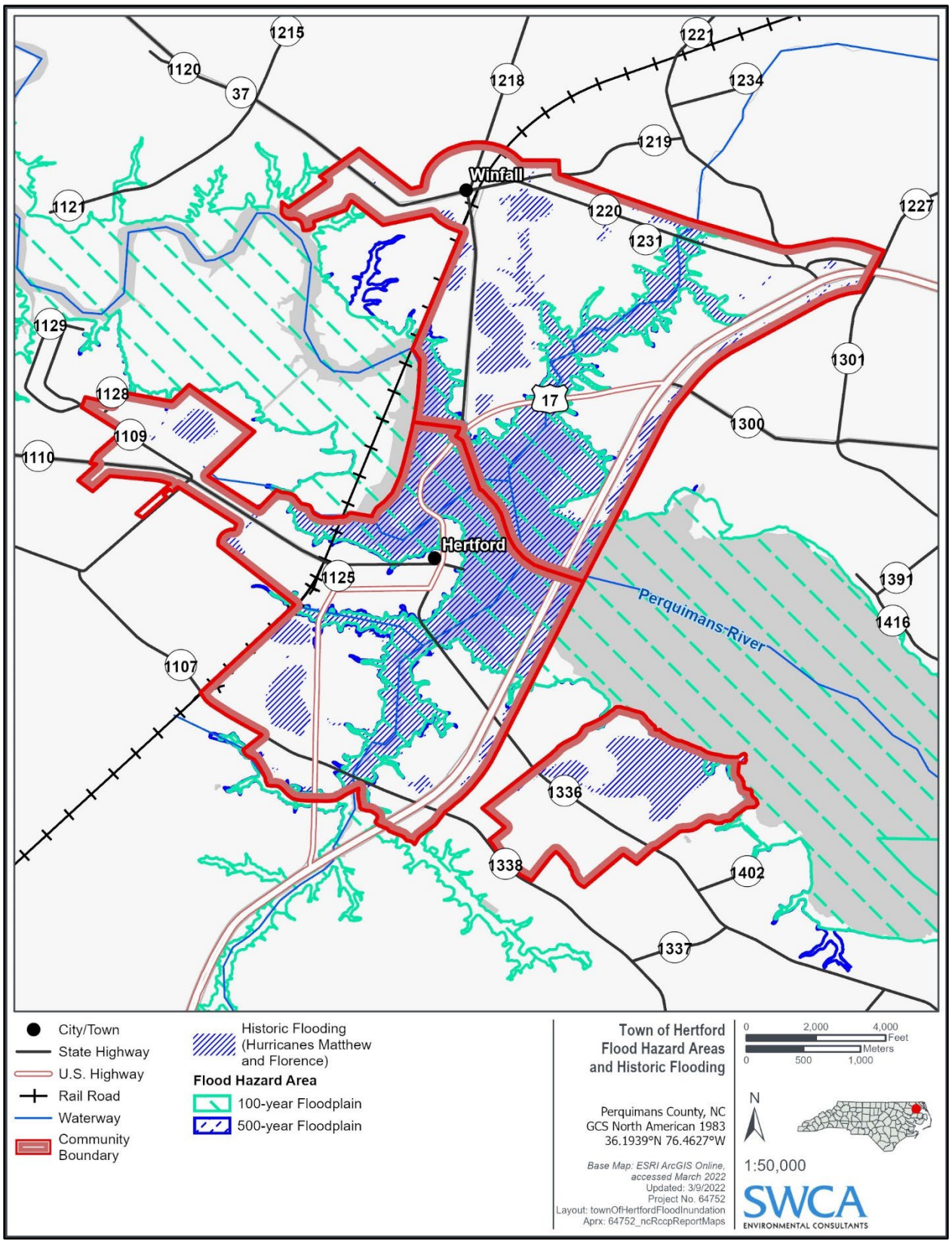


Figure 4. FEMA 100-year and 500-year floodplains and areas of historical flooding from Hurricanes Florence and Matthew around Hertford and Winfall, North Carolina.

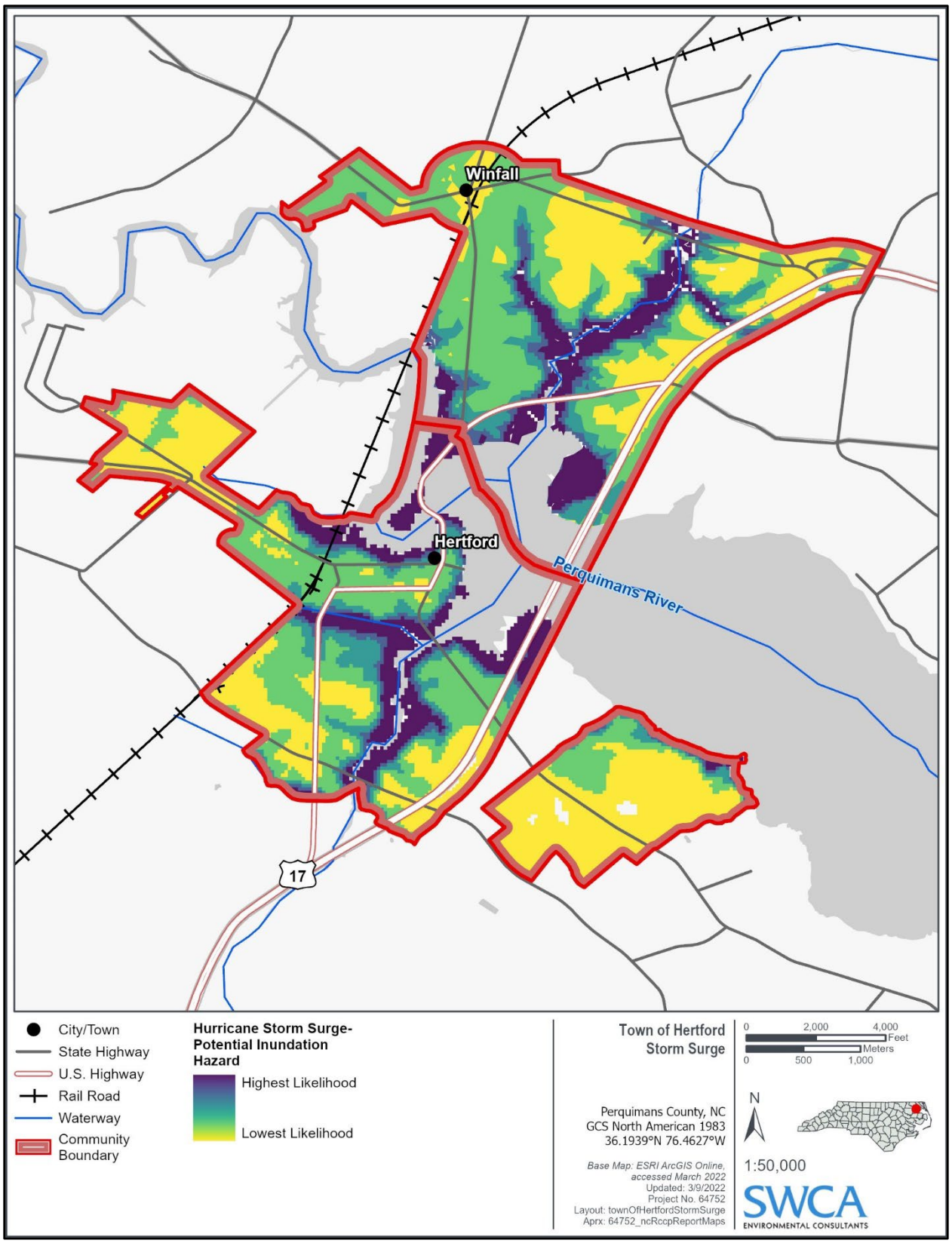


Figure 5. Areas with potential for storm surge inundation around Hertford and Winfall, North Carolina.

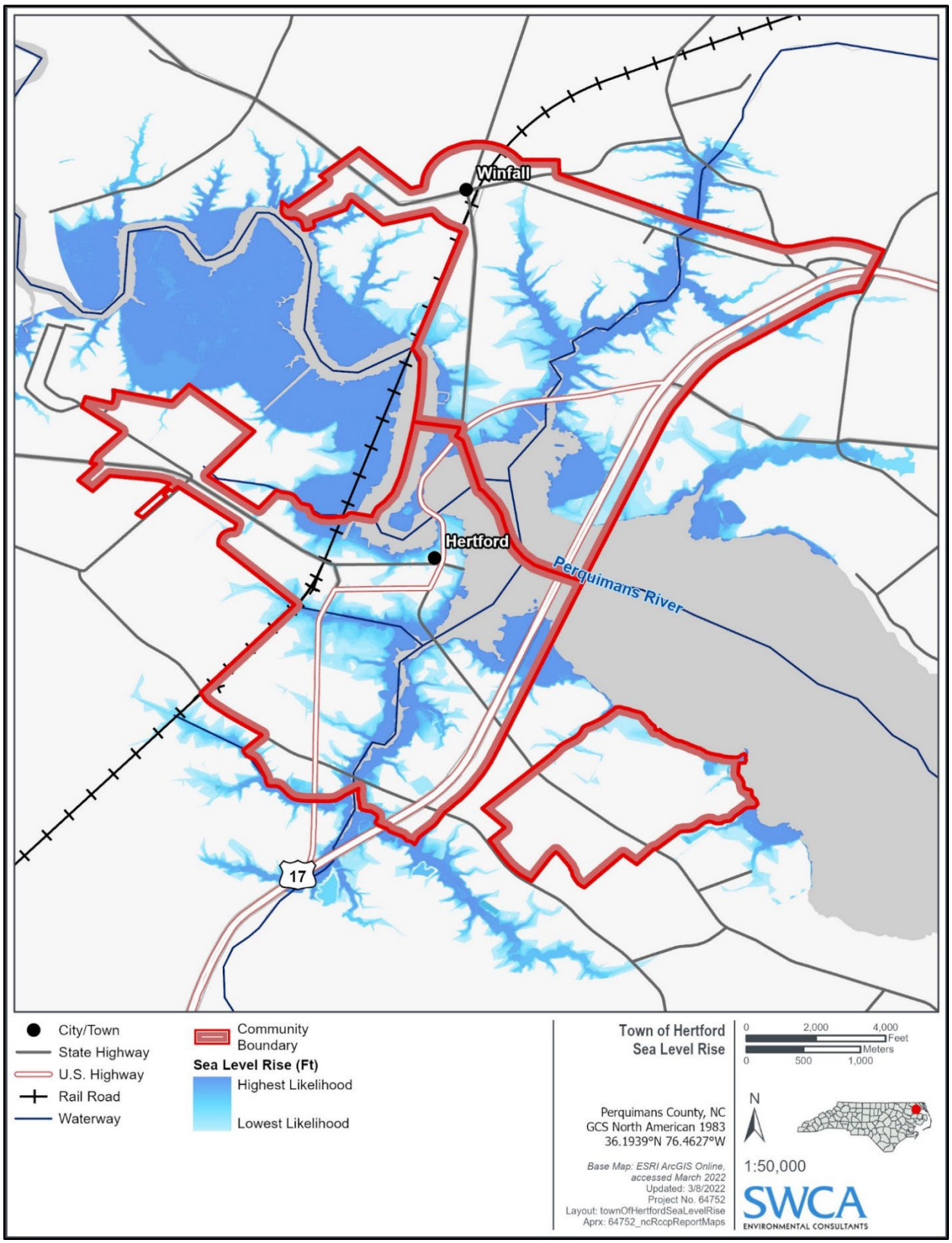


Figure 6. Areas at varying levels of risk from sea level rise from high likelihood of impact (dark blue) to lowest likelihood of impact (light blue) around Hertford and Winfall, North Carolina. The existing areas of water are shown in gray.

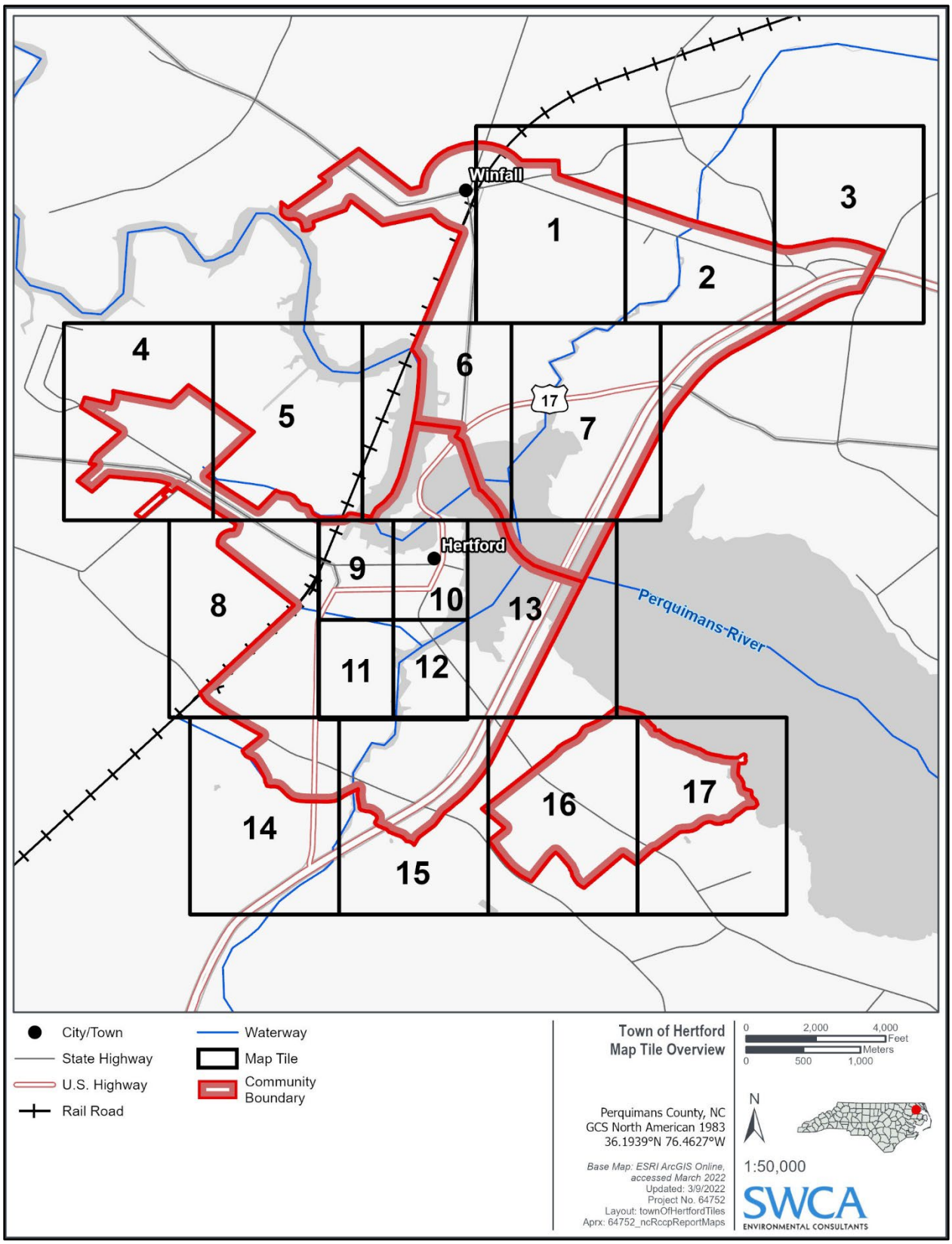


Figure 7. Map tile overview for maps showing details of assets and hazards around Hertford and Winfall, North Carolina. Individual maps can be found in Appendix F.

Table 3. Asset Information and Calculation of Vulnerability Index for Each Asset for Hertford, North Carolina. (Assets are listed from highest vulnerability to lowest vulnerability index. See Section 6.2 above for description of how scores were calculated.)

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-137	Hertford Housing Authority Units	Government	317, 319, 321, 323, 332, 330, 328, 326, 324, 322, 320, and 318 Stokes Street	Private	998,042	Town of Hertford	10	5	5	5	4	5	3	1	1	0
TH-097	Portion of Highway 17	Roadways	Hwy 17	State	400,000	Town of Hertford	9	5	5	5	4	4	3	1	0	0
TH-098	Portion of Hyde Park Road	Roadways	Hyde Park Rd	Town	200,000	Town of Hertford	9	5	5	5	4	4	3	1	0	0
TH-100	Portion of Grubb Street	Roadways	Grubb Street	Town	200,000	Town of Hertford	9	5	5	5	4	4	3	1	0	0
TH-101	Portion of Church Street	Roadways	Church St	Town	200,000	Town of Hertford	9	5	5	5	4	4	3	1	0	0
TH-103	Perquimans County High/Helicopter Landing Site/Primary Emergency Shelter	Schools, Emergency Services	305 Edenton Road St	County	6,137,400	Town of Hertford	9	4	5	5	3	5	3	1	1	0
TH-131	Long Distance Gas Line	Utilities	North of Ocean Hwy S	Private	450,000	Town of Hertford	9	5	5	5	4	4	3	1	0	0
TH-060	Hertford Housing Authority	Government	104 White St	Private	748,400	Town of Hertford	8	3	2	4	3	5	3	1	1	0
TH-084	Larry's Drive In	Restaurants	100 Creek Dr	Private	53,100	Town of Winfall	8	5	5	5	4	3	3	0	0	0
TH-122	Pumping station	Utilities	743 Whedbee St	Town	350,000	Town of Hertford	8	4	5	4	3	4	3	1	0	0

[1] These values are based on state assessor data and other publicly available information. These are estimates only, and do not necessarily reflect market value or replacement value for the asset. Values for historic districts include all parcels within the historic district.

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-123	Pumping station	Utilities	501 S Church St	Private	350,000	Town of Hertford	8	4	3	5	3	4	3	1	0	0
TH-135	Hertford Historic District	Cultural Site	Downtown Hertford	County, Town, Private	39,399,094	Town of Hertford	8	5	5	5	4	3	2	1	0	0
TH-005	Cedarwood Cemetery	Cemetery	West of Hyde Park St	Town	8,200	Town of Hertford	7	5	5	5	4	2	1	1	0	0
TH-030	Hertford Fire Department	Emergency Services	328 West Grubb Street	Town	1,296,100	Town of Hertford	7	2	1	4	0	5	3	1	1	0
TH-032	Perquimans County Emergency Management	Emergency Services	128 North Church St	County	2,724,800	Town of Hertford	7	2	1	4	0	5	3	1	1	0
TH-037	Perquimans County Schools Maintenance Department – Emergency Distribution Center	Emergency Services	138 Jimmy Hunter Dr	County	703,300	Town of Hertford	7	2	1	4	1	5	3	1	1	0
TH-053	Hertford Police Building	Government	114 West Grubb St	Town	29,400	Town of Hertford	7	2	1	4	2	5	3	1	1	0
TH-054	Perquimans County Health Department	Government	103 ARPDC St	County	1,724,400	Town of Hertford	7	2	1	4	0	5	3	1	1	0
TH-061	Perquimans County Library	Government	514 S Church St	County	158,300	Town of Hertford	7	2	1	4	1	5	3	1	1	0
TH-073	The Landings of Albemarle	Health and Medical	603 S Church St	Private	676,900	Town of Hertford	7	2	1	4	2	5	3	1	1	0
TH-081	Upper Perquimans River Trail Paddle Access at Missing Mill Park (Grubb Street)	Parks and Recreation	209 Perquimans St	Town	0	Town of Hertford	7	5	5	5	4	2	1	1	0	0

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-104	Hertford Grammar/Helicopter Landing Site	Schools, Emergency Services	603 Dobbs St	County	3,602,400	Town of Hertford	7	2	1	4	0	5	3	1	1	0
TH-121	Pumping station	Utilities	600 Willow St	Private	350,000	Town of Hertford	7	3	1	4	3	4	3	1	0	0
TH-130	Pumping Station	Utilities	219 N Church St	Private	350,000	Town of Hertford	7	3	1	4	3	4	3	1	0	0
TH-132	Diffuser for Sewer Treatment Outflow	Utilities	West of N Church St	Private	200,000	Town of Hertford	7	3	5	0	4	4	3	1	0	0
TH-024	Saunders Grove Baptist Church	Cultural Site	146 Chinquapin Rd	Private	690,200	Perquimans County Unincorporated	6	2	1	4	0	4	2	1	1	0
TH-033	Perquimans County Rescue and Emergency Services	Emergency Services	601B S Edenton Rd St	County	604,800	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-036	Storage for Emergency Services	Emergency Services	159 Creek Dr	County	784,800	Town of Winfall	6	2	1	4	1	4	3	0	1	0
TH-040	Sunoco	Food and Supplies	126 W Grubb St	Private	174,300	Town of Hertford	6	2	1	4	0	4	3	1	0	0
TH-041	Hertford Hardware	Food and Supplies	146 N Church St	Private	117,100	Town of Hertford	6	2	1	4	1	4	3	1	0	0
TH-045	Open Door Food Pantry	Food and Supplies	220 Ocean Hwy S	Private	382,300	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-046	First Baptist Church Food Pantry	Food and Supplies	211 Hyde Park St	Private	13,300	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-050	Hertford Post Office	Government	115 West Grubb St	Private	192,500	Town of Hertford	6	2	1	4	0	4	3	1	0	0
TH-051	Hertford Town Hall	Government	114 West Grubb St	Town	327,900	Town of Hertford	6	2	1	4	0	4	3	1	0	0

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-052	Perquimans County Courthouse	Government, Cultural Site	128 N Church St	County	2,724,800	Town of Hertford	6	2	1	4	0	4	3	1	0	0
TH-059	Maintenance Storage Building	Government	401 W Grubb St	County	82,000	Town of Hertford	6	2	1	4	0	4	3	1	0	0
TH-064	Woodards Pharmacy	Health and Medical	101 N Church St	Private	162,300	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-065	DaVita Perquimans Dialysis	Health and Medical	210 Ocean Hwy S	Private	1,018,500	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-066	Perquimans County Group Home	Health and Medical	142 Riverwood Dr	County	196,400	Perquimans County Unincorporated	6	1	1	3	0	5	3	1	1	0
TH-067	Brian Center Health and Rehabilitation/ Hertford	Health and Medical	1300 Don Juan Rd	Private	1,374,900	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-071	Coastal Carolina Family Practice	Health and Medical	600 S Church St	County	708,200	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-074	Family Care Pharmacy	Health and Medical	606 S Church St	Private	173,400	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-075	Perquimans County Sheriff's Department	Law Enforcement/ Corrections	110 N Church St	County	1,031,600	Town of Hertford	6	1	1	3	0	5	3	1	1	0
TH-077	Missing Mill Park/Waterfront	Parks and Recreation	W Grubb St	Town	730,500	Town of Hertford	6	3	1	5	3	3	1	1	1	0
TH-087	Brew 2 Rescue	Restaurants	139 N Church St	Private	120,900	Town of Hertford	6	2	1	4	0	4	3	1	0	0
TH-090	Little Mint	Restaurants	306 W Grubb St	Private	144,600	Town of Hertford	6	2	1	4	0	4	3	1	0	0

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-102	Portion of Covent Garden St	Roadways	Covent Garden St	Town	200,000	Town of Hertford	6	2	1	4	1	4	3	1	0	0
TH-111	Pumping station	Utilities	209A W Grubb St	Town	350,000	Town of Hertford	6	2	1	4	1	4	3	1	0	0
TH-118	Pumping station	Utilities	406 N Front St	Private	350,000	Town of Hertford	6	2	1	4	2	4	3	1	0	0
TH-006	Roadside Cemetery	Cemetery	304 S. Edenton Rd St	Town	2,100	Town of Hertford	5	3	3	4	3	2	1	1	0	0
TH-008	Mrs. Patricia's Day Care	Childcare	1027 New Hope Rd	Private	157,700	Perquimans County Unincorporated	5	2	1	3	1	3	2	0	1	0
TH-009	Precious Gifts Child Development Center	Childcare	1132 Don Juan Rd	Private	447,700	Town of Hertford	5	1	1	3	0	4	2	1	1	0
TH-011	The Learning Center of Perquimans County	Childcare	103 Bear Garden Rd	Private	178,900	Town of Winfall	5	2	1	4	1	3	2	0	1	0
TH-012	Hertford Baptist Church Preschool	Childcare	124 Market St	Private	1,587,000	Town of Hertford	5	1	1	3	0	4	2	1	1	0
TH-013	Wanda's Little Day Care	Childcare	1491 New Hope Rd	Private	107,600	Perquimans County Unincorporated	5	2	2	3	0	3	2	0	1	0
TH-025	First Baptist Church	Cultural Site	211 Hyde Park St	Private	20,600	Town of Hertford	5	1	1	3	0	4	2	1	1	0
TH-026	Colored Soldiers Monument	Cultural Site	Corner of Hyde Park & King St	Private	31,300	Town of Hertford	5	1	1	3	0	4	2	1	1	0
TH-034	Winfall Volunteer Fire Department	Emergency Services	341 Wiggins Road	Town	253,200	Town of Winfall	5	1	1	3	0	4	3	0	1	0
TH-043	Family Dollar	Food and Supplies	206 Ocean Hwy S	Private	1,018,500	Town of Hertford	5	1	1	3	0	4	3	1	0	0

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-044	Dollar General	Food and Supplies	256 Ocean Hwy S	Private	792,000	Town of Hertford	5	1	1	2	0	4	3	1	0	0
TH-048	Speedway	Food and Supplies	800 S Church St	Private	387,500	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-055	County Office Building	Government	104 Dobbs St	County	259,700	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-056	Hertford Community Center	Government	303 W Grubb St	Town	190,800	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-057	Historic Hertford, Inc., Building	Government	110 W Academy St	County	294,200	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-062	Cooperative Extension	Government	601A Edenton Rd St	County	604,800	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-070	Hertford Assisted Living	Health and Medical	464 Two Mile Dessert Rd	Private	77,500	Perquimans County Unincorporated	5	1	1	3	0	4	3	0	1	0
TH-083	252 Grill	Restaurants	100 Berry St	Private	195,300	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-085	Story's Seafood	Restaurants	131 N Commerce Dr	Private	281,900	Town of Hertford	5	2	2	3	0	3	3	0	0	0
TH-089	The Crawfish Shack	Restaurants	305 Swing Gate Rd	Private	100,900	Perquimans County Unincorporated	5	2	1	4	0	3	3	0	0	0
TH-091	Hardee's	Restaurants	200 Ocean Hwy S	Private	632,900	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-094	Captain Bob's	Restaurants	310 Ocean Hwy S	Private	623,300	Town of Hertford	5	1	1	2	0	4	3	1	0	0
TH-099	Portion of Covent Garden Street	Roadways	Covent Garden St	Town	200,000	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-106	Winfall Water Department (former)	Utilities	109 Yates Dr	Town	334,500	Town of Winfall	5	2	1	4	0	3	3	0	0	0

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-107	Pumping station	Utilities	1102 Don Juan Rd	Private	350,000	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-109	Wastewater treatment	Utilities	142 Meads Circle	Town	1,499,500	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-115	Water tower	Utilities	324 W Grubb St	Town	400,000	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-119	Pumping station	Utilities	318 Hyde Park	Town	350,000	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-125	Cable – Teleport office/InteliPort Fiber	Utilities	103 N Church St	Private	324,000	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-128	Pumping station	Utilities	905 Dobbs St	Private	350,000	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-129	Pumping station	Utilities	729 W Grubb St	Private	350,000	Town of Hertford	5	1	1	3	0	4	3	1	0	0
TH-138	Snug Harbor Water Plant	Utilities	300 Snug Harbor Rd4	County	316,859	Perquimans County Unincorporated	5	2	1	3	1	3	3	0	0	0
TH-002	PNC Bank	Banks	106 N Church St	Private	535,200	Town of Hertford	4	1	1	3	0	3	2	1	0	0
TH-003	Hertford Savings Bank	Banks	121 N Church St	Private	201,100	Town of Hertford	4	1	1	3	0	3	2	1	0	0
TH-004	State Employees' Credit Union	Banks	142 Ocean Hwy S	State	2,068,300	Town of Hertford	4	1	1	3	0	3	2	1	0	0
TH-007	Holy Trinity Episcopal Cemetery	Cemetery	207 S Church Street	Private	295,300	Town of Hertford	4	2	1	4	1	2	1	1	0	0
TH-010	Faith Child Development Center	Childcare	1213 Harvey Point Rd	Private	134,500	Perquimans County Unincorporated	4	1	1	2	0	3	2	0	1	0
TH-014	Anna's House of Learning	Childcare	787 Ocean Hwy S	Private	117,300	Perquimans County Unincorporated	4	1	1	3	0	3	2	0	1	0

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-016	Winfall Radio Tower Equipment	Communications	141 Lake Rd	County	514,600	Perquimans County Unincorporated	4	1	1	3	0	3	3	0	0	0
TH-017	Church of the Holy Trinity	Cultural Site	207 S Church St	Private	295,300	Town of Hertford	4	1	1	3	0	3	2	1	0	0
TH-020	Newbold-White House	Cultural Site	151 Newbold White Rd	County	526,900	Perquimans County Unincorporated	4	2	2	3	0	2	2	0	0	0
TH-022	Hertford UMC	Cultural Site	200 Dobbs St	Private	737,400	Town of Hertford	4	1	1	3	0	3	2	1	0	0
TH-023	Hertford Baptist	Cultural Site	124 Market St	Private	1,587,000	Town of Hertford	4	1	1	3	0	3	2	1	0	0
TH-028	Bethel Community Fire Protection Association	Emergency Services	462 Snug Harbor Rd	Private	322,700	Perquimans County Unincorporated	4	0	1	0	0	4	3	0	1	0
TH-042	Exxon	Food and Supplies	205 Ocean Hwy S	Private	1,125,000	Town of Hertford	4	1	1	3	0	3	3	0	0	0
TH-047	Food Lion	Food and Supplies	321 Ocean Hwy S	Private	2,096,900	Town of Hertford	4	1	2	2	0	3	3	0	0	0
TH-049	Ace Hardware	Food and Supplies	211 Ocean Hwy S	Private	1,125,000	Town of Hertford	4	1	1	3	0	3	3	0	0	0
TH-058	Maintenance Shop	Government	109 Melton Grove Rd	County	523,600	Town of Winfall	4	1	1	3	0	3	3	0	0	0
TH-078	Perquimans County Basketball Court/King Street Park and Building	Parks and Recreation	King St	Private	403,800	Town of Hertford	4	1	1	3	0	3	1	1	1	0

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-080	Perquimans County Tennis/Basketball Court	Parks and Recreation	Grubb St	Private	79,100	Town of Hertford	4	1	1	3	0	3	1	1	1	0
TH-088	Subway	Restaurants	205 Ocean Hwy N	Private	1,125,000	Town of Hertford	4	1	1	3	0	3	3	0	0	0
TH-092	McDonald's	Restaurants	303 Ocean Hwy S	Private	538,100	Town of Hertford	4	1	1	2	0	3	3	0	0	0
TH-093	Tommy's Pizza	Restaurants	309 Ocean Hwy S	Private	2,096,900	Town of Hertford	4	1	2	2	0	3	3	0	0	0
TH-095	Ming Hing	Restaurants	315 Ocean Hwy S	Private	2,096,900	Town of Hertford	4	1	2	2	0	3	3	0	0	0
TH-105	Winfall Water Plant	Utilities	109 Melton Grove Rd	County	1,330,500	Town of Winfall	4	1	1	3	0	3	3	0	0	0
TH-110	Hunnicutt Well Site	Utilities	199 Bembury Rd	County	40,000	Perquimans County Unincorporated	4	1	1	3	0	3	3	0	0	0
TH-112	Pumping station	Utilities	309 Wynne Fork Ct	Private	350,000	Town of Hertford	4	1	1	2	0	3	3	0	0	0
TH-114	Chappell Well Site	Utilities	231 Snug Harbor Rd	County	40,000	Perquimans County Unincorporated	4	1	2	0	0	3	3	0	0	0
TH-116	Winslow Well Site	Utilities	314 Lake Rd	County	40,000	Perquimans County Unincorporated	4	1	1	3	0	3	3	0	0	0
TH-117	Lake Road Well Site	Utilities	314 Lake Rd	Private	40,000	Perquimans County Unincorporated	4	1	1	3	0	3	3	0	0	0
TH-120	Water Warehouse	Utilities	458 Snug Harbor Rd	County	76,500	Perquimans County Unincorporated	4	1	1	2	0	3	3	0	0	0

Asset ID	Asset Name	Asset Type	Location	Ownership	Estimated Value ($) [1]	Jurisdiction	Vulnerability Index	Average Exposure (0–5)	Precipitation (0–5)	Sea Level Rise (0–5)	Storm Surge (0–5)	Total Sensitivity (0-5)	Sensitivity (0–3, by asset type)	Social Vulnerability (by location)	Social Vulnerability (by service)	Adaptive Capacity
TH-124	Swamp Road Elevated Water Tank	Utilities	745 Swamp Rd	County	400,000	Perquimans County Unincorporated	4	1	1	3	0	3	3	0	0	0
TH-126	New Hope Elevated Water Tank	Utilities	Corner of Gibson and New Hope Rd	County	400,000	Perquimans County Unincorporated	4	1	1	3	0	3	3	0	0	0
TH-127	Raburn Elevated Water Tank	Utilities	Corner of Holiday Island and Rayburn	County	400,000	Perquimans County Unincorporated	4	1	1	2	0	3	3	0	0	0
TH-001	First National Bank	Banks	1103 Harvey Point Rd	Private	611,800	Town of Hertford	3	1	1	2	0	2	2	0	0	0
TH-018	Fletcher-Skinner-Nixon House and Outbuildings	Cultural Site	385 Old Neck Rd	Private	153,000	Perquimans County Unincorporated	3	1	1	3	0	2	2	0	0	0
TH-039	Vidant Medical Center	Employers	1124 Harvey Point Rd	Private	369,000	Town of Hertford	3	1	1	2	0	2	2	0	0	0
TH-076	Hertford Boat Access Area	Parks and Recreation	310 Granby St	County	4,753,500	Town of Hertford	3	2	1	4	1	1	1	0	0	0
TH-079	Perquimans County Community Center and Walking Trail	Parks and Recreation	Granby St	Private	3,219,800	Town of Hertford	3	1	1	2	0	2	1	0	1	0
TH-082	Perquimans County Senior Center	Parks and Recreation	1072 Harvey Point Rd	County	488,700	Town of Hertford	3	1	1	2	0	2	1	0	1	0
TH-108	Manley Well Site	Utilities	140 Snug Harbor Rd	County	40,000	Perquimans County Unincorporated	3	0	1	0	0	3	3	0	0	0

6.3 Evaluation of Risk

To quantify the potential economic risk to town assets, Estimated Values for assets with a vulnerability score of 5 or greater were summarized by asset type and ownership (Table 4 and Table 5). Estimated values were assigned by finding the maximum value (Parcel Value, Land Value, or Improvement Value) associated with an asset's parcel. A threshold of 5 for the risk evaluation was used because it represents assets in a community with an average or above average vulnerability. In the Town of Hertford 81 assets with an estimated total value of $70,179,295 were determined to be at risk (defined as Vulnerability Index of 5 or higher). This value was calculated by assuming the value of assets that overlap are reflected in the cost estimate of the larger asset area (i.e., the cost of a government building in a historic district would be captured in the overall estimated cost for the historic district). This assumption was carried over into grouped estimated value calculations, and spatial duplicates were removed within each category. Estimated values for each Asset Type should be considered independently since assets with multiple type designations were included in the evaluation of each of their assigned types.

Table 4. Calculation of Total Asset Value at Risk (defined as Vulnerability Index of 5 or higher) for Each Asset Type for Hertford, North Carolina

Asset Type	Number of Assets at Risk	Estimated Asset Value at Risk ($)
Cemetery	2	10,300
Childcare	5	2,478,900
Cultural Sites [2]	4	40,089,294
Emergency Services	6	4,702,200
Food and Supplies	7	2,375,750
Government	12	5,308,042
Government, Cultural Site	1	1,362,400
Health and Medical	8	3,878,850
Law Enforcement/Corrections	1	1,031,600
Parks and Recreation	2	730,500
Restaurants	8	2,152,900
Roadways	6	1,400,000
Schools, Emergency Services	2	9,739,800
Utilities	17	3,369,859

Table 5. Calculation of Total Asset Value at Risk (defined as Vulnerability Index of 5 or higher) for Each Ownership Type for Hertford, North Carolina

Ownership Category	Number of Assets at Risk	Estimated Asset Value at Risk ($)
Private	43	46,288,182
State	1	400,000
County	18	1,6050,745
Town of Hertford	19	6,299,704

[2] Includes all parcels within historic districts

Ownership Category	Number of Assets at Risk	Estimated Asset Value at Risk ($)
Town of Winfall	2	1,140,664

7 PROJECT PORTFOLIO

7.1 Identification and Prioritization of Resilience Projects

The overall purpose of the RCCP is to support coastal communities to identify and pursue priority resilience projects that reduce and minimize risks posed by coastal hazards. The CAT referenced the following criteria (based on those in the RCCP Handbook) as well as their vision and goals in reaching agreement on a set of seven high-priority resilience projects for the town.

- Impact
  - Overall benefit to the community as a whole
  - Advances prior efforts/aligns with other plans
  - Has potential co-benefits, e.g., provides a recreational amenity, contributes to local economy, preserves a habitat, strengthens resilience to non-climate stressors like pandemics
  - Important for long-term resilience (i.e., taking climate change, sea level rise, and other future conditions into account)
  - Reduces vulnerability of key assets to coastal hazards
  - Reduces economic risk posed by coastal hazards in one or more sectors
  - Supports social equity
- Feasibility
  - Capacity to implement
  - Technical soundness
  - Likely positive benefit-cost ratio
  - Identifiable sources of funding

7.2 Prioritization Process

To develop a priority list of resilience projects for the Town of Hertford, SWCA first created a list of potential projects based on review of existing documents including the Albemarle Regional Hazard Mitigation Plan Update (North Carolina Emergency Management Division (NCEM) 2020), the Perquimans County Hurricane Matthew Resilient Redevelopment Plan (NCEM 2017), and the town's Riverfront and Community Plan, 2019 Capital Improvement Plan (CIP), and a Town Council Brief from May 2019.

Project prioritization proceeded in three rounds. In the first round, the CAT reviewed the full list of potential projects compiled from existing resources to remove projects already completed or no longer relevant to the town and add any additional projects for consideration. In the second round, CAT members added or refined some project ideas based on the criteria above and selected a short list to bring to the second public meeting for review and feedback (Figure 8). In the third round, CAT members refined and adjusted their high priority list based on the criteria above and to better reflect public input and the vulnerability assessment results.

The seven high-priority projects agreed upon by the CAT are described in more detail in the tables below. Generally, these projects were understood by the CAT to have broad community-wide risk-reduction benefits or to benefit vulnerable populations, to be feasible, to align with the town's long-term resilience goals, to build upon other plans, and to link to efforts already underway.

Figure 8. Community members discuss potential projects at the February public meeting.

All other projects considered by the CAT are documented in Appendix G. Some of the other projects considered were not prioritized because they had been completed or were already in progress since being identified in previous planning efforts. Others were very localized and not perceived by the CAT to have sufficient benefit to the community at large to be considered high priority. Others would not substantially contribute to reducing coastal hazard risks or were considered infeasible by the CAT for any of the reasons noted in the criteria above, and so were not prioritized.

7.3 High Priority Projects

The following seven projects were identified as high priority by the Hertford CAT. Click the links below to jump to more details for each project:

7.3.1 Jennies Gut Drainage Improvement Feasibility Study

Project Description	Conduct a comprehensive evaluation of the flow dynamics in Jennies Gut and associated drainage structures (ditches, culverts, etc.) to identify areas where flow needs to be increased or decreased to minimize flood risks. Specifically, evaluate road crossings and culverts on Hyde Park, Edenton Road Street, along the drainage between Carolina and Kenyon Streets, in the block west of Perry Street on Grubb Street, and the East Railroad Avenue culvert on Grubb Street. Investigate the impact of the railroad potentially holding back water and look at any need for water retention/watershed improvements in upstream areas (e.g., Nixon farmlands). Evaluate the potential to employ nature-based solutions to help retain water on the landscape or absorb water to prevent flooding of low-lying areas. Explore whether anything could be done to protect vulnerable structures such as the Stokes Street apartments.
Location	Includes the area from South Church Street to Kenyon/Carolina Avenue/West Dobbs Street.
Source	2019 Capital Improvement Plan, Public meeting input, Stakeholder Input, CAT discussion
Scoping Questions	Do flood hazard areas related to Jennies Gut differ depending on the source of flooding (e.g., from rainfall/runoff vs. storm surge/sea level rise)?
Hazard(s) Addressed by Project	Runoff, precipitation-based flooding, sea level rise, storm surge
Type of Solution	Structure and infrastructure projects, natural systems protection
FEMA Community Lifelines	Safety and Security, Transportation
Project Estimated Timeline	6 months–1 year
Responsible Entity	• Town of Hertford – The general area of Jennies Gut and the stream crossing to the cemetery (Hyde Park Street) • Perquimans County – Land Adjacent to Jennies Gut at Tennis Courts and the High School • NC DOT – The stream crossing at South Edenton Road Street
Potential Partners	Adjacent landowners, Natural Resources Conservation Service Soil and Water Conservation District
Existing Funding	None currently
Potential Funding Sources	**Study and engineering work for this project is the highest priority for RCCP Phase 3 funding.** National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund, Building Resilient Infrastructure and Communities (BRIC) State Allocation, WaterSMART Cooperative Watershed Management Program (CWMP), Streamflow Rehabilitation Assistance Program (StRAP) - includes debris removal:
Project Estimated Cost	Medium – $100,000 – 500,000
Anticipated Benefit	High – Action would have a significant impact on risk reduction. Mitigates risk to TH-137 (Vulnerability Index 10) – HHA Residences as well as other residences and impacts to the sewer system. Shorter term solution to mitigate threats to multiple assets makes this a very high priority. This project will prepare the town to address multiple interconnected drainage issues in and around the town core in the most technically sound and cost-effective manner.
Priority Rating	High

Figure 9. Drainage improvement feasibility study area in Jennies Gut watershed. Red dots show locations where there are known drainage issues such as undersized culverts that cause roadways and other areas to flood during high water.

7.3.2 Repair Four Damaged Storm Drains at the Stokes Apartments

Project Description	Repair four damaged storm drains at the Stokes Apartments
Location	Stokes Street
Source	Stakeholder input
Scoping Questions	What level of repair is needed?
Hazard(s) Addressed by Project	Runoff, precipitation-based flooding
Type of Solution	Structure and infrastructure projects
FEMA Community Lifelines	Safety and Security
Project Estimated Timeline	1 year
Responsible Entity	Town of Hertford Public Works Department
Potential Partners	None needed
Existing Funding	Currently being initiated by the Town of Hertford with some existing funding
Potential Funding Sources	Clean Water State Revolving Fund, USDA Water & Waste Disposal Loan & Grant Program, NCDEQ Water Resources Development Grant. The USDA grant program is specifically for towns with populations under 10,000 for which Hertford qualifies. Among other things funds can be used for the improvement of storm water collection, transmission, and disposal.
Project Estimated Cost	Medium – $100,000–$200,000
Anticipated Benefit	Medium – Action would have an impact on risk reduction. Mitigates risk to TH-137 (Vulnerability Index 10) – HHA Residences
Priority Rating	High

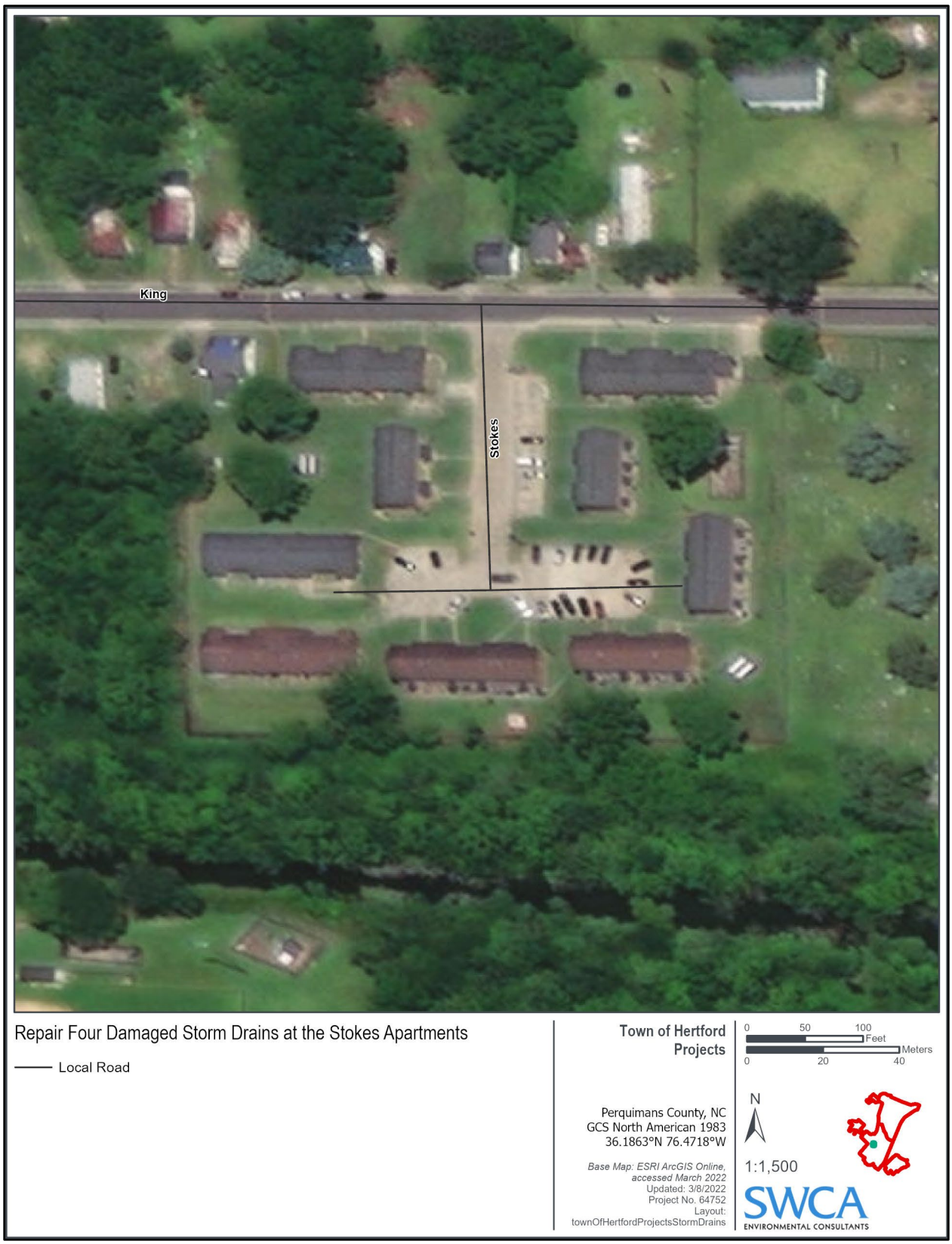


Figure 10. Area where four storm drains are to be repaired.

7.3.3 Relocate or Retrofit Hertford Housing Authority Facilities

Project Description	Relocate or retrofit Hertford Housing Authority facilities including administrative offices and flood prone residences on Stokes Street that back up to Jennies Gut
Location	Flood prone buildings on Stokes Street, and the Housing Authority offices at 104 White Street
Source	Public Meeting Input
Scoping Questions	Should relocation include only the three southern-most buildings on Stokes Drive that are most clearly at risk, or should it include the whole complex? [NOTE: this may depend on funding source and quantity of available funds.] Would wet floodproofing be a more effective strategy than relocation for either site? Where would the buildings be located to? Larger multi-family buildings like these typically can't be elevated (too big). The more likely scenario is that the buildings are condemned, and the residents relocated OR the buildings are flood-proofed and a more robust evacuation plan is put into place.
Hazard(s) Addressed by Project	Storm surge, sea level rise, precipitation-based flooding
FEMA Community Lifelines	Safety and Security
Type of Solution	Structure and Infrastructure
Project Estimated Timeline	5-10 years
Responsible Entity	Hertford Housing Authority
Potential Partners	North Carolina Housing Finance Agency, US Department of Housing and Urban Development
Existing Funding	None identified by CAT
Potential Funding Sources	Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), Flood Mitigation Assistance (FMA), Community Development Block Grants (CDBG), Emergency Watershed Protection-Floodplain Easement Program (EWP-FEP)
Project Estimated Cost	High – $2–$10 million
Anticipated Benefit	High – Action would have a significant impact on risk reduction. Addresses risk to Asset TH-137 (Vulnerability Index 10). This project would benefit vulnerable individuals and families in Hertford by moving them out of harm's way, prevent repetitive losses at these properties, and ensure continuity of services provided by the Housing Authority during and following flood events.
Priority Rating	High

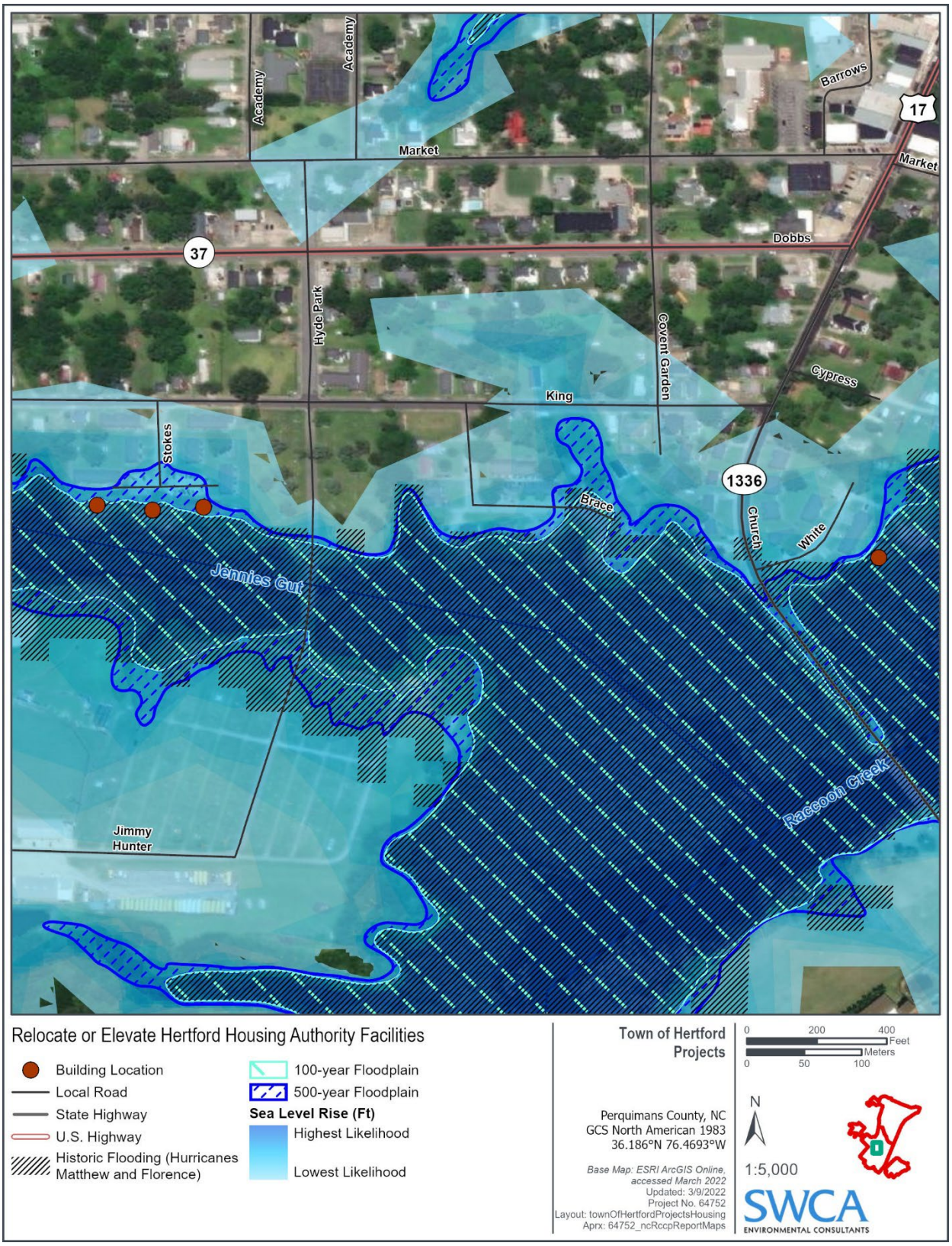


Figure 11. Location of three public residential structures and administrative office that were flooded and rebuilt in the same locations following Hurricane Isabel, showing their location within historically flooded areas, the 100-year and 500-year floodplains, and at risk of sea level rise.

7.3.4 Collections System Maintenance and Repair

Project Description	Sewer replacement project to repair access holes and repair or replace partially collapsed pipes. This includes Dobb Street sanitary sewer replacement, Jennies Gut sanitary sewer line repair or replacement, Woodland Circle and Pennsylvania Avenue sewer replacement, and repair and replacement at numerous of other sites.
Location	Town-wide
Source	2019 Capital Improvement Plan, Town Council Brief 5/13/19, Public Meeting input
Scoping Questions	At specific locations to be determined via the upcoming water/sewer survey
Hazard(s) Addressed by Project	Precipitation-based flooding, storm surge, sea level rise, runoff
FEMA Community Lifelines	Safety and Security
Type of Solution	Structure and infrastructure, emergency preparedness
Project Estimated Timeline	~10 years, including time for completion of the upcoming water/sewer survey
Responsible Entity	Town of Hertford Public Works Department
Potential Partners	
Existing Funding	$200,000 allocated in the 2019 CIP
Potential Funding Sources	Clean Water State Revolving Fund, USDA Water & Waste Disposal Loan & Grant Program
Project Estimated Cost	High – $1 million +
Anticipated Benefit	High – Action would have a significant impact on risk reduction.
Priority Rating	High

7.3.5 Pump and Lift Station Control Upgrades

Project Description	Pumps are reaching the end of their service lives and there are no spare pumps on hand, as required by the state. Major renovation of Cemetery Lift Station is the highest priority subproject due to overflow issues at this site. Other subprojects include Major renovation of Willow Lift Station, Meads Lift Station, Feed & Seed Lift Station on Grubb St, Commerce Park, repair or replacement of nine inoperable alarms, and upgrades to the telemetry system.
Location	Various, townwide
Source	2019 Capital Improvement Plan, Town Council Brief 5/13/19, Public Meeting input
Scoping Questions	Need to determine best way to group and sequence sub-projects for funding and implementation.
Hazard(s) Addressed by Project	Precipitation-based flooding, storm surge, sea level rise, runoff
FEMA Community Lifelines	Safety and Security
Type of Solution	Structure and infrastructure, emergency preparedness
Project Estimated Timeline	5-10 years
Responsible Entity	Town of Hertford Public Works Department
Potential Partners	
Existing Funding	$30,000 allocated in the 2019 CIP
Potential Funding Sources	Clean Water State Revolving Fund, USDA Water & Waste Disposal Loan & Grant Program, Building Resilient Infrastructure and Communities (BRIC)
Project Estimated Cost	High – $1 million +
Anticipated Benefit	High – Action would have a significant impact on risk reduction. Addresses risk at multiple asset locations (Vulnerability Index ranging from 4-8). Many moderately sized projects critical to prevent WWTP and Pumping Station Overloads, sewer overflows in the community and loss of sewer service to homes and businesses.
Priority Rating	High

7.3.6 Northern Riverfront Retaining Wall (Bulkhead) with Walkway

Project Description	An inland retaining wall (bulkhead) along the Hertford Waterfront to help mitigate flooding on the site and allow for redevelopment around Missing Mill Park, which is often inundated, even during rain events and strong winds. The focus is to first protect the area from flooding (as much as possible) and then to make it viable for redevelopment
Location	Hertford Waterfront – Northern Rivershore at Missing Mill Park
Source	Riverfront and Community Plan
Scoping Questions	How far along is design? May need an interim design/engineering step.
Hazard(s) Addressed by Project	Precipitation-based flooding, sea level rise, storm surge
FEMA Community Lifelines	Safety and Security
Type of Solution	Structure and Infrastructure, Nature Based Solutions
Project Estimated Timeline	5 years
Responsible Entity	Town of Hertford, Perquimans County
Potential Partners	Adjacent landowners
Existing Funding	$117,000 allocated in 2019 CIP - Funding support from the Count and the Town is being made available for engineering, funding for CAMA permitting is part of the 2021 Community and Riverfront Plan.
Potential Funding Sources	Golden Leaf Foundation; NC Land and Water Trust Fund; Building Resilient Infrastructure and Communities (BRIC); and, if it includes living shoreline on the water side or other significant nature-based components, National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund
Project Estimated Cost	High - $1–$2 million
Anticipated Benefit	High – Action would have a significant impact on risk reduction. Addresses risks to TH-100 Grubb Street (Vulnerability Index 9) as well as TH-077 Missing Mill Park/Waterfront (Vulnerability Index 6)
Priority Rating	High

Figure 12. Location of northern riverfront retaining wall (bulkhead) and walkway (shown in red). Map excerpted from the Riverfront and Community Plan.

7.3.7 Electric Line Replacement

Project Description	This project involves replacement of 3,400 feet of open secondary line and replacement of 6 miles of copper secondary line with aluminum. This project is a priority for the town, but specific assets and locations have not been documented.
Location	To be determined by public works
Source	Town Council Brief 5/13/19
Scoping Questions	What are the locations and extent of work needed? How is this linked to coastal hazards?
Hazard(s) Addressed by Project	To be determined based on location of lines to be replaced
FEMA Community Lifelines	Safety and Security
Type of Solution	Structure and infrastructure, emergency preparedness
Project Estimated Timeline	To be determined
Responsible Entity	Town of Hertford Public Works Department
Potential Partners	
Existing Funding	None identified by CAT
Potential Funding Sources	To be determined
Project Estimated Cost	To be determined
Anticipated Benefit	To be determined
Priority Rating	High

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APPENDIX A

Community Action Team Members

Table A-1. Community Action Team Members for Hertford, North Carolina

Name	Title/Affiliation
Sandra Anderson	Town Council Member
Earnell Brown	Mayor
Janice Cole	Town Manager
Eboney Elliot	Citizen Advisory Council Member
Tommy Harrell	Citizen Advisory Council Member
Ashley Hodges	Mayor Pro Tem
Larry Sandeen	Citizen Advisory Council Member
Marvin Sutton	Citizen Advisory Council Member
Sara Winslow	Citizen Advisory Council Member
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Tim Brinn	Citizens for the Preservation and Growth of Hertford
Sarah Nixon	Executive Assistant / Human Resources Officer
Sharon Smith	Albemarle Commission

APPENDIX B

Community Action Team Meeting Summaries

Ctrl+Click to jump to the summary of a specific meeting:

MEETING SUMMARY
TOWN OF HERTFORD CAT

Meeting No. 1, Tuesday October 12, 2021, from 7:00 to 8:00 p.m.

Meeting Objectives

- Introduce the purpose, milestones, and schedule for the RCCP process
- Review and answer any questions about the role of the CAT members
- Review existing information available and gaps for consideration under RCCP, including:
  - Priority hazards for assessment
  - Initial discussion of assets to be mapped
- Confirm next steps following this meeting

Participants

Town of Hertford Staff
Earnell Brown, Mayor of Hertford
Pam Hurdle, Town Manager

Other Members
Sandra Anderson
Eboney Elliot
Tommy Harrell
Larry Sandeen
Sara Winslow

Facilitation and Support Staff
Kathryn Gardner, SWCA Environmental Consultants
Meg Perry, SWCA Environmental Consultants
Mackenzie Todd, NC Division of Coastal Management

Action Items

CAT Members

- Share any additional existing materials to review, hazards or assets to focus on, or recommended avenues for sharing information with the community beyond this group - by Monday, Oct. 25

SWCA

- Share meeting recording, slides, and summary with CAT members – by Wednesday, Oct. 20
- Share examples of vision statements for CAT consideration – by Wednesday, Oct. 20
- Invite CAT members to access the SharePoint folder – by Wednesday, Oct. 20
- Invite Emergency Services Staff to next CAT meeting (per the Mayor's suggestion) by Wednesday, Oct. 20
- Gather the following information – by Friday, Oct. 22
  - Coastal Habitat Protection Plans from Marine Fisheries
  - Perquimans Historical Society Booklets
  - Data for water, sewer, and stormwater drains/lines

- CAMA Land Use Plan, if there is an updated version since 2006

Summary of Key Points from Presentation and Discussion

Program Overview

Meg Perry, SWCA Environmental Consultants, introduced the four-phase Resilient Coastal Communities Program (RCCP), and Larry Sandeen noted that this group will also have other business to discuss related to other projects and grants the Town in pursuing, in addition to the work on the RCCP.

Ms. Perry explained the four phases of the program are outlined below and explained in further detail in the Program Handbook:

- *Phase 1: Risk and Vulnerability Assessment* (approximately September – December 2021) Evaluating local assets, hazards, and vulnerabilities. This phase will include one public open-house event.
- *Phase 2: Planning, Project Identification, & Prioritization* (approximately December – March 2022) Identifying priority actions (such as infrastructure repair or creation of living shorelines) to reduce the risks identified in Phase 1. This phase will include a second public open-house event.
- *Phase 3: Engineering and Design* (approximately February – September, 2022)
- *Phase 4: Project Implementation*

Mackenzie Todd, Division of Coastal Management (DCM), explained that DCM will share information about how to apply for funding from the state for Phase 3 in early 2022. DCM expects to provide approximately $40,000 to each of the 26 communities currently participating in the program. These funds will support Phase 3 design for one priority project. Phase 3 is expected to run through late summer/early fall of 2022. After Phase 3, communities will have the opportunity to apply via a competitive proposal process for Phase 4 implementation funds.

Ms. Perry explained that the Division of Coastal Management has contracted with SWCA to provide technical support to four communities in completing Phases 1 and 2 of the Program between now and March 2022. The four communities SWCA is supporting are Bertie County, Hertford County, Town of Hertford, and Town of Windsor.

Community Action Team Role

Ms. Perry explained the role of the CAT is to provide guidance and input for Phases 1 and 2 to ensure the Resilience Strategy developed by SWCA reflects the community's vision and goals and accurately reflets the issues and needs in the community.

Meetings are scheduled for November and December to discuss the Risk and Vulnerability Assessment process and results. Additional meetings will be scheduled in January – March 2022 focused on development of the prioritized project portfolio and review of the final Resilience Strategy document.

Community Resilience Goals

Ms. Perry shared the following general goals for this effort:

1. Prepare the Town to implement projects that reduce risks and speed recovery from coastal hazards by evaluating local risks and vulnerabilities and identifying and scoping priority coastal resilience projects.

2. Qualify the Town for project funding through the RCCP and other funding programs

She asked CAT members to consider what specific vision and goals for resilience this program can help the Town of Windsor pursue. This will be discussed further in subsequent meetings.

Review of Existing Materials

Ms. Perry explained that the SWCA team has begun reviewing the existing materials related to resilience planning that the Town has previously created or approved. She asked CAT members to share any other existing information that might be relevant to SWCA's analysis. The following is a list of studies and plans SWCA is currently reviewing:

- Waterfront Community Plan (2021)
- Albemarle Regional Hazard Mitigation Plan (2016) and 2020 Update
- Perquimans County Hurricane Matthew Resilient Redevelopment Plan (2017)
- Perquimans County CAMA Land Use Plan (2006)

The group noted there has been an update to the CAMA Land Use Plan since 2006, and there is also a Town-level land use plan that should be referenced.

Discussion of Hazards

In addition to general hazard types that SWCA plans to assess, which include flooding (riverine and inland), storm impacts (storm surge and wind), erosion (where applicable) and sea level rise, the group identified some specific hazard concerns, as follows:

- Rainfall events that overwhelm the existing storm drains and sewer lines.

Discussion of Assets

The group identified a preliminary list of assets that may not be captured in existing plans and reports, including:

- Water, sewer, and stormwater infrastructure (including pumping stations and the services provided to Winfall under an agreement with the Town)
- Perquimans Historical Society Booklets may have information about cultural sites
- Coastal Habitat Protection Plan for information about important natural areas and habitat

Next Steps

The hazards and assets discussed during this call will inform work by SWCA to map the Town's coastal hazards and community assets, building on information in the existing plans and reports the Town has already developed or approved. The next meeting of the CAT is scheduled for **Tuesday, November 9 from 6:00 – 7:00 p.m.**

MEETING SUMMARY
TOWN OF HERTFORD CAT

Meeting No. 2, Tuesday November 9, 2021, from 6:00 to 7:00 p.m.

Meeting Objectives

- Review draft map of information available and gaps for consideration under RCCP, including:
  - Priority hazards for assessment
  - Assets to be mapped
- Review Vision Statement
- Confirm next steps following this meeting

Participants

CAT Members

Sandra Anderson, Citizen Advisory Council
Tim Brinn, Citizen Advisory Council
Earnell Brown, Town of Hertford
Eboney Elliot, Citizen Advisory Council
Thomas Harrell, Citizen Advisory Council
Pamela Hurdle, Town of Hertford
Larry Sandeen, Citizen Advisory Council
Sara Winslow, Citizen Advisory Council

Facilitation and Support Staff

Kathryn Gardner, SWCA Environmental Consultants
Meg Perry, SWCA Environmental Consultants
Mackenzie Todd, NC Division of Coastal Management

Action Items

CAT Members

- Review draft vision statement and provide any suggested edits to Meg Perry (meg.perry@swca.com) by Friday, Nov. 19
- Review asset list and send suggested additions to Meg Perry (meg.perry@swca.com) by Tuesday, November 23
- Mayor Brown to invite county staff to a meeting (tentatively Dec. 2) before the public input meeting to review maps

SWCA

- Share draft asset list and link to interactive draft asset and hazard map for CAT members to review by Friday Nov. 12
- Confirm timing and location for 1st Public Input Meeting by Friday Nov. 19
- Coordinate with Mayor Brown and Ms. Hurdle to prepare for the Dec. 2 meeting and January public open house

Summary of Key Points from Presentation and Discussion

RCCP Process

Meg Perry, SWCA, reminded the group about the four phases of the RCCP process. The CAT and SWCA are currently focused on Phase 1 Risk and Vulnerability Assessment (see Figure 1 below).

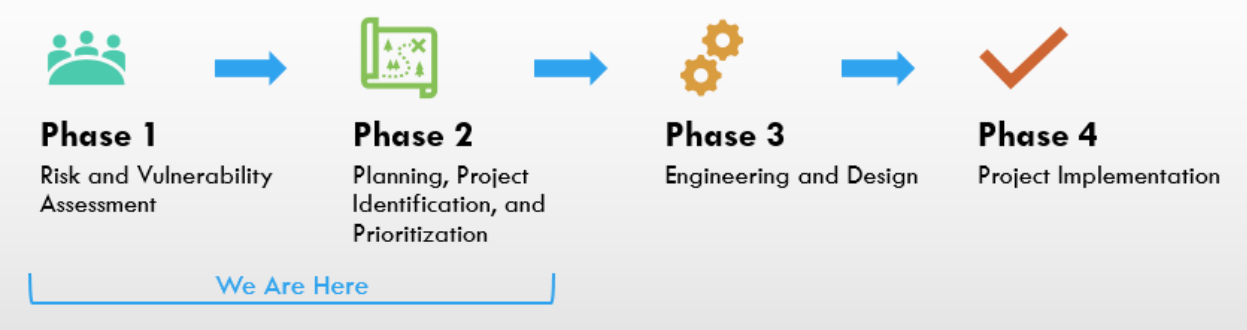


Figure 1. Phases of the Resilient Coastal Communities Program

Elements of Phase 1 In Progress

The Phase 1 Vulnerability Assessment will look at all the community asset locations to determine: 1) their Exposure – what hazards might occur at this location, 2) Sensitivity – how damaging those hazards would be to the asset, and 3) Adaptive Capacity – how much opportunity is there for this asset to change or adjust to reduce risk from coastal hazards. These factors will be summarized in a single number (Vulnerability Index) for each asset that indicates how vulnerable it is to hazards.

Phase 1 also includes a Risk Assessment that will estimate the cumulative economic risk of hazard impacts in the community. The current work to collect and map asset and hazard information will ultimately feed into these two assessments.

Vision Statement

Each community needs a Vision Statement to help guide decision making and prioritization. It is also useful to have a Vision Statement prepared when applying for funding. Ms. Perry shared the following elements of a vision statement to help guide the CAT in developing theirs (Figure 2).

The following is the town's current Vision Statement:

> **The Town of Hertford is a vibrant community with a diverse citizenry who are committed to helping its residents thrive where they are placed, celebrating its riverfront, history, culture, and distinctive character while promoting commercial and residential growth and showcasing the beauty and natural resources of the Perquimans River.**

During the meeting, the group considered whether to add a statement to accompany the vision statement above that speaks specifically to the Town's approach to coastal resilience. CAT members agreed to take this under advisement and consider adding this type of statement at their next meeting. Ms. Perry shared the following example language for the group to use as a starting point for their statement about resilience approach/strategies.

A. **We seek to improve the local quality of life through sustainable economic development that enhances and protects the environment and culture of the region. Natural and cultural resource-based science, eco-tourism, and environmental**

education help to diversify the local economy while minimizing the impacts of hazards. We employ an integrated approach to coastal resilience that addresses both upstream and downstream hydrologic dynamics and the ongoing changes in climate and sea level rise.

B. The community rebounds quickly following hazard events due to strong partnerships and frequent communication with residents.

C. The town supports its population and economic base through strategic investments in flood mitigation projects, effective response and recovery, and quality municipal infrastructure and services.

D. Hertford exemplifies a culture of resilience to coastal hazards through inclusive partnerships focusing on both effective response and recovery, and pro-active measures to prevent or minimize future damage. The town is quickly able to rebound from all hazard events, thereby supporting thriving, healthy communities that offer opportunities for all residents.

CAT members should send any suggested adjustments to this vision statement language to Ms. Perry (meg.perry@swca.com).

Draft Hazard and Asset Map Review

The group reviewed a preliminary version of the assets and hazards map which included assets and hazards from the following sources:

Asset Data Sources	Hazards Identified
2016 & 2020 Regional Hazard Mitigation Plans	100 & 500 year flood plain
USGS Data	National Hurricane Center high tide inundation storm surge (by storm category)
National Register of Historic Places	Historical Hurricane Florence Data
Sites Identified During 1st CAT Meeting	

The group identified additional hazard and asset types it would like to see included in the final version, including:

Assets Needed	Hazards Needed
Natural & Cultural Features	Historical Hurricane Isabel Data
Utilities – including water and wastewater (Note: This includes the town of Winfall for wastewater because Hertford supplies wastewater services to them)	Sea Level Rise Projections (at least out to 30 years)
	Localized drainage and inland flooding data
Transportation	NC DOT Road flooding data based on rainfall not storm surge
	Stormwater and waterline data from Town GIS
	Extend hazard layers to the area of Winfall serviced by sewer lines connected to Hertford
	Change in flood insurance maps

Upcoming Meetings

A strategy meeting with county staff is tentatively planned for **Thursday morning December 2nd**. The group discussed inviting the following county staff members to the strategy meeting on Dec 2nd:

- Public Works
- Emergency Services (EMS/Fire)
- A representative from the town of Winfall (possibly Melvin Jackson)
- Social Services
- Hertford Housing Authority
- Building Inspector
- Health Department
- School Superintendent
- Cooperative Extension
- Soil & Water Conservation / USDA Farm Service Agency
- Piedmont Natural Gas
- Cellular/telephone network

The first of two public open house meetings is tentatively scheduled for mid-January. Ms. Perry will coordinate with Mayor Brown and Town Manager Pam Hurdle to prepare for these events.

The next CAT Meeting, scheduled for **Tuesday, December 7 from 6:00 – 7:00 p.m.,** will focus on review of the draft Risk and Vulnerability Assessment and initial discussion of the resilience projects.

MEETING SUMMARY
TOWN OF HERTFORD CAT

Meeting No. 3, Tuesday December 7, 2021, from 6:00 to 7:00 p.m.

Meeting Objectives

- Provide Risk Assessment Status Update
- Plan for Public Meeting(s) in January
  - Review public outreach materials in development
  - Confirm meeting format, timing, and next steps
- Confirm next steps
  - Schedule for 2022 CAT Meetings

Participants

CAT Members

Tim Brinn, Citizen Advisory Council
Earnell Brown, Town of Hertford
Eboney Elliot, Citizen Advisory Council
Thomas Harrell, Citizen Advisory Council
Ashley Hodges, Town of Hertford
Pamela Hurdle, Town of Hertford
Larry Sandeen, Citizen Advisory Council
Sara Winslow, Citizen Advisory Council

Facilitation and Support Staff

Kathryn Gardner, SWCA Environmental Consultants
Meg Perry, SWCA Environmental Consultants

Action Items

CAT Members

- Review draft asset list and provide any suggested edits to Meg Perry (meg.perry@swca.com) by Monday, Dec. 13

SWCA

- Update maps in preparation for public open house by Monday, Jan. 3
- Finalize materials for public open house advertising by Monday, Dec. 20

Summary of Key Points from Presentation and Discussion

Review of Hazard Maps

Three maps were provided for review by the CAT:

1. Flood Plain Map – shows the 100 and 500 year flood plain

2. Historical Flood Map – shows historical data of area flooded during Hurricanes Matthew and Florence, data was collected via satellite imagery
3. Sea Level Rise Map – shows areas at risk of sea level rise based on 'bathtub' modeling. Areas lower in the landscape are more susceptible to sea level rise first and areas higher in the landscape would be impacted at more severe levels of sea level rise. This is not based on a timeline prediction because there are many factors that may influence how quickly sea level rise occurs.

Asset Discussion

Assets noted as missing that need to be added:

- Public works
- Water tower near Grubb
- Water tower near mobile home park
- Waste Water Treatment Plant
- Pumping Stations for Water Treatment Plant
- Hardware and Grocery Stores
- Storm Shelter locations
- Telecommunications (Century Link office and Teleport Office)
- Roadside Cemetery on Edenton Street
- Colored Soldiers monument
- First Baptist on the corner of King and Hyde Park Street
- Episcopal Cemetery
- Hertford United Methodist
- Hertford Baptist Church

CAT members should respond to Meg (meg.perry@swca.com) no later than Monday, December 13 to identify any other missing assets. Examples include:

- Community landmarks and gathering places
- Locations important for safety during a storm
- Assets important for recovery and rebuilding after a storm

Meg is also reaching out to other stakeholders and County staff to add any information from them to the Asset List.

Public Open House

The first of two open house meetings is tentatively planned for **January 18th from 3-7pm.** Town Manager Pam Hurdle confirmed following the meeting that the Public Open House will take place at the HHI (Historic Hertford Inc.) building located at 110 W. Academy Street Hertford, NC 27944. CAT members are asked to attend if available to help answer questions from attendees. Mackenzie offered DCM to help with refreshments.

Next Steps

The next CAT Meeting will focus preparation for the first public open house and is scheduled for **Tuesday, January 4 from 6:00 – 7:00 p.m.**

MEETING SUMMARY
TOWN OF HERTFORD CAT

Meeting No. 4, Tuesday January 4, 2022, from 6:00 to 7:00 p.m.

Meeting Objectives

- Prepare for Open House Meeting
- Hear an update and share input on the Vulnerability and Risk Assessment

Participants

CAT Members

Sandra Anderson, Citizen Advisory Council
Tim Brinn, Citizen Advisory Council
Janice Cole, Town of Hertford
Eboney Elliott, Citizen Advisory Council
Ashley Hodges, Town of Hertford
Larry Sandeen, Citizen Advisory Council
Sara Winslow, Citizen Advisory Council

Facilitation and Support Staff

Kathryn Gardner, SWCA Environmental Consultants
Meg Perry, SWCA Environmental Consultants

Action Items

CAT Members

- Help advertise the public meeting on 1/18

SWCA

- Prepare print materials for public meeting – by 1/18
- Create master list of existing project ideas and add new project ideas - Prior to next CAT meeting

Summary of Key Points from Presentation and Discussion

Public Meeting Preparation

The group reviewed plans and publicity materials for the upcoming Open House Meeting. Meg Perry, SWCA, explained that SWCA has arranged for newspaper and radio announcements. CAT members were encouraged to circulate the announcement using the flier and social media post prepared by SWCA**.**

The website for program information and survey collection is now live and accessible to the public: https://nc-rccp-community-portal-swcagis.hub.arcgis.com/

Information collected during this meeting will inform the vulnerability assessment and help identify potential projects to include on the project list. A brief report on key themes from the public meeting will be circulated to the CAT following the meeting.

Risk and Vulnerability Assessment

Meg explained the next step in the process will be to evaluate each asset based on 3 criteria:

1. Exposure – How often or severely is an asset exposed to flooding hazards
2. Sensitivity – How much would this location be impacted by flooding (e.g., temporarily impacted and easy to repair, significant repairs needed and longer duration of inoperability, or likely to be completely destroyed by a flood)
3. Adaptive Capacity – What measures are already in place to protect or reduce flooding impacts at this location?

This information will be used to develop a "Vulnerability Index" – a single number that indicates how vulnerable that location is to coastal hazards. This will enable the CAT to compare the vulnerability of different sites and can help identify and prioritize potential resilience projects.

Next Steps

The next CAT Meeting will focus on review of the vulnerability assessment results and preliminary project list on **Tuesday, February 1 from 6:00 – 7:00 p.m.**

MEETING SUMMARY
TOWN OF HERTFORD CAT

Meeting No. 5, Tuesday February 1, 2022, from 6:00 to 7:00 p.m.

Meeting Objectives

- Review Preliminary Project List and Discuss Resilience Goals
- Review Preliminary Vulnerability Scores
- Prepare for February Open House

Participants

CAT Members

Sandra Anderson, Citizen Advisory Council
Tommy Harrell, Citizen Advisory Council
Ashley Hodges, Town of Hertford
Larry Sandeen, Citizen Advisory Council
Sara Winslow, Citizen Advisory Council

Facilitation and Support Staff

Kathryn Gardner, SWCA Environmental Consultants
Meg Perry, SWCA Environmental Consultants
Mackenzie Todd, NC Division of Coastal Management

Action Items

CAT Members

- Review draft goals and provide any suggested edits to Meg Perry (meg.perry@swca.com) by Friday, Feb. 11
- Review preliminary project list and share any information about current status of projects on the list or other projects that should be added with Meg Perry (meg.perry@swca) by Friday, Feb. 11.

SWCA

- Confirm event space for 2nd public meeting
- Share updated project list and asset list with vulnerability scores in advance of the next meeting – by Monday, February 14.

Summary of Key Points from Presentation and Discussion

Review of Project Types and Preliminary Project List

Existing sources of project information have been combined into a single table for review by CAT Members. CAT members should respond to Meg (meg.perry@swca.com) no later than Friday, February 11 to identify projects that have already been completed or need to be taken off the list.

Goals

The RCCP process requires identification of goals that will direct the work of the CAT members moving forward and ensure selected align with the Town's vision. The draft goals identified by the group are

listed below. The linked document also includes selection criteria that will be used to identify priority projects from the project list.

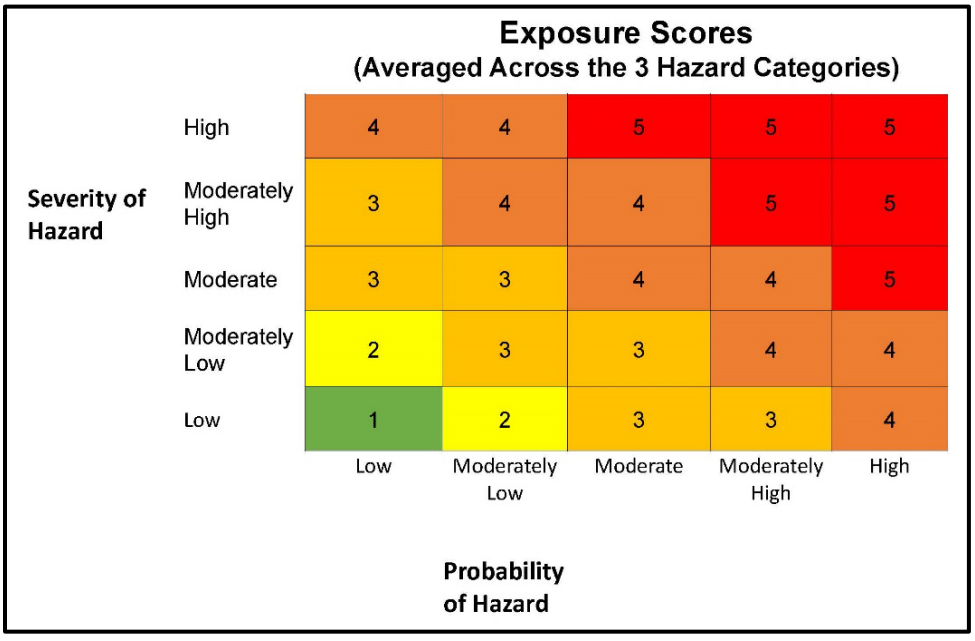
- Pursue phased comprehensive update/upgrade of public works, infrastructure
  - Pumping stations
- Identify and pursue projects to protect residences from flooding over the next five years
  - Protecting or relocating public housing units out of the floodplain
  - Buying out or relocating other flood-prone residences
- Ensure nothing else is built in the floodplain
  - This could be a code/ordinance change/update (links to CAMA Land Use Plan – Sharlan Owens can address questions – they are trying to secure additional planning/management grants)

CAT Members should respond to Meg (meg.perry@swca.com) no later than Friday, February 11 to provide feedback on the goals.

Review of Vulnerability Scores

A draft version of the vulnerability scores for each asset was presented to the group. The vulnerability score combines the Exposure, Sensitivity, and Adaptive Capacity for each asset.

The exposure score is measured by assessing the probability that an asset will be exposed to each of three flooding hazard types and the severity of that type of flooding at that location. Then the scores for the three flooding types are averaged to generate a final exposure score that ranges from 0 (no exposure) to 5 (high exposure).



Sensitivity and Adaptive Capacity scores will be finalized for review by the next CAT Meeting.

Public Open House

The second of two open house meetings is tentatively planned for **February 22nd from 3pm -6pm** at the Historic Hertford Building. CAT members are asked to attend if available to share input and help answer questions from attendees.

Next Steps

The next CAT Meeting will focus finalize information from the public open house in preparation for the final report and is scheduled for **Tuesday, March 1 from 6:00 – 7:00 p.m.**

MEETING SUMMARY
TOWN OF HERTFORD CAT

Meeting No. 6, Tuesday March 1, 2022, from 6:00 to 7:00 p.m.

Meeting Objectives

- Confirm high priority projects
- Confirm plans for review of draft report

Participants

CAT Members

Sandra Anderson, Town Council Member
Tommy Harrell, Citizen Advisory Council
Ashley Hodges, Mayor Pro Tem
Larry Sandeen, Citizen Advisory Council
Sara Wilson, Citizen Advisory Council

Facilitation and Support Staff

Kathryn Gardner, SWCA Environmental Consultants
Meg Perry, SWCA Environmental Consultants

Action Items

SWCA

- Draft final Resilience Strategy report and send to CAT for review by 3/14

CAT Members

- Provide feedback on draft report by 4/1

Summary of Key Points from Presentation and Discussion

Priority Project List

The group reviewed and discussed the project list in light of feedback and discussions at the public meeting, previously identified criteria and goals, and the results of the vulnerability assessment. The CAT members agreed on a group of high priority projects to be described in more detail in the final Resilience Strategy report:

- Jennie's Gut Drainage Improvement Feasibility Study
- Repair 4 damaged storm drains at the Stokes Apartments
- Relocate or Elevate Hertford Housing Authority Facilities
- Collections System Maintenance and Repair
  - Dobb Street Sanitary Sewer Replacement
  - Jennie's Gut Sanitary Sewer Line
  - Sewer Line Replacement Project Phase 1-5
  - Sewer Manhole Replacement Project Phase 1-5

    - Woodland Circle Sanitary Sewer Replacement
    - Pennsylvania Avenue Sanitary Sewer Replacement
- Pump/Lift Station Controls/Upgrades
    - Lift Station Pump Replacement Plan (6 pumps)
    - Major renovation of Cemetary Lift Station
    - Major renovation of Willow Lift Station
    - Major renovation of Meads Lift Station
    - Feed & Seed Pump Station on Grubb St.
    - Pump Station Pump Overhaul Plan (8 pumps)
    - Pump Station Pump Replacement Plan (16 pumps)
    - Pump Station Telemetry Upgrade
- Northern riverfront retaining wall/bulkhead with walkway

Next Steps

SWCA will provide a draft report to the CAT members by **March 14th** for review. CAT members are requested to review the draft report and provide feedback by **April 1st**. The final report will be delivered by mid April.

APPENDIX C

Project Website Content

Figure C-1. Example screenshot of the project website, 1 of 4.

The four phases of the program include:

Phase 1: Community Engagement and Risk & Vulnerability Assessment- Current Phase

Phase 2: Planning, Project Selection and Prioritization

Phase 3: Engineering and Design

Phase 4: Implementation

By completing the Resilience Strategy (Phases 1 and 2), the town becomes eligible for additional state funding to support design and engineering for a priority resilience project and will strengthen grant proposals to other funders.

North Carolina
RESILIENT COASTAL COMMUNITIES PROGRAM

Learn more about the N.C. Resilient Coastal Communities Program

What does the Resilience Strategy do?

A Resilience Strategy-

- Identifies areas at risk from coastal hazards such as flooding, storm surge, and sea level rise
- Integrates hazard data and local knowledge to identify where community assets may be at risk
- Identifies strategies to reduce risks from coastal hazards
- Identifies priority projects for resilience funding

Timeline for Completion

The target completion date for the Resilience Strategy is March 2022.

Planning Process and Community Engagement

To create the Resilience Strategy, your community and its supporting contractor, SWCA Environmental Consultants will:

- Create a Community Action Team (CAT) to help guide the planning process
- Define a resilience vision and goals
- Map assets and coastal hazards
- Assess vulnerability and economic risk
- Identify strategies to reduce vulnerability to coastal hazards
- Develop a priority list of resilience projects for funding and implementation

Community members will have the opportunity to provide input in three ways:

- Online survey – January 2022
- Public Open House meeting focused on community assets and hazard areas – January 2022
- Public Open House meeting focused on resilience project priorities – February 2022

Be Prepared!

Check out the resources below to prepare your household for future floods and storms:

- Ready NC Hurricane Preparedness Guide (also available in Spanish)
- Preventing and Cleaning Up Mold/Moisture
- What to do with Drinking Water Wells and Septic Systems in Flooding Conditions
- Post-Disaster Resources from Legal Aid NC

Contact Us

Additional Information on community contacts can be found on your community portal.

Project Contact- Meg Perry- Project Manager, SWCA Environmental Consultants

- Phone: 984.275.4317
- Email: meg.perry@swca.com

Technical Support Contact

- Email Project Team

Figure C-2. Example screenshot of the project website, 2 of 4.

Figure C-3. Example screenshot of the project website, 3 of 4.

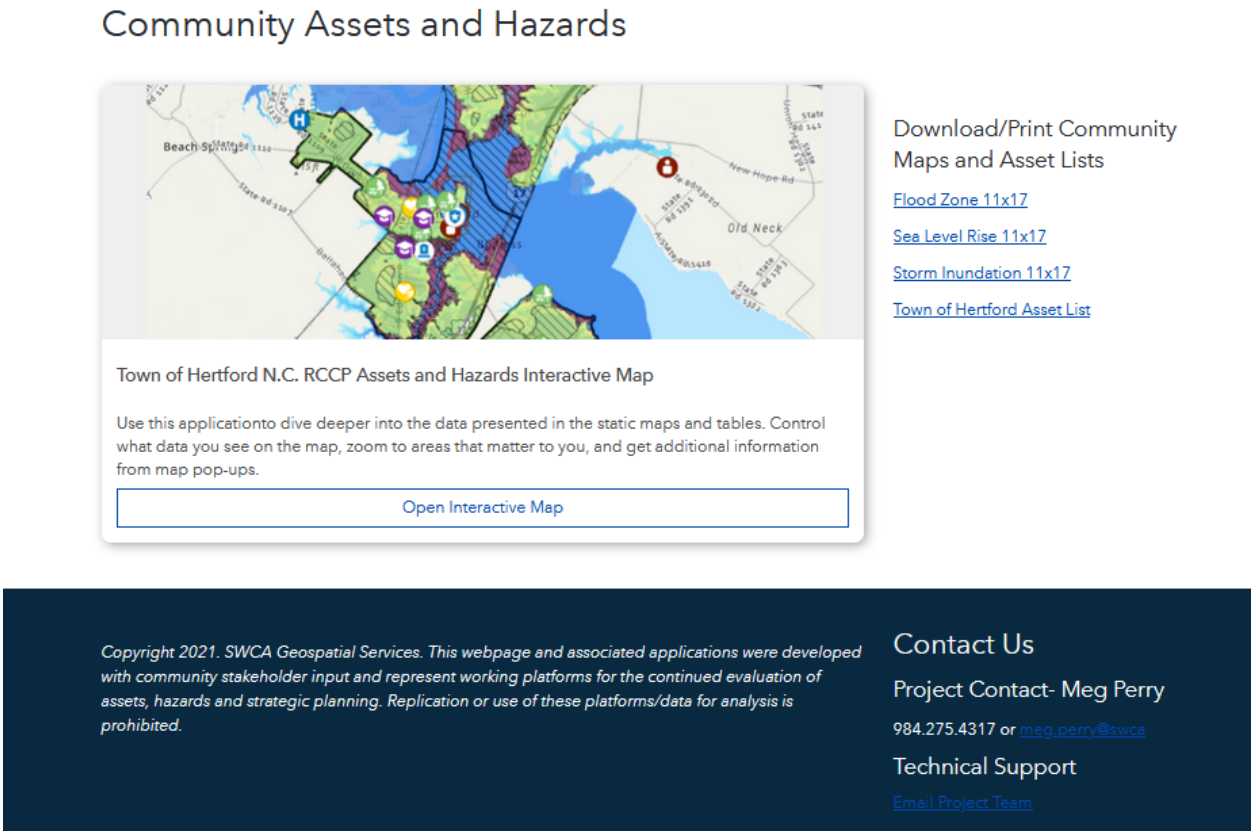


Figure C-4. Example screenshot of the project website, 4 of 4.

APPENDIX D

Public Meeting Attendees

Table D-1. Attendance at the Two Public Meetings Held in January and February 2022 for Hertford, North Carolina

First Name	Last Name	Affiliation	Meeting 1	Meeting 2
Attendees				
Sandra	Anderson	CAT/Town Council Member	X	X
Kim	Brinn	Citizen	X	
Tim	Brinn	Citizens for the Preservation and Growth of Hertford	X	X
Connie	Brothers	Town Council Member	X	
Sharon	Burtner			X
Janice	Cole	CAT/Interim Town Manager	X	
Susan	Cox	Historic Hertford Inc.		X
Dave	Goodman			X
Jan	Goodman			X
Ashley	Hodges	CAT/Mayor Pro Tem	X	X
Joshua	Hollowell	Albemarle Regional Health Services	X	
Frank	Jaklic	Rotary/Resident		X
Carol	Kuhn			X
John	McAllister			X
Paula	McAllister			X
Wallace	Nelson	Perquimans County Commissioner		X
Parker	Newbern	Inspector, Green Engineering; Former Hertford Public Works Director	X	X
Barbara	Nixon	Resident		X
Ed	Nixon	Resident		X
Jonathan	Nixon	Perquimans County Emergency Services	X	
Nick	Nixon	Resident		X
Fran	Ownley	Resident		X
Rhonda	Repanshek	Perquimans County Planner		X
Larry	Sandeen	CAT	X	X
Julie	Solesbee	Perquimans County Emergency Services	X	
Rhonda	Waters	Citizen	X	
Sara	Winslow	CAT	X	X
		Total Attendees	**13**	**20**
Support Staff				
Kathryn	Gardner	SWCA Environmental Consultants	X	X
Meg	Perry	SWCA Environmental Consultants	X	X
Mackenzie	Todd	NC Division of Coastal Management	X	X

APPENDIX E

Data Used in Vulnerability and Risk Assessment

Table E-1. Data Used in Assessment of Asset Vulnerability and Risk for Hertford, North Carolina

Field/Variable	Data Used to Define Field/Variable	Data Summary	Use in Risk and Vulnerability Assessment	Additional Information on Source Data
Flood Plain Exposure	North Carolina Preliminary Flood Zones	Areas representing the area within the flood mapping boundaries defined by the engineering models for the 100-year (1% annual chance), 500-year (0.2% annual chance) and floodway (river channel and adjacent land areas for flood discharge).	Floodplain type was categorized and used to assess current climate precipitation induced flood risk under varying conditions across the landscape.	Data was produced by North Carolina Floodplain Mapping Program in 2020 at 6-m spatial resolution
Flood Plain Exposure	High Resolution Elevation (DEM 20')	Elevation data was created using LiDAR collected by NC Floodplain Mapping Program	Elevation data was processed to find low-lying areas outside the current 500-year flood plains that have the potential for precipitation-induced flood risk under future climate conditions across the landscape.	Data was produced by North Carolina Department of Transportation in conjunction with the North Carolina Floodplain Mapping Program in 2020 at 6-m spatial resolution
Reported Event Inundation Factor	Hurricane Matthew Inundated Areas	Areas that experienced flooding during Hurricane Matthew, based on aerial photographs taken October 8 to 16, 2016.	Inundated areas were used assess extreme precipitation event flood risk across the landscape.	Data was produced by the Center for Biodiversity Outcomes, Arizona State University in 2020 at 5-m spatial resolution
Reported Event Inundation Factor	Hurricane Florence Inundated Areas	Areas that experienced flooding during Hurricane Florence, based on aerial photographs taken September 18 to 22, 2018.	Inundated areas were used assess extreme precipitation event flood risk across the landscape.	Data was produced by the Center for Biodiversity Outcomes, Arizona State University in 2020 at 5-m spatial resolution
Reported Event Inundation Factor	Community Flood Reporting Point	Areas outside of the 100- and 500-year floodplains that were identified by the public as having frequent or severe flooding during large precipitation events.	Point locations were converted to inundated areas based on the underlying elevation and topography. These inundated areas were used to assess extreme precipitation flood risk across the landscape.	Data was collected via analog maps at community stakeholder engagement meetings and online flood reporting survey
Sea Level Rise Exposure	Sea Level Rise (SLR) Inundation Extent 1-foot to 10-foot Scenarios	Data represents where water would be present along coast lines and intertidal waterways (under normal, non-flood conditions) at increasing sea levels. This is based on a “modified bathtub model,” which identified the areas of land that would be covered with water if you increased the water height by a specific amount. It does not address when or how quickly the sea level might increase.	Simulated scenario data was combined with Sea Level Rise (Low) Inundation data and categorized into severity values 1 through 5 used to assess sea-level rise risk under varying conditions across the landscape.	Data was produced by the National Oceanic and Atmospheric Administration, Office for Coastal Management in 2017 at 10-m spatial resolution

Field/Variable	Data Used to Define Field/Variable	Data Summary	Use in Risk and Vulnerability Assessment	Additional Information on Source Data
Sea Level Rise Exposure	Sea Level Rise (Low) Inundation Extent 1-to 10-foot Scenarios	Data represents where water would be present in inland areas (under normal, non-flood conditions) at increasing sea levels. This is based on a "modified bathtub model," which identified the areas of land that would be covered with water if you increased the water height by a specific amount. It does not address when or how quickly the sea level might increase.	Simulated scenario data was combined with Sea Level Rise (SLR) Inundation data and categorized into severity values 1 through 5 used to assess sea-level rise risk under varying conditions across the landscape.	Data was produced by the National Oceanic and Atmospheric Administration, Office for Coastal Management in 2017 at 10-m spatial resolution
Sea Level Rise Exposure	Duck Pier Local Sea Level Rise Scenario Statistics	Data lists northern North Carolina regional projected sea level rise in feet sea for five IPCC emissions scenarios.	Data was used to determine the likelihood of sea level rise inundation per emission scenario	Data was produced by the National Oceanic and Atmospheric Administration, National Weather Service in coordination with the IPCC in 2017
Storm Surge Exposure	Sea, Lake, and Overland Surges from Hurricanes (SLOSH) Category 1–5 High Tide Simulations	Data depicts the simulated storm surges from tropical cyclones, developed using tens of thousands of simulations of climatology-based hypothetical tropical cyclones.	Modeled data from Category 1 through 5 storms were combined and inundation depth was categorized into severity values 1 through 5 used to assess storm surge risk under varying conditions across the landscape.	Data was produced by the National Oceanic and Atmospheric Administration, National Weather Service, National Hurricane Center in 2018 at 30-m spatial resolution
Storm Surge Exposure	Hurricane Landfall Statistics	Data lists all recorded hurricanes by category that have made landfall in the state of North Carolina since 1851.	Data was used to determine likelihood of storm surge exposure event by hurricane category.	Data was produced by the National Oceanic and Atmospheric Administration, National Weather Service
Social Vulnerability (geographic)	Social Vulnerability Index (SVI) 2018	Data represents a combination of socioeconomic factors that are used to identify and map the communities that will most likely need support before, during, and after a hazardous event.	Total SVI rankings were categorized using the flag approach and used to assess the most current socially vulnerable populations in the community.	Data was produced by the CDC's Division of Toxicology and Human Health Sciences, Geospatial Research, Analysis & Services Program (GRASP) in 2020 at the tract level
Social Vulnerability (geographic)	Social Vulnerability Index (SoVI) 2000	Data represents a combination of socioeconomic factors that are used to identify and map the communities that will most likely need support before, during, and after a hazardous event.	Total SoVI rankings were categorized using the flag approach and used to assess the socially vulnerable populations in the community at a localized scale.	Data was produced by the Hazards and Vulnerability Research Institute, University of South Carolina in 2011 at the block group level

Field/Variable	Data Used to Define Field/Variable	Data Summary	Use in Risk and Vulnerability Assessment	Additional Information on Source Data
Estimated Cost	Assessor Parcel Boundaries	Data represents county-level parcels with standardized attributes such as ownership, addresses, and assessed monetary values.	Monetary value fields such as Parcel Value, Land Value, and Improvement Value were used to calculate total estimated cost values for assets considered at risk.	Data was produced by the North Carolina Geographic Information Coordinating Council in coordination with local government agencies and last updated 2022

APPENDIX F

Detail Maps of Assets and Hazards

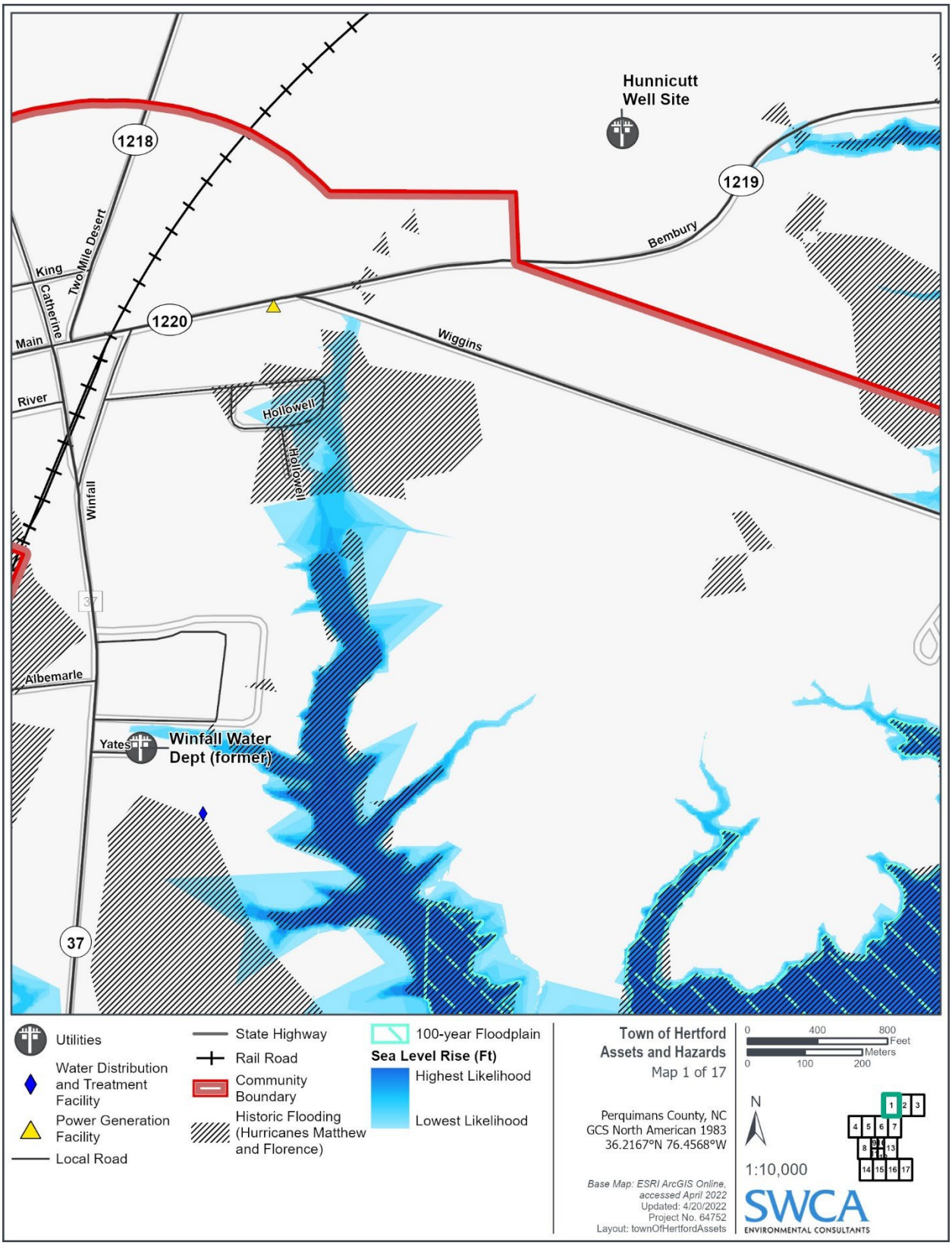


Figure F-1. Detail map of assets and hazards, keys to Figure 7.

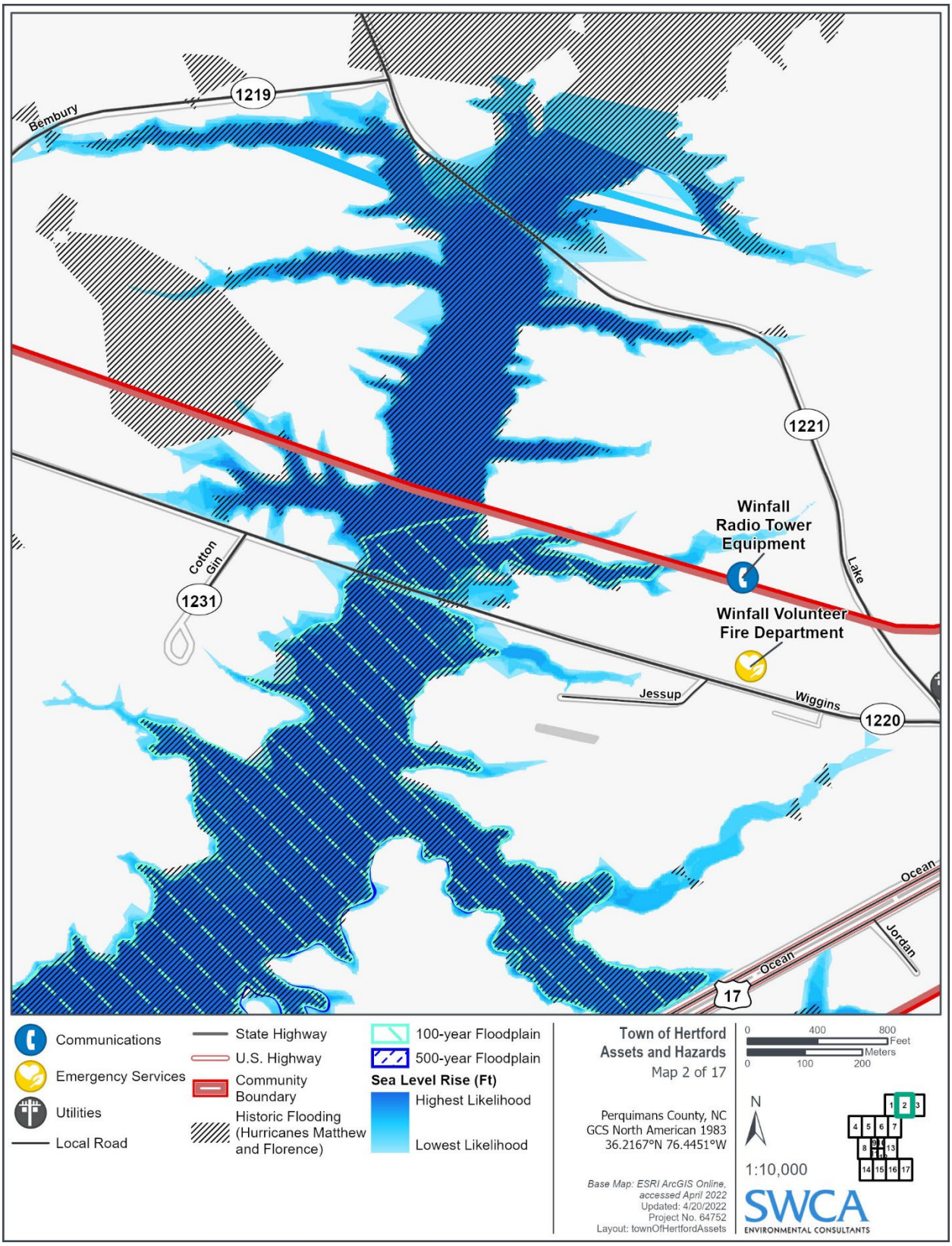


Figure F-2. Detail map of assets and hazards, keys to Figure 7.

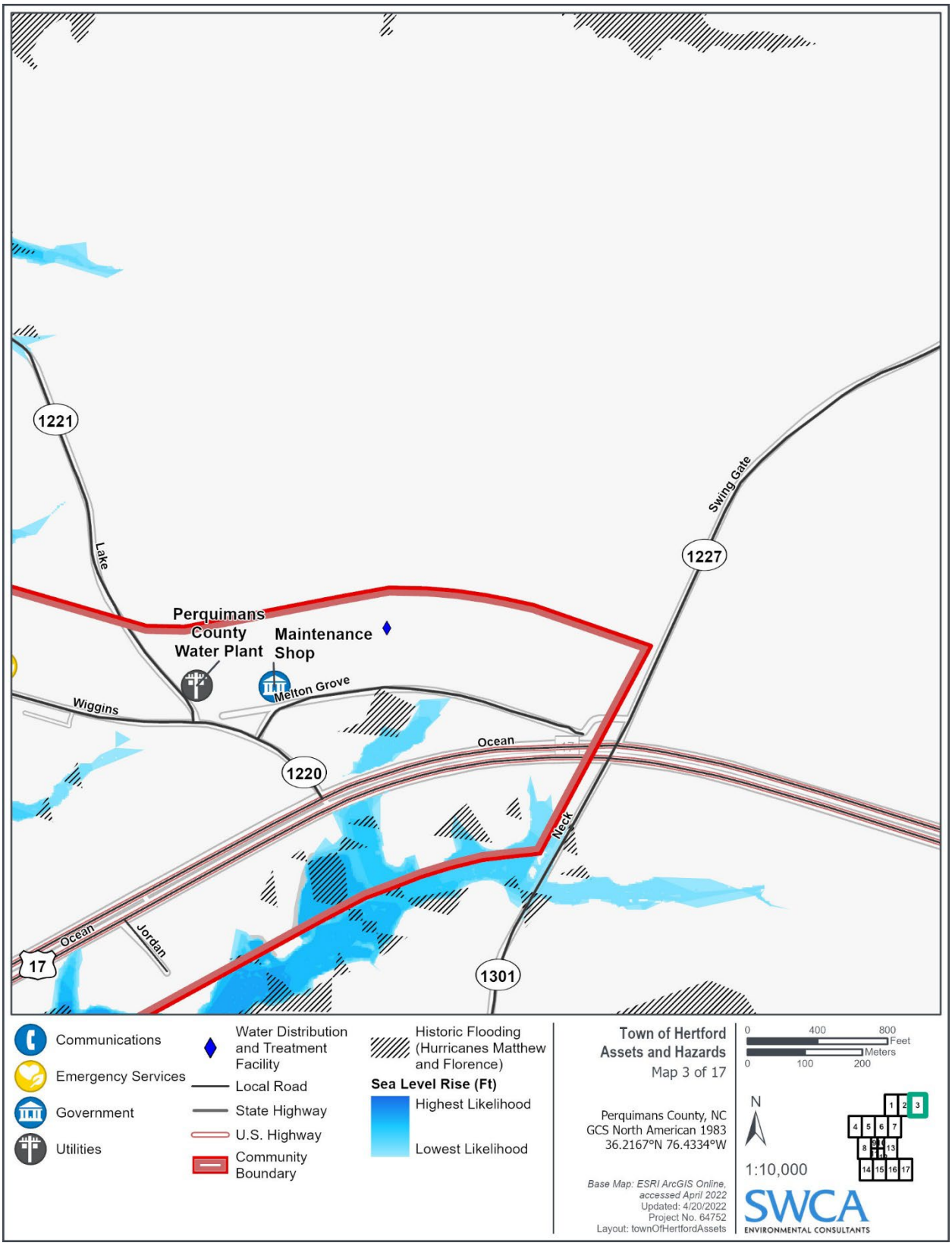


Figure F-3. Detail map of assets and hazards, keys to Figure 7.

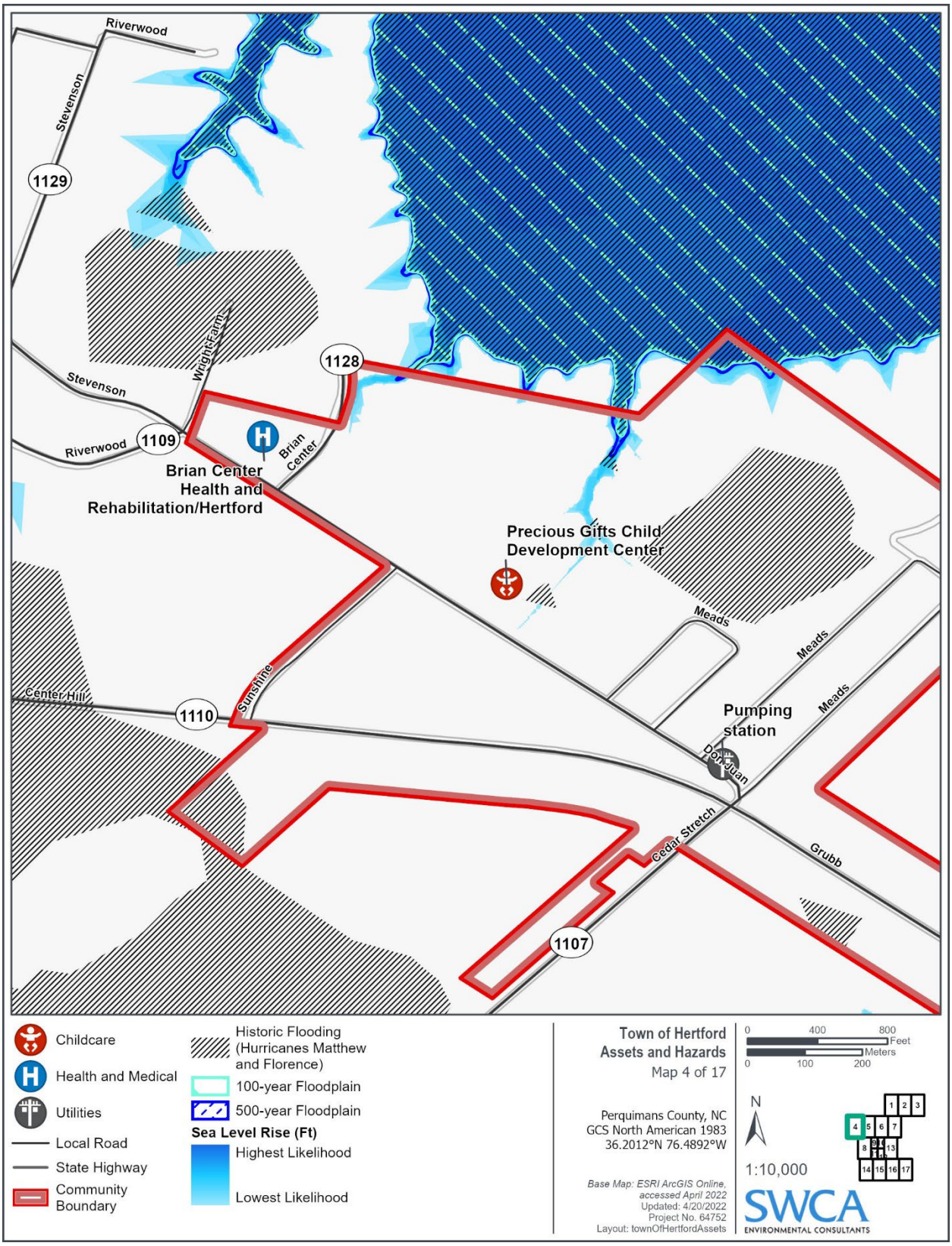


Figure F-4. Detail map of assets and hazards, keys to Figure 7.

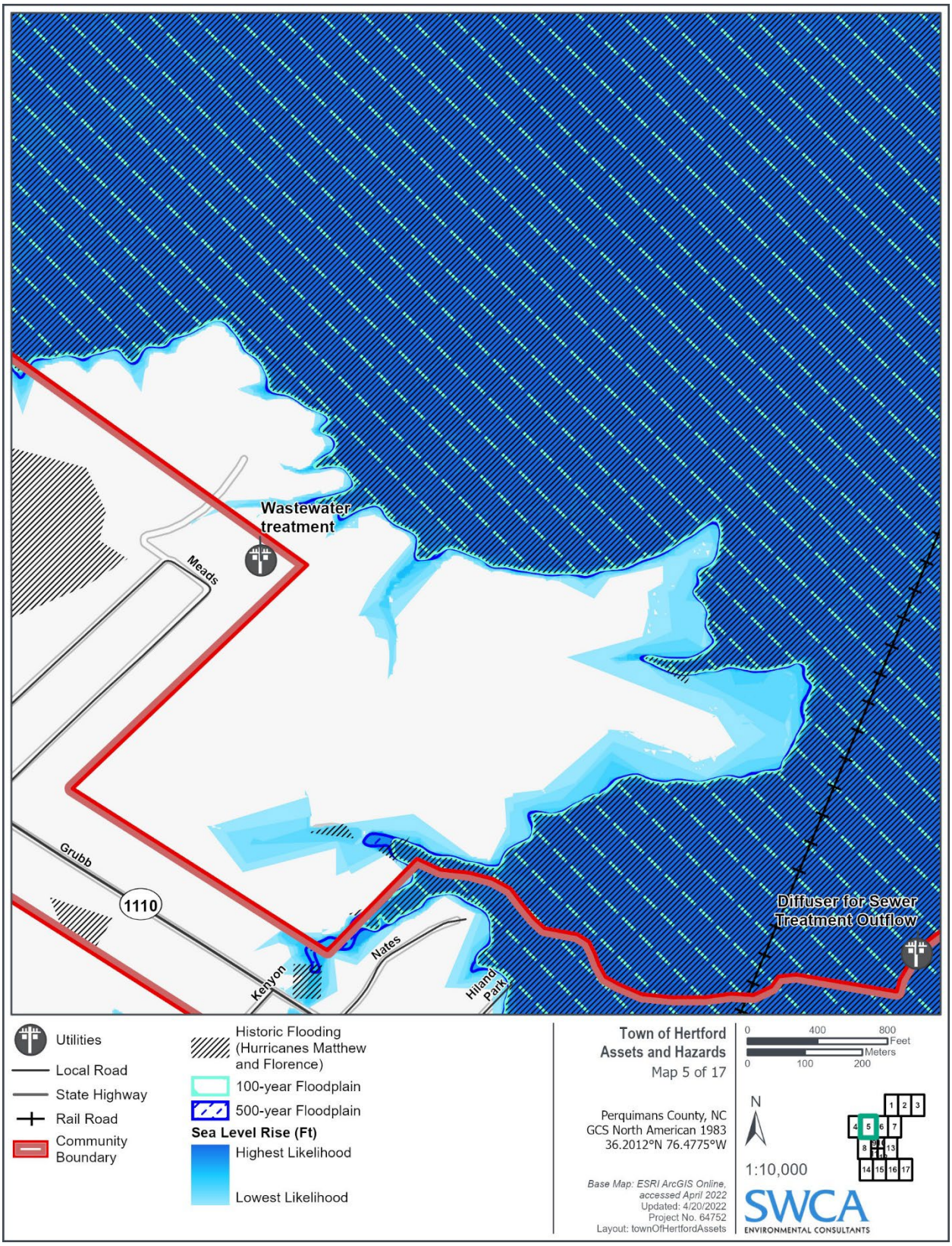


Figure F-5. Detail map of assets and hazards, keys to Figure 7.

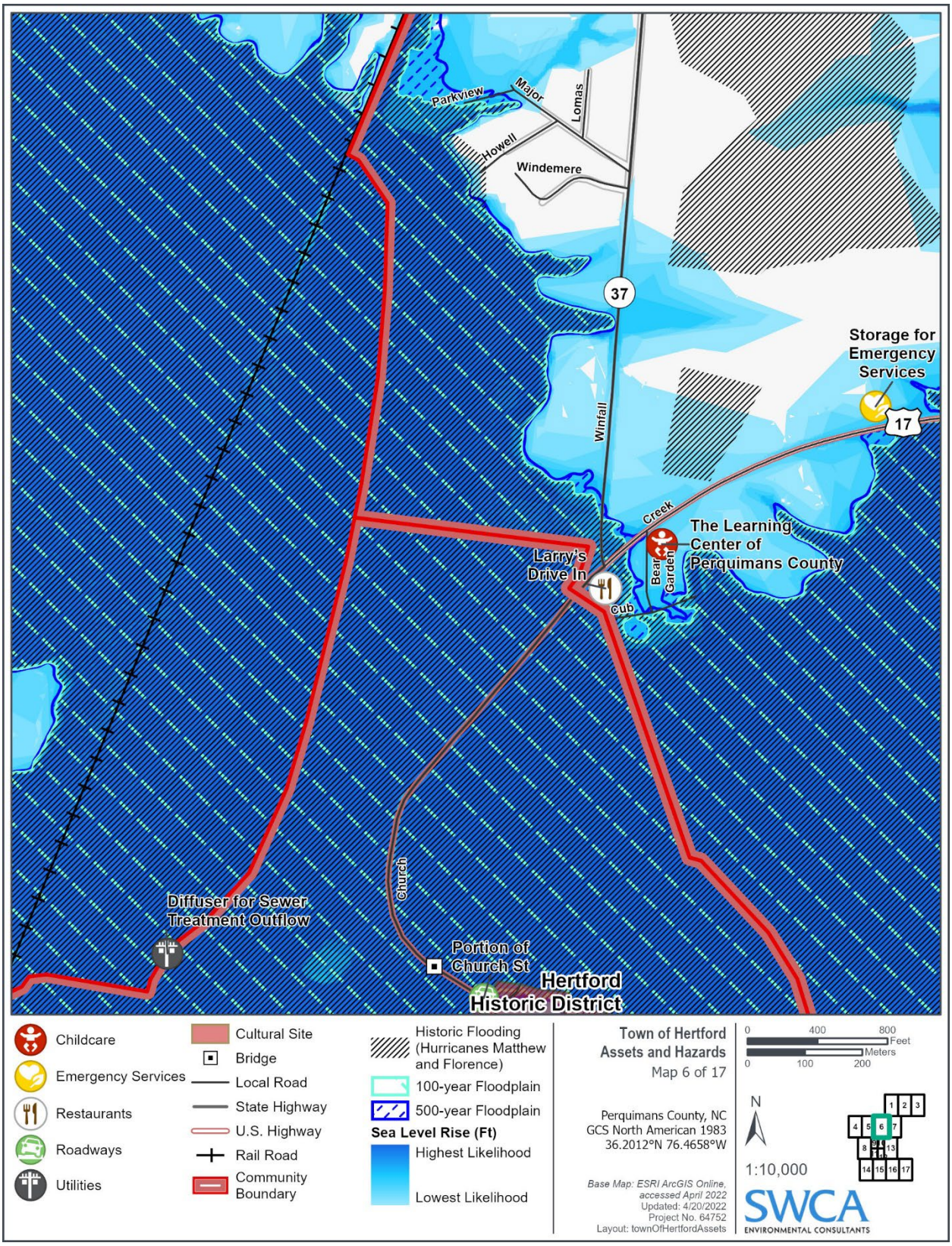


Figure F-6. Detail map of assets and hazards, keys to Figure 7.

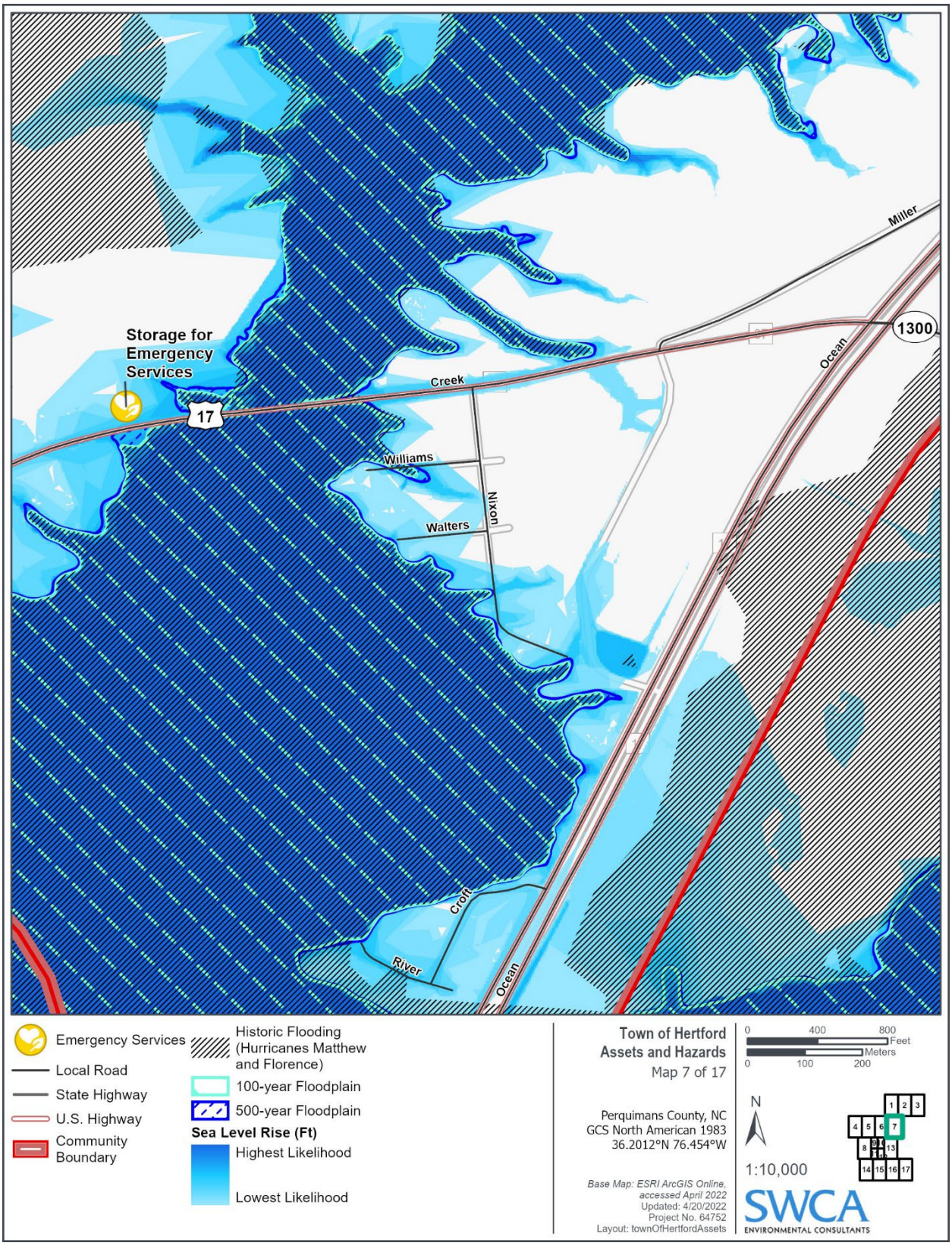


Figure F-7. Detail map of assets and hazards, keys to Figure 7.

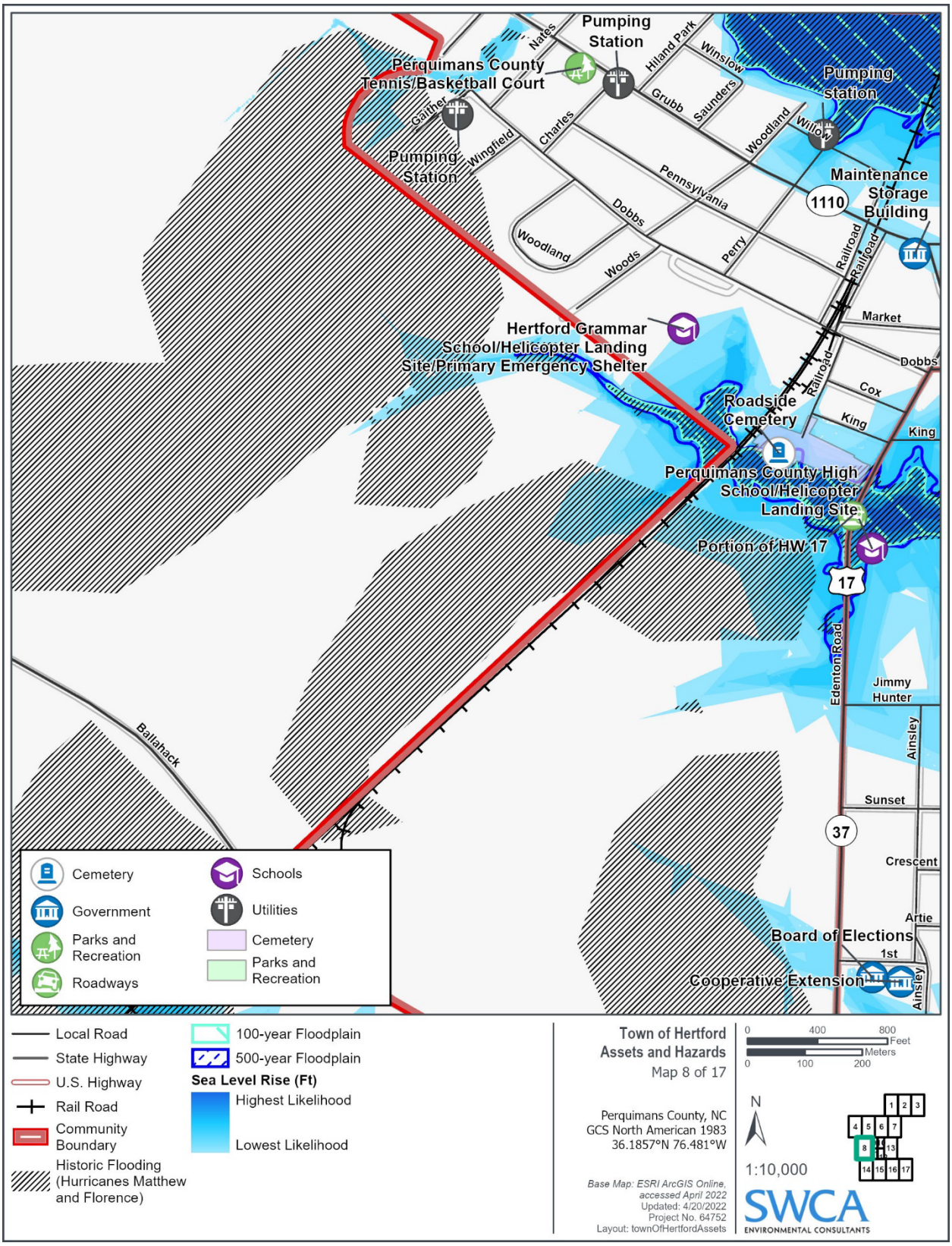


Figure F-8. Detail map of assets and hazards, keys to Figure 7.

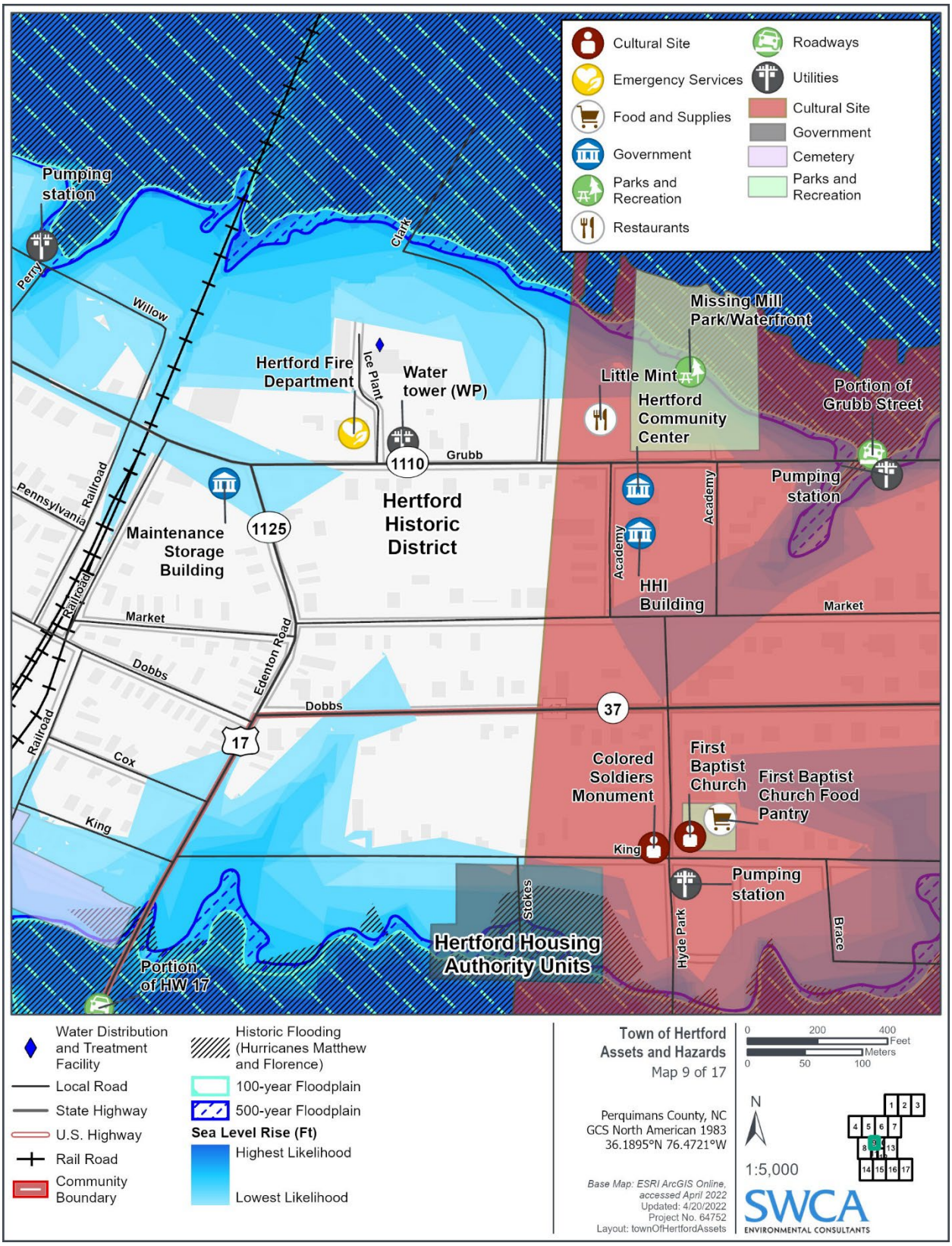


Figure F-9. Detail map of assets and hazards, keys to Figure 7.

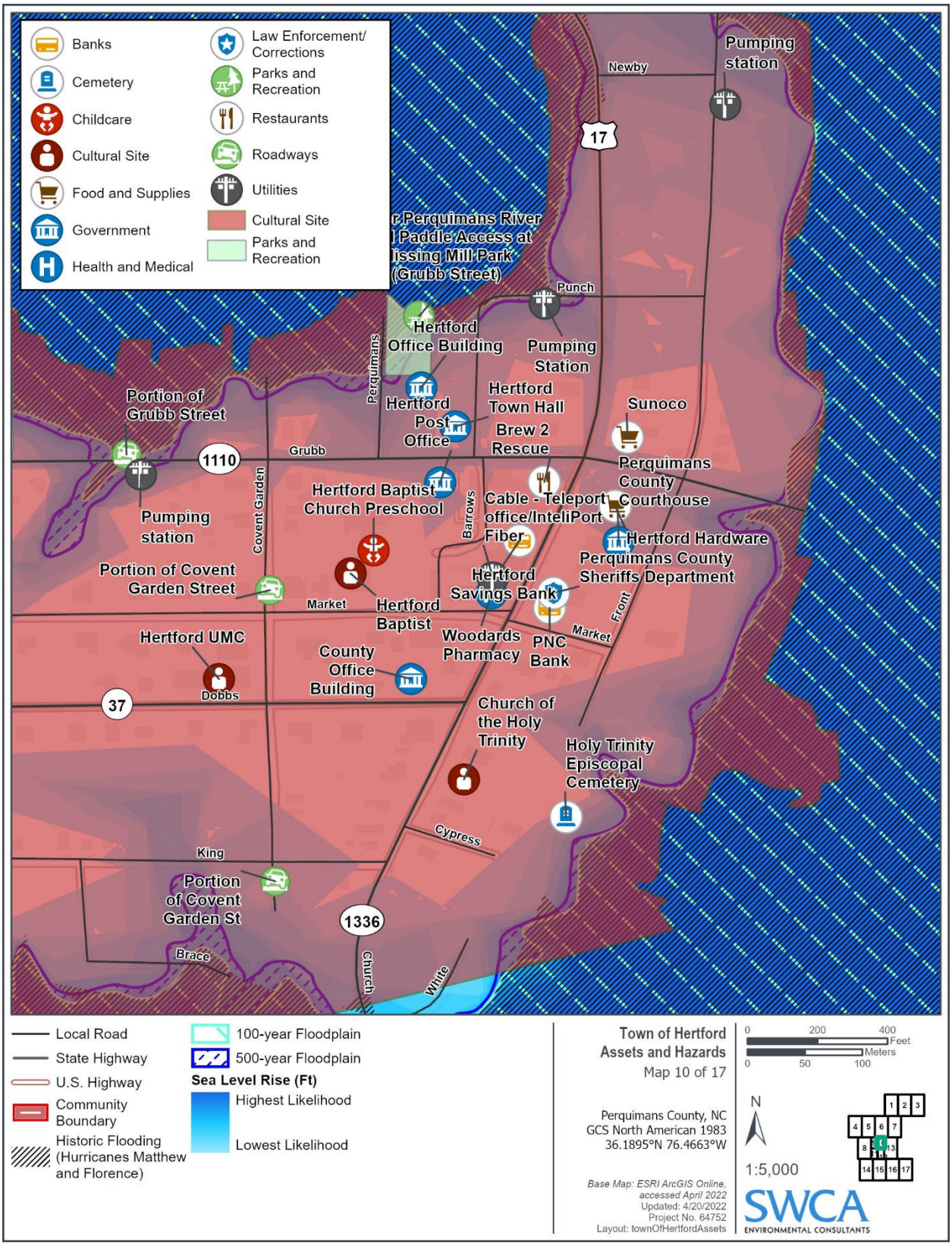


Figure F-10. Detail map of assets and hazards, keys to Figure 7.

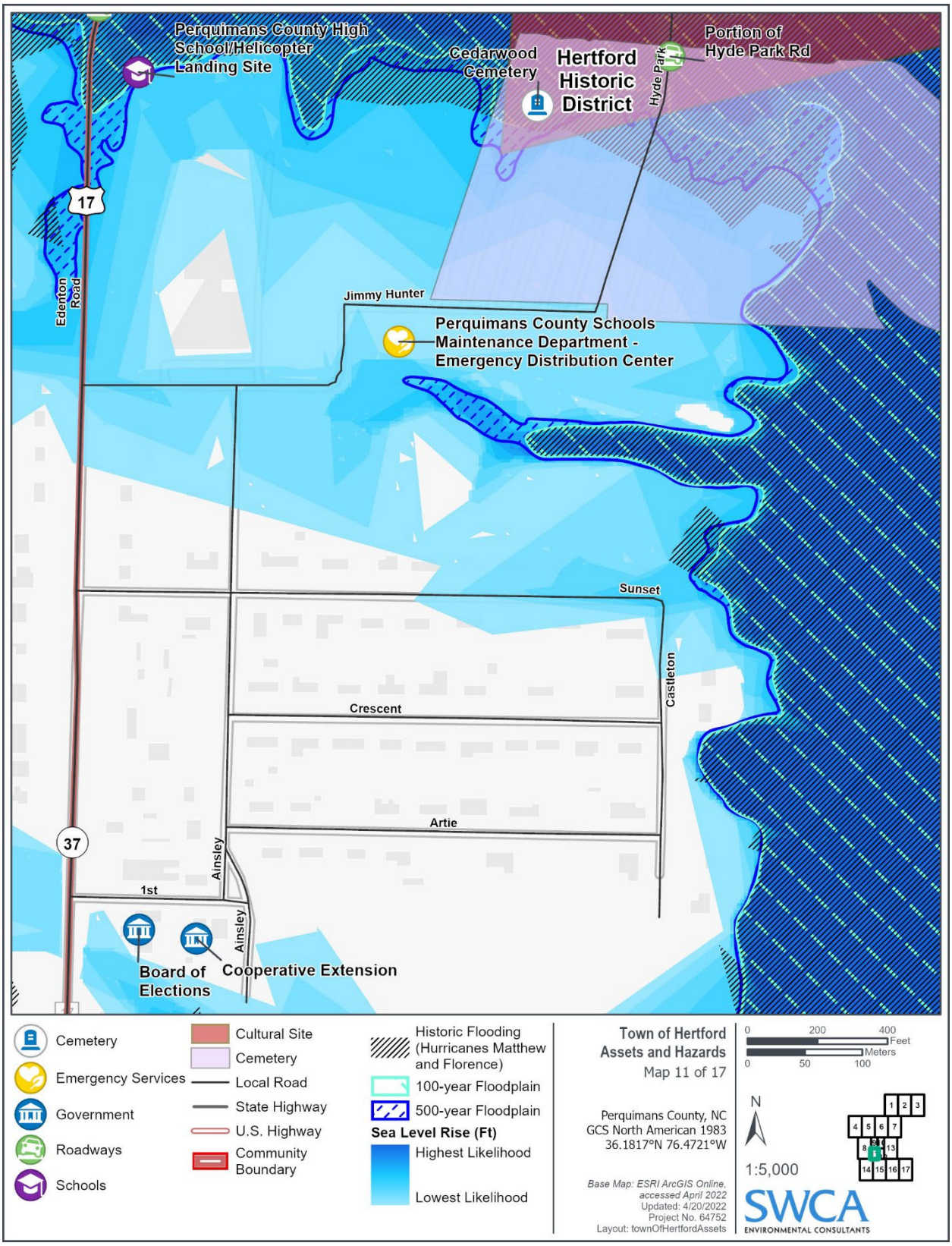


Figure F-11. Detail map of assets and hazards, keys to Figure 7.

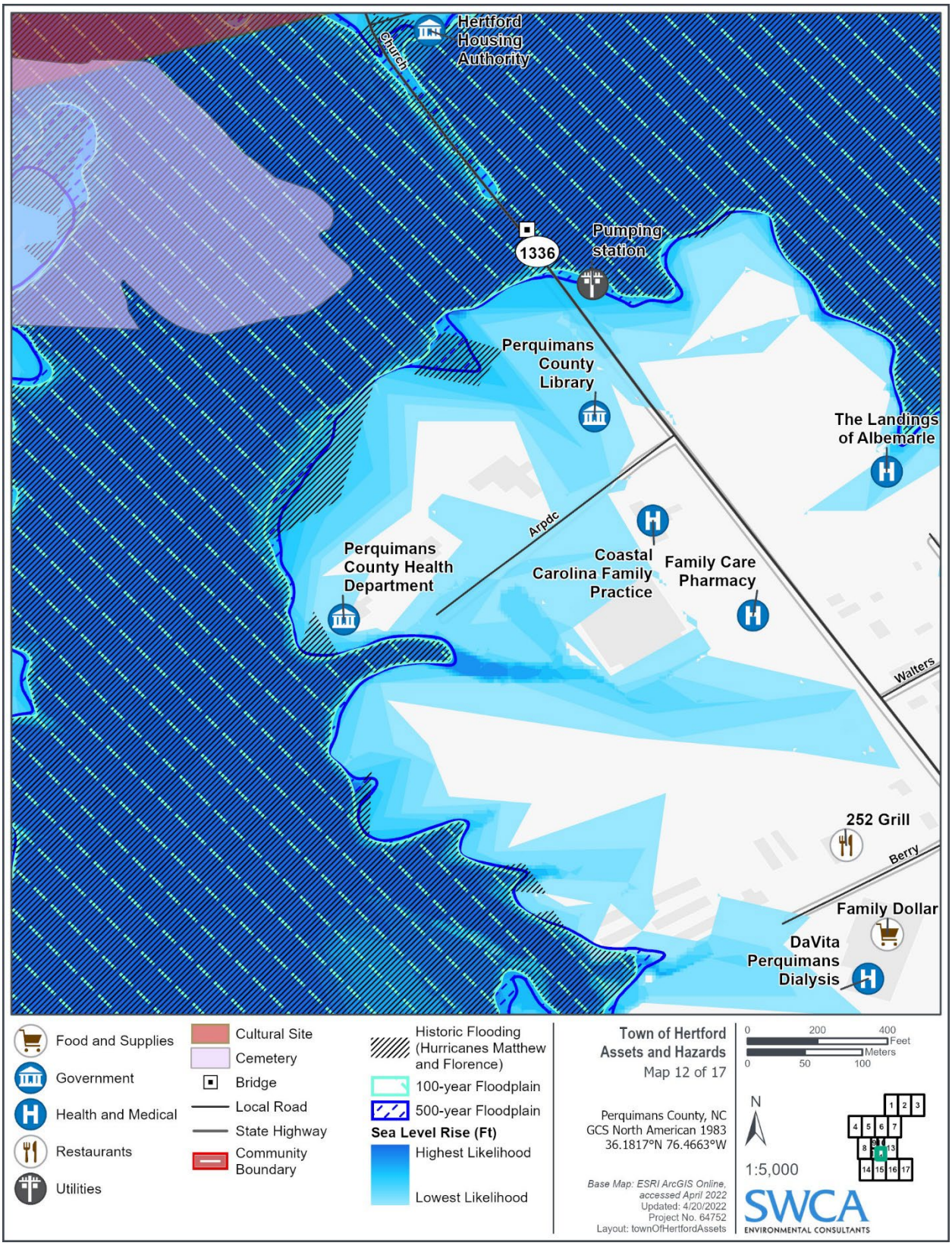


Figure F-12. Detail map of assets and hazards, keys to Figure 7.

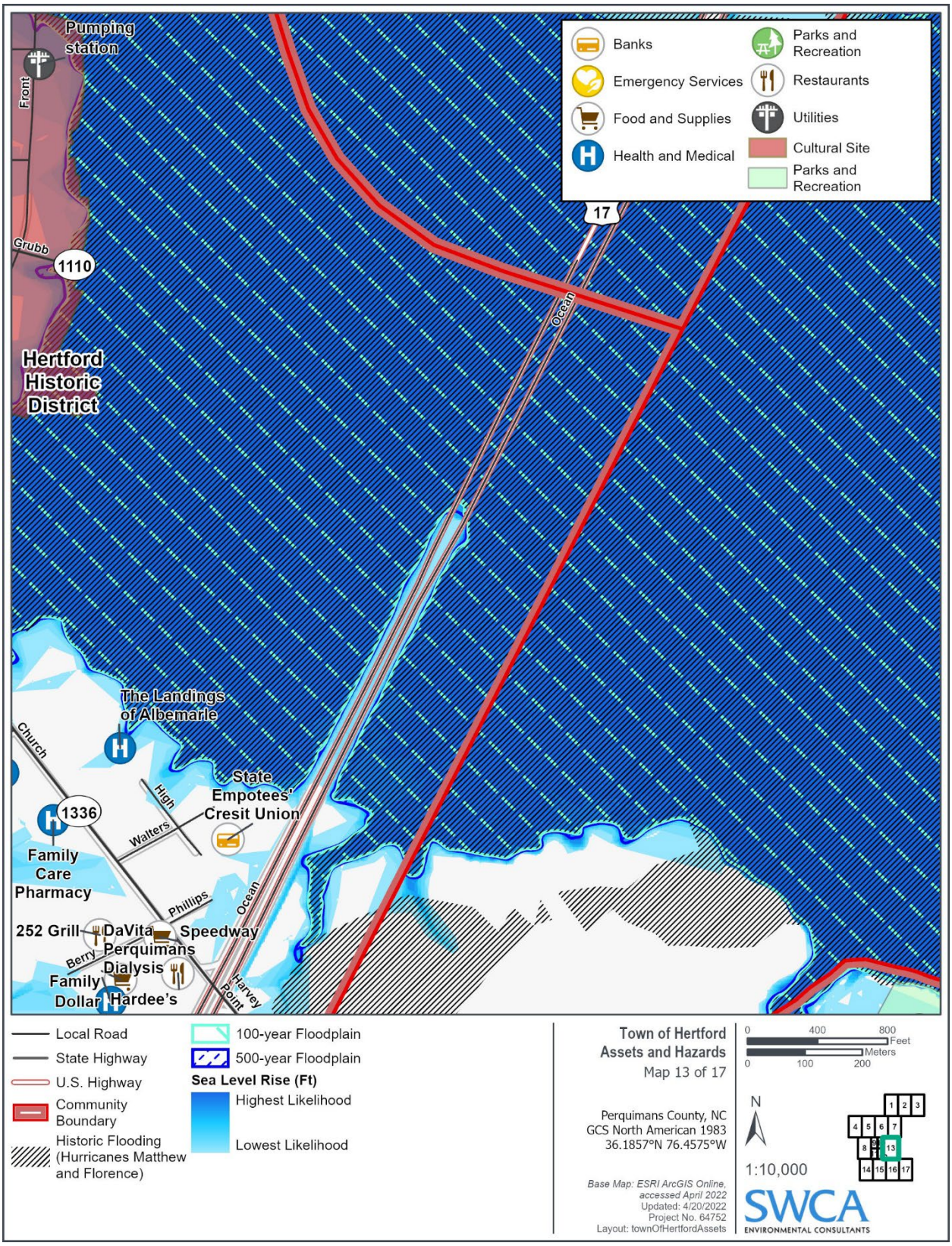


Figure F-13. Detail map of assets and hazards, keys to Figure 7.

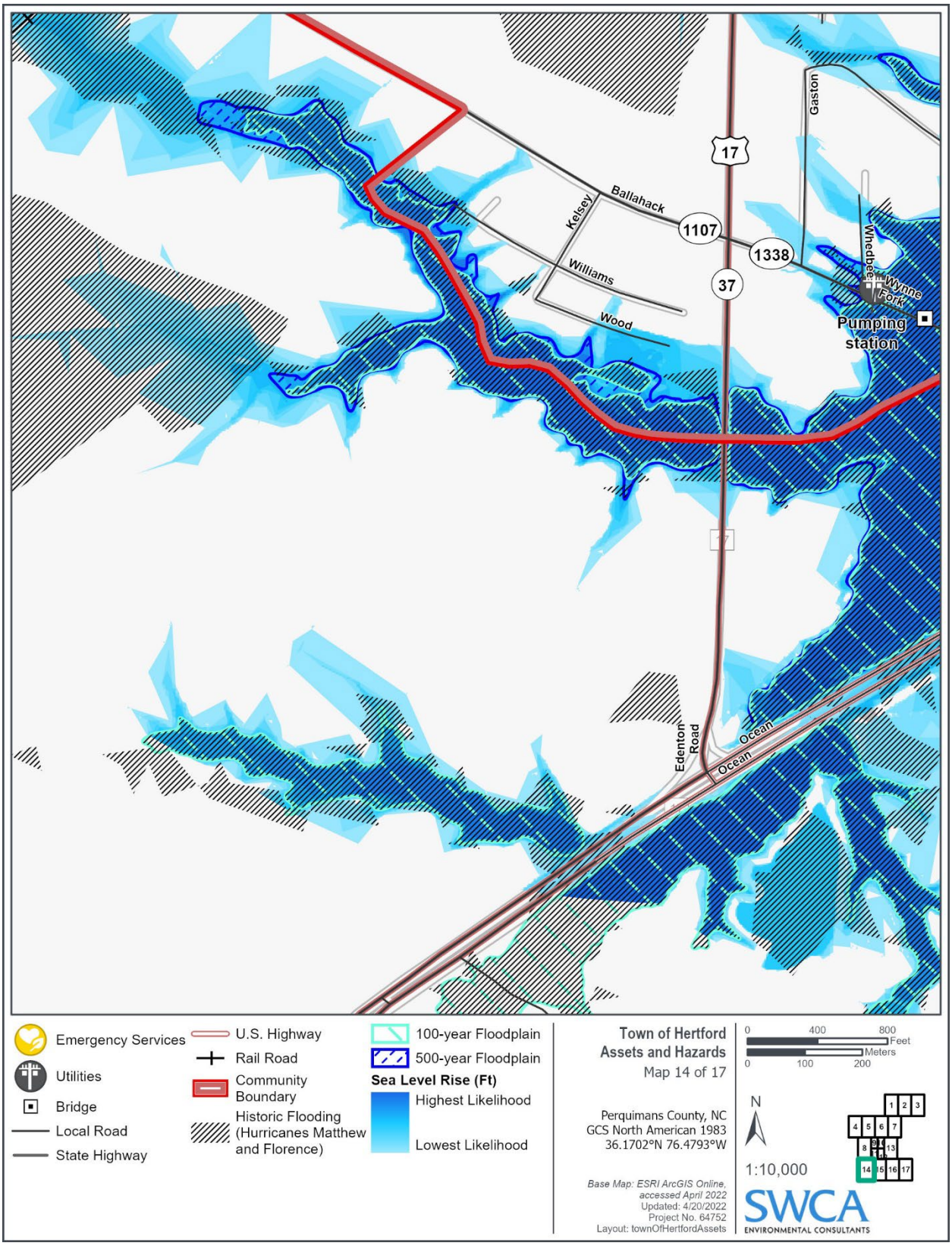


Figure F-14. Detail map of assets and hazards, keys to Figure 7.

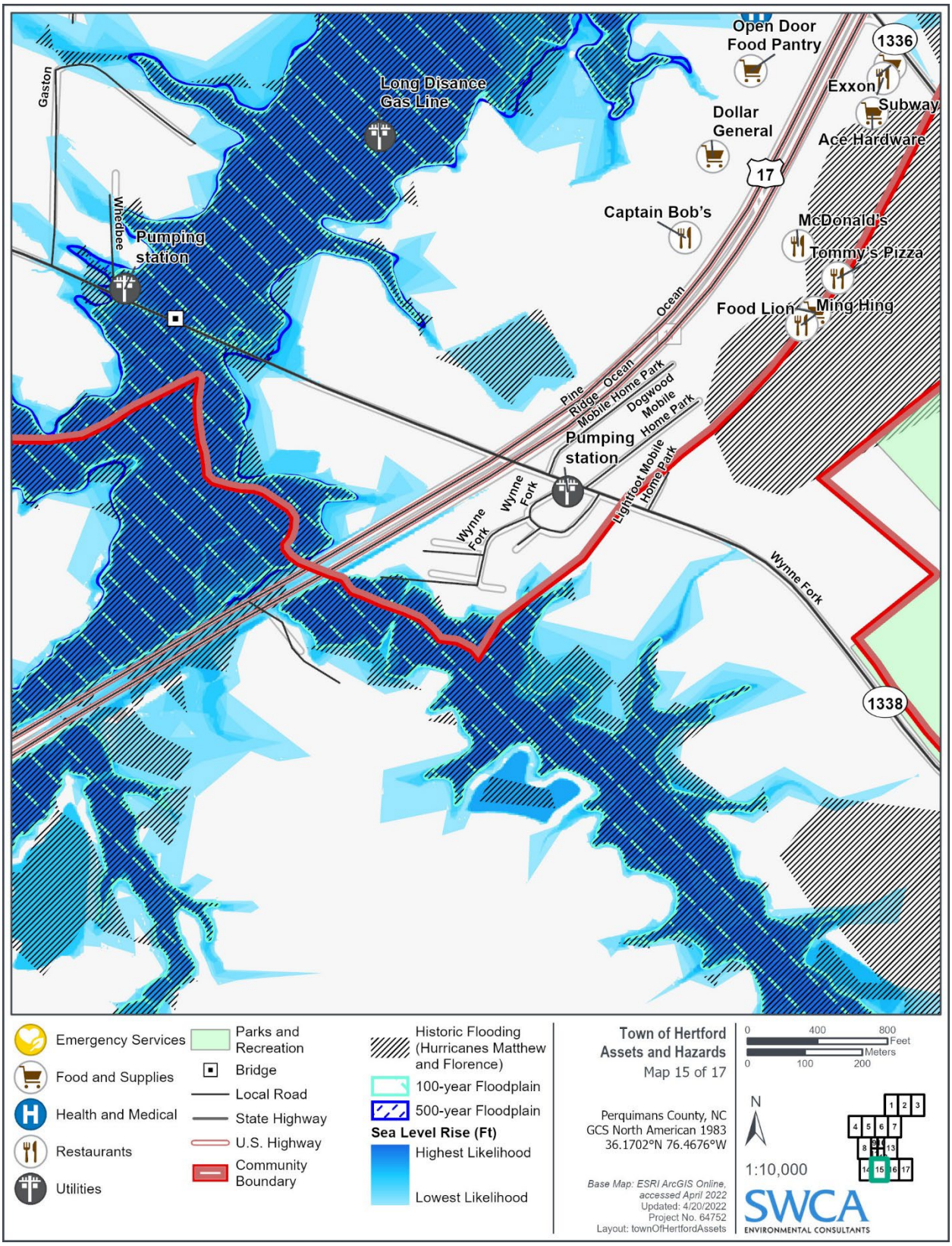


Figure F-15. Detail map of assets and hazards, keys to Figure 7.

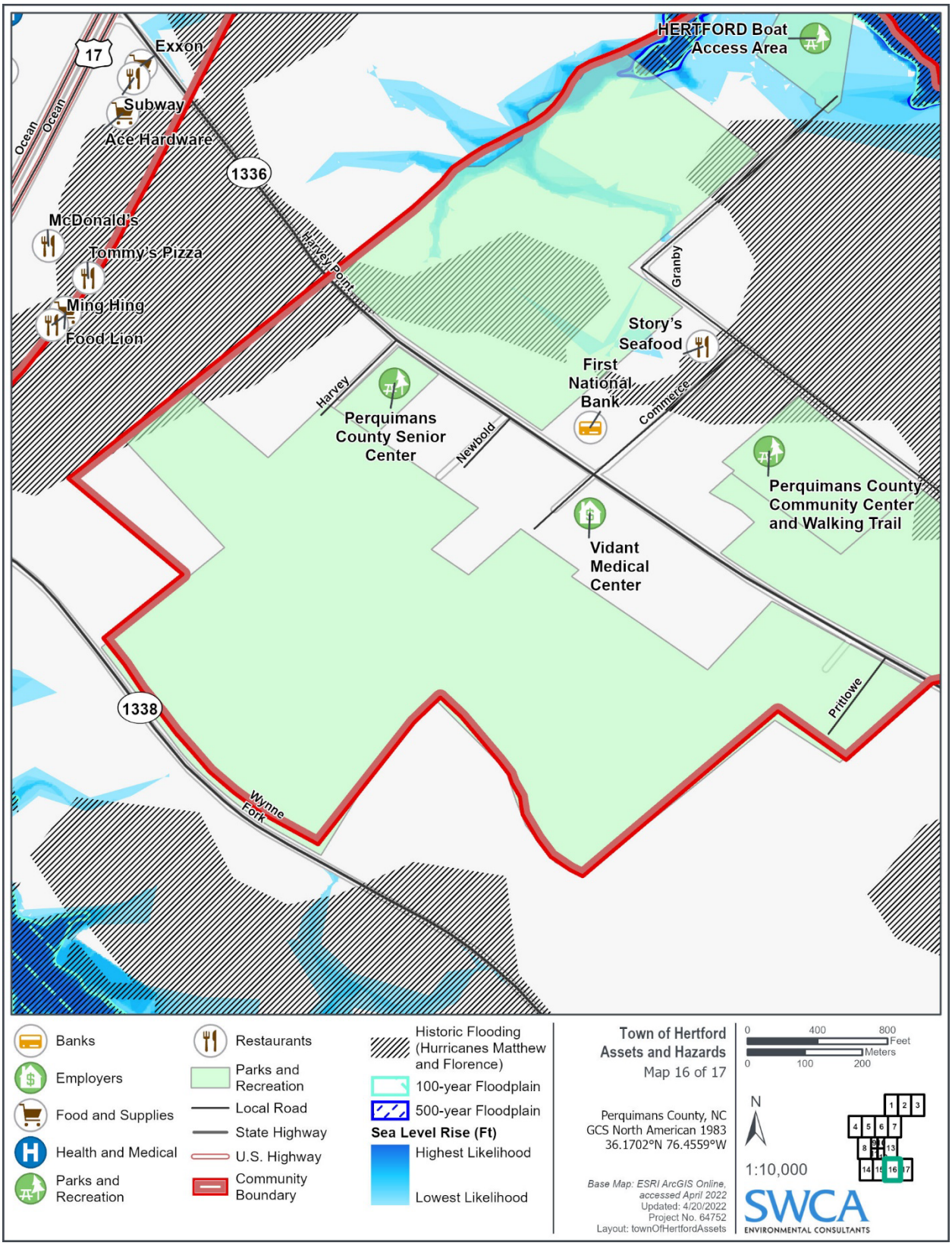


Figure F-16. Detail map of assets and hazards, keys to Figure 7.

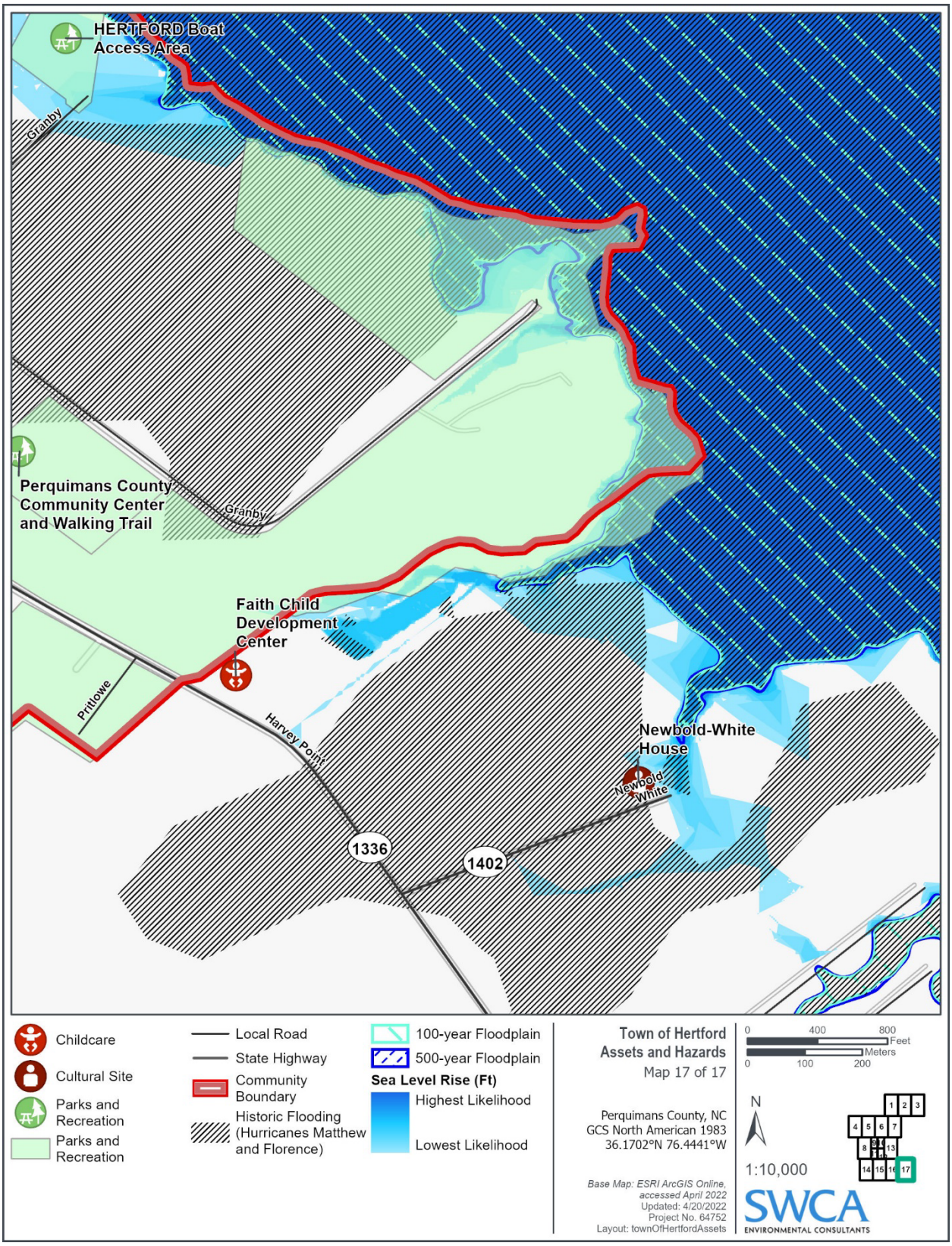


Figure F-17. Detail map of assets and hazards, keys to Figure 7.

APPENDIX G

Other Projects Considered

Table G-1. Other Projects Considered for Hertford, North Carolina

Project Name	Project Description	Source
Installation of River Gages	Establish active river gauges at various points along the Perquimans River. The installation of the detailed river gages will provide real-time weather and river data that will benefit emergency management actions and allow for more efficient actions.	Hurricane Matthew Resilient Redevelopment Plan – Perquimans County; Albemarle Region Hazard Mitigation Plan 2020
Analysis of the Reed Oil site	Analysis of the Reed Oil site to see if there are any environmental concerns. If there is contamination on the site, this will need to be mitigated through a Brownfields study, formulation of a mitigation plan, and implementation of the plan. A potential funding source for this could be the EPA's Brownfield Grants Program. More information on the program is available here: https://www.cclr.org/funding-news/cclrs-tips-for-getting-started-on-epa-brownfield-grants-now?mc_cid=5a48929ae3&mc_eid=49f07ca2b5	Waterfront Community Plan
Asset Inventory and Assessment of Water and Sewer System	In September 2020, Hertford applied for an Asset Inventory and Assessment grant through the NC Division of Water Infrastructure for both its water and sewer systems. If funded, the asset mapping and condition assessment will incorporate a vulnerability assessment of infrastructure.	RCCP application; RCCP Public Meeting #1
Update County and Town Ordinances and Land Development Regulations	Revise Hertford's Zoning Ordinance and Subdivision Regulations to improve stormwater management practices in developments to better address Mitigation Goals and Objectives and ensure they align with and support the 2017 CAMA Land Use Plan provisions related to suitable use of land around waterways and in flood-prone areas. Minimize construction of additional impervious surfaces within floodplains to reduce stormwater runoff, including limiting construction of impervious surface parking lots in the areas near the rivers through amendments to the County Land Development Regulations.	Albemarle Region Hazard Mitigation Plan 2020
Continuity of operations plans	Work to develop continuity of operations plans (COOPs) for county/town departments, assisted living facilities, long-term care facilities, day care centers, etc.	Albemarle Region Hazard Mitigation Plan 2020
Establish Regulatory Flood Height (with Perquimans Co.)	Update development ordinances and/or Flood Damage Prevention Ordinance to include a specific freeboard level.	Public Meeting #2
Update the CAMA Land Use Plan	Update the CAMA Land Use Plan in conjunction with the County's Core Land Use Plan.	Albemarle Region Hazard Mitigation Plan 2020
Emergency Operations Plan	Maintain and annually update the county Emergency Operations Plan. This plan should contain detailed information on responsible parties and contact information. This information should be updated as positions and contact information change.	Albemarle Region Hazard Mitigation Plan 2020
Retrofitting or Elevating At-Risk Residences	There are numerous residences that are not yet repetitive loss properties but may be soon. Identify funding and assistance to elevate or retrofit these properties. Pursuing this as a group rather than one homeowner at a time may provide cost efficiencies.	Public Meeting #2
Buy Out or Retrofit Repetitive Loss Properties	Identify additional repetitive loss properties; monitor ongoing status and condition; pursue funding to buy out or retrofit as appropriate.	Albemarle Region Hazard Mitigation Plan 2020
Acquire Destroyed/Damaged Properties	Continue to acquire destroyed or substantially damaged properties and relocate households. Seek State and Federal funding (voluntary program).	Albemarle Region Hazard Mitigation Plan 2020; 2019 Capital Improvement Plan

Project Name	Project Description	Source
Flood Mitigation Partnerships	Actively work with federal, state, local, and private partners to identify mitigation measures and secure funding via grants to alleviate flooding. Focus efforts on property along the Perquimans River, Bear Swamp Watershed, Bagley Swamp Watershed, Burnt Mill Watershed.	Albemarle Region Hazard Mitigation Plan 2020
Storm Water Maintenance, Repairs, and Improvement Projects	Work with North Carolina Department of Transportation and other agencies to ensure that stormwater facilities are maintained to allow for reasonable flows.	Albemarle Region Hazard Mitigation Plan 2020; 2019 Capital Improvement Plan
Grubb Street Drainage Improvements	One approach might be to elevate this section of Grubb Street and create a drainage area to the south of Grubb Street where there are two vacant properties. Large stormwater pipes could carry this water under the road and under the entry plaza to the riverfront to discharge into the wetlands. Include mechanism for filtering out trash from stormwater before it enters the river.	Waterfront Community Plan; Public Meeting #2
Area behind the Post Office	Heavy rains cause water to gather behind the post office and flood the loading dock of the post office	Public Meeting #2
Interconnect Hertford & Winfall Sewer Systems	Interconnect Hertford and Winfall Sewer System	Public Meeting #1
Jennie's Gut Sanitary Sewer Line	Camera (CCTV) inspection and likely repair/replacement of the sanitary sewer line on the margins of Jenny's Gut, including the rehabilitation of 10 access holes. This is likely a sensitive environmental area and a trenchless repair may the best option.	Jeremy Haislip and Julius Williams
Implement Community and Riverfront Plan	Implement Waterfront Plan to include shoreline protection, restoration, and development of park	Public Meeting #1
Stormwater and Erosion Control Plan	If the proposed community development were shown on the CAMA plan, it would need to include a stormwater and erosion control plan for any development behind the inland retaining wall. This waterfront plan does not include proposed development except environmental and some associated public improvements (e.g. the walkway) and this will be what is submitted to CAMA for approval.	Waterfront Community Plan
Landscaping to Retain Soil	Planting of Live Oaks or another similar species on the land side of the Hertford waterfront retaining wall and walkway to add shade, improve soil retention, and add character to the walkway.	Waterfront Community Plan
Wetland mitigation and restoration	Wetland mitigation and restoration on the river side of the Hertford waterfront retaining wall; include living shoreline with walkway on piers and bridges.	Waterfront Community Plan
Ecologically sound designs	Hertford waterfront redevelopment should strive to be ecologically sound. Walkways and parking surfaces should be permeable, and rainwater should be captured on site as much as possible rather than draining directly into the wetlands or into a stormwater system.	Waterfront Community Plan
Relocate water utility buildings	After the severe flooding from Hurricane Isabel, state agencies recommended that the water utility buildings be relocated from the northern riverfront to an area near the southeast corner of South Edenton Street and King Street.	Waterfront Community Plan
Phased town wide utility upgrades	This would include burying electric lines, installing broadband, and upgrading water/sewer pipes all at once in different sections of town, beginning with highest priority areas (and upgrading utility boxes downtown?).	Public Meeting #1
Install Third Clarifier	This would involve installation of a third clarifier to expand capacity of the Waste Water Treatment Plant.	2019 Capital Improvement Plan

Project Name	Project Description	Source
Wastewater Treatment Plant Upgrades	Install remote shutdown on chlorinator, put aerators/blowers on generator loads, fix bar screens so motors do not trip during high flow.	Town Council Brief 5/13/2019