Seven Springs

HMDRRI
Hurricane Matthew
Disaster Recovery and
Resilience Initiative

DOWNTOWN FLOOD RETROFIT **2017 REPORT**

Table of Contents

OVERVIEW

The downtowns of Fair Bluff, Seven Springs, and Windsor In Phase were devastated by Hurricane Matthew in October 2016. In an effort to assist the communities, the HMDRRI Team proposed a special flood retrofit initiative. It would involve assembling a team of experts experienced in the issue of flood retrofitting. These experts conducted site visits in each downtown. In organizing the team of retrofit experts, the HMDRRI reached out to organizations like the Association of State Floodplain Managers Association Flood Retrofit Committee, North Carolina Department of Public Safety National Flood Insurance Program, and the North Carolina State Historic Preservation Office. Once the team was assembled, over a three day period they conducted detailed assessments of buildings which involved walkabout, in-field assessments. Each pre-identified building was evaluated and specific flood retrofit recommendations were prepared. The experts included Dan Brubaker, the North Carolina NFIP Coordinator; Jack Malone, 406 Mitigation Specialist and John Cuneo, Public Assistance Coordinator, both from FEMA; Zach Faulkner with American Society of Floodplain Mangers (ASFPM); and Reid Thomas and Jeff Adolphsen, Restoration Specialists with North Carolina State Historic Preservation Office.

Goals

To identify flood retrofit techniques and assess their feasibility and associated costs in three towns devastated by Hurricane Matthew.

Downtown Seven Springs

The town of Seven Springs, North Carolina is a historic, river-oriented town located in Wayne County on the Neuse River. The heritage of the town and the surrounding area dates back to before the Civil War and the historic district identified in the town. Settled in Eastern North Carolina due to an abundance of natural springs, the rich history of Seven Springs includes ties to the Civil War and recreation. The Seven Springs Hotel was open through World War II and its original building still stand today, adjacent to the natural springs. Seven Springs has several other attractions for visitors including the historic United Methodist Church, Civil War Battle of Whitehall Sites and Cliffs of Neuse State Park. With 110 people counted in the 2010 census and 55 percent expected to remain post-Hurricane Matthew, the tiny town is anchored by just a few amenities including a restaurant, recreational outfitter, bank, and U.S. Post Office.

About 77 percent of the town's square footage is residential, with 14 percent comprised of five commercial parcels located on Main Street. Approximately 80 percent of the town's built environment is located within the 100-year floodplain and was inundated by Hurricane Matthew. About 100 acres of privately-owned, undeveloped land south of E. NC Highway 55 is elevated out of both the 100- and 500-year floodplains and is within the town limits, providing the town with an option to relocate within the town limits. However, the likelihood that the property owner will sell is low. For Seven Springs, the flood vulnerability of the town is obvious, but how to rebuild the downtown and surrounding area, (wet or dry flood proofing or complete relocation) is not.

FLOOD IMPACT ON DOWNTOWN SEVEN SPRINGS

The historic downtown dates back to the Civil War. Main Street, which extends from S.R. 55 to the Neuse River was completely flooded. The depth of water at the first floor elevation (FFE) level varied from five feet to less than two feet. Generally, the depth of the flood water was deeper closer to the river. All commercial businesses as well as the local Post Office were flooded. As of fall 2017, only Mae's Restaurant has reopened. The Neuse River Traders have been repairing and retrofitting their store and plan to re-open in December 2017. Being large and elevated, the Tidewater Energy building has potential to be subdivided into individual store bays which could provide a positive benefit to the Town's revenue stream. An expanded discussion of the flood ramifications is documented in the report, *Seven Springs, NC Downtown Flood Retrofit and Revitalization – ASFPM On-boarding Report.*

HISTORIC PERSPECTIVE

The HMDRRI Downtown Flood Retrofit team included an expert in historic restoration from the North Carolina State Historic Preservation Office, Jeff Adolphsen. He looked at all the buildings along Main Street and concluded that there is no clustering of commercial buildings in downtown Seven Springs that have *contributing resources* that would make the structure eligible to be added to the National Register of Historic Places.

It is a complicated process to be listed on the National Historic Register. When a National Register historic district is surveyed, a property inventory is created. The inventory is organized by address and each building, structure, object, and site is listed as "contributing" or "not contributing" to the historic character of the district. Contributing status is assigned to a building, structure, object, or site if the construction date falls within the period of significance of the district and the property retains historic integrity from that period.

The State Historic Preservation Office (SHPO) is concerned about possible changes to potentially historic buildings resulting from flooding that can negatively affect the historic integrity of those buildings. The restoration specialists from SHPO who participated in the in-field flood retrofit assessment have outlined series of suggested actions to minimize the threat of flood events. See *General Comments for Flood Damaged Buildings* in the Appendix.

METHODS

The team of flood risk experts made site visits to each community and conducted in-field assessments of a pre-identified set of buildings in the flood risk area. They evaluated the hazard threat of each structure and assessed the feasibility of varied flood hazard risk reduction techniques spanning technical parameters, historic preservation and culture-related issues. They also took cost-effectiveness into consideration. For each structure, a set of proposed flood retrofit techniques were developed. A data template was developed to record observations, impressions and data on each structure that would be used to recommend flood retrofit strategies information to be investigated for each structure. A technical report for each community was developed based on the information and recommendations the team of flood experts provided.

RECOMMENDATIONS

Below is a summarized report of the results of the flood experts who participated in conducting an assessment of 14 structures in downtown Seven Springs. Each reviewer was provided a packet of information containing 14 individual assessment sheets, one for each structure. It also included a key map (see **Appendix A**) that identified the location of each building structure along with a letter code which linked to the individual assessment sheet for each building. The packet also included property records for all 14 parcels.

Of the 14 structures analyzed, the HMDRRI team of experts identified five buildings for demolition. They included: **D**, **H**, **I**, **L,** and **M**. Two structures have been either retrofitted or the improvements are nearly completed: the Neuse River Traders (Building **A**) and Mae's – local restaurant, (Building **F**). Neuse River Traders have taken steps to mitigate future flooding by elevating their inventory inside the store. A portion of Building F will house Town Hall; however, it is undergoing renovation at this time.

Most of the buildings are built on slab construction and have low ceilings which ma es the option of elevation impractical, with the e ception of potentially the Tidewater Energy structure (Building **B**). Without having access into Building **B**, it appeared to the experts that the ceilings in the office portion of the building had sufficient height so that the first floor could be raised to freeboard height and still have eight-foot ceilings. In addition, the building is a suitable candidate for wet floodproofing and has potential to be divided into a series of commercial bays.

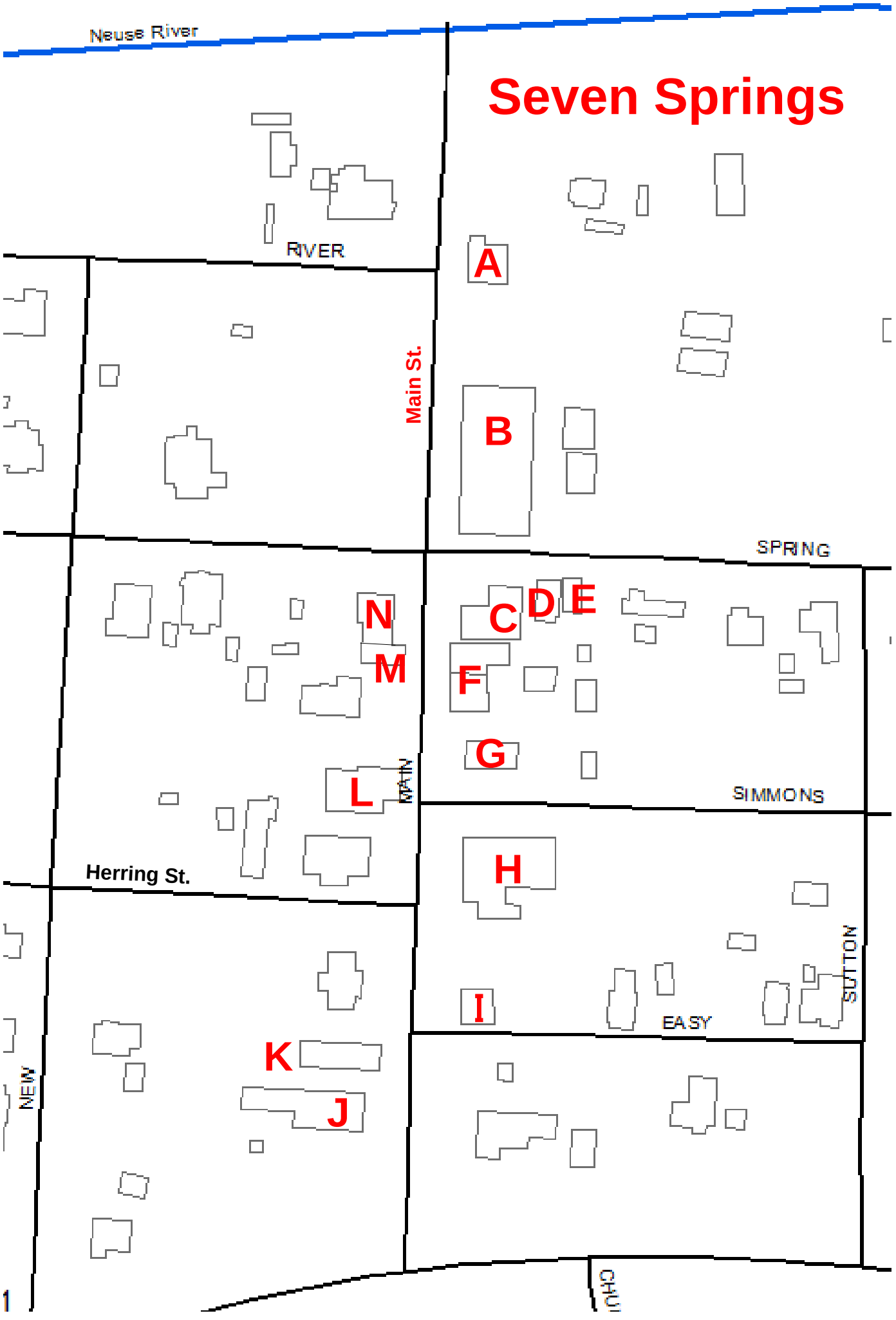
Dry floodproofing may be a good option for two buildings: the vacated bank (**G**), and the Post Office (**N**). The bank building seemed to be structurally sound and is an excellent candidate for dry floodproofing as the building has only two egress points (see the use of Flex Cover). One expert did indicate that the windows in the bank appeared to be close to freeboard height, however, this aspect needs to be looked at in more detail. A further note of caution was mentioned by experts: all structures need to undergo a structural analysis since the flood retrofit survey was only cursory with the prime purpose of giving an initial assessment of flood retrofit techniques that might be appropriate.

APPENDIX

A. Key Map
B. Field Notes
C. Flood Wall Examples
D. National Register Historic District Definitions
E. Flood Retrofit On-Boarding Report
F. Survey Records
G. General Comments for Flood Damaged Buildings
H. Seven Springs Historic District

Appendix A

Key Map


Seven Springs
Neuse River
RIVER
Main St.
SPRING
MAIN
SIMMONS
Herring St.
EASY
SUTTON
NEW
A
B
C
D
E
F
G
H
I
J
K
L
M
N

Appendix B

Field Notes

General Comments for Flood Damaged Buildings in Seven Springs

Jeff Adolphsen
Restoration Services Branch
North Carolina State Historic Preservation Office
December 1, 2017

How to Minimize the Threat from Future Flood Events

The State Historic Preservation Office (HPO) is concerned with possible changes to potentially historic buildings that can negatively affect the historic integrity of those buildings. The HPO suggests property owners coordinate floodproofing work with the HPO prior to undertaking any work to ensure that the historic integrity of the property (whether listed in the National Register of Historic Places or not) is maintained. Please note, the loss of historic integrity may result in a property no longer being eligible for listing in the National Register of Historic Places, which would preclude the use of the rehabilitation tax credit. For additional information, see the National Register of Historic Places and Historic Rehabilitation Tax Credit write-ups below.

For purposes of floodproofing, historic buildings can generally be categorized into masonry or frame (wood) buildings. These building types can often be treated differently because of their construction.

A. Masonry buildings are usually not candidates for elevating. Assuming these buildings remain in place, the HPO believes some degree of protection can be afforded by the installation of a Flex Wall system and/or wet-proofing systems.
    1. The Flex Wall system (https://smartvent.com/media/view/new-dry-floodproofing-products) is contained within a trench under cover plates adjacent to the building in front of masonry openings at doors, windows, and storefronts. Before a flood event, the cover plates are lifted, support posts are placed within the ground sleeves, and the Kevlar fabric is lifted and attached to the supports. This system does not include any permanent attachments to the building, and thus it preserves the historic integrity of the building.
    2. Wetproofing may be a viable alternative for historic masonry buildings as these historic materials (brick, lime mortars, and plaster walls) may be able to stand in water for extended periods of time with few of the deleterious effects suffered by wood framed buildings. Factors to consider when wetproofing a building include the following:
        a. Allow ample time for the masonry and concrete slab to dry before applying any finishes as hidden moisture will affect the finish. Evidence that materials have not had sufficient time to dry include peeling paint from masonry or efflorescence popping off the paint from plaster walls.
        b. Do not apply permanent coatings or coverings atop historic masonry as moisture in the ground can be driven further up masonry walls during non-flood events. This can result in in the spalling of brick as moisture escapes from the wall and increased duration of moisture retention

within the masonry wall and wood components adjacent to the wall which can accelerate deterioration of those wood components.

c. Concrete floors can hold in moisture under the slab and drive additional moisture vertically within masonry walls. If the slab is in poor repair or if plumbing lines under the slab need replacement, the opportunity exists to replace the slab and install a drainage system under the slab and possibly around the exterior perimeter of the building to help drain excess water from the site during non-flood events.

d. While masonry buildings may be viable candidates for wet proofing, one of the concerns is the condition of historic (constructed within the period of significance of the historic district) storefronts and how to preserve those storefronts after a flood. Can the storefront be adequately cleaned after a flood? Wood storefronts should be dried and treated with Boracare prior to repainting. Rolled aluminum or hollow metal storefront should gently be disassembled and the individual components thoroughly cleaned, polished, and reassembled whether glazing is to be replaced or not.

e. If any part of the historic or later wood structure (sill, joists, corner post, post and beam, stud wall, etc.) or finishes (floor, siding, trim, etc.) that are scheduled to remain in place and that were exposed to flood waters or are potentially susceptible to future flooding are visible, those components should be sprayed with Boracare. Boracare is an oil based fungicide, mildewcide, termiticide, and insecticide. It is highly viscous liquid that must be mixed with an impeller rod into warm water and then sprayed onto the wood with a sprayer. The oil will carry the active ingredients into the wood to prevent further deterioration. This may be an option to save wood floors if they can be reset flush onto the joists. If there is space, joists and flooring can be sprayed from the crawlspace. Studs can be sprayed if the finish is removed. Wood wainscot may be sprayed from the backside if the chair rail and/or finish paint is removed. For further information about Boracare see: http://nisuscorp.com/builders/products/BORA-CARE. NOTE: Boracare is hydroscopic and if the wood is too close to the grade, it will attract moisture. Consult with manufacturer.

B. Frame buildings, unlike most masonry buildings, may be good candidates for elevating because the structure can be lifted from the sill plate. It is possible for elevated buildings to retain their National Register eligibility. **Consequently, the HPO should be consulted in advance to enhance retention of the requisite historic integrity.**

The less a building is elevated, the better. Many buildings can be elevated approximately four feet and maintain their historic integrity through mitigating strategies such as: subtle grading around the foundation; the installation of shrubbery; the installation of raised planting beds; and the sympathetic design of new stairs.

In certain cases, buildings elevated more than four feet can retain their historic integrity. Buildings that are raised too high (eight feet or more) lose their relationship to the street. Mitigation is more difficult on small urban lots where buildings simply may not have space to move elsewhere within the property. Elevated buildings may need to be placed further from the right-of-way to account for taller and deeper sets of stairs. The number of risers, the configuration of the stairs, and an increased setback of the building can negatively affect historic integrity of a building and possibly result in the loss of historic designation. Larger urban and rural sites may be more accommodating of relocation farther from the right-of-way. New staircases should exhibit the character of the historic staircase. If the historic staircase was monumental, a redesigned monumental staircase may be appropriate. If the historic stairs were not monumental and the new stairs are prominent purely by size and location, the historic integrity of the building would be negatively affected and possibly result in the loss of historic designation.

If any part of the historic or later wood structure (sill, joists, corner post, post and beam, stud wall, etc.) or finishes (floor, siding, trim, etc.) that are scheduled to remain in place and that were exposed to flood waters or are potentially susceptible to future flooding are visible, those components should be sprayed with Boracare. Boracare is an oil based fungicide, mildewcide, termiticide, and insecticide. It is highly viscous liquid that must be mixed with an impeller rod into warm water and then sprayed onto the wood with a sprayer. The oil will carry the active ingredients into the wood to prevent further deterioration. This may be an option to save wood floors if they can be reset flush onto the joists. If there is space, joists and flooring can be sprayed from the crawlspace. Studs can be sprayed if the finish is removed. Wood wainscot may be sprayed from the backside if the chair rail and/or finish paint is removed. For further information about Boracare see: http://nisuscorp.com/builders/products/BORA-CARE. NOTE: Boracare is hydroscopic and if the wood is too close to the grade, it will attract moisture. Consult with manufacturer.

Removal of Later Finishes

Whether a property owner undertakes a rehabilitation tax credit project, the flooding may be an opportunity to remove later non-historic finishes. There were several buildings that had plaster walls covered with furred out sheetrock walls. Removal of the furred walls will provide a little more square footage and reveal the historic plaster walls that can tolerate submersion in water; whereas, sheetrock cannot and wood studs will need to be treated prior to resurfacing. There were also later acoustical and Celotex ceilings that were concealing historic ceilings. Those ceilings may be plaster or wood and even an early Celotex ceiling. Some wood or concrete floors were covered with tile or carpet.

Handicap Accessibility

If the commercial district is not abandoned, a master plan for the streetscape should be developed to provide handicap accessibility to all buildings. The HPO can help the local government and property owners in reviewing plans to provide accessibility to each building while maintaining the building's historic integrity.

Possible Uses

There appears to be a clear demand for a variety of services in Fair Bluff as most buildings were occupied prior to Hurricane Matthew and the flooding it brought. If those services can return and a historic district can be created, property owners or long-term lessees can utilize the rehabilitation tax credits. Like many two-story buildings across the state, many second-floor spaces in Fair Bluff appear to be vacant. The opportunity to rehabilitate these underutilized spaces for residential use should be investigated. This is a historic development pattern has recently been reimplemented across the state, including within rural areas. Second floor residential use may increase demand for services within the downtown.

Seven Springs Historic Building Inventory

Submitted by: Jeff Adolphsen
Restoration Services Branch
North Carolina State Historic Preservation Office
December 1, 2017

Note: The building inventory follows the lettering system supplied by the Recovery and Resilience Initiative at the Center for Natural and Hazards Resilience at the University of North Carolina. Only those buildings that have retained historic integrity, are included in this write-up.

Although the Seven Springs Historic District was placed on the state's Study List (preliminary determination of eligibility for listing in the National Register of Historic Places) in 1998, the North Carolina State Historic Preservation Office (HPO) no longer believes that the district is eligible for listing in the National Register of Historic Places due to the loss of buildings that have been removed after past floods. However, the HPO recommends that the historic materials and features on the remaining buildings be retained to the maximum extent possible. Listed below, is a summary of some of those materials and features for those buildings that have retained their historic character.

Building B, 204 Main St., Commercial and Warehouse – Character defining features include the masonry construction, the wood storefront and transoms in south commercial bays where the wood floor sits atop a crawlspace. The northern bays are lower in elevation and have concrete floors and industrial wood sliding doors.

Building E, E Spring St., Town Hall – Character defining features include masonry construction, jerkinhead roof, wood storefront and door, wood floor, and plaster walls. In addition to the Flex Wall system, this building may be a candidate for elevating; although with the small lot size, a lift if preferable versus a very long ramp to achieve accessibility.

Building F, Main St., Commercial – The building is composed of several smaller buildings. The northernmost building has an intact wood storefront. The southernmost building is masonry on the front half and frame construction on the rear half and tied in together with a hip roof with exposed rafter ends. Much of the interior has been altered since the hurricane; however, beaded board ceiling is extant.

Building L, Main St., Commercial – Nice frame building with several structural issues. Adjacent to creek. Structural issues are located throughout including the foundation, sill, joist, and trusses. Needs a lot of investment to repair structural issues.

Building M, Main St., Commercial – Nice masonry building with front shed. Also has several structural issues that need to be remedied.

Scattered historic frame houses – Most of the historic frame houses in Seven Springs have been flooded multiple times. If the owners seek assistance from FEMA, the options to date have been (1) purchase and removal of the house, (2) elevating the house, and (3) floodproofing. In cases where owners sell their property to FEMA and must relocate, the HPO suggests that FEMA work with the state-wide non-profit historic preservation organization Preservation North Carolina (PNC) to relocate these houses out of harm's way after FEMA purchases the property. Many of the houses in the Study List district are

historic and still retain a high degree of architectural integrity. If FEMA can work with PNC who can advertise the houses for sale with the caveat that they be relocated out of the flood plane, these houses can be saved which can save FEMA from incurring demolition and landfill expenses. When PNC acquires an interest in a property, protective covenants are placed on the property to ensure that the house maintains its historic integrity in perpetuity. PNC contact is Maggie Gregg, 315 Evans St., PO Box 398, Greenville, NC 27835-0398, 252-689-6678 or mgregg@presnc.org.

DAN BRUBAKER – Seven Springs

Most of the structures we've seen in Fair Bluff and Seven Springs are slab-on-grade, making structural elevation or relocation projects very expensive and of doubtful success. Given sufficient ceiling height, some structures can have the floor elevated, although this presents some access issues which will need to be resolved. The open space below the floor would need to be wet floodproofed. Two-story structures generally would need to have the ground floor wet floodproofed (used only for parking, access, or temporary storage), and occupied space moved higher, or have the intermediate floor removed. Dry floodproofing appears to be an option in some of the structures, either with a perimeter wall separate from the exterior wall or a barricade at the building envelope. Either system would need to be engineered to withstand hydrostatic loading during a flood event, and in the latter case, the building would need to be structurally evaluated to determine whether it could withstand flood loads. Demolition is always an option.

SEVEN SPRINGS

Slab construction and low ceilings make elevation impractical except for possibly the Agri-Supply Building (B on the map). There may be sufficient clearance to elevate the interior floor in that building.

The Old Town Hall (Building E) is a crawlspace structure. It is small, an may be a candidate for elevation or relocation.

Dry Floodproofing may be a good option for two buildings: The Bank (G) and the Post Office (N). This is due to the rectangular footprints and limited openings in the structures. It may be practical elsewhere, but cost-effectiveness should be looked at carefully. Structural analysis should be performed on all structures where dry floodproofing is considered.

Many structures have elevated their HVAC units. Some have not, and should do so. Also, propane tanks should be securely anchored or removed as soon as possible.

Buildings that likely should be demolished include D, H, I, L, and M.

In conclusion, please consider this e-mail PRELIMINARY based on my review only. It should not be considered final or anything more than an initial assessment. Others will have more to add and consider.

Best regards,

Dan Brubaker

Seven Springs

Most of the properties at Seven Springs had the same issues: the first floor was 3-5 feet below the freeboard height (BFE +2) and the majority were one story buildings with moderate ceiling heights(except building "B").

Building "B" was a warehouse/storage building on one half and storefront/offices on the other half. The building sloped downwards as you moved closer towards the warehouse/storage portion. The ceilings in the office portion (only portion we could look into) appeared to be high enough that you could raise the first floor up to the freeboard height and still have at least 8' ceilings. So the building as a whole looked like a good candidate for wet floodproofing. Link brought up a good idea that the building could be used for multiple (4) storefronts- I agree with this and think the building was structurally one of the strongest of the bunch and a good candidate for mitigation.

Building "E", the Town Hall, was a candidate for two options, neither which were a perfect fit. In my opinion, the building could either be lifted about 6-8 above the freeboard height and then either left open on piers or enclosed and vented or dry floodproofed. There were some windows that were below BFE, so it almost seemed necessary to have to wrap or protect the entire building, not just the windows and egress points. If the lift and vent option was chosen, then building "D" would have to be removed so they could complete the lift.

The bank (building "G") was another building that was seemingly structurally sound. It was a great candidate for a dry floodproofing design being that there were only two egress points. I believe Flex Cover would work great on both doors. The windows seem to be close to the freeboard height so that would have to be looked into more closely.

All of the other properties, but the few I'll mention shortly that need to be demolished(in my opinion), were pretty good candidates for dry floodproofing and the majority for Flex Cover specifically. Most of the egress points were single standard doorways and a 6' Flex Cover (or two 3') would be perfect.

There were a couple buildings that seemed beyond repair/not worth the investment to repair. The first is building "D" next to the fire station. This building was in rough shape. The only option I could think of for floodproofing it would be to abandon the first floor and then wet floodproof. Buildings "H","I", "L", and "M" seemed beyond repair.

Zach Faulkner, CFM
Flood Mitigation Specialist
North Carolina, South Carolina & Georgia

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Appendix C
Flood Wall Examples

Dry Floodproofing Examples

Below are two examples of dry floodproofing methods.

Appendix D

National Register

Historic District Definitions

National Register Historic District

Definitions

A. **Contributing**: Contributing resources are those constructed during the period of significance which substantially convey their appearance from that period.
*Contributing resources may be eligible for state and federal historic tax credits. Properties that are listed as "contributing" within a historic district are more than likely able to be "certified historic structures" unless work has been done to the building that lessens the historic integrity of the building after the district was surveyed.

B. **Non-Contributing:** Noncontributing resources are those that do not date from the period of significance (1790 to 1941) or have been substantially altered. Buildings that are listed as "non-contributing" are more than likely not eligible to be certified as historic as they were constructed outside of the period of significance of the district and/or do not retain historic integrity.

Appendix E

Flood Retrofit On-Boarding Report

Seven Springs, NC
Downtown Flood Retrofit and Revitalization

ASFPM On-boarding Report

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

COASTAL RESILIENCE CENTER
A U.S. Department of Homeland Security Center of Excellence

Association of State Floodplain Managers

The Rural Center

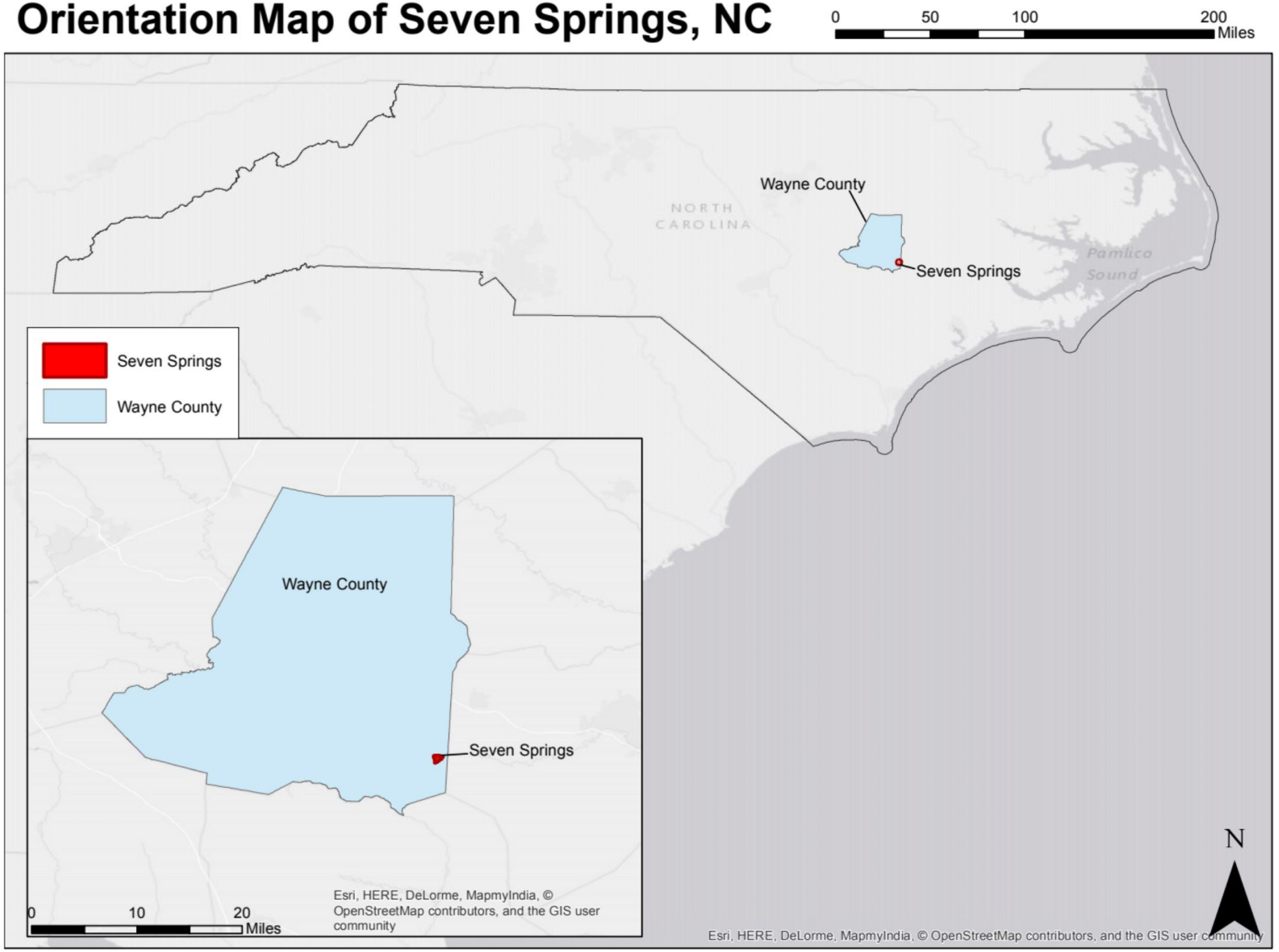
I. Purpose

The purpose of this document is to provide the Association of State Floodplain Managers (ASFPM) with the necessary information regarding Hurricane Matthew's impact on the commercial downtown properties of Seven Springs, NC. It provides preliminary information to guide the feasibility and cost assessment of various flood hazard risk reduction techniques for Seven Springs' downtown. This information will be used by ASFPM prior to and during site visits to Seven Springs to inform their analysis.

Table of Contents

II. Introduction

Orientation Map of Seven Springs, NC



Background Information

Seven Springs, NC is a historic river oriented town located in Wayne County on the Neuse River. The town's and the surrounding area's heritage dates back to before the civil war and the historic district identified in the town. Settled in eastern North Carolina due to an abundance of natural springs, the rich history of Seven Springs includes ties to the Civil War and recreation. The Seven Springs Hotel was open through World War II and its original building still stands today, adjacent to the natural springs. Seven Springs has several other attractions for visitors including the historic United Methodist Church, Civil War Battle of Whitehall Sites, and Cliffs of Neuse State Park. With 110 people counted in the 2010 census and 55% expected to remain post-Hurricane Matthew[1], the tiny town is anchored by just a few amenities including a restaurant, recreational outfitter, bank, and U.S. Post Office.

About 77% of the Seven Springs' square footage is residential, with 14% comprised of five commercial parcels located on Main Street. Approximately 80% of the town's built environment is located within the 100-year floodplain and was inundated by Hurricane Matthew. About 100 acres of privately-owned, undeveloped land south of E. NC Highway 55 is elevated out of both the 100-year and 500-year floodplains and is within the town limits giving the town the option to relocate the town within the town limits. However, the likelihood that the property owner will sell is low. For Seven Springs, the flood vulnerability of the town is obvious but how to rebuild the downtown and surrounding area, (wet or dry flood proofing or complete relocation) is not.

Public Interests:

- Ensure downtown resiliency
- Become a recreational destination for the Southeastern Wayne area
- Strengthen downtown's connection to Neuse River and Cliffs of the Neuse State Park
- Rebuild "enough" of a downtown to meet the needs of visitors to the area

Photo sourced from: http://wayne.lostsoulsgenealogy.com/photos/seven/seven1.jpg

Post Office

Photo sourced from: http://wayne.lostsoulsgenealogy.com/photos/seven/seven2.jpg

[1] Quotation from Mayor of Seven Springs saying about 50 percent of the town will remain post-buyout and relocation.

Freeboard Requirement
2 feet – Seven Springs does not have its own freeboard requirement but the Wayne County Flood Damage Prevention Ordinance specifies 2 feet.

Main Street Program Participation
Not participating

Historic District / Properties
There is an historic district and in the town limits and there are historic properties. However, no historic properties are within the downtown area.

NFIP
Seven Springs is a member of the NFIP but does not participate in the Community Rating System (CRS)

Flood Damage Prevention Ordinance
Seven Springs is required to adopt a Flood Damage Prevention Ordinance. While they do not have their own, it is likely the town adopted that of Wayne County.

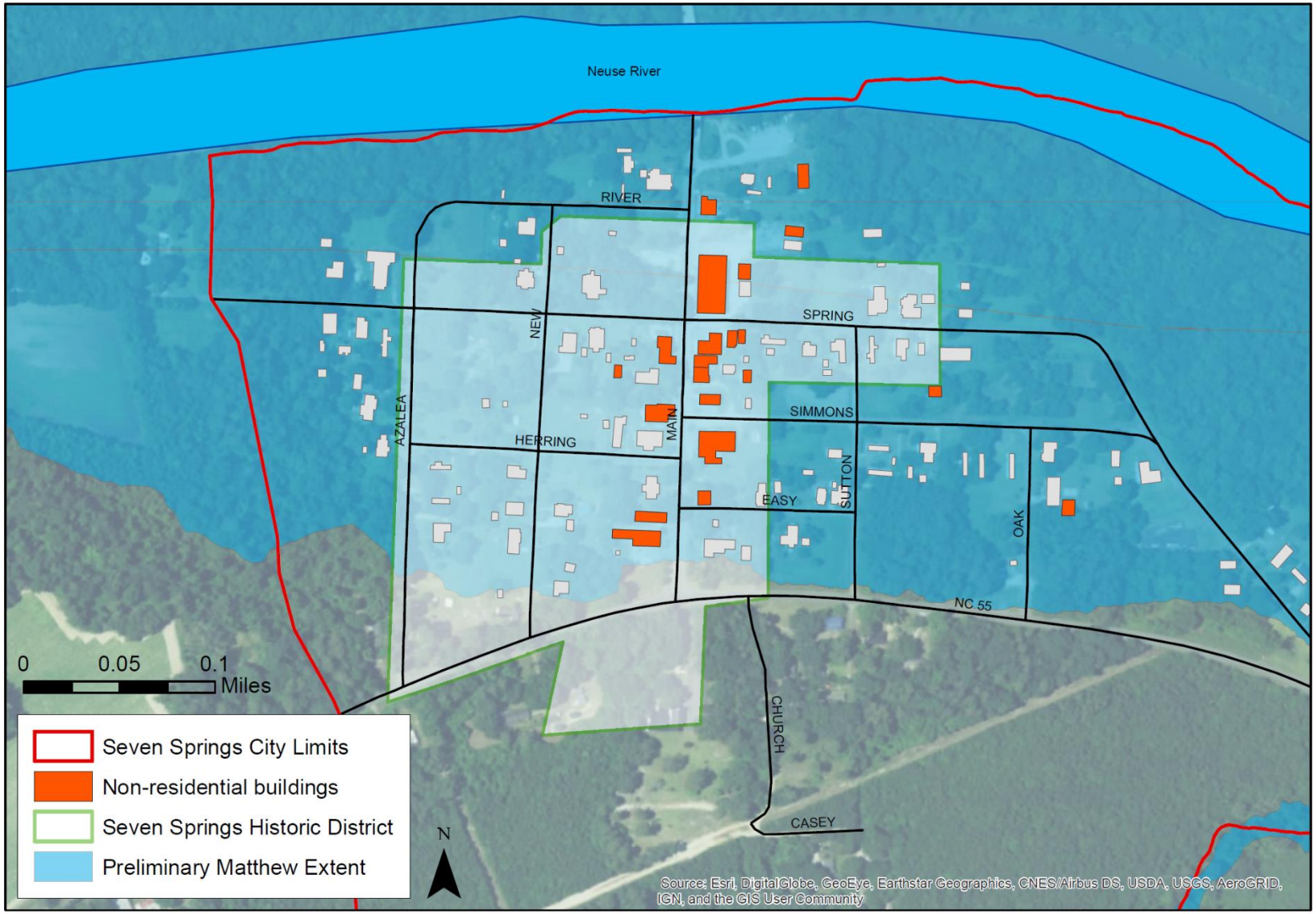
Temporary / Mobile post-Office in Seven Springs
Photo from News and Observer, taken by Chris Seward

Table I: General Town Characteristics

2010 Decennial Census (*) 2015 ACS 5-Year Estimates	Town of Seven Springs
Total population	110
% White	81.8%%
% Black	8.2%%
% Hispanic	21.8%%
% Under 18	10.9%
% 65 and older	20.0%
Average male age	38.5
Average female age	49.5
% with disability*	35.70%
Average household size	1.95
Housing units	61
Vacant housing units	9.84%
Rental vacancy rate	2%
Median year structure built*	1989
Median house value	$92,400
Less than high school education*	24.6%
Labor force participation	59.1%%
Unemployed	7.5%
MHI (2015 dollars)	$35,856
% Below poverty line	22.9%
Average commute to work (minutes)	20.8
% Lived in same home a year ago*	57.90%

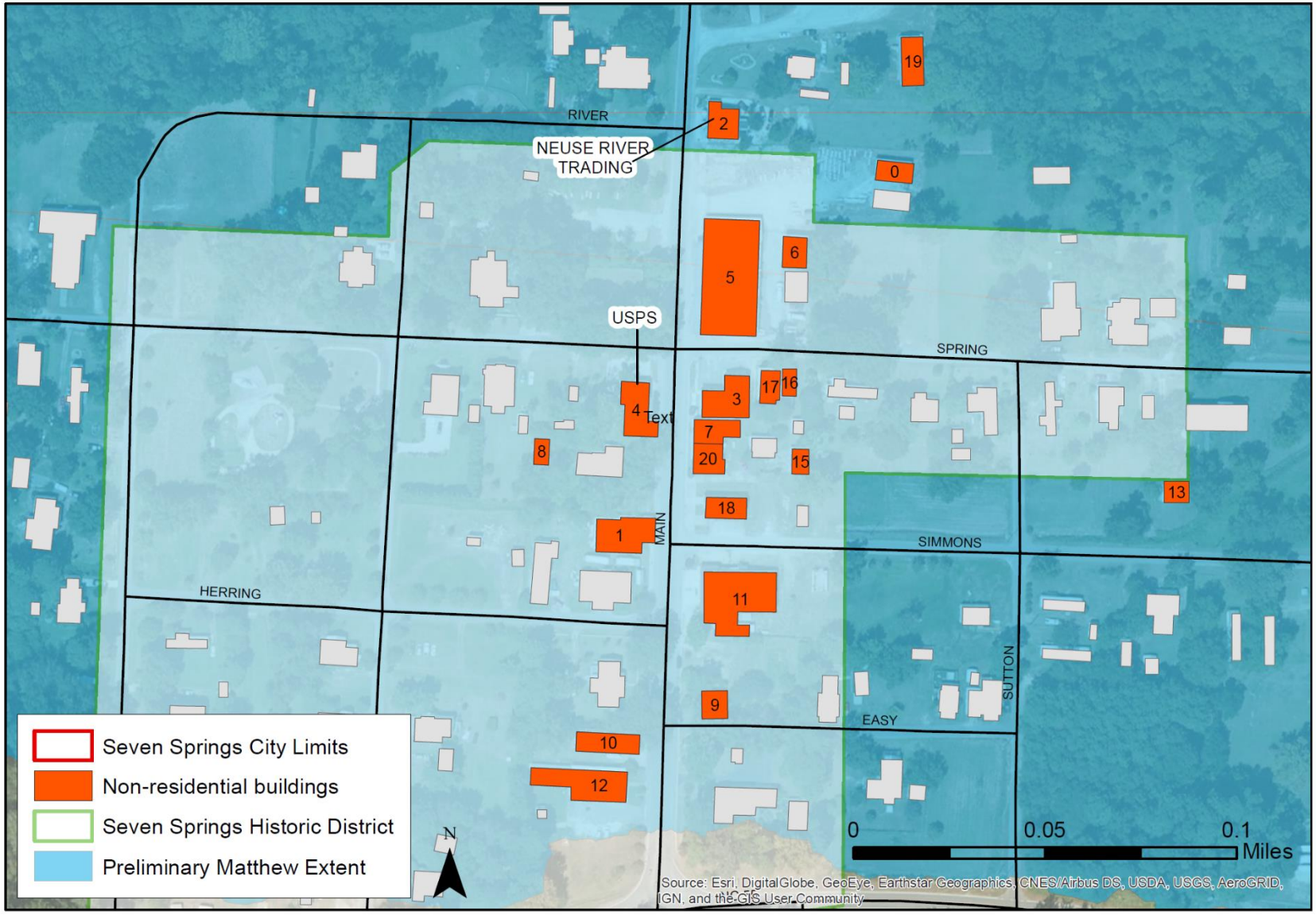
III. Downtown Reference Materials

Seven Springs, NC
Bulidings and Preliminary Extent of Hurricane Matthew



Seven Springs is a town of about 100 people and their historic downtown dating back to the civil war was completely flooded in Hurricane Matthew. The map above shows the historic district and town boundaries as well as notes all non-residential structures.

Seven Springs, NC
Bulidings and Preliminary Extent of Hurricane Matthew



The numbered non-residential structures will serve as a reference for the site visits. Map and tabular data follows with details on ownership, damage sustained, and NFIP coverage per structure. The 100-year floodplain and Hurricane Matthew's estimated extent line up exactly so for the purposes of these maps, they have the same reach.

Seven Springs, NC
Non-residential building owners

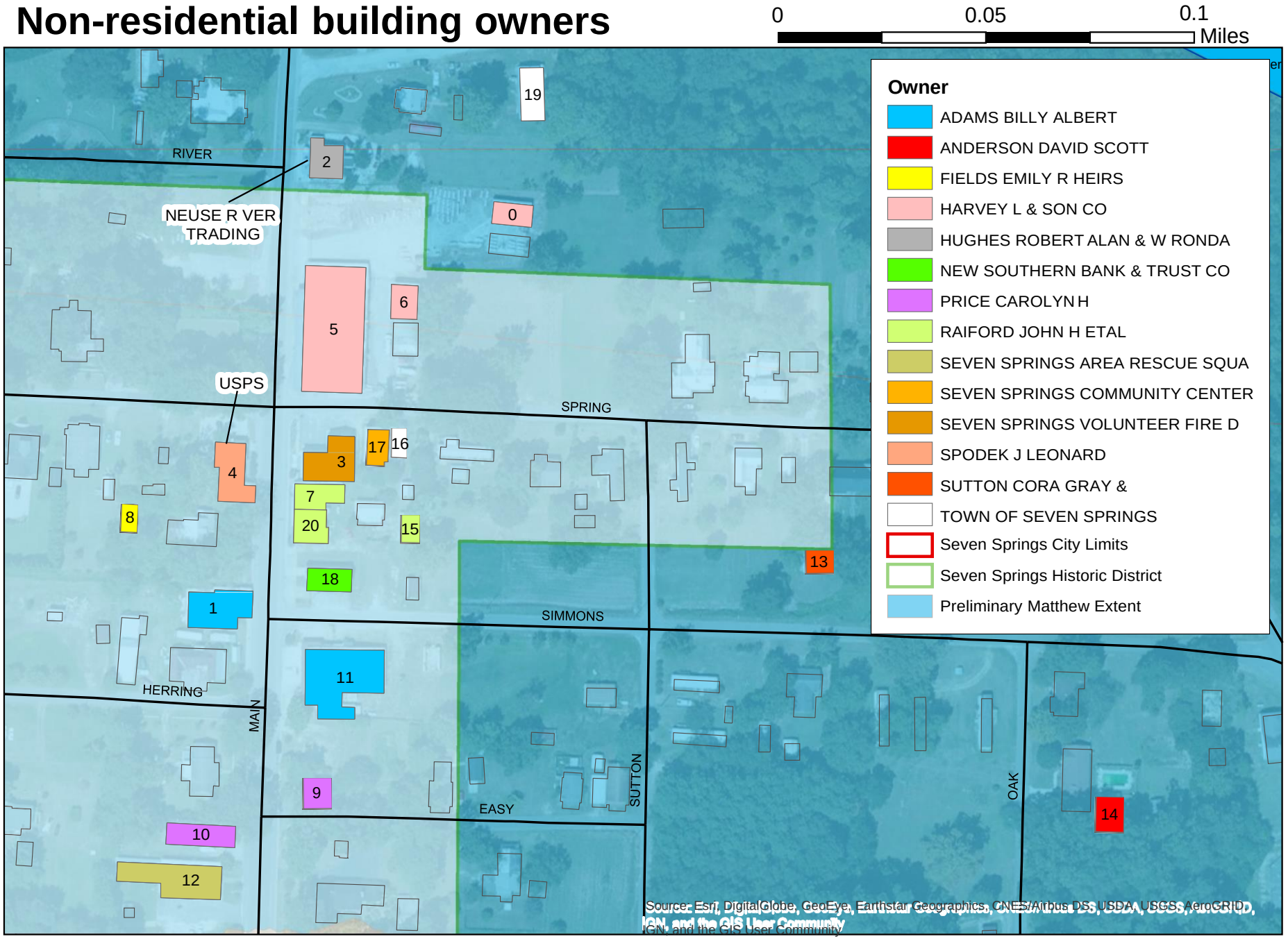


Table II: Building Ownership

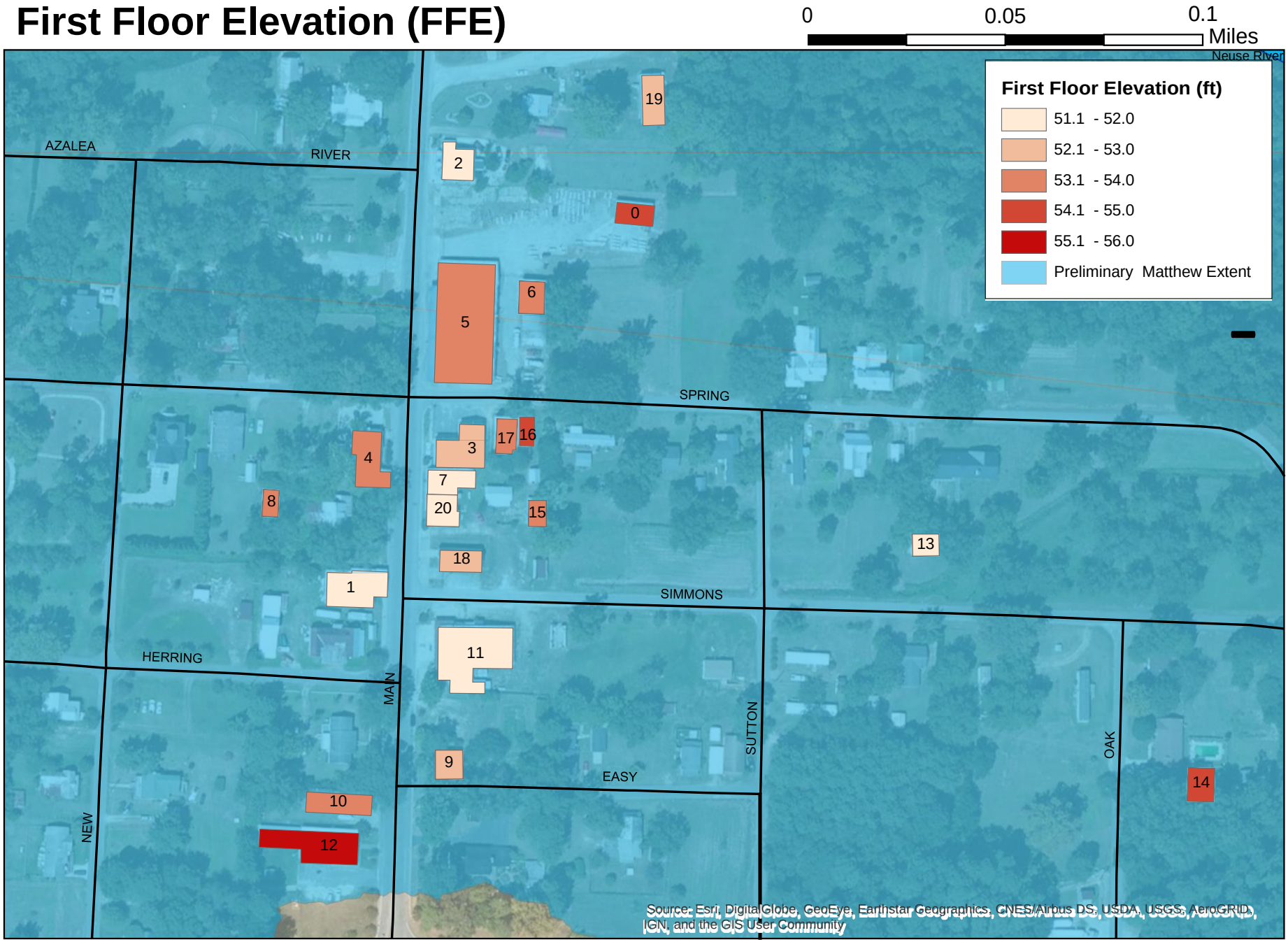
Number	Occupant	Owner Name	Owner City
0	Unknown	HARVEY L & SON CO	KINSTON
1	Unknown	ADAMS BILLY ALBERT	SEVEN SPRINGS
2	Neuse River Trading Company	HUGHES ROBERT ALAN & W RONDA	MOUNT OLIVE
3	Seven Springs Fire Department	SEVEN SPRINGS VOLUNTEER FIRE D	SEVEN SPRINGS
4	USPS	SPODEK J LEONARD	CEDARHURST
5	Tidewater Energy	HARVEY L & SON CO	KINSTON
6	Tidewater Energy	HARVEY L & SON CO	KINSTON
7	Mae's Restaurant	RAIFORD JOHN H. ETAL	SEVEN SPRINGS
8	Unknown	FIELDS EMILY R. HEIRS	WILMINGTON
9	Unknown	PRICE CAROLYN H	SEVEN SPRINGS
10	Unknown	PRICE CAROLYN H	SEVEN SPRINGS
11	Seven Springs Restaurant	ADAMS BILLY ALBERT	SEVEN SPRINGS
12	Seven Springs Area Rescue	SEVEN SPRINGS AREA RESCUE SQUA	SEVEN SPRINGS
13	Unknown	SUTTON CORA GRAY &	SEVEN SPRINGS
14	Unknown	ANDERSON DAVID SCOTT	SEVEN SPRINGS
15	Unknown	RAIFORD JOHN H. ETAL	SEVEN SPRINGS
16	Seven Springs Town Hall	TOWN OF SEVEN SPRINGS	SEVEN SPRINGS
17	Unknown	SEVEN SPRINGS COMMUNITY CENTER	SEVEN SPRINGS
18	Southern Bank	NEW SOUTHERN BANK & TRUST CO	MOUNT OLIVE
19	Unknown	TOWN OF SEVEN SPRINGS	SEVEN SPRINGS
20	Mae's Restaurant	RAIFORD JOHN H. ETAL	SEVEN SPRINGS

The town of seven springs owns 4 structures, the fire department, rescue squad, community center, and park facility (#19). All other properties are privately owned. Note that there are no LLCs present in the town as owners but several owners are from different cities.

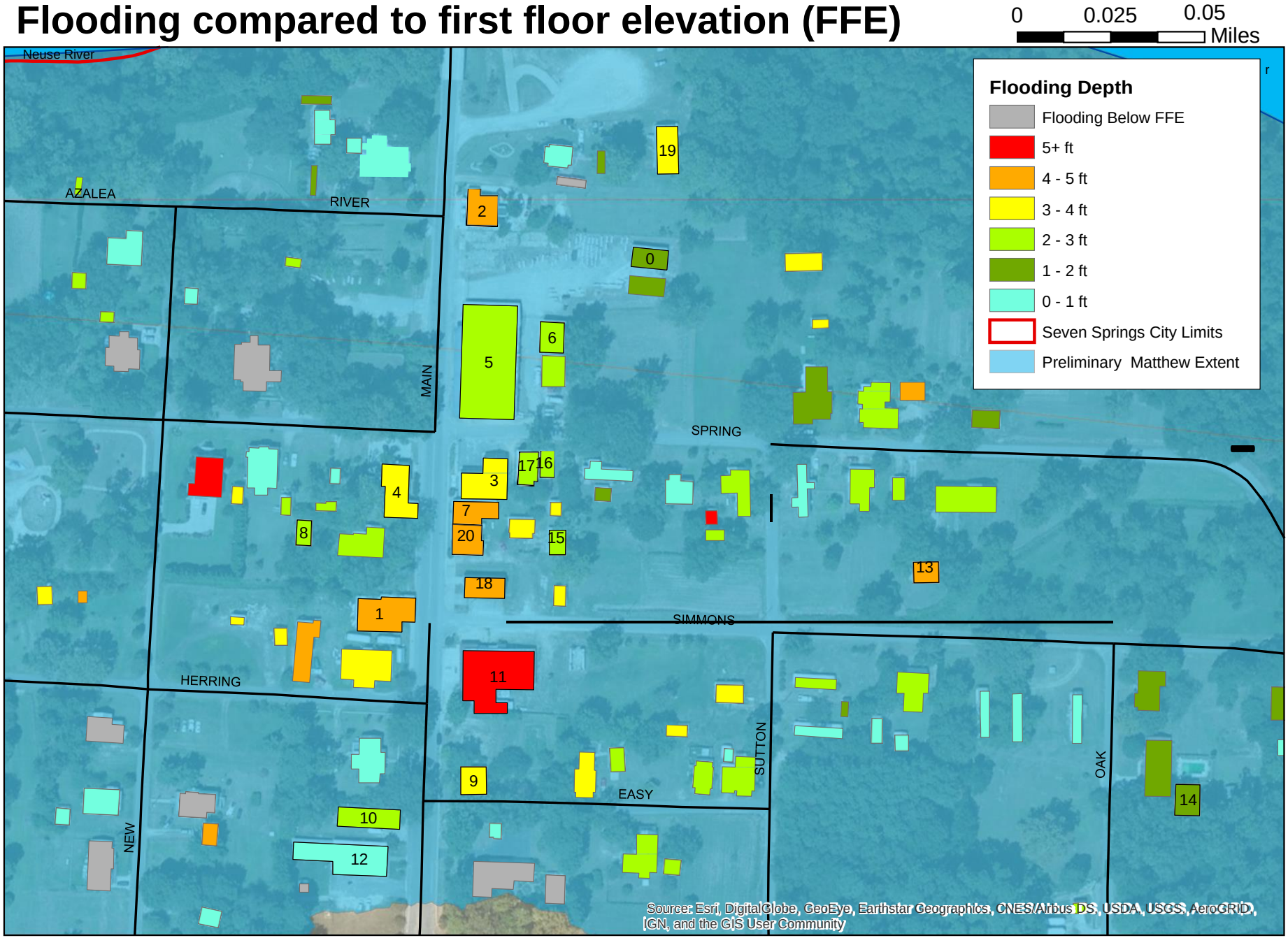
IV. Hurricane Matthew Impact

Photo taken from The Goldsboro News-Argus
Photo by, Casey Mozingo
http://www.newsargus.com/news/archives/2016/10/15/loss_of_seven_springs_flood_victims_doubt_return/

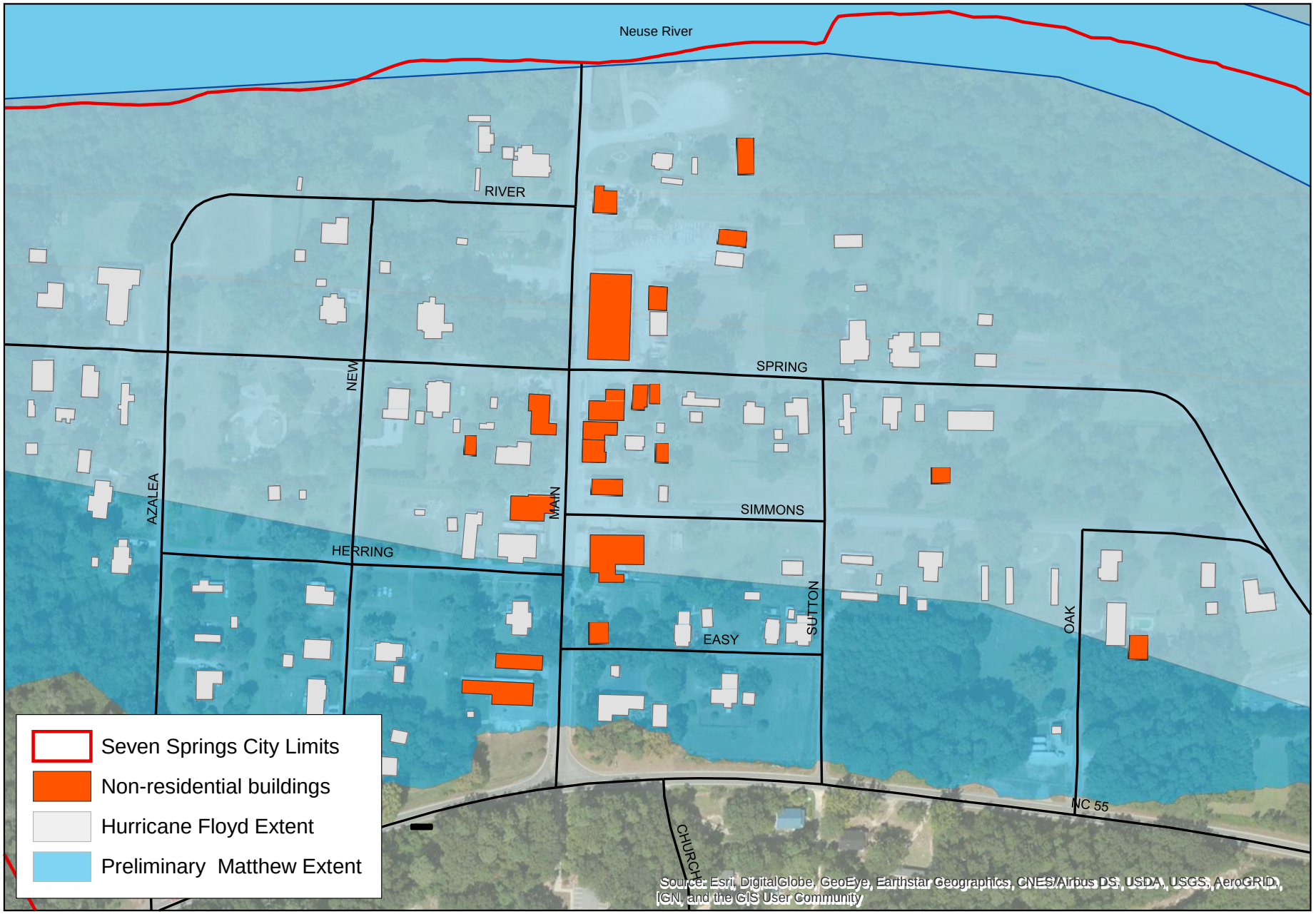
Seven Springs, NC
First Floor Elevation (FFE)



Seven Springs, NC
Flooding compared to first floor elevation (FFE)

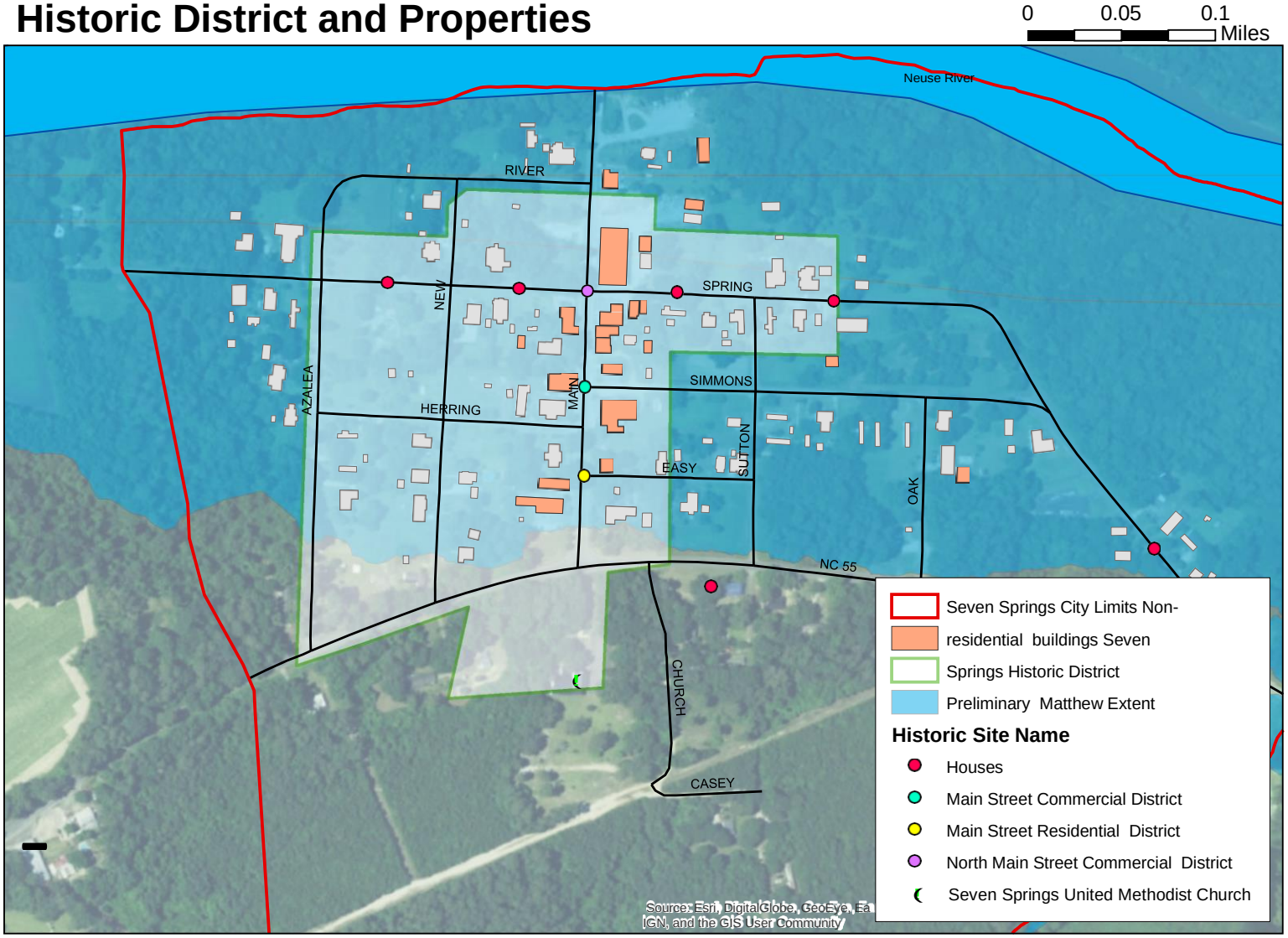


Seven Springs, NC
Hurricane Floyd Extent



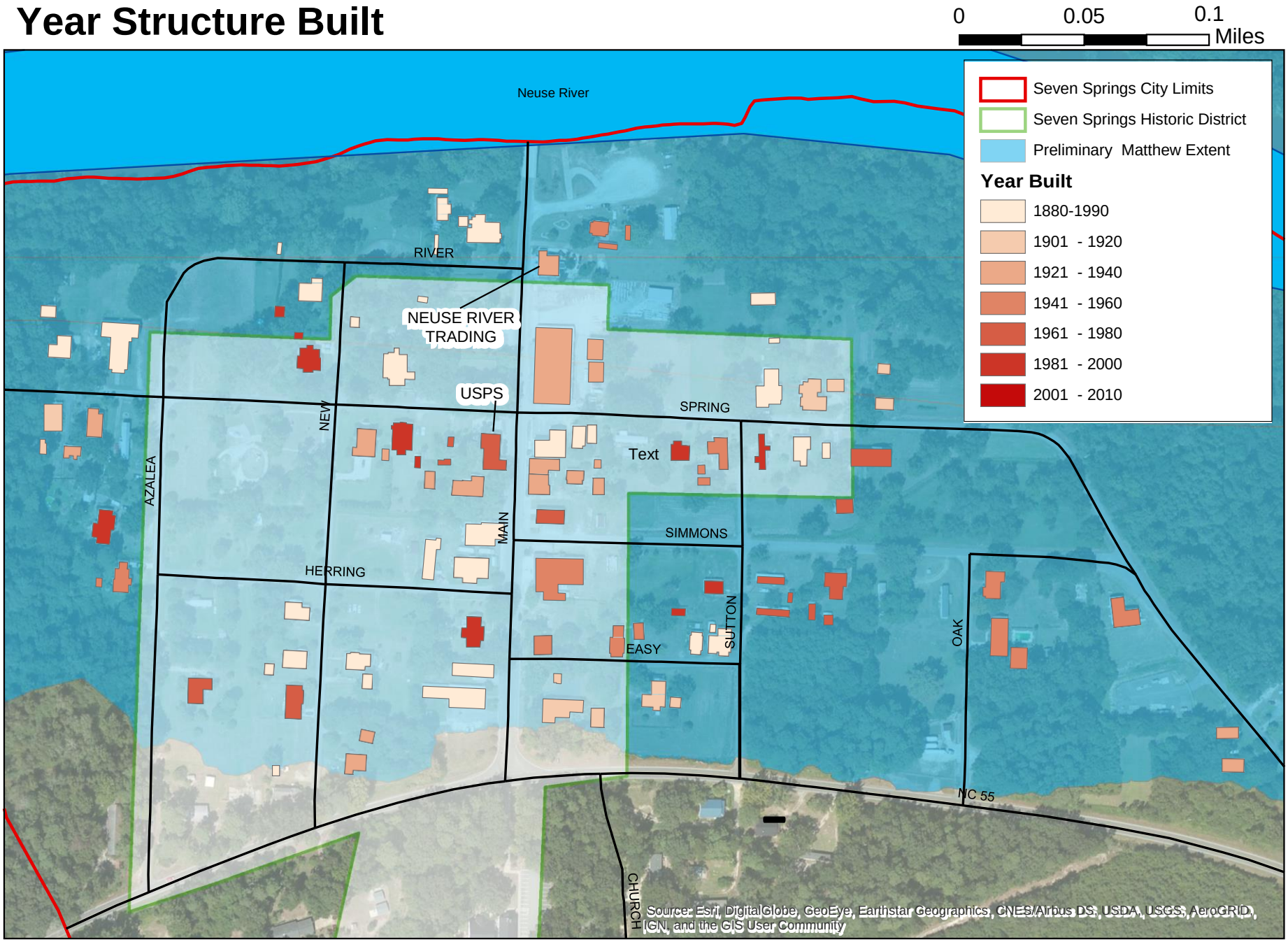
V. Downtown Building Characteristics

Seven Springs, NC
Historic District and Properties

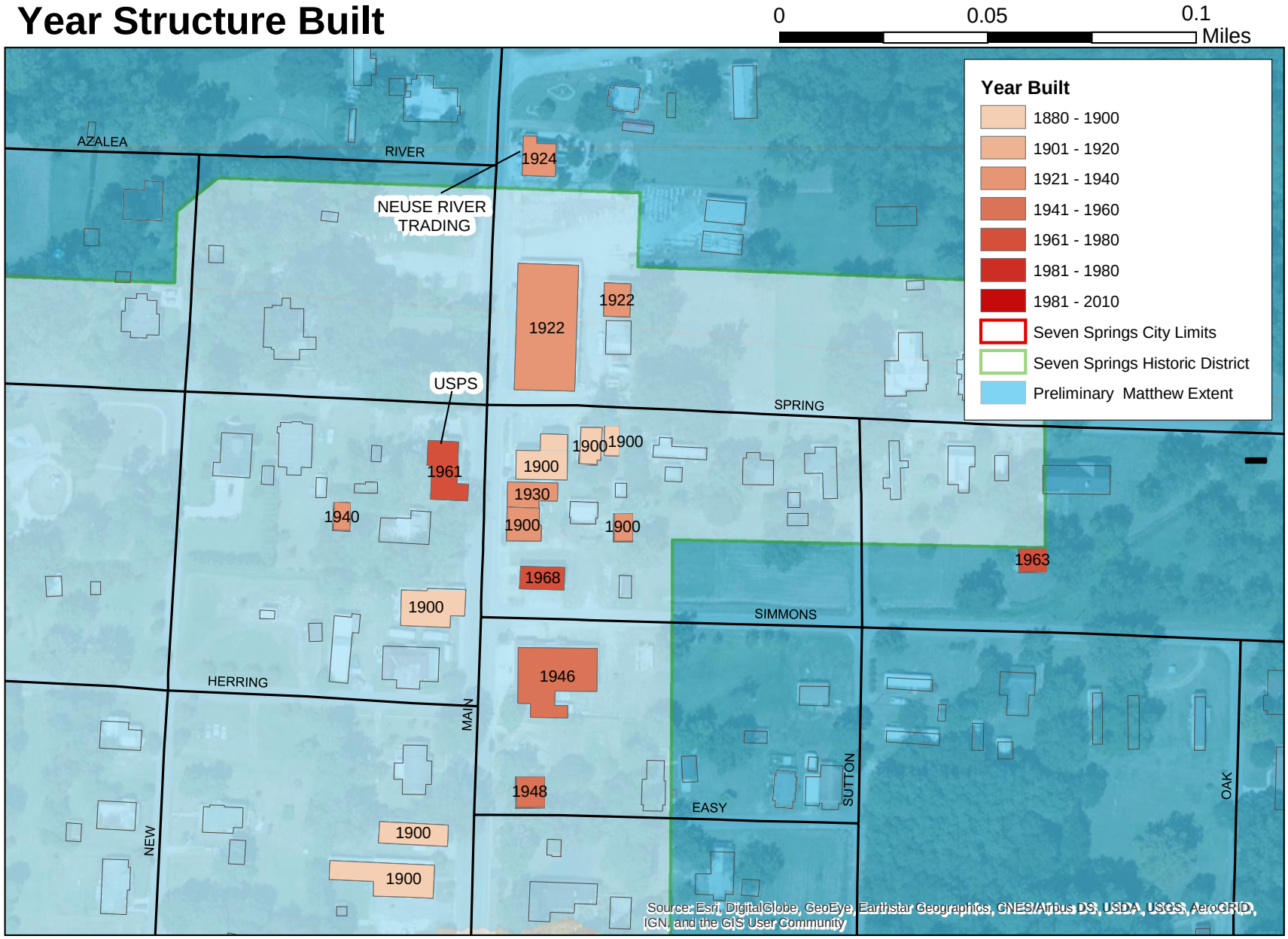


The historic district and property data does not correspond to actual buildings or parcels. The main street commercial district centers at the intersection of Simmons and Main Street in downtown. The United Methodist Church to the south is up on a hill, far outside of the floodplain and is the only historic non-residential structure in the historic downtown area. Though many buildings are old enough to be historic, they have not gone through the designation process to become so on the national registrar.

Seven Springs, NC
Year Structure Built

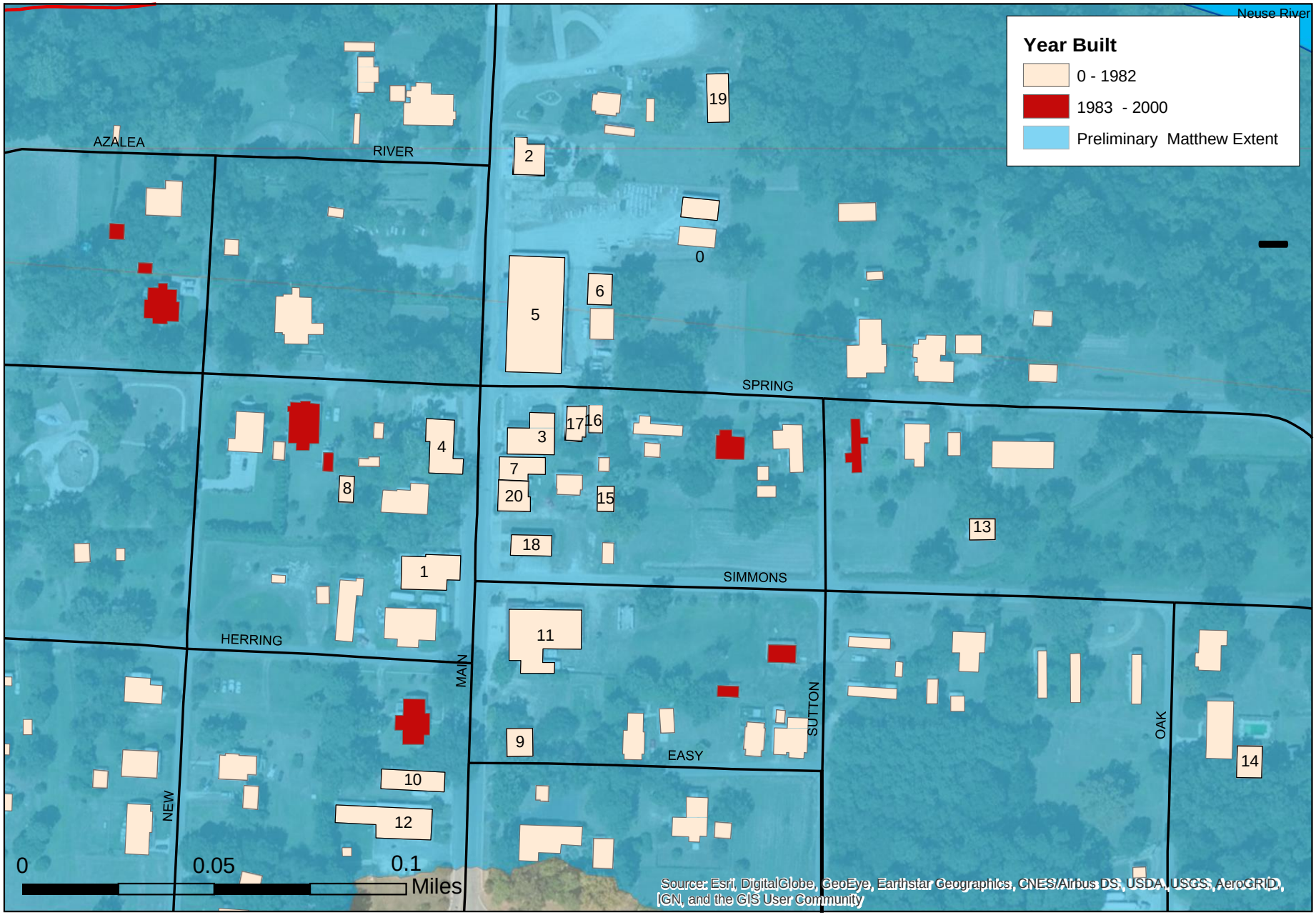


Seven Springs, NC
Year Structure Built

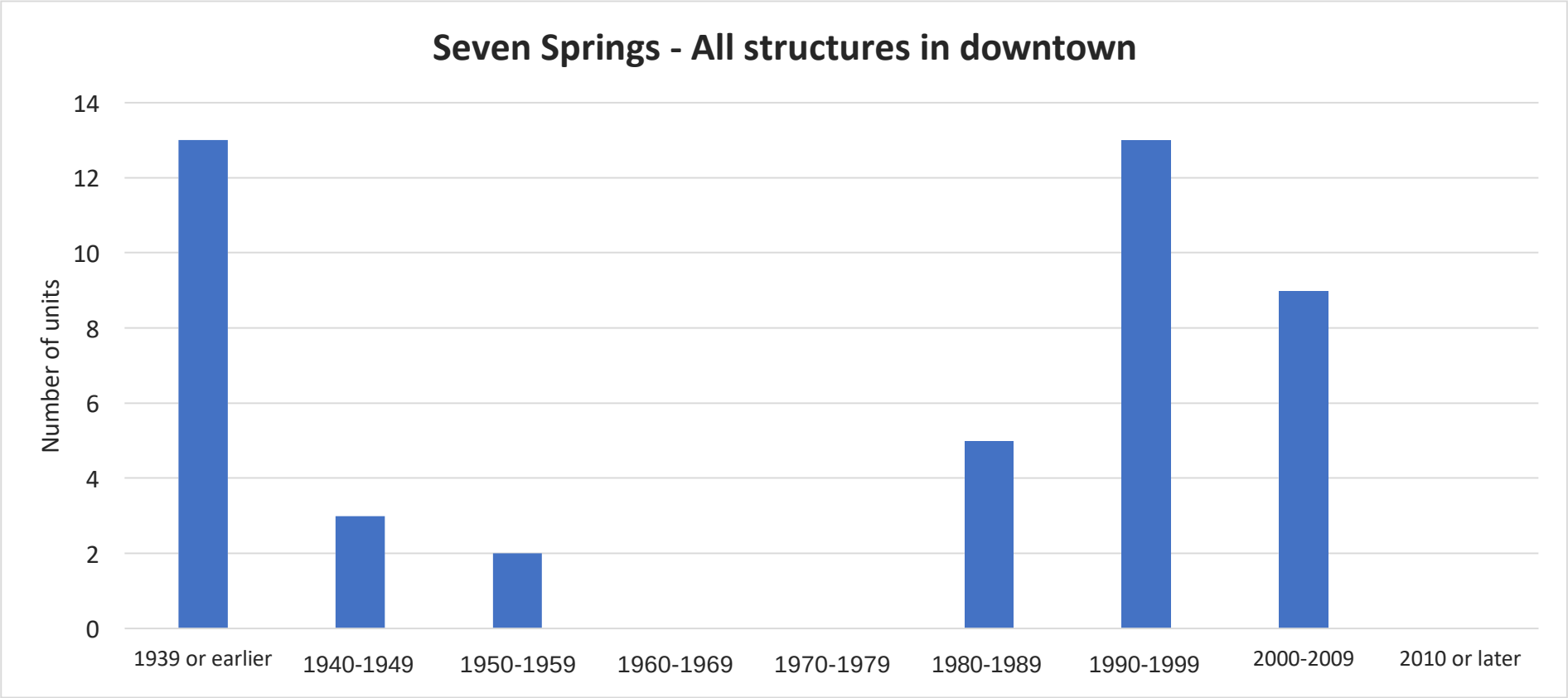


The buildings are labeled with the year they were built. Two structures are identified to orient readers to the area on the site visit.

Seven Springs, NC
Buildings built before and after the first flood hazard base map

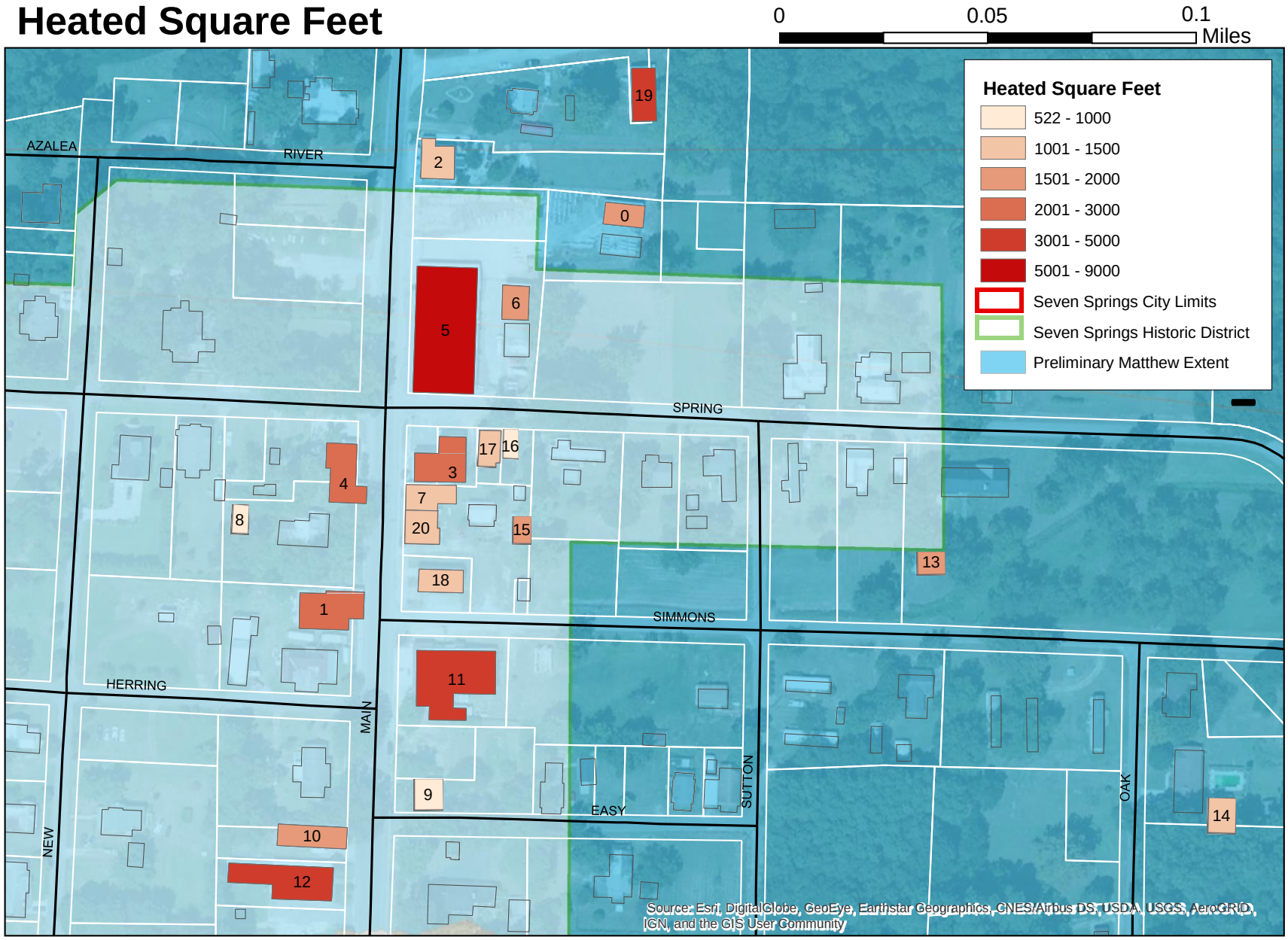


Graph I: Year Built



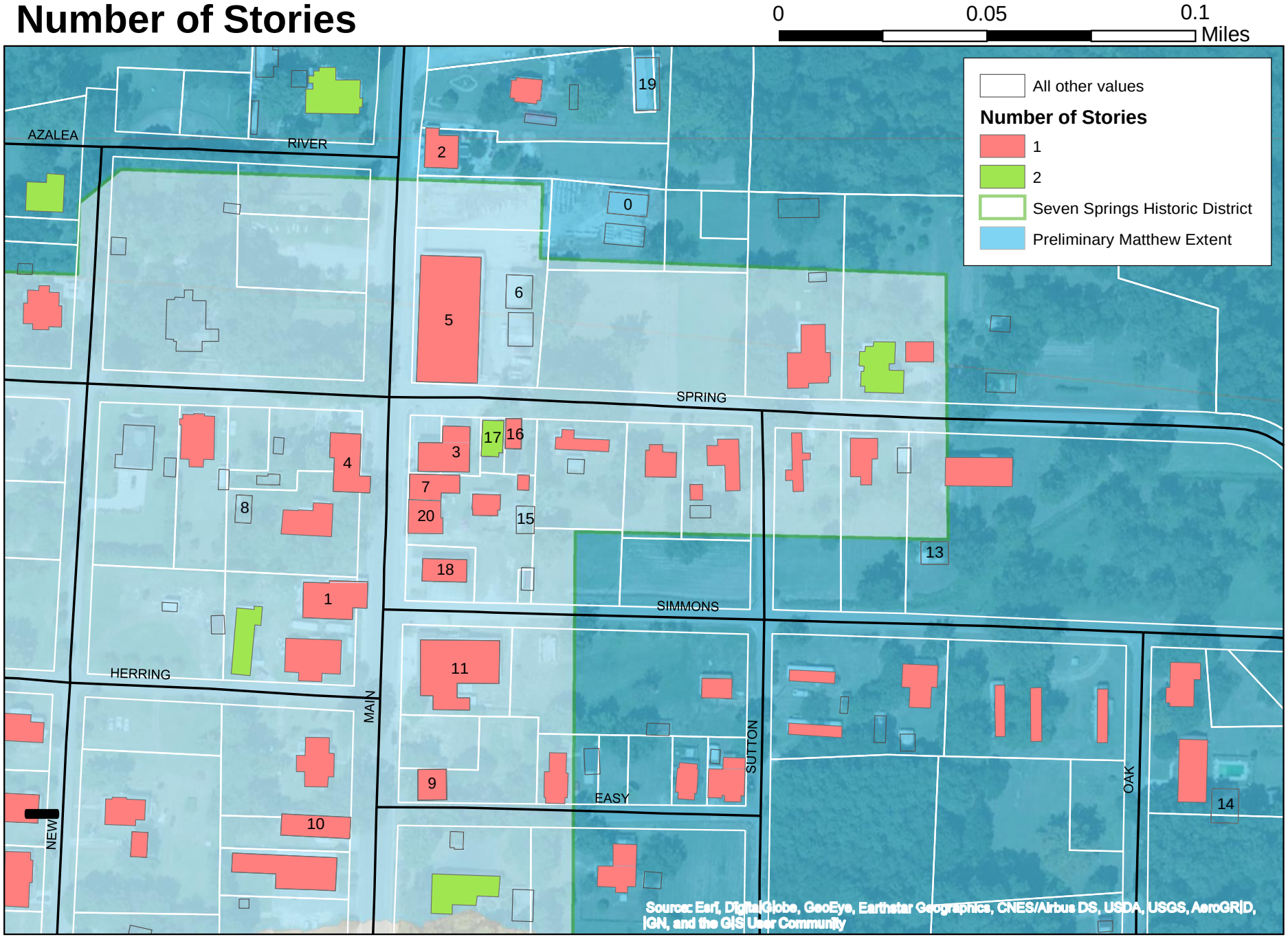
- Almost half of all of the structures in Seven Springs were built prior to 1982, when the first flood hazard rate maps came online.
- All non-residential structures were built prior to 1982 meaning there are few structures that meet current code requirements for flood hazards prevention.

Seven Springs, NC
Heated Square Feet

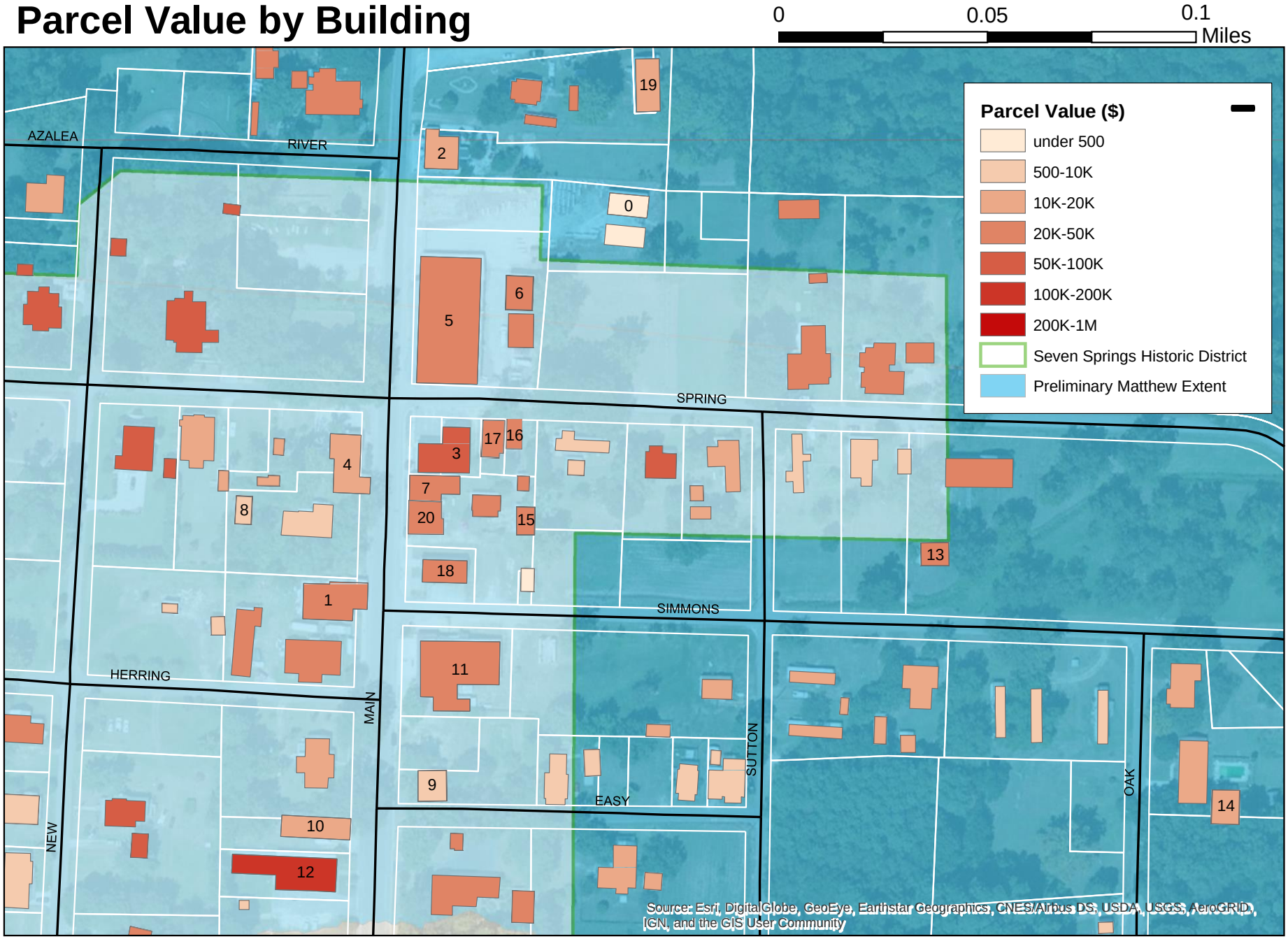


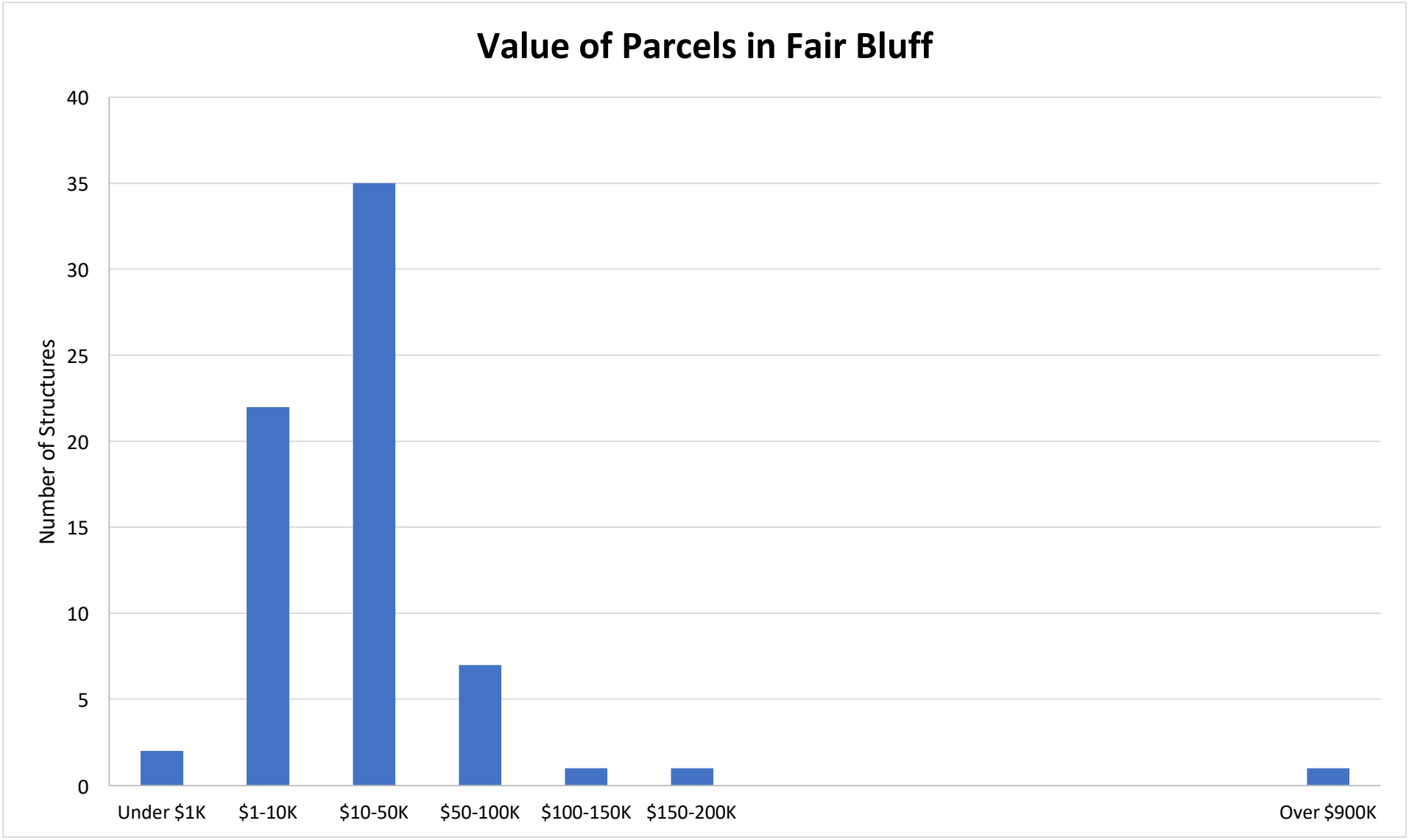
Heated square feet refers to the square footage of occupied space. This excludes areas of buildings where heating or AC are not applied.

Seven Springs, NC
Number of Stories



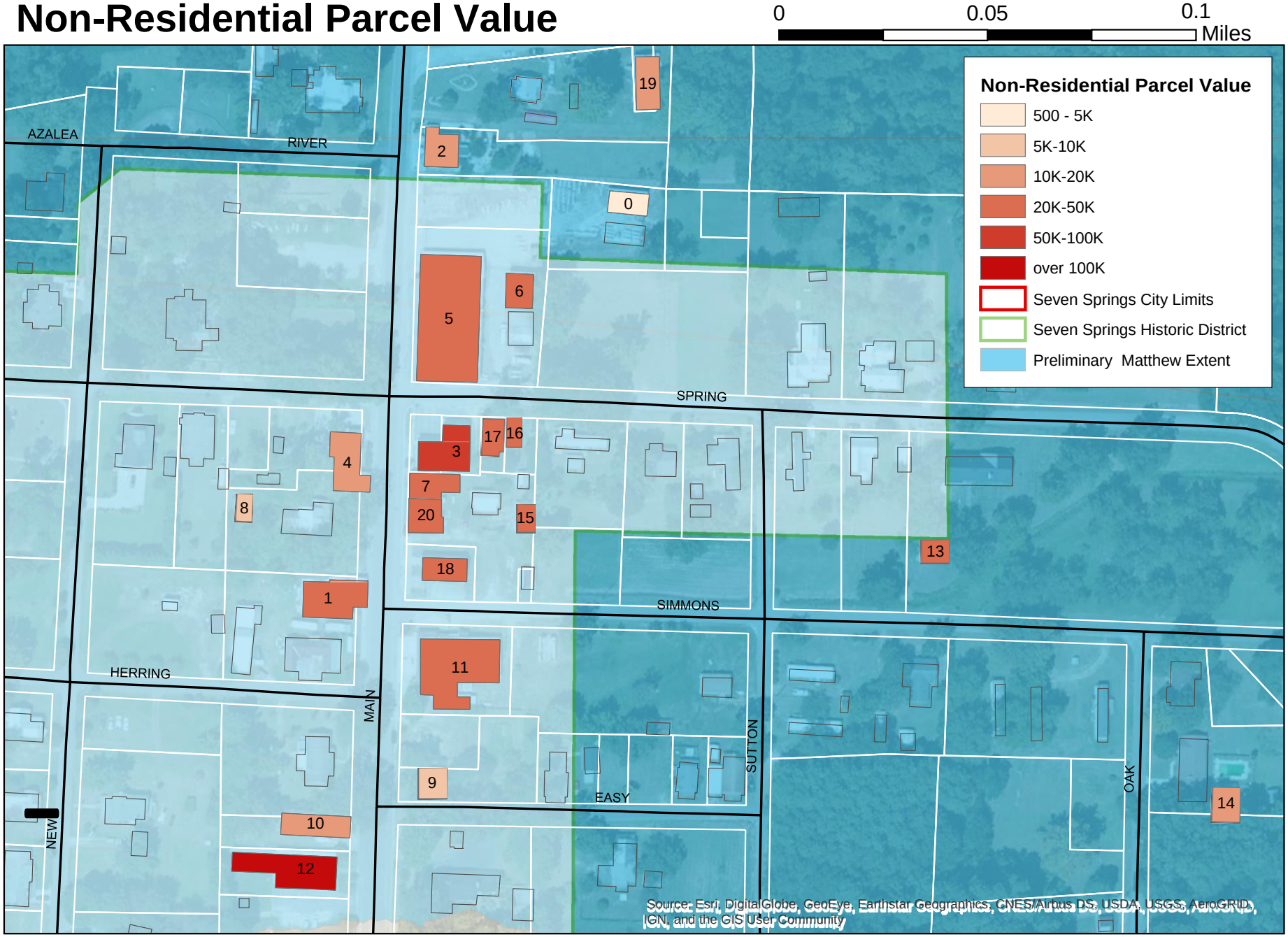
Seven Springs, NC
Parcel Value by Building





Most parcels in Fair Bluff are worth about $10-50K. The one outlier in the town is the rescue squad building #12 which sustained over $30K in damages from Hurricane Matthew. Parcel value was taken from the total assessed value field in the Wayne County tax assessor's parcel data.

Seven Springs, NC
Non-Residential Parcel Value



IV. Data Sources

Fair Bluff Characteristics

ACS 5-year Estimates (2015)
ESRI Business Analyst (2016) via DFI Report

Building and parcel level data

NCEM and NC OneMap - Wayne County Tax Assessor http://data.nconemap.gov/downloads/vector/parcels/>.
Number of stories estimated using Google Maps Street View

100-year Floodplain

NC FRIS <http://fris.nc.gov/fris/Home.aspx?ST=NC>.

Hurricane Matthew inundation extent and depth

United States Geological Survey <https://www.sciencebase.gov/catalog/item/58f796a7e4b0b7ea5451f222>.

Appendix F

Survey Records

Flood Retrofit Study

Thursday, December 7, 2017
6:17:54 AM

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
1	17414	FB	A	Seems to have crawl space. If first floor is above BFE, then add flood XXX/wet floor proof. Not sure if building is salvagable.	ZF
2	17645	FB	B	2 entry points. Dry floodproofing seems best option. First floor below BFE. Seems salvagable. Flave cover. Water line is 3 ft high+	ZF
3	17413	FB	C	First floor below BFE. Dry floodproof. 1 entry in front, 1 in back in right half. Seems same on left side. Flex cover. Water line is 3 ft high+	ZF
4	17975	FB	C1	1 front entry thru hardware store. First floor below BFE. Dry floodproof. Vertical flat wall for front door or maybe flex cover. Mold too bad to go in. Not sure about rear entry. Appliance XX XX and entry door. Flex cover seems best for one small front door. Water line 3 ft high+	ZF
5	17969	FB	D	Industrial lumber yard. FF just above BFE. Multiple openings. Flex cover for openings	ZF
6	17968	FB	E		
7	17642	FB	F	Post office. Seems operable. Looks elevated higher than surrounding properties. Elevated with fill. Above BFE. Dry floodproof.	ZF
8	17925	FB	G	Below BFE. One front entry. Birch veneer on at least 3 feet. Door locked, so not sure about exit. Dry floodproof. Left building same scenario. Door XXXXX XXX XXXX XXX	ZF
9	17802	FB	H	Old steel building. Demolish	ZF
10	18237	FB	I	One entry door. Below BFE. Dry floodproof	ZF
11	81930	FB	J	Below BFE. One entry door.	ZF
12	18179	FB	K	Lots of windows below BFE presumably. 3 front door entry points. Newer building. Auto repair shop. 3 gararge doors	ZF
13	62032	FB	L	Below BFE. Newer building. Front door, side door, rear door, AC unit, Elevated windows look high enough. Flex cover for doors.	ZF
14	18272	FB	M		
15	18174	FB	M1		
16	96687	FB	N	Slab area? Maybe park? Right next to trail.	ZF

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
17	18176	FB	O	Scott Motor Co. Large building. Far right side of building has crawlspace. High ceilings. Left half of building has low windows (Within XX of grade). Back half of building looks very rough. Bad shape in back half.	ZF
18	18260	FB	P	Left living in interior in bad shape. Windows approx. 18" above grade. 2 entry doors	ZF
19	18167	FB	P1	Warehouse. One entry door. One garage type door in rear.	ZF
20	18172	FB	R	Old theater. Low ceilings in front but looks like high ceilings in middle/rear. Looks really bad inside. Salvagable? Raise floor and repurpose?	ZF
21	18018	FB	S		
22	17574	FB	S1	Low ceilings. Venting for display area. Dry floodproof. AC unit lifted.	ZF
23	17576	FB	T	Two small doors at entry. Windows appox. 12" above grade. Raise flooring? Floor in bad shape	ZF
24	17573	FB	T1	Vents in front door under display case. Raise flooring? One entry door. One rear door.	ZF
25	17961	FB	U	2 rear doors. No windows bdelow BFE on rear. Rear side XX XX. Maybe basement XX. Front door and windows below BFE on front. Raise flooring?	ZF
26	17963	FB	U1	One front entry door. Windows approx. 18" above grade. One rear door. No side or back windows. Raise flooring?	ZF
27	179872	FB	V	One entry door in front. Inside looks rough. Windows approx. 18" above grade.	ZF
28	17964	FB	W	XXX XXXX. One front entry door. Windows approx. 18" above grade. Large storage room in rear of building. One entry door on back side of building and one more direct to rear.	ZF
29	17965	FB	Y	One of the larger buildings on the street. One front entry door. Windows about 18" above grade. 2 entry doors on direct XX. Window AC unit elevated.	ZF
30	17749	FB	Z	One rear door. AC elevated (window unit). Front half of structure is brick, back half is wood. 2 front entry doors. Windows appear above BFE.	ZF
31	18043	FB	AA	Scott Property. FF below BFE. 2 entry doors. One rear door to msall room/office. Flex cover. Back in business currently.	ZF
32	18038	FB	BB	Town Hall. No flood damage	ZF
33	17414	FB	A	Interior demolition, re-paint	JDB

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
34	17645	FB	B	First floor abandon (wet floodproof) Dry floodproof	JDB
35	17413	FB	C	First floor abandon (wet floodproof) Dry floodproof	JDB
36	17975	FB	C1	Demo and rebuild Dry floodproof	JDB
37	17969	FB	D	Dry floodproof Perimeter wall	JDB
38	17968	FB	E		
39	17942	FB	F	Dry floodproof (easy)	JDB
40	17925	FB	G	First floor abandon (wet floodproof) Elevate floor and get rid of drop ceiling	JDB
41	17802	FB	H		
42	18237	FB	I		
43	81930	FB	J		
44	18179	FB	K		
45	62032	FB	L		
46	18272	FB	M		
47	18174	FB	M1		
48	96687	FB	N	Raise floor and remove drop ceiling Dry floodproofing Remove pavement next door	JDB
49	18176	FB	O	Raise floor Demolition	JDB
50	18260	FB	P	Raise floor	JDB
51	18167	FB	P1	Raise floor	JDB
52	18172	FB	R	Demolition	JDB
53	18018	FB	S	Raise floor and remove drop ceiling. Dry floodproof. Replace Floor	JDB
54	17574	FB	S1	Raise floor Dry floodproof	JDB
55	17576	FB	T	Raise floor Dry floodproof	JDB
56	17573	FB	T1	Raise floor Dry floodproof with exterior floodwall	JDB
57	17961	FB	U	Raise floor Wet floodproof	JDB

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
58	17963	FB	U1	Raise floor Dry floodproof	JDB
59	17972	FB	V	Raise floor Dry floodproof	JDB
60	17964	FB	W	Raise floor	JDB
61	17965	FB	Y	Dry floodproofing is an option Wet floodproof and rehab 2nnd floor	JDB
62	17749	FB	Z	Already repaired Not substantial damage Dry floodproofing is an option	JDB
63	18043	FB	AA	Minor flooding <substantial damgage Repaired	JDB
64	18038	FB	BB	N/A - Elevated	JDB
66	3001A	SS	G	Good candidate for dry floodproofing Note: Southern bank 4'	JDB
67	4003	SS	A	Demo/rebulid or dry floodproof Ceiling not high enough to elevate	ZF
68	4001	SS	B	Warehouse. Multiple garage style openings. High ceilings. XXXX to XXX first floor. Area on left side seems to be used for storage; can be vented. Wet and dry combo	ZF
69	3004	SS	C	2 rear doors. 4 garage doors. 1 side door. Flex gate? Flex cover. Dry office space/kitchen and vent garage?	ZF
70	3006	SS	D	First floor abandoned and wet floodproof. Rough shape	ZF
71	3007	SS	E	Add fill to basement area. Potentially lift and vent if building next door is demolished	ZF
72	3003	SS	F	Dry floodproof. Flex wall system. Divided into 3 parts. 1 rear door. Flex wall for front of building. Flex cover for back door.	ZF
73	3001A	SS	G	Dry floodproof. Flex cover for rear door. Flex cover for front door. Front window is below. Flex cover on windows.	ZF
74	2003A	SS	H	Bad shape - Demo.	ZF
75	2002	SS	I	Bad shape. Could dry floodproof. Already had foundation issues. Wall repair inside. Demo.	ZF
76	4004	SS	J	Wet floodproof back areas. Remove front office space or dry floodproof it.	ZF

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
77	4003	SS	K	One side door. One front entry door. Dry floodproof. Flex cover.	ZF
78	3005	SS	L	Awful shape. Termite damage. Demo	ZF
79	3004	SS	M	Demo. Structural XXXX everywhere. Tree roots in foundation. Front XX broken.	ZF
80	3003A	SS	N	Rear door flex cover. One front door - flex cover. Two front windows below; need to be floodproofed.	ZF
81	9369	W	A	Demolition Note: 4'	JDB
82		W	B	Planned for demolition Note: 6'	JDB
167	3828	W	J	Bunn's Barbeque Owner states he was flooded 10 times in 18 years. Hurricanes Julia and Matthew advance notice 18 hours. Can't elevate, may be best to relocate to alternative location.	JC
168	4765	W	L	EMS Building - old bank Fits dry storage trailer to haul animals	JC
169	6814	W	K	Southern Bank NFIP repetitive damage Had been elevated above the BFE. All furniture and contents were removed prior to the storm. Retrofit: elevated. Safe deposit boxes 2-ft. May be candidate for new flex flood gates.	JC
170	5529	W	M	3 LP tanks on ground level, anchor them Empty building. Demolish.	JC
171	5545	W	N	Chinese Restaurant Storage on second floor 4' flooding New flex style floodgate out front.	JC
172	5563	W	O	Has second floor Demolish? Can't elevate possibly wet flood proof? Long-term possibly mitigate out of floodplain.	JC
173	6418	W	R	Davis Insurance Agency 2 inches of flood water entered building Note higher than Arts Council building. Additional flood vents on exterior of building	JC
174	6426	W	S	Bertie County Arts Center 4 in-flood water dehumidifier running, Elevate vestibule above BFE	JC

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
175	6485	W	U	Town Hall 5 feet above BFE no flooding in Hurricane Matthew which was 3.79 feet above BFE	JC
176	3606	W	W	Demo	JC
177	2697	W	X	Demo	JC
178	4392	W	1A		JC
179	4384	W	1B		JC
180	4368	W	1C	Exterior flood wall with flex cover	JC
181	4450	W	D	Flex cover for door	JC
182	4432	W	1E		JC
183	4414	W	1F	Elevated floor XXX at front 8"	JC
184	4407	W	1G	Cherry Insurance 15-foot ceilings - elevate floor 1-foot footing in Hurricane Matthew Elevate electric outlets Dry floodproof at front entrance with new flex floodgates	JC
185	3499	W	1H	1999 no XXX	JC
186	3571	W	1I	Utilize new flex floodgates to protect windows and front door	JC
187	3682	W	V	Side dock cut drywall up to 4' feet Front has plate glass door and plate glass windows.	JC
188	2679	W	Y	Demolish	JC
189	1782	W	BB	Address: 116 - 117 North King Street HVAC elevate, electrical elevate, install 10-foot flex flood gates to cover window and door.	JC
190	9065	W	DD	Retail Stores Potential, but may have to demo	JC
191	2617	W	Z	Historic building, 1930s Elevate 3 feet. Flood vents would help.	JC
192	2025	W	F		JC
193	5570	W	P	Gift shop and florist, Masonic Lodge second floor Could use flood vents 16 in drop ceiling over 4ft Elevate vestibule entry	JC
83	1223	W	C	Demolition Note: 8'	JDB

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
84	1159	W	D	N/A - Vacant Note: 6'	JDB
85	1192	W	E	N/A - Vacant Note: 7'	JDB
86	2025	W	F	N/A - Vacant Note: 7'	JDB
87	2071	W	G	None Note: Bunns BBQ Note: 7'	JDB
88	3938	W	H	Demolition Note: 6'	JDB
89	4904	W	I	N/A - Picnic shelter - OK Note: 8'	JDB
90	3828	W	J	Demolition Dry floodproof? Doubtful, due to BFE height Note: 4'	JDB
91	4765	W	L	Wet floodproof Venting Note: 3'	JDB
92	6814	W	K	Building is elevated to 0.2% on fill. Note: Bank Note: 2'	JDB
93	5529	W	M	Demolition Note: 1'	JDB
94	5545	W	N	Wet floodproofed Anchor propane tanks Note: 2'	JDB
95	5563	W	O	Wet floodproofing Demolition and open space First floor abandon Note: 2'	JDB
96	5570	W	P	Elevate outlets Raise floor and remove drop ceiling Note: 2'	JDB
97	6418	W	R	Add crawlspace vents Dry floodproof entrance Note: 1'	JDB
98	6426	W	S	Anchor propane tanks Elevate first floor and remove drop ceiling area Note: 1'	JDB

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
99	6485	W	U	Raise first floor Dry floodproof with perimeter barrier Elevate generator and switch gear Tile 1' or 2' on wall Note: 1'	JDB
100	3632	W	V	Dry floodproof (if structurally capable) Note: 3'-4'?	JDB
101	3606	W	W	N/A - Vacant Note: ?	JDB
102	2697	W	X	Demolition Note: ?	JDB
103	2679	W	Y	Demolition Note: ?	JDB
104	2617	W	Z	Anchor propane tanks Note: 4'	JDB
105	1699	W	AA	Demolition Dry floodproof if stucturally capable Note: 4'	JDB
106	1782	W	BB	Demolition Dry floodproof if structurally capable Note: 4'	JDB
107	1802	W	CC	Dry floodproof egress points Note: 4'	JDB
108	9065	W	DD	Demolition Note: 2'	JDB
109	8900	W	EE	Demolition - SRL and Abandon Note: 5'	JDB
110	4392	W	1A	Dry floodproof (perimeter planter wall)	JDB
111	4384	W	1B	Dry floodproof along with neighbors	JDB
112	4368	W	1C	Dry floodproof	JDB
113	4450	W	1D	Dry floodproof	JDB
114	4432	W	1E	Dry floodproofing	JDB
115	4414	W	1F	8" water in Matthew Raise floor Dry floodproof (easy)	JDB
116	4407	W	1G	2' Floyd. 1' Matthew Dry floodproofing Elevate floor Note: JB Cherry Insurance	JDB
117	3499	W	1H	Dry floodproofing Note: Insurance	JDB

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
118	3571	W	1I	Dry floodproofing	JDB
119	4003	SS	A	Demolish/rebuild Dry floodproof Note: Outfitters Note: 4'	JDB
120	4001	SS	B	Raise floor to wet floodproof Storage area - vent and wet floodproof or raise floor Note: 2'	JDB
121	3004	SS	C	Anchor propane tank Elevate or remove diesel fuel tank Wet floodproof Note: Fire Station Note: 3'	JDB
122	3006	SS	D	Abandon first floor and wet floodproof Demolish and rebuild Note: 2'	JDB
123	3007	SS	E	Add fill to subterranean crawlspace. Dry floodproof. Elevate the entire structure. Note: 2'	JDB
124	3003	SS	F	Anchor propane tanks or remove if unused. Dry floodproof. Note: Mae's Restaurant Note: 4'	JDB
125	2003A	SS	H	Demolish Note: 5'+	JDB
126	2002	SS	I	Demolish Note: 3'	JDB
127	4004	SS	J	Wet floodproof and remove occupied space. Note: 0'-1'	JDB
128	4003	SS	K	Dry floodproofing Anchor propane tank Note: 2'	JDB
129	3005	SS	L	Demolish Note: 4'	JDB
130	3004	SS	M	Demolish Note: 3'	JDB
131	3003A	SS	N	Dry floodproof (limited number of openings) Note: 3'	JDB
132	17414	FB	A	Better flood vents in crawlspace Wet floodproofing - minimize first floor use Has second floor	JM

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
133	17645	FB	B	Two story Elevate HVAC To dry floodproof, have to retrofit windows (entry point) Barriers - deployment should be very easy ISSUE - Adjacent buildings - would need to treat like a complex Second floors used as storage	JM
134	17413	FB	C	Window retrofit - skirting with planters? Green appearance Skipped two buildings to get to C1 - both would have to be inlcuded in a XX mit. Same construction - DEMO? Furniture store, small fountain	JM
135	17975	FB	C1	Hardware Store - Ellis Mcares & Son Objects left in place Could elevate floor well here Could do skirting - again, go green - would have to be done to hold back weight of H2O Brickwork degrading Outside long wall could have a nice mural - currently a faded sign Furniture place, drop ceiling - pull out and raise the floor	JM
136	17969	FB	D	Storefront entryway no longer used, hasn't been for years Planter or mural	JM
137	17968	FB	E		JM
138	17642	FB	F	Post Office Dry floodproofing feasible with barrier at entrance	JM
139	17925	FB	G	Both buildings - historically the own hall Could elevate floor Acutally has three floors	JM
140	17802	FB	H	Old metal building, falling in - no action	JM
141	18237	FB	I	Address - 1089 Had voting sign Drop ceiling - take out and elevate floor	JM
142	81930	FB	J	Gun Smith High security - could have the modular flood barrier built into the welded metal front cage door	JM
143	18179	FB	K	Modern looking construction Could elevate interior - demo Popcorn ceiling	JM
144	62032	FB	L	Address: 1055 - Pizza place for rent Issue seepage at CMU intersection with slab	JM

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
145	18272	FB	M	Empty lot	JM
146	18174	FB	M1	Old metal warehouse next to empty lot No mit.	JM
163	18038	FB	BB	Town Hall Elevated, didn't get flooded	JM
164	4904	W	I	Trucking company Demolition and remove 5-6' of water	JC
165	2071	W	G	Depth of water 6 feet. Demolition and remove	JC
166	4904	W	I		JC
147	96687	FB	N	Nada	JM
148	18176	FB	O	N = Unknown O = Scott Motor and next to it Address 1162 Front abandoned for years Back = metal warehouse - DEMO Front = Retrofit? - Dictated by owner? Renter? Closest to river	JM
149	18260	FB	P	Old appliance maintenance/sale Been vacant for years Ceiling damage DEMO	JM
150	18167	FB	P1	Warehouse - recommend DEMO	JM
151	18172	FB	R	Old theater house Beautiful old building - it's trashed DEMO	JM
152	18018	FB	S	Go with S1	JM
153	17574	FB	S1	Drop ceiling - raise flooring?	JM
154	17576	FB	T	General building deterioration Elevate interior flooring	JM
155	17573	FB	T1	Florish High ceiling - hardwood floor - Elevate floor? Note: the conditions to the rear of the building do not immediately lend theirselves toward dry floodproofing	JM
156	17961	FB	U	Pharmacy	JM
157	17963	FB	U1	Could put a barrier across the front or a wall with a panel for the door Could elevate floor	JM

ID	Property ID	Town	Case #	Potential Retrofits and General Notes	Initials
158	17972	FB	V	Actually two buildings Fair Bluff Family Practice Clinic - should have gone with "w" HVAC to be elevated Different slabs - would require signficant work to seal up	JM
159	17964	FB	W	Carolina Class Salon Pressed tin ceiling Raise flooring - Note: ceiling at 14' Some wet floodproofing - removable panels for ease of drying out Remember the constraint of interdependency of buildings	JM
160	17965	FB	Y	Senior Center Address: 1100 Main St (at one point was a Red Lion Food Center) Raising floor could be a hardship - skirting red flag due to interpendency with other buildings Consdier wet floodproofing traditional with flooring et al. County has already cleaned it out Drop ceiling, raise floor? Use the building for another function	JM
161	17749	FB	Z	Fuel tank to anchor or elevate or both Yokos	JM
162	18043	FB	AA	Scott Properties CMU sides one back, brick front, and one side Back = storage? Elevate the HVAC Consider dry floodproofing Need sealant, a number of intrusion points	JM
192					

Appendix G
General Comments for Flood Damaged Buildings

General Comments for Flood Damaged Buildings

How to Minimize the Threat from Future Flood Events

The State Historic Preservation Office (HPO) is concerned with possible changes to potentially historic buildings that can negatively affect the historic integrity of those buildings. The HPO suggests property owners coordinate floodproofing work with the HPO prior to undertaking any work to ensure that the historic integrity of the property (whether listed in the National Register of Historic Places or not) is maintained. Please note, the loss of historic integrity may result in a property no longer being eligible for listing in the National Register of Historic Places, which would preclude the use of the rehabilitation tax credit. For additional information, see the National Register of Historic Places and Historic Rehabilitation Tax Credit write-ups below.

For purposes of floodproofing, historic buildings can generally be categorized into masonry or frame (wood) buildings. These building types can often be treated differently because of their construction.

A. Masonry buildings are usually not candidates for elevating. Assuming these buildings remain in place, the HPO believes some degree of protection can be afforded by the installation of a Flex Wall system and/or wet-proofing systems.

    1. The Flex Wall system (https://smartvent.com/media/view/new-dry-floodproofing-products) is contained within a trench under cover plates adjacent to the building in front of masonry openings at doors, windows, and storefronts. Before a flood event, the cover plates are lifted, support posts are placed within the ground sleeves, and the Kevlar fabric is lifted and attached to the supports. This system does not include any permanent attachments to the building, and thus it preserves the historic integrity of the building.

    2. Wetproofing may be a viable alternative for historic masonry buildings as these historic materials (brick, lime mortars, and plaster walls) may be able to stand in water for extended periods of time with few of the deleterious effects suffered by wood framed buildings. Factors to consider when wetproofing a building include the following:

        a. Allow ample time for the masonry and concrete slab to dry before applying any finishes as hidden moisture will affect the finish. Evidence that materials have not had sufficient time to dry include peeling paint from masonry or efflorescence popping off the paint from plaster walls.

        b. Do not apply permanent coatings or coverings atop historic masonry as moisture in the ground can be driven further up masonry walls during non-flood events. This can result in in the spalling of brick as moisture escapes from the wall and increased duration of moisture retention within the masonry wall and wood components adjacent to the wall which can accelerate deterioration of those wood components.

        c. Concrete floors can hold in moisture under the slab and drive additional moisture vertically within masonry walls. If the slab is in poor repair or if plumbing lines under the

slab need replacement, the opportunity exists to replace the slab and install a drainage system under the slab and possibly around the exterior perimeter of the building to help drain excess water from the site during non-flood events.

d. While masonry buildings may be viable candidates for wet proofing, one of the concerns is the condition of historic (constructed within the period of significance of the historic district) storefronts and how to preserve those storefronts after a flood. Can the storefront be adequately cleaned after a flood? Wood storefronts should be dried and treated with Boracare prior to repainting. Rolled aluminum or hollow metal storefront should gently be disassembled and the individual components thoroughly cleaned, polished, and reassembled whether glazing is to be replaced or not.

e. If any part of the historic or later wood structure (sill, joists, corner post, post and beam, stud wall, etc.) or finishes (floor, siding, trim, etc.) that are scheduled to remain in place and that were exposed to flood waters or are potentially susceptible to future flooding are visible, those components should be sprayed with Boracare. Boracare is an oil based fungicide, mildewcide, termiticide, and insecticide. It is highly viscous liquid that must be mixed with an impeller rod into warm water and then sprayed onto the wood with a sprayer. The oil will carry the active ingredients into the wood to prevent further deterioration. This may be an option to save wood floors if they can be reset flush onto the joists. If there is space, joists and flooring can be sprayed from the crawlspace. Studs can be sprayed if the finish is removed. Wood wainscot may be sprayed from the backside if the chair rail and/or finish paint is removed. For further information about Boracare see: http://nisuscorp.com/builders/products/BORA-CARE. NOTE: Boracare is hydroscopic and if the wood is too close to the grade, it will attract moisture. Consult with manufacturer.

B. Frame buildings, unlike most masonry buildings, may be good candidates for elevating because the structure can be lifted from the sill plate. It is possible for elevated buildings to retain their National Register eligibility. Consequently, the HPO should be consulted in advance to enhance retention of the requisite historic integrity.

The less a building is elevated, the better. Many buildings can be elevated approximately four feet and maintain their historic integrity through mitigating strategies such as: subtle grading around the foundation; the installation of shrubbery; the installation of raised planting beds; and the sympathetic design of new stairs.

In certain cases, buildings elevated more than four feet can retain their historic integrity. Buildings that are raised too high (eight feet or more) lose their relationship to the street. Mitigation is more difficult on small urban lots where buildings simply may not have space to move elsewhere within the property. Elevated buildings may need to be placed further from the right-of-way to account for taller and deeper sets of stairs. The number of risers, the configuration of the stairs, and an increased setback of the building can negatively affect historic integrity of a building and possibly result in the loss of historic designation. Larger urban and rural sites may be more accommodating of relocation farther from the right-of-way. New staircases should exhibit the character of the historic staircase. If the historic staircase was monumental, a redesigned monumental staircase may be appropriate. If the historic stairs were not monumental and the new stairs are prominent purely

by size and location, the historic integrity of the building would be negatively affected and possibly result in the loss of historic designation.

If any part of the historic or later wood structure (sill, joists, corner post, post and beam, stud wall, etc.) or finishes (floor, siding, trim, etc.) that are scheduled to remain in place and that were exposed to flood waters or are potentially susceptible to future flooding are visible, those components should be sprayed with Boracare. Boracare is an oil based fungicide, mildewcide, termiticide, and insecticide. It is highly viscous liquid that must be mixed with an impeller rod into warm water and then sprayed onto the wood with a sprayer. The oil will carry the active ingredients into the wood to prevent further deterioration. This may be an option to save wood floors if they can be reset flush onto the joists. If there is space, joists and flooring can be sprayed from the crawlspace. Studs can be sprayed if the finish is removed. Wood wainscot may be sprayed from the backside if the chair rail and/or finish paint is removed. For further information about Boracare see: http://nisuscorp.com/builders/products/BORA-CARE. NOTE: Boracare is hydroscopic and if the wood is too close to the grade, it will attract moisture. Consult with manufacturer.

Removal of Later Finishes

Whether a property owner undertakes a rehabilitation tax credit project, the flooding may be an opportunity to remove later non-historic finishes. There were several buildings that had plaster walls covered with furred out sheetrock walls. Removal of the furred walls will provide a little more square footage and reveal the historic plaster walls that can tolerate submersion in water; whereas, sheetrock cannot and wood studs will need to be treated prior to resurfacing. There were also later acoustical and Celotex ceilings that were concealing historic ceilings. Those ceilings may be plaster or wood and even an early Celotex ceiling. Some wood or concrete floors were covered with tile or carpet.

Handicap Accessibility

If the commercial district is not abandoned, a master plan for the streetscape should be developed to provide handicap accessibility to all buildings. The HPO can help the local government and property owners in reviewing plans to provide accessibility to each building while maintaining the building's historic integrity.

Possible Uses

There appears to be a clear demand for a variety of services in Fair Bluff as most buildings were occupied prior to Hurricane Matthew and the flooding it brought. If those services can return and a historic district can be created, property owners or long-term lessees can utilize the rehabilitation tax credits. Like many two-story buildings across the state, many second-floor spaces in Fair Bluff appear to be vacant. The opportunity to rehabilitate these underutilized spaces for residential use should be investigated. This is a historic development pattern has recently been reimplemented across the state, including within rural areas. Second floor residential use may increase demand for services within the downtown.

Source: North Carolina State Historic Preservation Office, December 2017.

Appendix H

Seven Springs

Historic District

From: Gledhill-earley, Renee [mailto:renee.gledhill-earley@ncdcr.gov]
Sent: Wednesday, December 20, 2017 12:11 PM
To: Southwell, Jessica <south001@ad.unc.edu>; Adolphsen, Jeff <jeff.adolphsen@ncdcr.gov>; zfaulkner@smartvent.com; jack.malone@fema.dhs.gov; Brubaker, Dan (NCEM) <Dan.Brubaker@ncdps.gov>
Cc: Smith, Gavin P <gpsmith@email.unc.edu>; barryhokan@yahoo.com; Lincoln Walther <lwalther@lincolnwalther.com>
Subject: RE: [External] Action Requested: Fair Bluff DRAFT Flood Retrofit Report

Jessica and Colleagues:
I am attaching a screen shot from our internal GIS that shows the boundaries of the historic district that we determined eligible for listing in the National Register of Historic Places as a result of planned hazard mitigation projects by FEMA through Wayne County.

You will see 17 yellow symbols that indicate properties that will be acquired and demolished as part of the recovery/mitigation efforts. Several of them are within the historic district, including the Fire Department, which is addressed in your report.

As part of the Section 106 process, we have determined that the demolition of 9 buildings within the HD will adversely affect the historic district. Some will not as they are non-contributing properties in the HD. Nor, will the demolition of properties outside the HD adversely affect it.

Given the repeated flooding in Seven Springs, we understand why homeowners might want to sell and move. And, under Section 106 of the National Historic Preservation Act, we are looking at ways to mitigate the loss of the historic properties, including documentation of the structures as well as collection of oral histories, historic photographs, and some form of memorializing, within what will become the public open-space, the buildings that will be lost.

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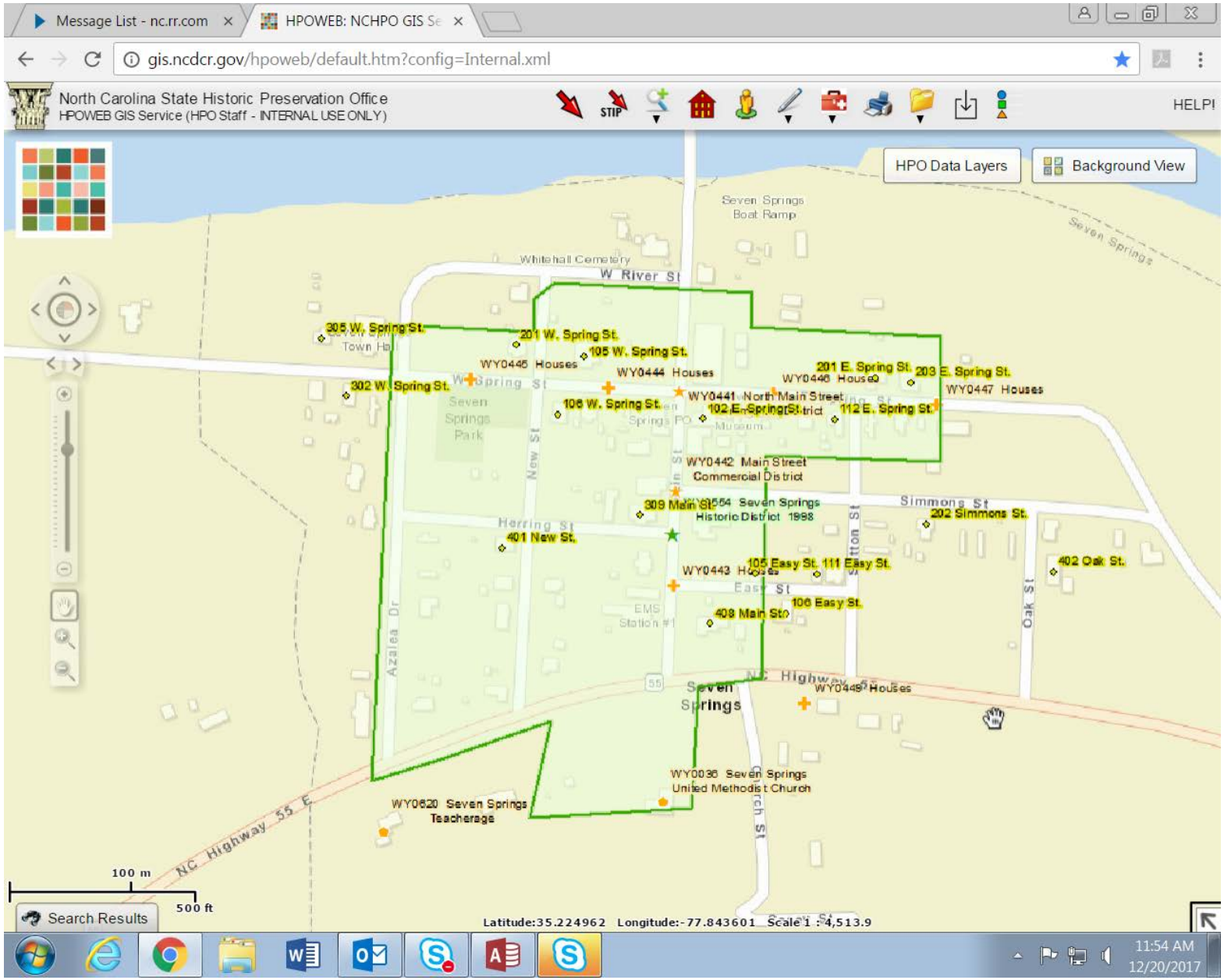
Renee Gledhill-Earley
Environmental Review Coordinator
State Historic Preservation Office
109 E Jones St MSC 4617 Raleigh, NC 27699
919 807 6579 *office*

NC DEPARTMENT OF
NATURAL AND CULTURAL RESOURCES

Please Note: Requests for project review or responses to our review comments should be sent to our Environmental Review emailbox at environmental.review@ncdcr.gov Otherwise, I will have to return your request and ask that you send it to the proper mailbox. This will cause delays in your project. Information on email project submittal is at: http://www.hpo.ncdcr.gov/er/er_email_submittal.html


Message List - nc.rr.com
HPOWEB: NCHPO GIS Se
gis.ncdcr.gov/hpoweb/default.htm?config=Internal.xml
North Carolina State Historic Preservation Office
HPOWEB GIS Service (HPO Staff - INTERNAL USE ONLY)
HELP!
HPO Data Layers
Background View
Seven Springs Boat Ramp
Whitehall Cemetery
W River St
305 W. Spring St.
201 W. Spring St.
105 W. Spring St.
WY0445 Houses
WY0444 Houses
201 E. Spring St.
203 E. Spring St.
WY0446 Houses
WY0447 Houses
302 W. Spring St.
106 W. Spring St.
WY0441 North Main Street Historic District
102 E. Spring St.
112 E. Spring St.
Seven Springs Park
WY0442 Main Street Commercial District
309 Main St.
WY0554 Seven Springs Historic District 1998
Simmons St
202 Simmons St.
Herring St
401 New St.
105 Easy St.
111 Easy St.
402 Oak St.
WY0443 Houses
Easy St
106 Easy St.
408 Main St.
EMS Station #1
Azalea Dr
Oak St
NC Highway 55 E
Seven Springs
WY0449 Houses
WY0036 Seven Springs United Methodist Church
WY0620 Seven Springs Teacherage
100 m
500 ft
Search Results
Latitude:35.224962 Longitude:-77.843601 Scale 1 :4,513.9
11:54 AM
12/20/2017