



# Fair Bluff

**HMDRRI**  
Hurricane Matthew  
Disaster Recovery and  
Resilience Initiative

DOWNTOWN FLOOD RETROFIT **2017 REPORT**

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## OVERVIEW

The downtowns of Fair Bluff, Seven Springs and Windsor 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 Fair Bluff

Fair Bluff is a small town in rural eastern North Carolina on the banks of the Lumber River. Incorporated in 1873, Fair Bluff is one of the oldest towns in Columbus County and sits on the border of North Carolina and South Carolina. Two main highways define Fair Bluff’s Main Street – N.C. 904 and US Hwy 76. The heart of the retail businesses was located on Main Street. After Matthew, the downtown area was a canal of waist-high flood water that remained high for a number of days.

In the early 20th century, the town employed its residents as turpentiners, lumbermen, and merchants. The settlement of the town took advantage of the trade opportunities provided by the Lumber River and later the Atlantic Coast Line Railroad. As of 2015 estimates, Fair Bluff’s residents primarily worked in education and health care, retail trade, and manufacturing, indicating that many leave town to work since there are minimal job opportunities in those industries within Fair Bluff’s limits.

Hurricane Matthew flooded most of Fair Bluff’s downtown area by about four feet. This was a central business district of older buildings with small town charm. It is an asset the community wants to rebuild while still maintaining its character. The entrance to the town’s Riverwalk is adjacent to the downtown area as well, connecting the downtown to a natural amenity in the area. The railroad that runs through Fair Bluff and the Lumber River were important fissures of the local economy. Today, warehouses from the town’s tobacco and lumber trade heyday line the railroad and make up a portion of the downtown core.

## FLOOD IMPACT ON DOWNTOWN FAIR BLUFF

Hurricane Matthew flooded most of Fair Bluff's downtown area by about four feet. This was a central business district of older buildings with small town charm. It is an asset the community wants to rebuild while still maintaining its character. Hurricane Matthew's extent almost matched that of the 100-year floodplain. Downtown Fair Bluff is at high risk for flooding regardless of the magnitude of Matthew, because the majority of the downtown is within the 100-year floodplain. These structures and businesses are highly vulnerable to future damages. Retrofitting these structures to withstand future flooding is imperative to the survival of the downtown in its current location.

The structures that sustained the most damages do not follow a clear spatial pattern. This is likely because the data collected measures damages incurred from lost materials and contents of buildings as well as structural damage to the building itself.

The building with the most damage sustained is the large square in the southeast of the downtown area. Its damages far surpassed all others taking up 55 percent of the total damages in downtown Fair Bluff. This is the roofing company Atlantic Roofing Distributors. This company used the building as a warehouse for its materials and the losses incurred from Matthew likely include its contents as well as structural damage.

Most of the buildings on the North side of the downtown were built prior to 1960. Especially those on the Northwest portion closest to the river, the age of the building and their likely lack of compliance with building codes that would mitigate flood damages is clear given the significant damage. An expanded discussion of the flood ramifications is found in the report, *Fair Bluff, NC Downtown Flood Retrofit and Revitalization - ASFPM On-boarding Report* (see Appendix E).

## HISTORIC PERSPECTIVE

Downtown Fair Bluff is not designated as a National Register Historic District; however, Jeff Adolphsen, a Senior Restoration Specialist with the North Carolina State Historic Preservation Office, was a member the flood retrofit assessment team. His focus was on determining the historic aspects of the buildings in the downtown area of Fair Bluff.

Adolphsen identified 25 properties that *might* qualify as historic properties. Because they form a group of buildings, they might be qualified to become a National Register Historic District. The buildings that might be qualified as historic included **A, B, C, F, G, H, I, K** buildings on the non-riverside and buildings **N, O, S, S1, T, T1, U, U1, V, Z**, on the riverside receive historic recognition. Buildings receiving the designation of "certified historic structures" may be eligible for rehabilitation tax credits if they spend the adjusted basis (purchase price less land value plus capital improvements, less depreciation).

The State Historic Preservation Office (SHPO) is concerned with possible changes to potentially historic buildings resulting from flooding that can negatively affected 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 in *General Comments for Flood Damaged Buildings* (see Appendix G).

## 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 structural integrity and 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 recorded for each structure. Based on the information and recommendations from the team of flood experts, a technical report was compiled for each community. Each reviewer completed a set of individual assessment sheets for each structure. The packet included a key map (see Appendix A) which graphically depicts the location of all structures reviewed, as well as property records for each 31 parcels.

Beginning September 2nd, the team conducted on-site inspections of 31 buildings in downtown Fair Bluff. During the site visit, the team assessed the physical and structural conditions of each structure. Based on their assessment, each reviewer documented their recommendations on a pre-prepared form for each structure, the summary of which are included below. The detailed field notes of each expert are included in the Field Notes (see Appendix B).

## RECOMMENDATIONS

Fair Bluff's Main Street constitutes its downtown. Interestingly, Main Street is unusual in that the two sides of the street have different orientations and are uniquely different in the types of structures. The *non-riverside* structures are comprised predominately of two-story buildings while the *river-side* has mostly single-story buildings.

### **Non-Riverside Commercial Structures**

The reviewers agreed since many of the buildings along the non-riverside of Main Street are two story structures with high ceilings buildings, one option would be to raise the interior first floor. In addition, a number of the storefronts could protect themselves by utilizing wet floodproofing products to block flood waters from entering their businesses (see Appendix C). These products are strong and some companies offer options (not pictured) that are lightweight and easy to install and operate. It is important to note a structural analysis **must be** performed prior to any mitigation action to determine whether the existing structures and dry floodproofing methods can withstand the anticipated hydrostatic forces of a design flood. It is also important to add that raising the first floor and adding planter wall concepts may negatively affect the historic integrity.

Buildings B (Old Town Hall) and C (commercial storefront) seemed to be the best option for perimeter dry flood proofing away from the building. There is sufficient sidewalk space to install the protection, and this would not require structural modifications to the buildings themselves other than code requirements, as applicable. The experts thought a "planter wall" positioned to deflect flood waters away from the store was both feasible and attractive. However, please note the points below outlining the potential concerns raised about this option.

### **River Side Commercial Structures**

Most of the buildings on the riverside are one-story structures with tall ceilings. There was general consensus that several of the structures should clearly be demolished, including the movie theater (**R**) and the TV & Appliance (**P**) due to the collapsing dilapidated condition of the two buildings. All other structures **N** through **AA** with the exception of buildings **R** and **P** could be modified to eliminate or minimize potential flood conditions within the structures. Both had their roofs collapsing. The reviewers saw a benefit in opening up access to the Riverwalk and bandstand from the street. The openings can also present opportunities for additional park space, however, the remaining structures have value in saving. Suggested options for mitigation include having floors elevated, and/or possibly adding dry floodproof measures.

### **Other Retrofit Concerns**

One of the experts mentioned that some residents told him about the intrusion of floodwater into the structures occurred with little actionable warning in the middle of the night. Therefore, without some type of a warning system, the hazard must be treated as a little to no-notice events. Within that constraint, the use of any active mitigation is discouraged. This would eliminate the option of dry flood proofing, due to any dry flood proofing requiring an individual have advance warning of an impending flood so that they could install modular flood barriers to block off water intrusion points. There are dry flood proofing barriers that will automatically deploy, however those options are costly. If a functional warning system can be established, then the active mitigation of dry flood proofing using modular flood barriers could be considered a more viable form of mitigation. In addition, demolition of most, if not all, of the existing downtown structures is a possibility. Building removal and revegetation would restore the natural and beneficial functions of the floodplains. It would also remove the safety and health issues associated with the abandoned, deteriorating structures. However, not all experts believed this is the best approach. While many buildings have failing roofs, in the case of a theater or single-story masonry building, restoration specialists do not believe the roof is reason to demolish a building as roofs are easy installations. The question is, will anyone invest the money to bring the building(s) back to usable condition?

**APPENDIX**

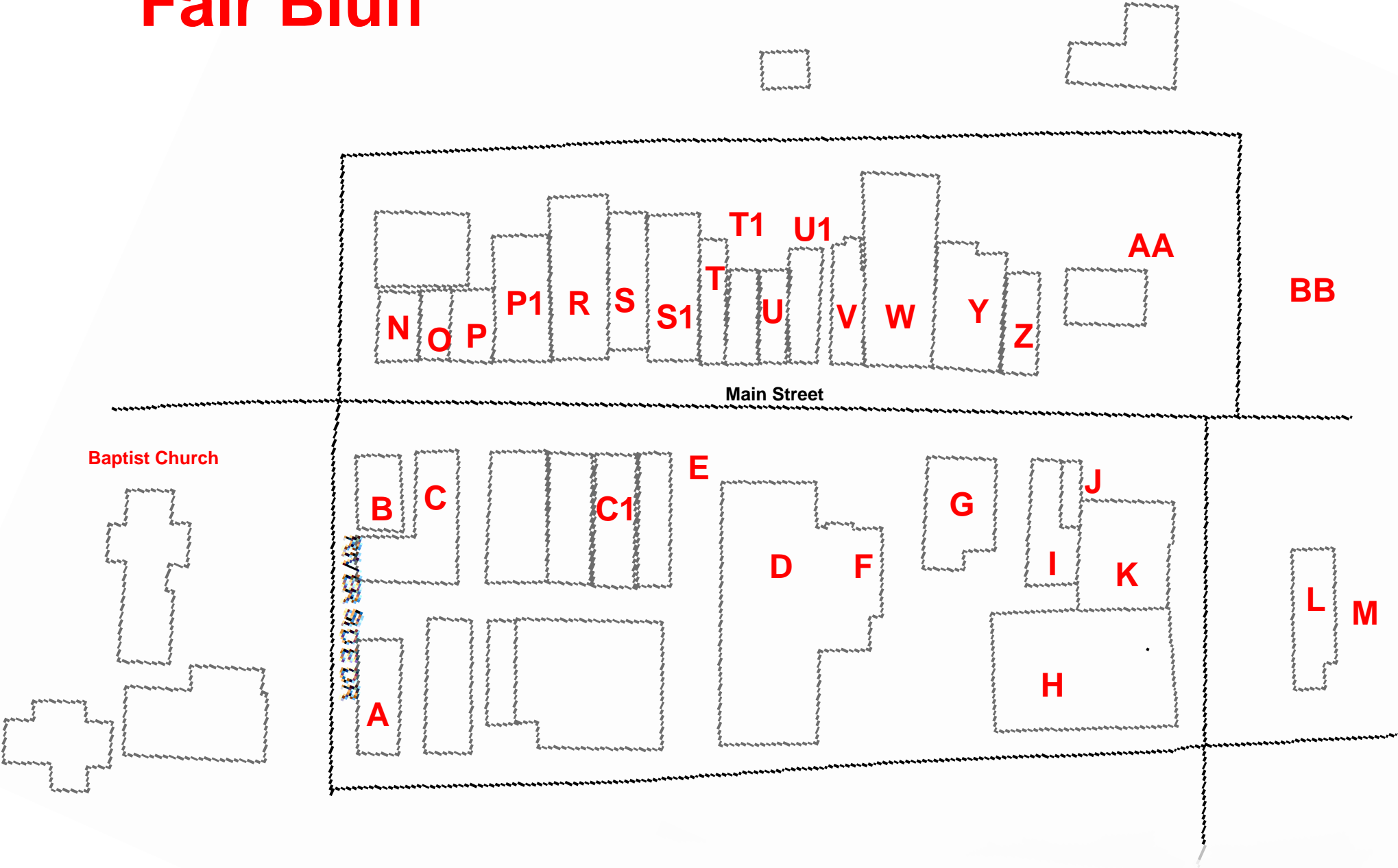
- A. Key Map
- B. Detailed Field Notes of Experts
- C. Flex Cover/Flex Wall products
- D. National Register Historic District Definitions
- E. References
- F. Survey Records
- G. General Comments for Flood Damaged Homes

# Appendix A

## Key Map



# Fair Bluff



# Appendix B

## Field Notes

## DAN BRUBAKER – Fair Bluff notes

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.

### FAIR BLUFF

Fair Bluff has a downtown Central Business District (CBD) that can be divided up in three main areas on the maps Barry provided (I do not have a digital copy to attach, but I think Barry can forward one if needed): B and C, D through K, and N through Z. I'll discuss each area separately.

I also want to note that we discussed relocating the CBD, meaning (frankly) demolishing all of the structures or maintaining some facades while relocating business operations to higher ground. From our discussions, this seemed to be initially considered by the Town leadership, but has not been lately. Demolition remains a consideration.

B and C seemed to be the best option for perimeter dry floodproofing away from the building. There is sufficient sidewalk space to install the protection, and this would not require structural modifications to the buildings themselves other than code requirements, as applicable. We thought a "planter wall" may be both feasible and attractive.

D through K are two-story structures. These structures could either have the ground floor wet floodproofed, or have the intermediate floor removed and the ground floor elevated, and so converted to a one-story structure. Dry floodproofing is an option, but the perimeter is not straight, so dry floodproofing may not be as practical as at B and C.

N through Z (on the river side of Highway 74) present various options. Most of these are one-story structures with tall ceilings. Several of the structures should clearly be demolished. The remaining structures may be able to have floors elevated, or possibly dry floodproofed. We saw a benefit to open up access to the riverwalk and bandstand from the street. The openings can also present opportunities for additional park space.

I recommend demolishing A and H. Their practical reuse is beyond my skill or imagination.

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.

## JACK MALONE Field Notes

10/2/17

Downtown Flood Retrofit Study Field Report for Fair Bluff, NC

Field inspections were conducted on 10/2/17 regarding potential flood retrofitting for the downtown area of Fair Bluff, NC. This report is comprised of the opinions and suggestions from Jack Malone, who works for FEMA Hazard Mitigation, and John Cuneo, who works for FEMA Public Assistance. The information contained in this report is representative of the subjective input based on their years of field experience working flood events, and not an official stance or recommendation from FEMA.

As noted during the meeting immediately following the field inspections, there will be an abiding issue of the economic considerations. Namely, from a strictly business standpoint, all of the buildings in the downtown area should be considered within the context of investment potential. Meaning, if money is invested into retrofitting any of the downtown buildings, there would need to be a reasonable belief there could at some point be a return on that investment. As was further noted, this was a small (2015 population of 859) impoverished community before Hurricane Matthew and it was rendered even more impoverished after the disaster, as well as having up to one third of the town's population move to other communities. As a result, there are a number of buildings in downtown Fair Bluff that have not been protected from mold and deterioration following the flooding associated with Hurricane Matthew. In plain terms, it was believed by some property owners that putting any money into work on those buildings would be such a bad investment that they opted to take no action, thereby allowing mold to grow and spread unchecked. Those considerations will have an impact on any actions taken for the buildings in downtown Fair Bluff.

During the course of these inspections, more than 30 locations were examined. There appeared to be 4 general approaches that were considered:

1. Dry Flood Proofing, meaning using a variety of methods to make a building's perimeter substantially impermeable to water. Effectively keeping the interior of the building dry.
2. Wet Flood Proofing, meaning flood water would be allowed to enter the building, but there would be minimal to no damage to the building itself. Post-flood this mitigation would call for the cleaning of surfaces the flood water came into contact with and removing any residual silt or debris deposited.
3. Elevating the interior floor of the building. This would preserve the external appearance of the building, while allowing the interior first floor elevation and any furnishings to reside above the flood water, thereby keeping them from being damaged. This option could also include the removal of second floors in applicable buildings to facilitate achieving the vertical height requirements to elevate the interior first floor.
4. Demolishing the structure. Selective demolition of buildings where it would not be cost beneficial to restore them could in some instance enhance the downtown area through the creation of parking, recreational areas, and potentially opening the view shed to allow for enhanced visibility of the Lumber River area. Further, the removal of fixed structures from the special flood hazard area will result in an incremental increase in the conveyance capability and general functionality of the floodplain itself.

Due to the proximity of the buildings to each other, many of which have shared walls, it is recommended that any mitigation for any individual building be considered in the context of an overall plan for the downtown area.

As per the testimony of various individuals, the intrusion of floodwater into the structures occurred with little actionable warning in the middle of the night. Therefore, without some type of a warning system, the hazard must be treated as a little to no-notice event. Within that constraint, the use of any active mitigation is discouraged. This would eliminate the option of dry flood proofing, due to any dry flood proofing requiring an individual have advance warning of an impending flood so that they could install modular flood barriers to block off water intrusion points. There are dry flood proofing barriers that will automatically deploy, however those options are costly. If a functional warning system can be established, then the active mitigation of dry flood proofing using modular flood barriers could be considered a more viable form of mitigation.

The appropriate mitigation for each building will eventually be predicated on the proposed use of the building and whether or not it would be cost effective to retrofit the building in a particular manner in relation to its intended use. For instance, if a building is going to be retrofitted with the purpose of preserving the building against future event, but with no intended use, then the intent of any mitigation is the continued existence of the structure and its appearance. In that case, the appropriate mitigation would be whatever option has the least cost without altering the appearance of the structure. This would generally take the form of wet flood proofing whereby flood water was allowed to flow in and then flow out of the structures with limited physical damages. The use of wet flood proofing would mean that any interior contents would be subject to flood damages if those contents were not elevated.

As another example, if a building is going to be used by an active business, then a more appropriate mitigation would be to elevate the internal flooring. The reason for this is because a business operator will have merchandise, building contents such as furniture, and potentially equipment and supplies which would need to be protected against flood water. As stated earlier, without a warning system in place, it is not reasonable to assume there would be adequate notice for a business operator to be able to move all of these items to higher ground preceding an event. Therefore, these items would have to be protected against flood damages due to internal elevation (via elevated flooring or elevated platforms) so that they are protected as-is, with no additional measures needed.

Regarding demolition, if it is determined that it is not cost beneficial to invest the time or money in remediating the existing flood damages to a structure, then the building should be demolished. If a building no longer serves a purpose, whether through aesthetics or function, then it should be demolished. If a building is not being demolished, then it should be mitigated.

# Fair Bluff Building Inventory

Submitted by: Jeff Adolphsen  
Restoration Services Branch  
North Carolina State Historic Preservation Office  
October 20, 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. Most building entries include a statement as to whether the building would be listed as “contributing” or “non-contributing” within a possible future Fair Bluff National Register Historic District. Owners of buildings that are “certified historic structures” may be eligible for rehabilitation tax credits if they spend the adjusted basis (purchase price, less land value, plus capital improvements, less depreciation) on the rehabilitation, if the property is depreciated, and if the work meets the *Secretary of the Interior’s Standards for Rehabilitation*. 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 listed. 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. In some cases, remedial work may need to be done to the building so that the building may be classified as historic. In these cases, owners should consult with the State Historic Preservation Office to ensure that work will meet the *Secretary of the Interior’s Standards for Rehabilitation* and that the building can be classified as contributing once work is completed.

**Building A, 308 Scott St., Warehouse** – This would probably be a contributing building in the potential commercial historic district. Character defining features/finishes that should remain include: multi-wythe brick exterior walls; exposed interior brick walls; post-and-beam construction; exposed second floor structure; 5/4” wood floors. Large hole in roof. Window openings on the south elevation have been infilled with brick and/or concrete blocks. Some window openings have been filled on the west elevation as well. Segmental arches are also a character-defining feature. Mothball if possible for future use.

**Building B, 1175 Main St., Commercial (Former Town Hall)** – This would probably be a contributing building in the potential commercial historic district if the mansard roof was taken off and if the masonry later storefront infill within the arches was removed and a sympathetic storefront installed. Two stories tall. Handsome brick work includes triple header courses with keystones that surmount full arches. The brick is painted white. The interior has a concrete floor, and partially removed sheetrock walls front the plaster walls. Celotex ceilings hide the historic material above.

**Building C, 1167 Main St., Commercial (Hardware Store)** – This would probably be a contributing building in the potential commercial historic district. Two stories tall. Handsome brick that is painted. Three segmental arched second floor window openings. Later but possible historic hollow metal storefront. The interior has a concrete floor, plaster walls, and beaded board ceiling.

**Building C1**, composed of four separate buildings.

1. **Building 1, 1151 Main St. Commercial** – This would probably be a contributing building in the potential commercial historic district. The single story, three-bay wide, painted masonry building

has an original storefront in the westernmost bay; whereas, the two eastern bays have been altered with the removal of the storefront and a new shorter brick bulkhead installed across the entire masonry opening with a hollow metal storefront installed above the bulkhead. Thus, no pedestrian access is afforded through either altered storefront. The western storefront appears to be all original, having rosettes on the I-beam. The transom is simply painted glass that can easily be stripped to restore the original storefront elevation. The interior of this storefront has a drop ceiling, paneled walls, and a concrete floor. It is assumed that the historic finishes are behind the later finishes, and that they can be revealed. The interior of the two eastern storefronts has acoustical ceiling, what appears to be sheetrock installed over furred out walls, and carpet atop the floor (concrete?). It is assumed that the historic finishes are behind the later finishes, and that they can be revealed.

2. **Building 2, 1143 Main St., Commercial** – This would probably be a contributing building in the potential commercial historic district. The shed roof structure may need to be removed for the building to be considered contributing. The two-story masonry building is not painted. There are three second-floor window openings within segmental arches having a pair of wood 6/6 sash within each opening. The storefront appears to be later but possibly within the period of significance. The rolled and hollow metal storefront sits atop a brick bulkhead. The interior has a concrete floor, paneled walls, and beaded board ceiling. It is assumed that the plaster walls are intact behind the furred out paneled walls.
3. **Building 3, ADDRESS, Commercial** – This would probably be a contributing building in the potential commercial historic district. The two-story, unpainted, masonry building has a later storefront (angled brick bulkhead surmounted by a hollow metal storefront) with a flat-roofed aluminum canopy. The transom appears to be covered with a later material. It is assumed that the historic transom is behind that material. The deteriorated canopy may have to be removed for the building to be considered contributing. There are three second-floor window openings set within segmental arches having a pair of later vinyl 9/9 sash within each opening. The interior is of post and beam construction and has a pressed metal ceiling, 8" tile over the floor (concrete?), and a plaster-finished west wall. The east wall is either plaster or furred sheetrock over plaster that can be removed. The rear elevation has bricked-in windows. There may be historic steel sash behind the bricked-in window openings.
4. **Building 4, ADDRESS, Commercial** – This would probably be a contributing building in the potential commercial historic district. The two-story, unpainted, masonry building has a later storefront composed of a brick bulkhead across the entire masonry opening surmounted by a hollow metal storefront. Thus, no pedestrian access is afforded through the front elevation of this building. The transom is covered with a later material. It is assumed that the historic transom is behind that material. The interior finishes consist of later acoustical ceilings, paneled walls, and carpet atop the floor (concrete?). Historic materials may be intact beneath later finishes.

**Building D, Warehouse** – Not historic and thus no write-up.

**Property E, Alley** – no write -up.

**Building F, 1115 Main St., U.S. Post Office** – Depending on the date of construction, this building may be a contributing building in the potential commercial historic district. One story masonry building with hollow metal storefront with opaque panels in bulkhead and transom.

**Building G, 1101 Main St., Commercial Buildings** – The unpainted masonry building has three periods of construction – two along Main Street and one across the rear (south) elevation. The western building along Main Street and rear building are two stories in height and would probably be contributing in the potential commercial historic district. Depending on the date of construction, the single story eastern building along Main Street may be a contributing building in the potential commercial historic district. The eastern building along Main Street also has a later shallow pitched roof addition that appears to drain water from the building to the west and the front gable roof of the building to the rear. There is some spalling brick where a stone consolidant could be used to halt deterioration. For additional information see ProSoCo website for OH100 Consolidant (without water repellent) at: <http://www.prosoco.com/products/conservare-oh100-consolidation-treatment>. The rear building has 6/6 second floor window sash and a door that accesses the second floor along the west elevation. The rear elevation of the first floor has taller segmental arched window openings that are boarded up and a wood frame addition toward the west. The west building along Main Street has two pair of 3/1 Craftsman-style second floor windows over a later storefront and brick bulkhead. The east building along Main Street has what appears to be a historic hollow metal storefront with a center door atop a tall brick bulkhead. Interior finishes along Main Street include V-board ceilings and later 1x1 tile.

**Building H, 26 Bardin St., Warehouse** – This would probably be a contributing building in the potential commercial historic district. The simply constructed, wood-framed warehouse is composed of two adjacent east-west oriented gable roofed buildings atop a later concrete floor. The original construction was probably wood floor atop joists. The center section is post-and-beam construction and the exterior wall is 5/4" ship-lapped studs. There is an interior gutter to collect water from both inward facing gables. There are several sections of missing roofing and there several runs of beams beginning to fail. The corrugated translucent panels are a later introduction meant to introduce light to the interior of the building. The simple constructed building may be a viable candidate for rehabilitation as warehouse space or a similar use requiring little work, such as an open market.

**Building I, 1089 Main St., Commercial** – If the later storefront was changed out for a more sympathetic storefront and the stucco was removed, this would probably be a contributing building in the commercial historic district. The single-story, painted, masonry building is a twin to the building to the east. The historic transom may be in place behind the later covering. The later fiberglass stucco may easily be removed as evidenced by sections that have already fallen. There is some spalling brick but a stone consolidant could be used to halt deterioration. For additional information see ProSoCo website for OH100 Consolidant (without water repellent) at: <http://www.prosoco.com/products/conservare-oh100-consolidation-treatment>. Interior finishes include beaded board ceiling beneath a drop ceiling, sheetrock furred out walls, and carpet atop the concrete floor. It is assumed that the beaded board ceiling and plaster walls are in place beneath the later finishes.

**Building J, 1085 Main St., Commercial** – If the later storefront was changed out for a more sympathetic storefront, this would probably be a contributing building in the commercial historic district. The single-story, painted, masonry building is a twin to the building to the west. The historic transom may be in place behind the later covering.

**Building K, 1075 Main St., Commercial** – Not historic and thus no write-up.

**Building L, 1055 Main St., Commercial** – Not historic and thus no write-up.



**Property M, Alley** – No write-up.

**Building N, 1170 Main St., Commercial** – This would probably be a contributing building in the potential commercial historic district. The former car dealership is comprised of several one-story stucco-covered masonry buildings. This building appears to be comprised of the two westernmost buildings – each with its own storefront. Both buildings were unified with a stucco rendering and flat canopies. It appears that the western storefront is later, and that the eastern storefront is an early rolled aluminum storefront. The eastern building has a metal ceiling.

**Building O, Commercial** – This would probably be a contributing building in the potential commercial historic district. This building is also part of the former car dealership and appears to be comprised of the one-story eastern-most stuccoed building and the one-story unpainted brick building to the east. Of these two buildings, it appears the western building may have been acquired later as the stucco rendering appears slightly different from the two buildings to the west. The storefront was changed early as it has a rolled aluminum storefront atop a brick bulkhead with no pedestrian access. It appears the transom glass is painted but intact atop the storefront. The brick building to the east also has a later storefront as evidenced by the later brick bulkhead. The storefront is comprised of later hollow metal storefront and wood door. The plywood covering over the transom appears to be nearly flush with the face of the brick suggesting that the transom may be in place behind the plywood. The finishes for the eastern most building (?) consist of a Celotex ceiling that may be within the period of significance, plastered walls, and a wood floor.

**Building P, 1158 Main St., Commercial** – This would probably be a contributing building in the potential commercial historic district. The single-story, unpainted, brick building has a later storefront as evidenced by the different brick bulkhead. The bulkhead is topped with a hollow-metal storefront and flat metal canopy. Two evenly dispersed pipe columns support the weight of the masonry opening. Interior finishes consist of a Celotex ceiling, plastered walls, and tile atop concrete floor. The pipe columns could be used to support the vertical supports of the Flex Wall system.

**Building P1, 1154 Main St., Commercial** – Not historic and thus no write-up.

**Building R, 1144 Main St., Commercial** – This would probably not be a contributing building in the potential commercial historic district because of what appears to be later stucco rendering, alterations to the doors, and removal of signs, canopy, or marquee. The two-story brick building is covered with stucco that is painted. The stucco has fallen off in several locations and is cracked in several locations. Remedial work may be necessary to make the building a contributing building in the potential commercial historic district. Historic photographs should be sought for guidance.

**Buildings S and S1, 1136 Main St., Commercial** – The building appears to be contributing in the potential commercial historic district if the date of construction is within the period of significance of the district. The single story, unpainted, brick building has a flat canopy covering the entire width. The storefront is rolled aluminum with butt joints. The interior finishes are later acoustical ceilings, later furred walls over plaster walls, and wood floors.

**Building T, 1132 Main St., Commercial** - This would probably be a contributing building in the potential commercial historic district. The intact one-story, painted, brick building has a rolled aluminum storefront with a pair of recessed ¾-light doors surmounted by what appears to be a later but historic

transom comprised of vertical installed V-Board with three equally sized and dispersed horizontal sash surmounted by a later aluminum awning. Interior finishes consist of a later Celotex ceiling, plastered walls, and a plywood floor that is assumed to be installed over the original wood floor.

**Building T1, 1128 Main St., Commercial** – This would probably be a contributing building in the potential commercial historic district. This building is similar to the adjacent building to the east. The one-story, unpainted, brick building has a remarkably intact storefront comprised of a brick bulkhead surmounted by a concrete cap and wood storefront. Access is through a pair of  $\frac{3}{4}$  light doors. Each storefront section is comprised of a large display window surmounted by a transom with a pair of windows divided by a vertical muntin. The masonry opening is supported by an exposed I-beam. Interior finishes consist of a later sheetrock ceiling and furred out walls and a wood floor. It is assumed that the historic ceiling and wall finishes lie behind the later finishes. The raised display is accessed by an interior wood storefront system.

**Building U, 1126 Main St., Commercial** - This would probably be a contributing building in the potential commercial historic district if the later awning was removed. This building is similar to the adjacent building to the west, but has a later aluminum storefront with a recessed entrance behind a broken tile stoop. The masonry opening is supported by an exposed I-beam. Interior finishes consist of a later Celotex ceiling, plaster walls, and a concrete floor.

**Building U1, 1122 Main St., Commercial** - This would probably be a contributing building in the potential commercial historic district. The one-story, unpainted, brick building with pigmented mortar joints has a later aluminum storefront atop a later brick bulkhead. Ghost marks for the original wood storefront are visible in the jamb of the masonry opening. The original wood transom (not including the quarter round trim along the masonry) remains in place over the new storefront. The transom glass has been painted. Interior finishes consist of a plaster ceiling (?), plaster walls, and concrete floor.

**Building V, 1116 and 1112 Main St., Commercial** - This would probably be a contributing building in the potential commercial historic district. The one-story, two-bay, painted, brick building is crowned with a crenelated parapet. Each bay has a later storefront atop a later brick bulkhead. The eastern storefront is a rolled aluminum storefront. The western storefront is covered with plywood providing no information about the storefront or the interior finishes. The later covering over the transom protrudes far enough out from the building to possibly conclude that the historic transom is beneath. The finishes on the eastern bay include a drop ceiling, wood paneled walls furred over what is assumed to be plaster walls, and a concrete floor.

**Building W, 1106 Main St., Commercial** – This would probably be a non-contributing building in the potential commercial historic district unless the later stucco and vinyl siding can be removed. The single-story masonry building was parged in stucco and has a later storefront. Vinyl siding also covers some of the masonry. Interior finishes consist of an Art Deco pressed metal ceiling, plaster walls, and a concrete floor.

**Building Y, 1100 Main St., Commercial** – This would probably be a non-contributing building in the potential commercial historic district unless the later stucco can be removed. The two-story, two-bay, masonry building was parged in stucco that presumably covers second floor windows. Both storefronts are later. The western storefront provides access; whereas, the eastern storefront has a new continuous brick bulkhead and storefront that provides no access. The storefronts are surmounted by a flat

aluminum canopy. Interior finishes consist of a later drop ceiling, and painted paneling. It is assumed that the historic finishes lie beneath the later finishes.

**Building Z, 1092 Main St., Commercial** - This would probably be a contributing building in the potential commercial historic district if the date of construction falls within the period of significance for the district. The handsome single-story, unpainted, brick building has a wood and aluminum and glass block storefront surmounted by an aluminum canopy. Interior finishes consist of a drop ceiling, painted plaster walls, and tile over concrete floor. This building is an excellent example of wet proofing. Soon after the floodwaters receded, the owner power washed the interior of the building down, sanitized the interior, and installed new finishes.

Building AA, 1080 Main St., Commercial – Not historic, thus no write-up.

## Fair Bluff

In my opinion this project should be divided into two parts: the river side and the non river side.

I believe that the properties on the non-river side were all salvageable except for the first property (A). This was also one of the only properties on that side that I saw a real opportunity for wet floodproofing, provided the property was salvageable.

The majority of the properties on the non-river side seem to be better off being dry floodproofed. The majority of these properties suffered less damage than the river side properties. There were a mixture of single and multi level units on this side. I think Flex Cover would be a perfect fit for the majority of the openings and a few might need the Vertical Flex Wall system. This is provided that the windows were above the BFE by 2 feet(freeboard height). If the majority of the windows are not then wrapping the entire building(s) may be a viable option. Jack brought up an interesting idea for the backside of the property with an actual "flood wall" with steps and then storing the stop log panels inside the "flood wall". That same idea would work even better with a Flex Wall System or even our Roll Out Flex Wall.

The majority of the properties on the river side were more damaged than the non-river side. The majority of these properties were single story units. The majority of these properties also had relatively high ceilings, which lead me to believe the best option would be to raise the floor and then wet floodproof the areas below.

Another common theme with the buildings on the river side were that the majority had some sort of add-on on the backside of the building (water side). It seemed like half were of wood construction and half were aluminum. All of these were in terrible shape and gave the water side of the buildings a non-aesthetic look. In my opinion they should be demolished. There were a couple buildings on the river side that seemed to be unsalvageable as well. The T.V. and appliance center (P) roof was caving in and looked in very rough shape on the interior. The old movie theater(R) was by far the worst of all.

There was an abandoned field right across from the church that would seem to make a great park area with plenty of room for a stage(for concerts/festivals), picnic tables, grill areas, a playground, etc and it's right by the river walking trail access and would be a great rest area for travelers. I think the area in general could be transformed to a very nice downtown with a beautiful historical feel but the question is, "will people move here/spend money in the town?"

The Flex Cover is a highly durable coated fabric cover that can be deployed rapidly for flood protection on vertical building openings with or without grates. Using advanced materials, the Flex Cover system is durable and lightweight. The Flex Cover DW is up to 80% lower weight than a typical stop log solution. The Flex

Cover is up to 80% lighter than a typical stop log solution. It is simple to install and remove by a single person within minutes, even in high winds.

Flex Wall is our newest product and it's a dry floodproofing protection product for commercial buildings in Special Flood Hazard Areas. Flex-Wall is a high strength, tension fabric wall that can be deployed rapidly for flood protection around buildings, doorways, power stations, and other critical infrastructure. It's also a point of use storage system, so it's always there when you need it and out of site when you don't.

Roll Out Flex Wall is stored on rolls within a designated space within the building. Posts and fabric are on carts and wheeled to the deployment area.

## **Zach Faulkner, CFM**

Flood Mitigation Specialist

*North Carolina, South Carolina & Georgia*

## **Smart Vent Products, Inc.**

430 Andbro Drive, Unit #1 | Pitman, NJ 08071 877.441.8368 (office) |

843-816-0825 (cell)

[zfaulkner@smartvent.com](mailto:zfaulkner@smartvent.com) (email)

[www.smartvent.com](http://www.smartvent.com)

[www.dryfloodproofing.com](http://www.dryfloodproofing.com)



# 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

# Fair Bluff, 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*



# 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 Fair Bluff, NC. It provides preliminary information to guide the feasibility and cost assessment of various flood hazard risk reduction techniques for Fair Bluff's downtown. This information will be used by ASFPM prior to and during site visits to Fair Bluff to inform their analysis.

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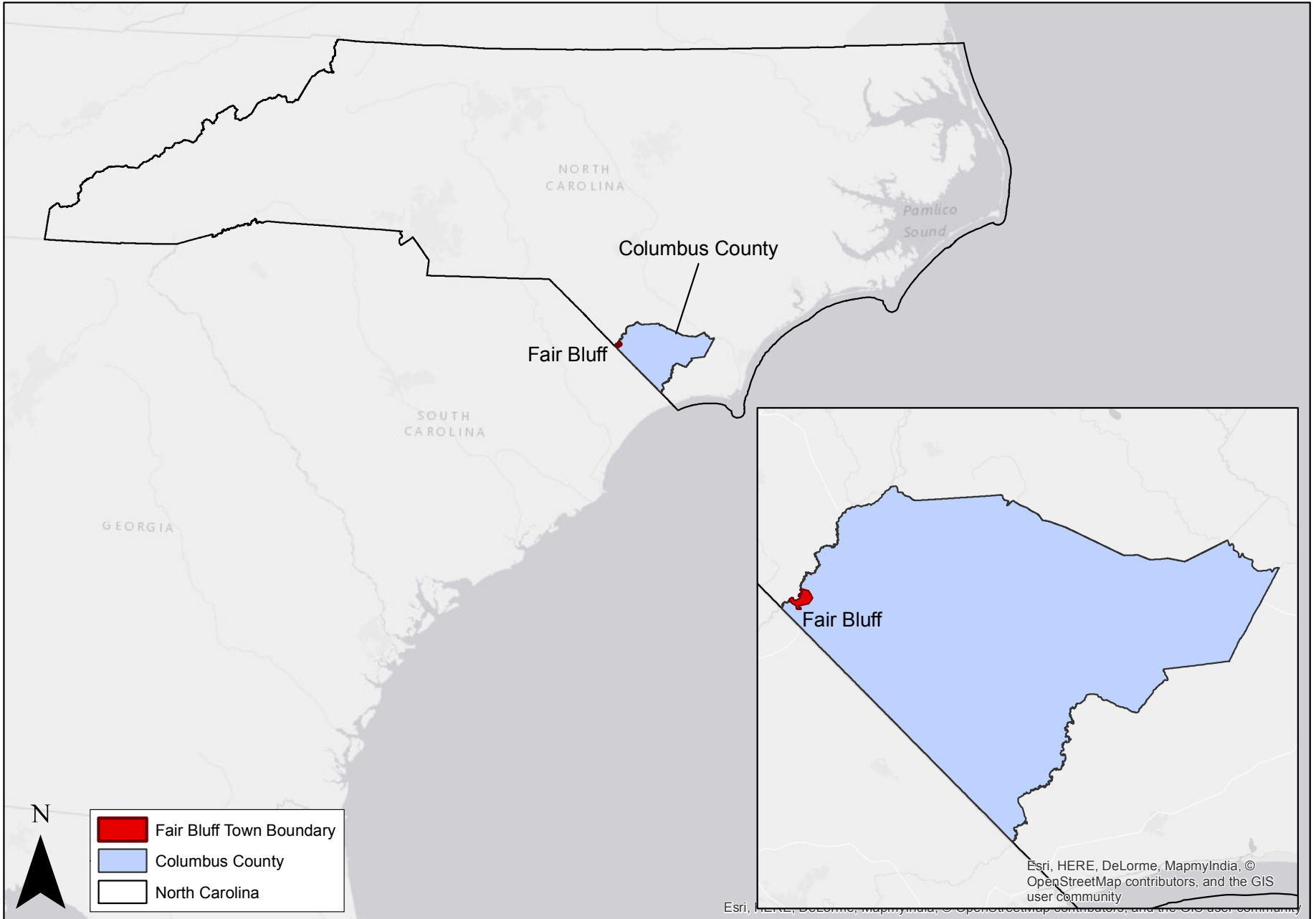
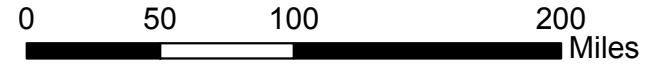
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## II. Introduction



Photo by Jody Johnson  
Taken from youtube drone footage on 10.12.16

# Orientation Map of Fair Bluff, NC



## Background Information

Fair Bluff is a small town in rural eastern North Carolina on the banks of the Lumber River. Incorporated in 1873, Fair Bluff is one of the oldest towns in Columbus County and sits on the border of North Carolina and South Carolina. Two main highways define Fair Bluff's Main Street – N.C. 904 and US Hwy 76.<sup>1</sup>

In the early 20<sup>th</sup> century, the town employed its residents as turpentiners, lumbermen, and merchants. The settlement of the town took advantage of the trade opportunities provided by the Lumber River and later the Atlantic Coast Line Railroad. As of 2015 estimates, Fair Bluff's residents primarily worked in education and health care, retail trade, and manufacturing indicating that many leave to town to work since there are minimal job opportunities in those industries within Fair Bluff's limits. Fair Bluff describes itself as a "town in transition".

Our conversations with the county economic director, Gary Lenier, discussed his ideas to bring in service based jobs such as a call center just outside of Fair Bluff's borders and creating business incubation spaces for start-up companies looking for the advantages offered by a rural setting. Fair Bluff must consider the regional economic dependencies between itself and the rest of Columbus County. This will ensure that once the downtown is redeveloped and retrofitted, it serves a niche purpose and sustains itself.

### Public Interests:

- Enable local businesses to move back into downtown
- Enhance the Riverwalk-oriented tourism economy
- Ensure downtown resiliency
- Preserve historic character of downtown
- Minimize public investment – maximize private



Downtown Fair Bluff (North side of Main Street)

### General Town Characteristics

<sup>1</sup> DFI Report on Fair Bluff, cited from "Visitors Center," Fair Bluff, NC 2016. Accessed on June 28, 2017 via <http://www.fairbluff.com/visitors-center>.



Fair Bluff is a small rural town with a population consistently under 1,000. No housing units have been built later than 2009 and there is a high percentage of vacant housing which indicates a declining population. The town hopes to weather the impacts of Hurricane Matthew and prompt stable growth for their community to survive. However, given the size and growth trajectory of Fair Bluff prior to Matthew, this will be an uphill battle. The downtown’s rebuilding and resilience to future shocks will be integral to bringing people back to the town and seeing the vision of a revitalized Fair Bluff become reality.



**Freeboard Requirement**

2 feet (Columbus County Flood Damage Prevention Ordinance)

**Main Street Program Participation**

Not participating

**Historic District / Properties**

There is not a National Register historic district in the town limits, but there are individually listed National Register properties. The North Carolina State Historic Preservation Office (SHPO) believes there is the potential for a small commercial historic district. For additional information, contact the Survey and National Register Branch of the SHPO at: <http://www.hpo.ncdcr.gov/spbranch.htm>.

**NFIP**

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

**Flood Damage Prevention Ordinance**

As a member of the NFIP, Fair Bluff is required to have a Flood Damage Prevention Ordinance. It is likely the town adopted that of Columbus County.

Table I: General Town Information

2015 ACS 5-Year Estimates	Town of Fair Bluff
Total population	859
% White	31.3%
% Black	66%
% Hispanic	0%
% Under 18	13.5%
% 65 and older	28.6%
Average male age	45.8
Average female age	59.8
% with disability	21.3%
Average household size	1.9
Housing units	581
Vacant housing units	136
Rental vacancy rate	23.5%
Median year structure built	1978
Median house value	\$81,800
Less than high school education	22.2%
Labor force participation rate	42.2%
Unemployed	10.8%
MHI (2015 dollars)	\$22,917
% Below poverty line	29%
Average commute to work (minutes)	19
% Lived in same home a year ago	91.2%



Alley-way on north side of Main Street (camera facing north towards the river)

## Videos and Drone Footage

Drone video: <https://www.youtube.com/watch?v=wbbIEHJssD8>

Video of still shots:

<https://www.youtube.com/watch?v=D6g3fQOdRDl>

<http://www.wral.com/weather/hurricanes/video/16116922/>



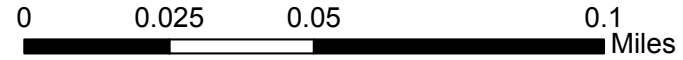
Riverwalk

### III. Downtown Reference Materials



# Downtown Fair Bluff, NC

## Hurricane Matthew Inundated Buildings



The maps above and below show numbered buildings that correspond a table with a description of the business/ occupancy of the structure. This is to be used as a reference on site visits.

# Downtown Fair Bluff, NC

## Hurricane Matthew Inundated Buildings

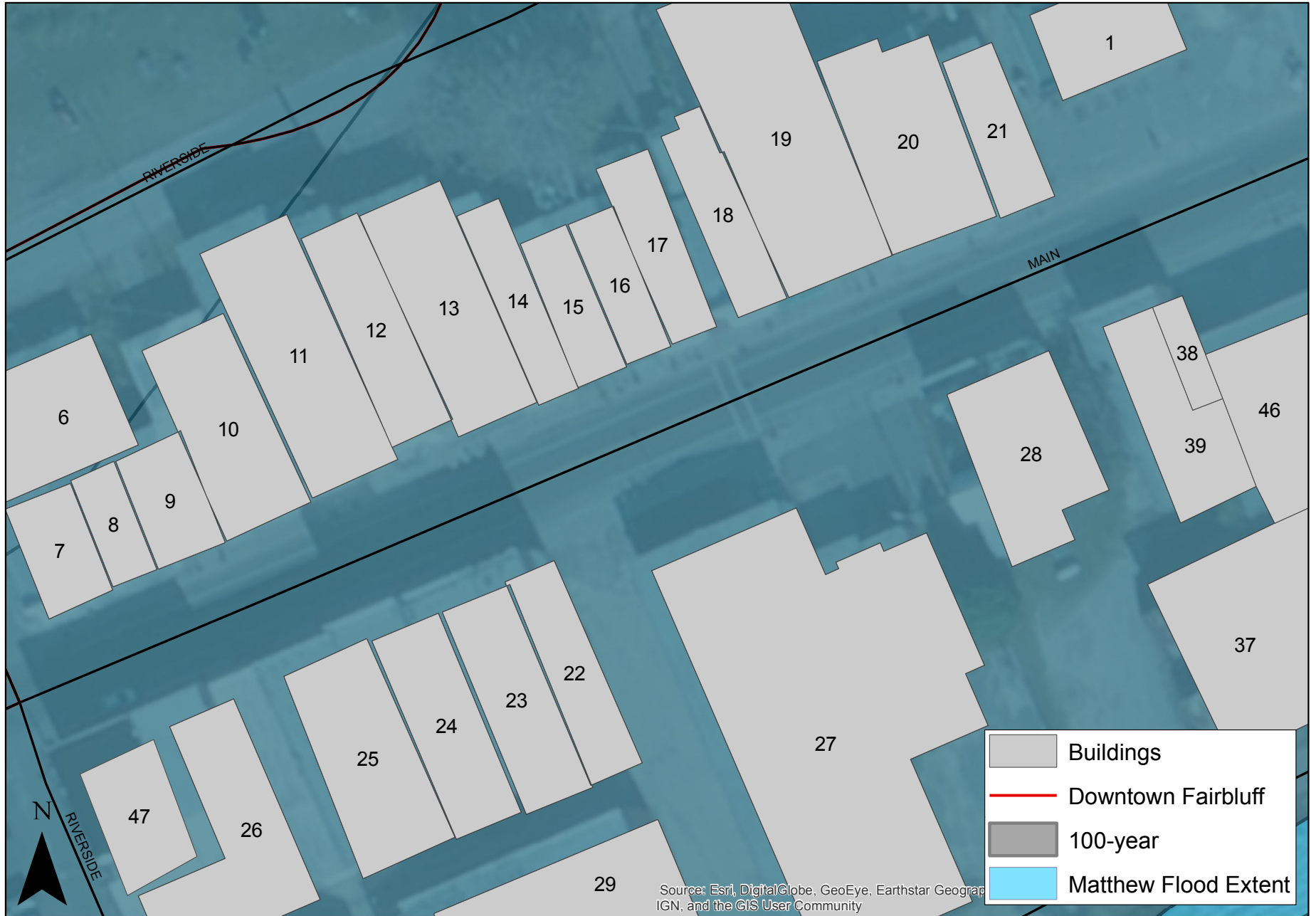
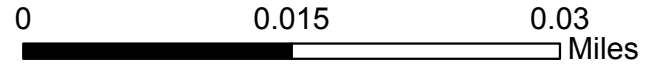


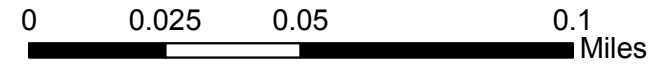
Table II: Downtown Building Reference

Number	Business / owner
0	Town of Fair Bluff (recreational pavilion)
1	Scott Properties
2	Fair Bluff Baptist Church
3	Warehouse
4	Warehouse
5	Activity building (owned by William's Backhow Service Inc.)
6	Retail
7	Scott Motor Co.
8	Retail
9	Parcel use is a beauty parlor but unclear if that is the most current use
10	Retail
11	Theatre
12	Retail
13	Town of Fair Bluff Municipal Offices
14	Retail
15	Florist
16	Retail
17	Mikemike's Computer's
18	Cleaners
19	G & G Healthcare PC
19	Carolina Class Salon
20	Senior Center
21	Yokos Hibachi
22	Retail
23	Retail
24	Retail
25	Retail
26	Hardware Store
27	Riding Lawn Mowers

Number	Business / owner
27	US Post Office
28	Retail
29	Retail
30	Vacant residential
31	Vacant commercial
32	Warehouse
33	Restaurant
34	Fair Bluff Baptist Church
35	Fair Bluff Baptist Church
36	Warehouse
37	Warehouse
38	Valley Gun Works
39	Drug store
40	Medical office
41	Fire station
42	Mini-warehouse
43	Town of Fair Bluff Municipal Offices
44	Atlantic Roofing Company
45	Warehouse
46	Retail
37	Town of Fair Bluff - Municipal Building

# Downtown Fair Bluff, NC

## All Property Owners



The majority of the properties in downtown Fair Bluff are owned by Carl Meares. Mr. Meares told us he doesn't charge a lot of his tenants rent. This indicates the tenants are not financially solvent and cannot front much of the money needed to make repairs or buy back inventory to start again. Small Business Administration (SBA) loans would be helpful for this but there is general reluctance to taking out loans on the part of the businesses. Talking with Al Leonard, the town manager, there were about 7 applicants and all were denied SBA loans. Carl Meares has also not remediated or "mucked and gutted" his properties and black mold has set in for most of the downtown properties. Carl Meares also does not have flood insurance through the NFIP although he mentioned having private insurance. It is unclear whether this private insurance covers the structures themselves or just the contents within.

Table III: Property Owners

Property Owner	Number of Properties	Average Parcel Value	Cumulative Parcel Value	Cumulative Square Feet
MEARES CARL	11	\$40,809	\$448,900	90127
BRITT SPRUILL & HAROLD FOLEY	4	\$20,125	\$80,500	13400
BABLI FAIZ	3	\$25,233	\$75,700	9196
POWELL ANNE MCKENZIE	3	\$25,600	\$76,800	47800
ELVINGTON PLAN	2	\$16,700	\$33,400	3036
FOWLER W RAY & CYNTHIA C	2	\$35,500	\$71,000	7410
LOVETT TOMMY GARLAND (JR)	2	\$59,500	\$119,000	6540
SCOTT CHRISTOPHER MARTIN	2	\$48,450	\$96,900	4566
SCOTT DAVID	2	\$52,200	\$104,400	8892
SMALL WILLARD & CARL MEARES	1	\$86,200	\$86,200	2520
BARNES GARY J (JR)	1	\$26,400	\$26,400	1570
ELLIS PHYLLIS	1	\$78,800	\$78,800	2160
ENZOR CYNTHIA T	1	\$65,300	\$65,300	N/A
ENZOR MONROE (JR) & MONROE (SR)	1	\$39,100	\$39,100	2139
ENZOR RONALD	1	\$9,400	\$9,400	640
HAYNES ROSSIE DALE & DONNA C	1	\$26,200	\$26,200	10388
HILBOURN JOHN DOUGLAS	1	\$72,700	\$72,700	2546
HILLCREST CORP #7	1	\$286,000	\$286,000	11210
JOHNSON WILLIAM & STEPHANIE NANCE	1	\$30,000	\$30,000	4695
LUNDY JOANTHAN R	1	\$17,400	\$17,400	1452
MASON DUSTIN	1	\$12,300	\$12,300	750
MEARES JAMES HUBERT (JR) & WENDELIN	1	\$25,200	\$25,200	1808
ODHAM L R (JR) & ANNA L YATES ODHAM	1	\$62,500	\$62,500	1335
RICHARDS ANN SINGLETARY (TRUSTEE) &	1	\$142,000	\$142,000	7200
SCOTT JACQUELINE R	1	\$61,100	\$61,100	4464
SMALL GORDON M (JR)	1	\$41,100	\$41,100	3200
GRAND TOTAL	48	\$45,590	\$2,188,300	249044

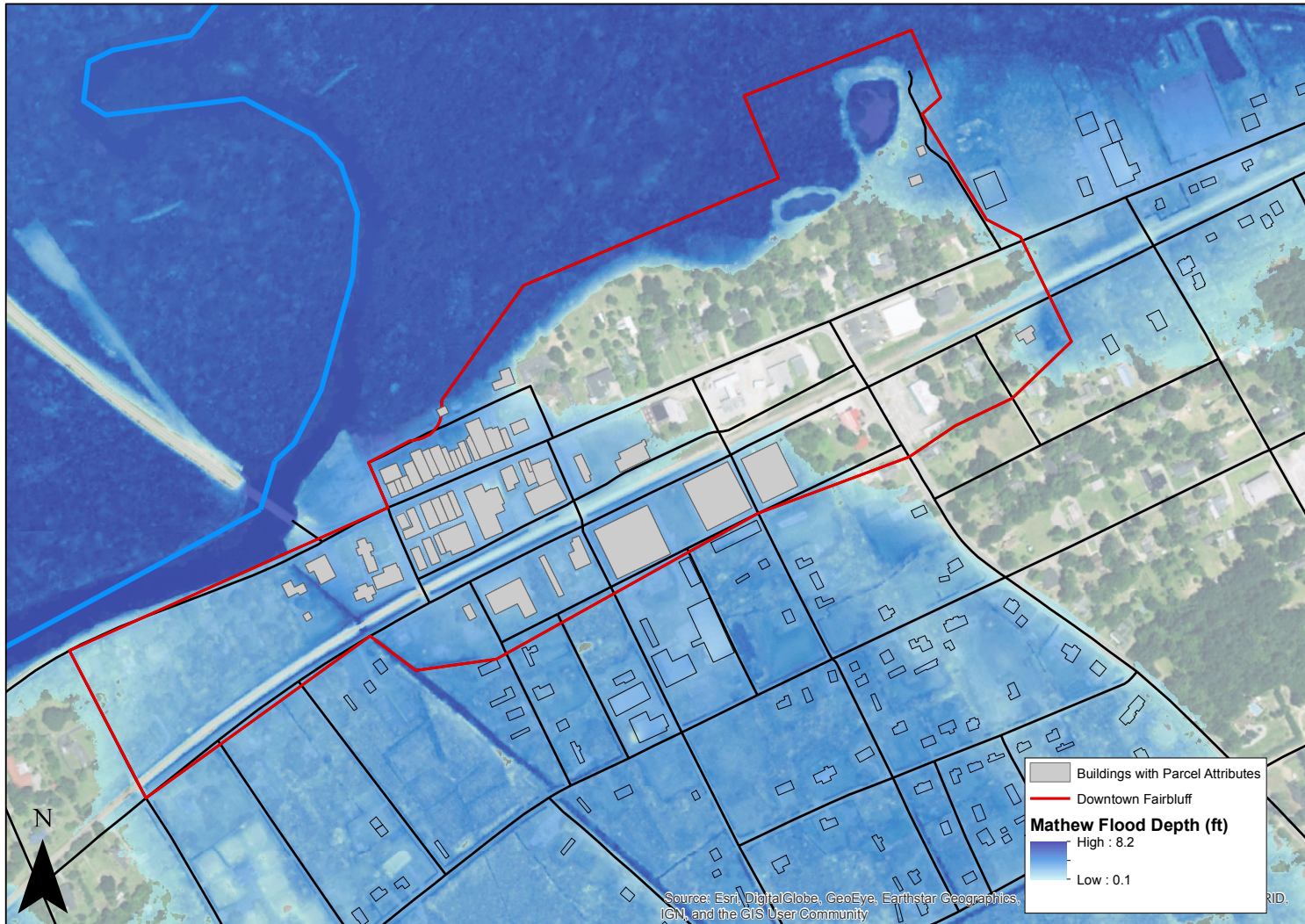
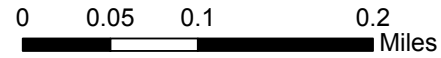


## IV. Hurricane Matthew Impact



Jody Johnson  
<http://www.wral.com/weather/hurricanes/video/16116922/>

# Downtown Fair Bluff, NC Hurricane Matthew Inundated Buildings



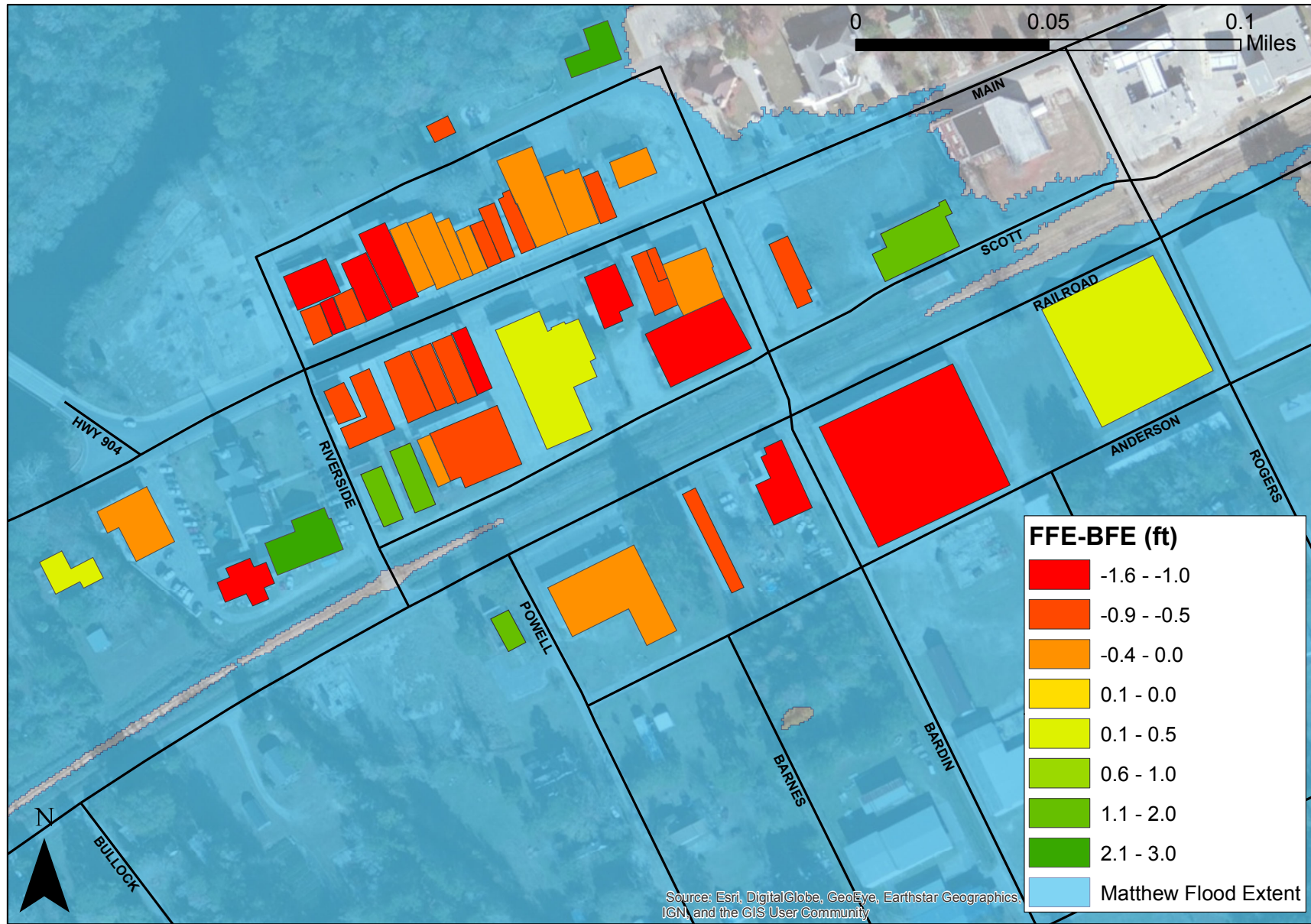
Hurricane Matthew flooded most of Fair Bluff's downtown area by about 4 feet. This was a central business district of older buildings with small town charm. It is an asset the community wants to rebuild while still maintaining its character. The entrance to the town's river walk is adjacent to the downtown area as well, connecting the downtown to a natural amenity in the area. The railroad that runs through Fair Bluff and the Lumber River were important fissures of the local economy. Today, warehouses from the town's tobacco and lumber trade hey-day line the railroad and make up a portion of the downtown core.

Many beach goers also pass through Fair Bluff on their way to the coast. Fair Bluff would like to see their downtown area revitalized to not only be a local asset but attract these beach goers to make a stop on their way to their vacation destination.

Hurricane Matthew's extent almost matched that of the 100-year floodplain. Matthew exceeded the 100-year floodplain slightly however, the downtown is at high risk for flooding regardless of the magnitude of Matthew, because the majority of the downtown is within the 100-year floodplain. These structures and businesses are highly vulnerable to future damages. Retrofitting these structures to withstand future flooding is imperative to the survival of the downtown in its current location.

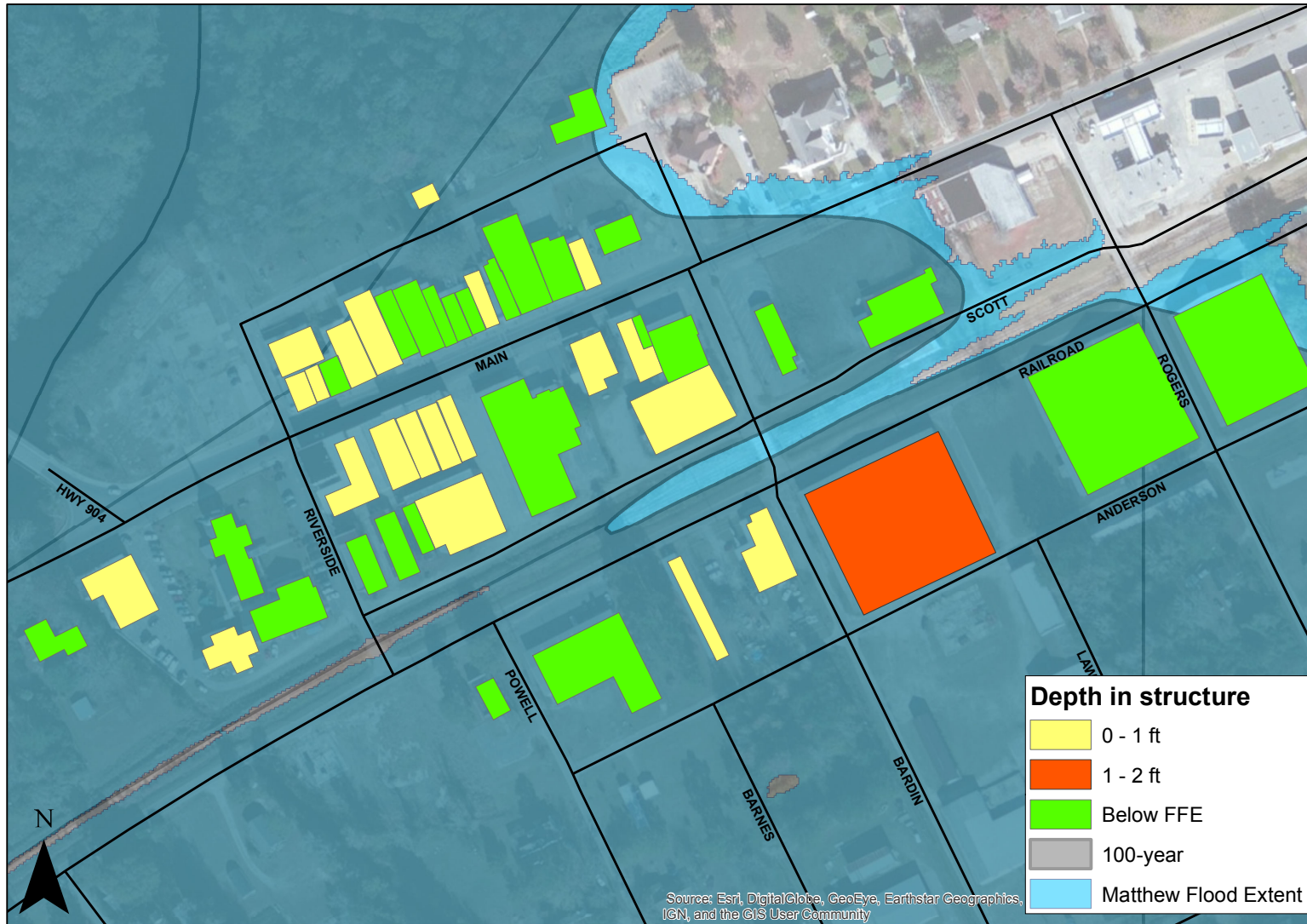
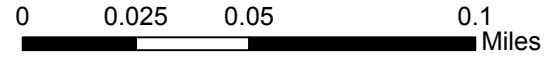
# Downtown Fair Bluff, NC

## First Floor Elevation (FFE) - Base Flood Elevation (BFE)



The FFE for Fair Bluff's buildings ranges from about 64 to 69 feet. The negative values in the map to the left indicate insufficient FFE heights compared to the BFE.

# Downtown Fair Bluff, NC Water Depth in Structure



The maps depicting FFE, BFE, and flood depth illustrate which structures are most at risk to flooding due to their not adhering to BFE requirements. The buildings that experienced flooding had FFEs below the BFE and most of them were built prior to Fair Bluff's FIRMs.

The lowest FFE is 64 feet and the highest reaches about 69 feet.

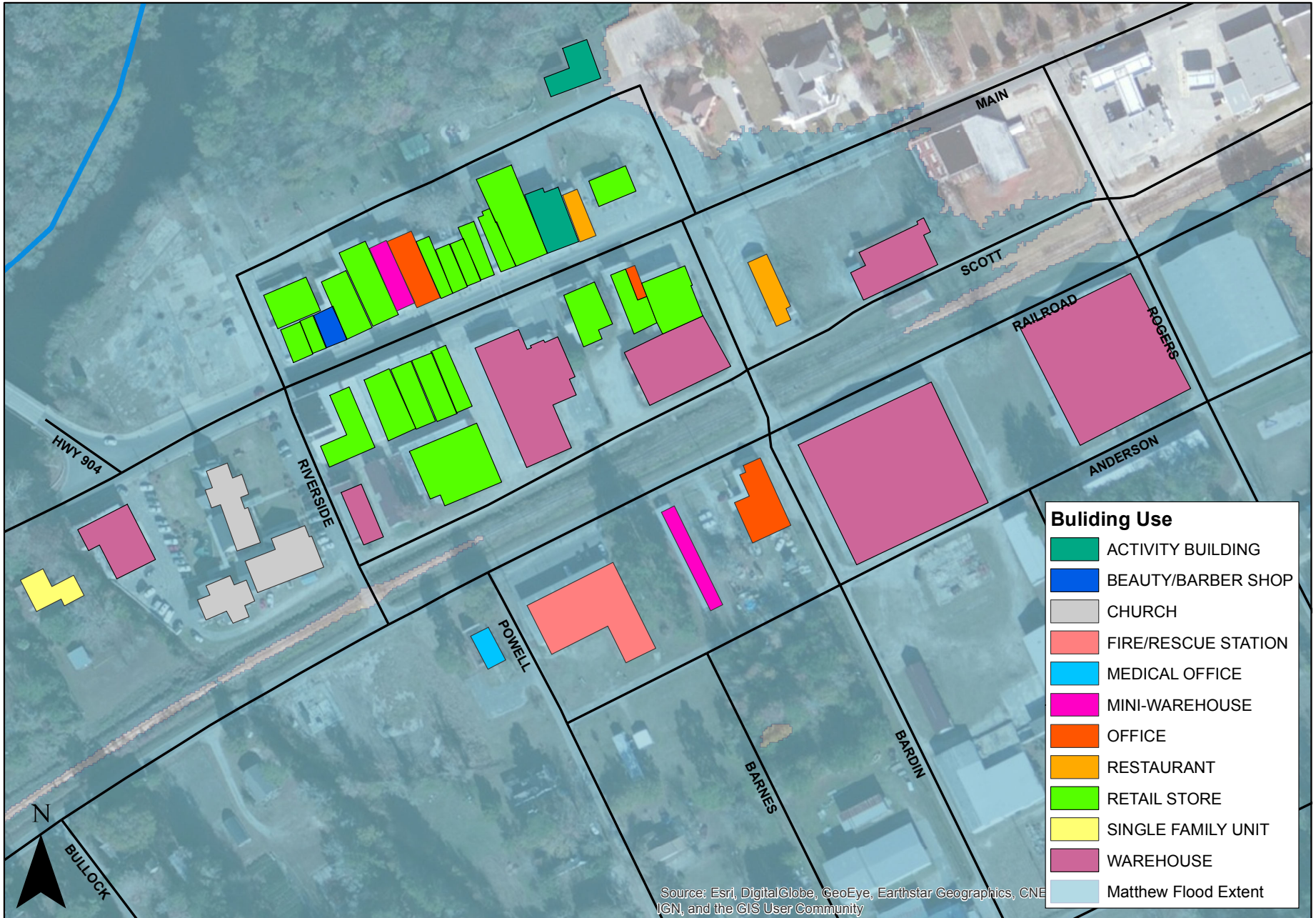
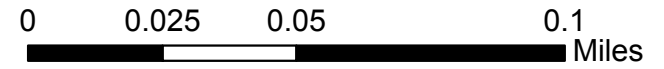
In the map to the left, according to the data, the only building that flooded more than 1 foot is the roofing company that also sustained the most damages.

# IV. Building Characteristics



# Downtown Fair Bluff, NC

## Building Use



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNR, IGN, and the GIS User Community

Table IV: Downtown Commercial Building Characteristics

Total Buildings	45
Retail Buildings	21
Warehouse Buildings	11
Total Buildings built prior to 1960	38 (84%)
Average Building Value	\$47,582
Buildings with NFIP Policy	2
Buildings Without Damage	5

The majority of the downtown area is used for general retail purposes including restaurants, a pharmacy, beauty parlor and a florist. There is also a fair amount of warehouse activity in the central downtown area with a few scattered office spaces.

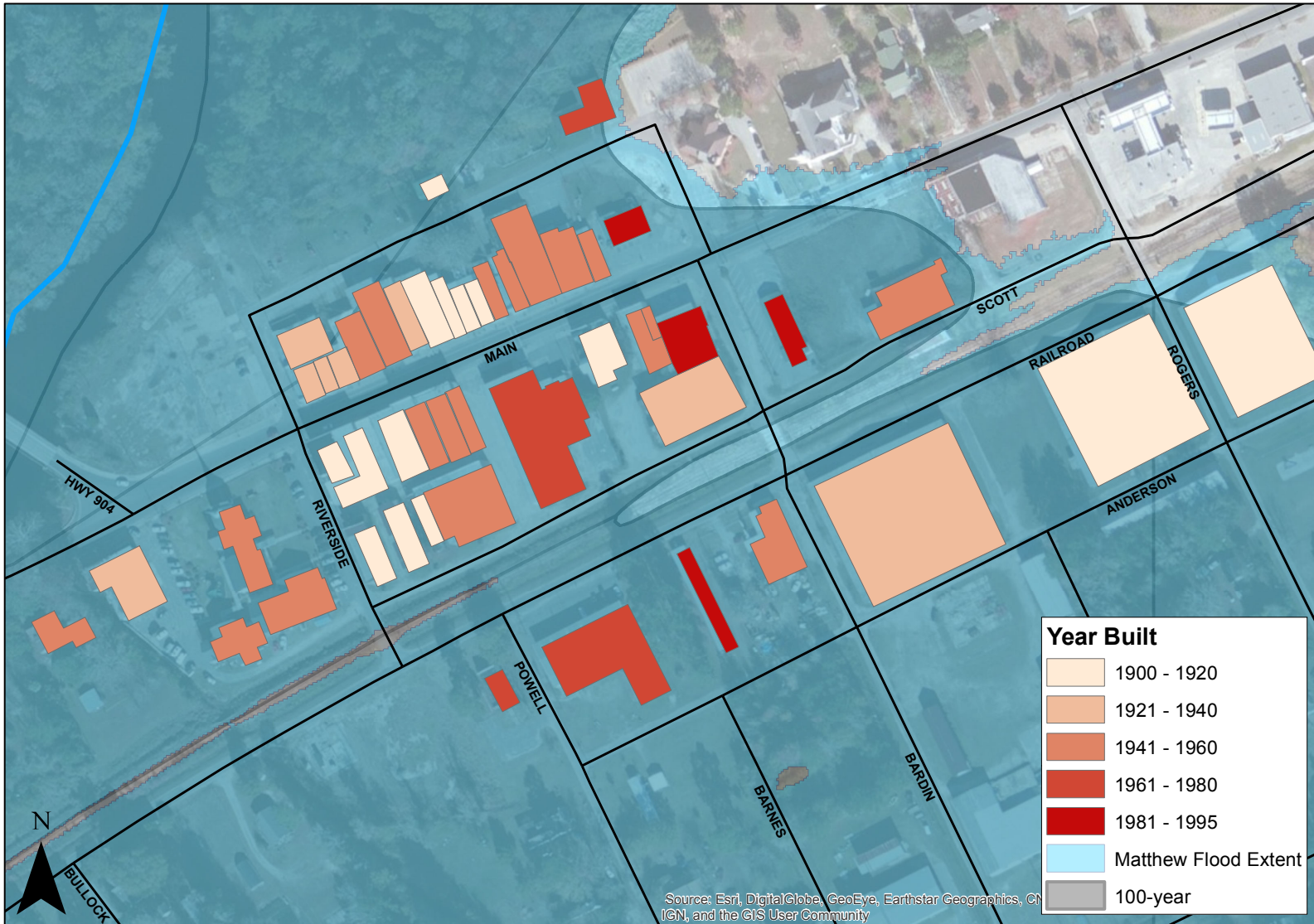
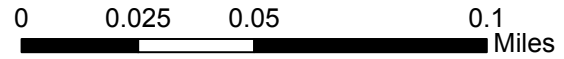
The first businesses to return is a restaurant, Yokos Hibachi, on the far east corner of the north side of the downtown strip. Yokos Hibachi has two locations which may have provided some income buffer for the owner to absorb the losses temporarily from the Fair Bluff location.



Photo taken by Cindy Burnham  
Retrieved from <http://businessnc.com/after-the-flood/>

# Downtown Fair Bluff, NC

## Year Structure Built

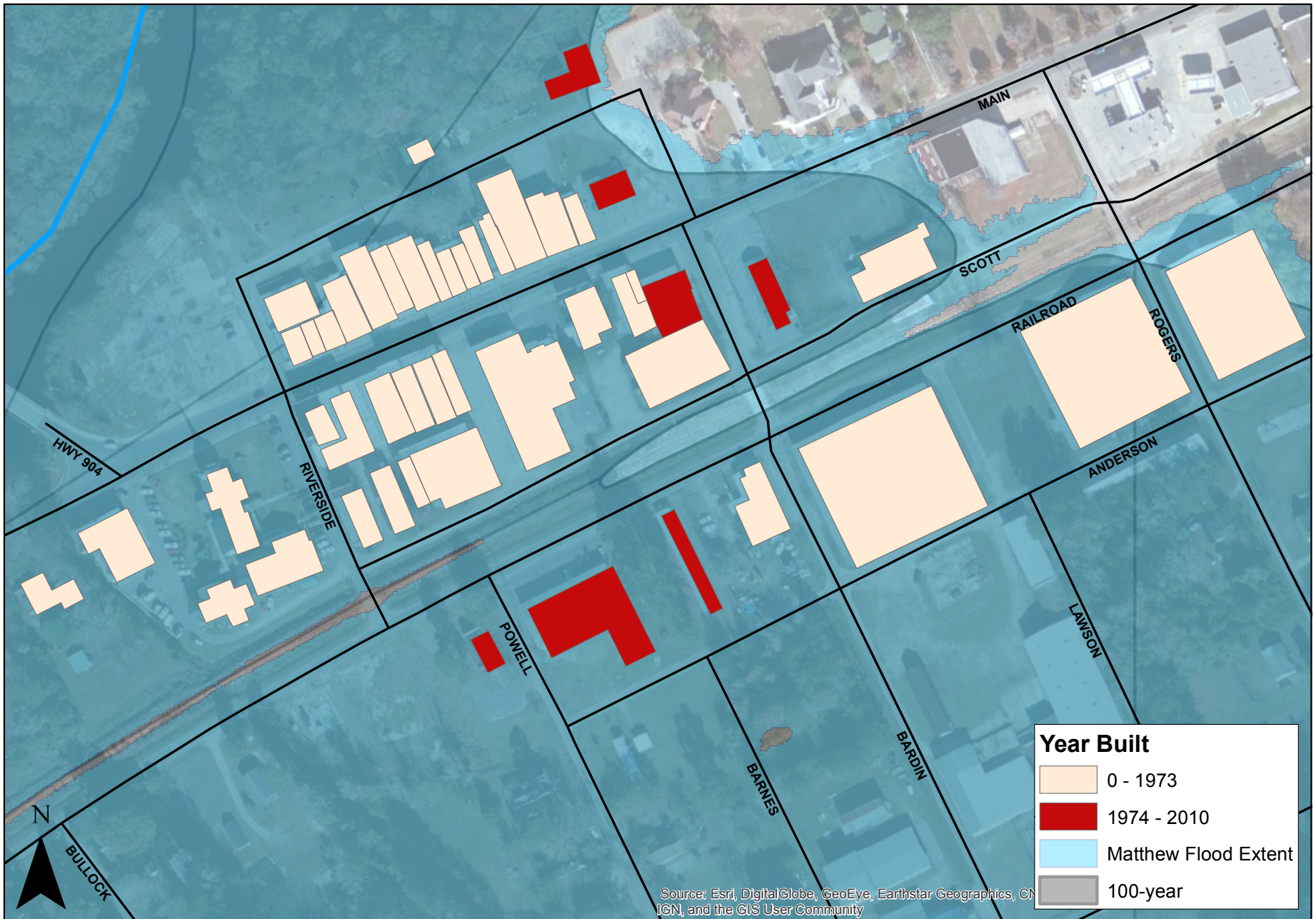
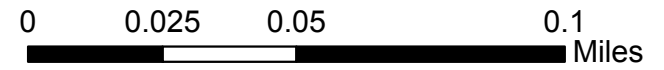


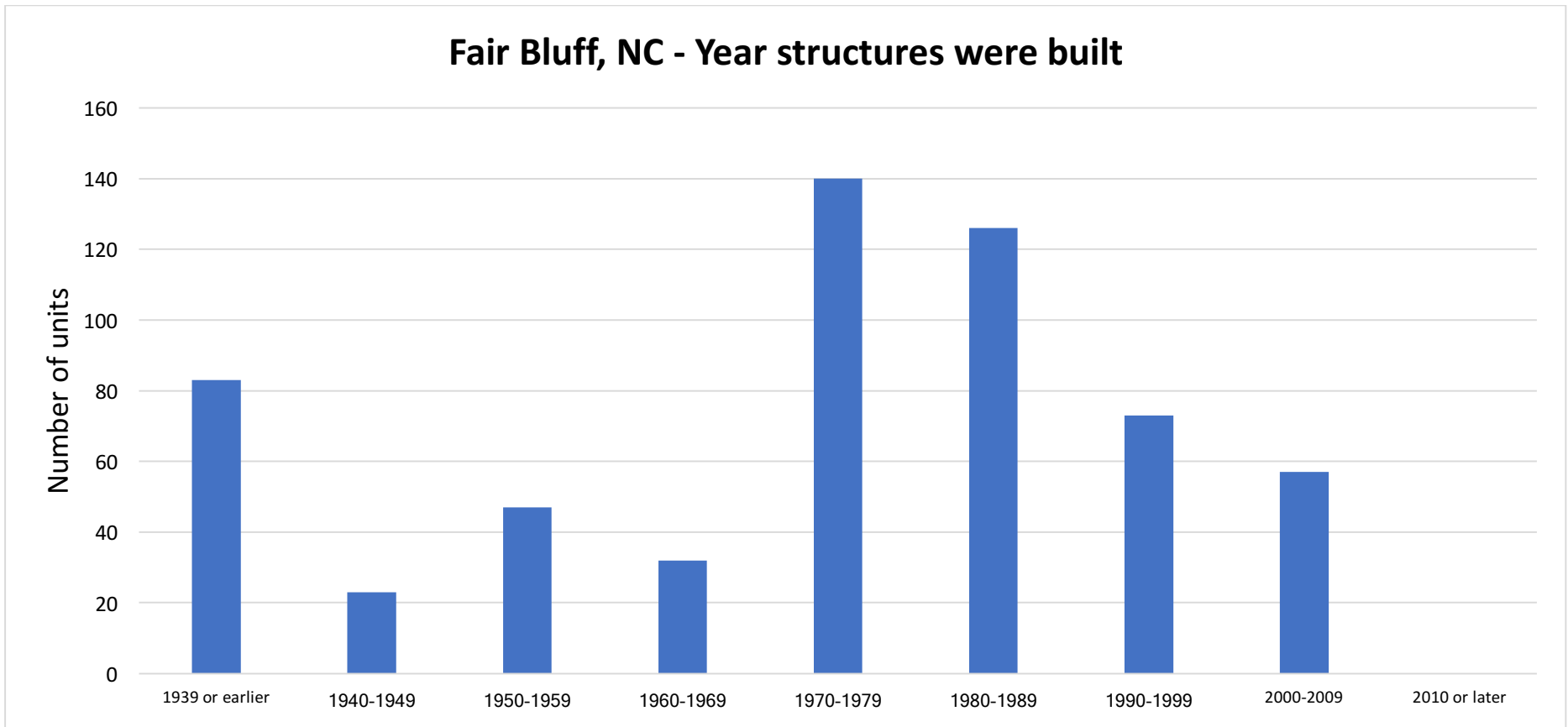
Most of the buildings in Fair Bluff were built in the early 20<sup>th</sup> century, before the NFIP was formed and the Flood Insurance Rate Maps were developed. It is likely many of the buildings would receive significant subsidies for their flood insurance policies if they had flood insurance. According to North Carolina's Flood Rate Information System (FRIS), the majority of these older structures premiums would cost under \$1,000 a year with the entire range of those buildings built in 1960 or earlier being between \$450-1,850 per year.



# Downtown Fair Bluff, NC

## Year Structure Built

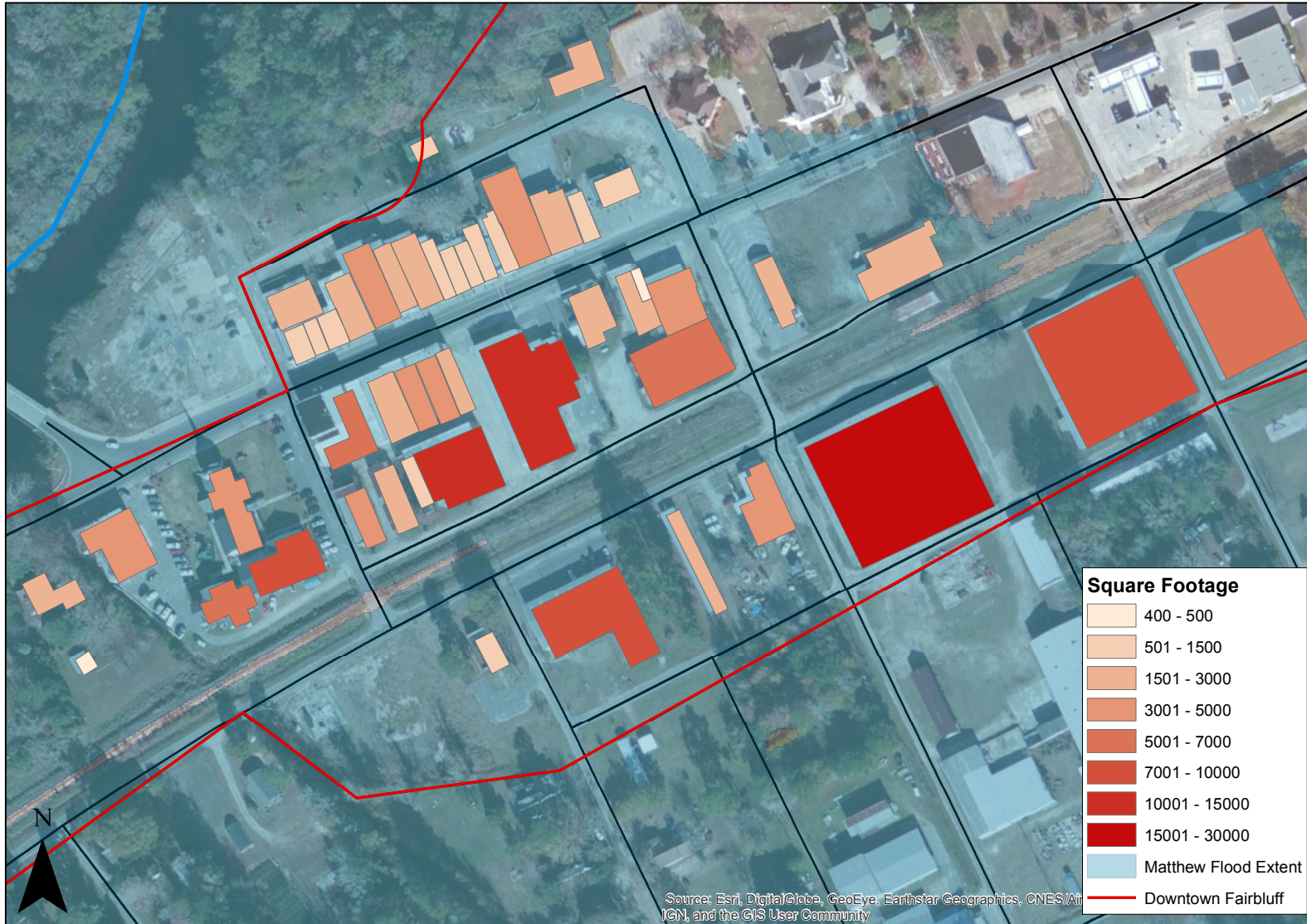
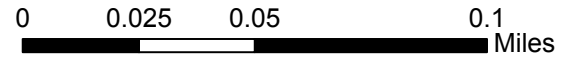




Fair Bluff’s initial flood insurance rate maps (FIRMS) were drawn in 1987 and the most recent updates of those maps occurred in 2007. The majority of downtown Fair Bluff buildings were built prior to 1980. The previous map (p. 27) indicates the majority of structures were built before Fair Bluff joined NFIP.

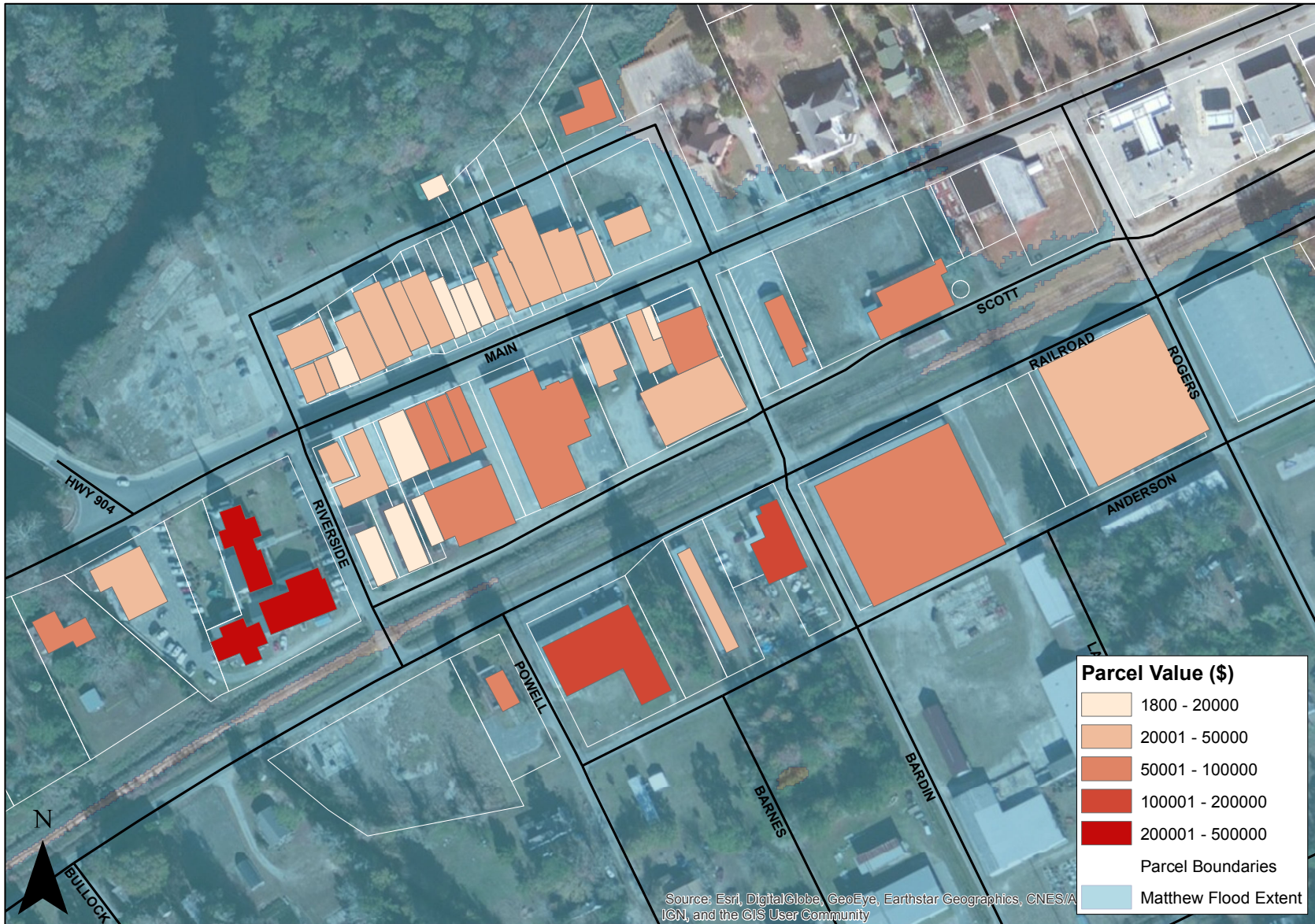
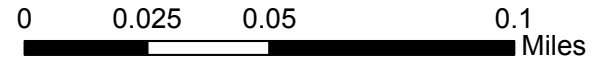
In downtown Fair Bluff, parcels closest to the river have lower values compared to those further away. This indicates a relationship between the riverine flooding and the market perceived value of the buildings. If these buildings were to be flood proofed, it is possible their values would increase. Some structures share the same parcel which means that each building was given the parcel value for the entire parcel, not just the portion they occupy.

# Downtown Fair Bluff, NC Square Footage



The map of square footage per buildings to the left describes the square footage per structure flooded by Hurricane Matthew. Later in the report in Section 3: Hurricane Matthew, it will be clear that the dollar amount in damage does not necessarily increase as the structure's square footage increases.

# Downtown Fair Bluff, NC Building Parcel Value

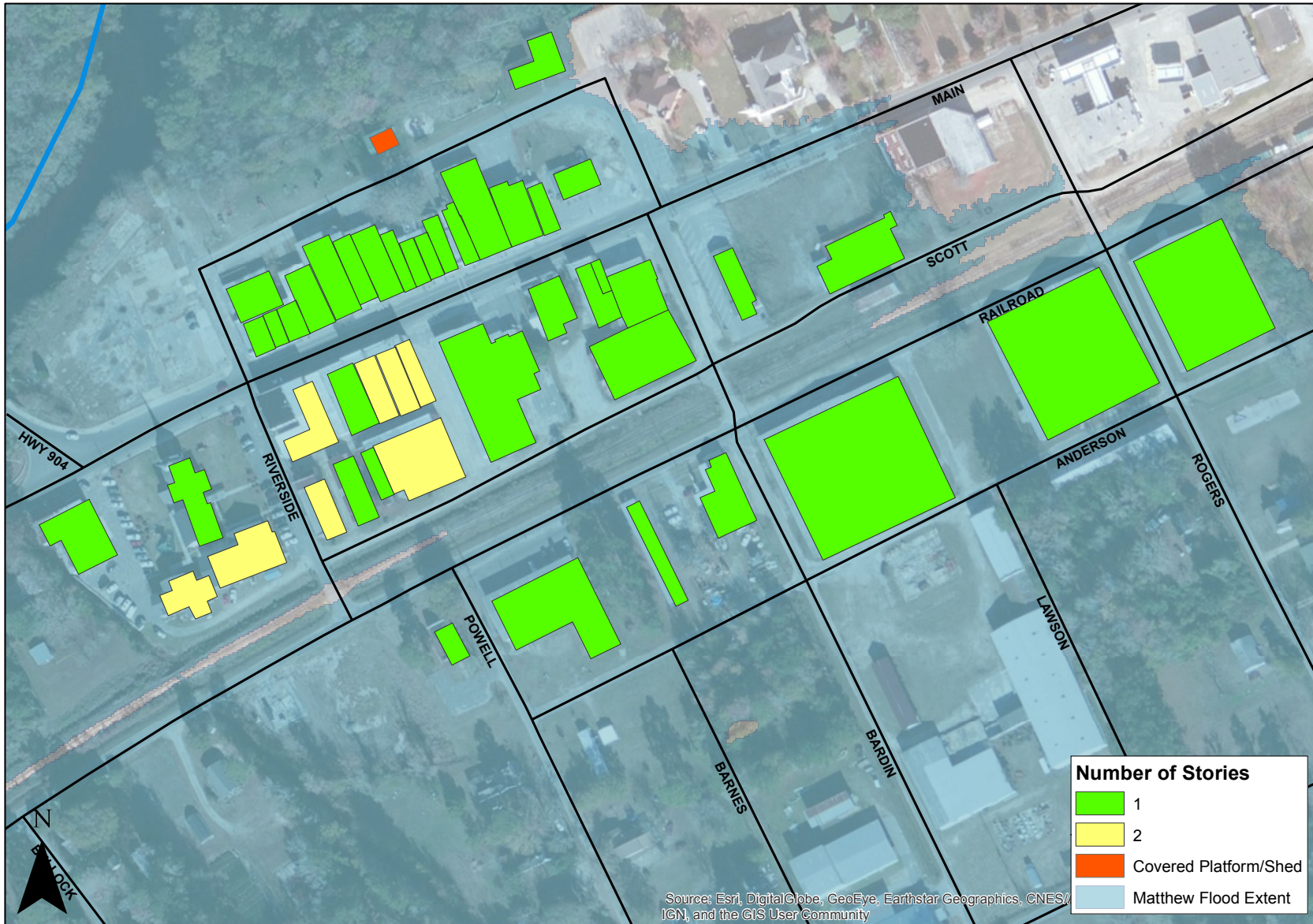


The older structures in Fair Bluff are lower in value than the newer. Specifically, the north end of downtown is older than the south side and parcel values reflect this indicating the older, the building the lower its value.

# Downtown Fair Bluff, NC

## Number of Stories

0 0.025 0.05 0.1 Miles

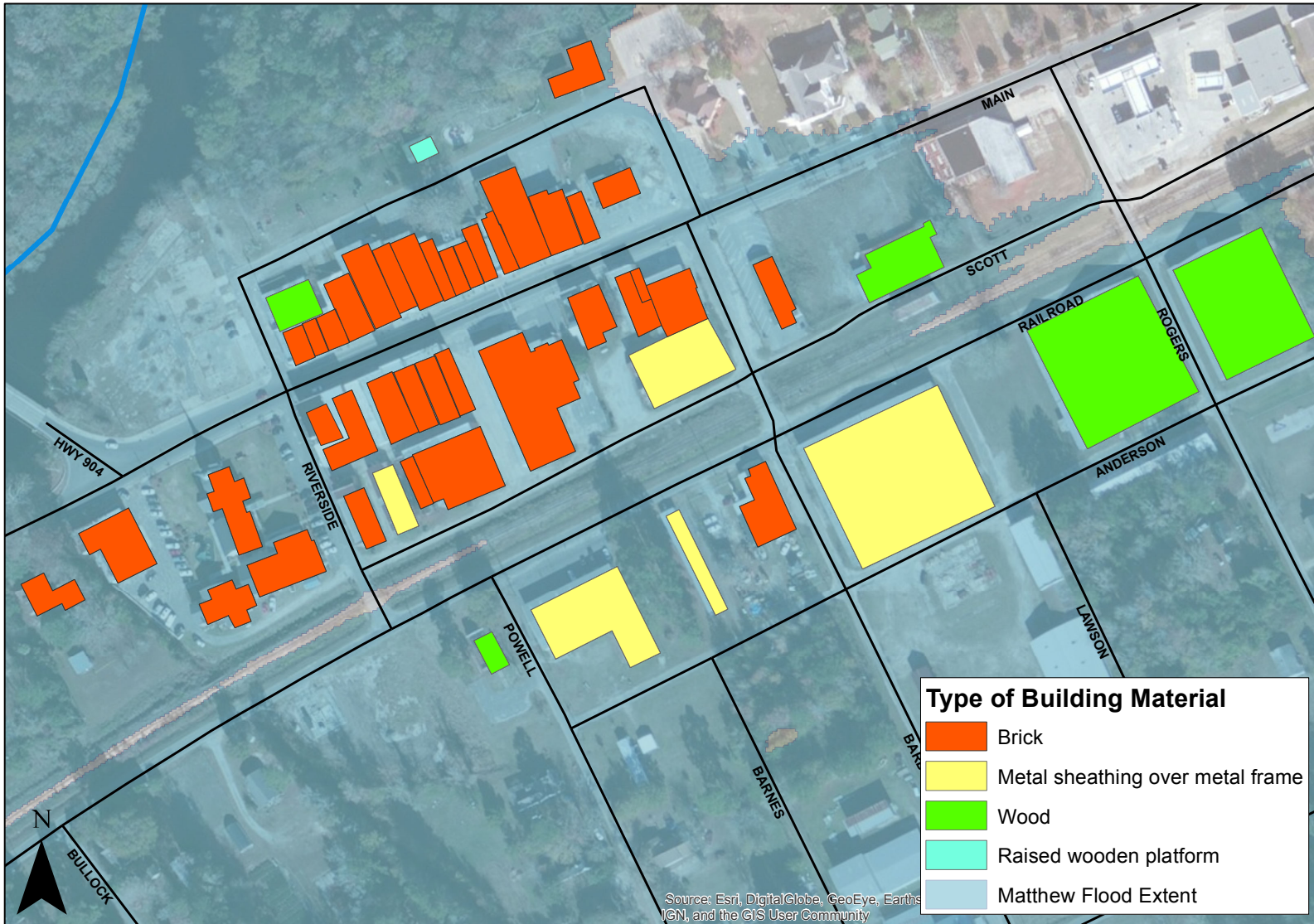


Most buildings in the downtown area are one story with a few exceptions being the Methodist Church, a municipal building, and some retail space on the south side of Main Street.

# Downtown Fair Bluff, NC

## Type of Building Material

0 0.025 0.05 0.1 Miles



The building material type refers to the exterior of the building. The structural make-up and interior of the structures is unknown and requires onsite analysis. Most of the downtown buildings are brick and one-story. Many of the buildings furthest from the river on the south side of the downtown are made of metal sheathing or wood and possibly a combination of both.

# V. Data Sources

## **Introduction/Background Information**

Development Finance Institute Report – Downtown Fair Bluff Recovery: Market and Financial Analysis. July 2017.

## **Fair Bluff Characteristics**

ACS 5-year Estimates (2015)

ESRI Business Analyst (2016) via DFI Report

## **Building and parcel level data**

NCEM and NC OneMap - Columbus County Tax Assessor <<http://data.nconemap.gov/downloads/vector/parcels/>>.

Number of stories and foundation type data taken from NC FRIS <<http://fris.nc.gov/fris/Home.aspx?ST=NC>>.

## **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 garage 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 approx. 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 below 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 small 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 2nd floor	JDB
62	17749	FB	Z	Already repaired Not substantial damage Dry floodproofing is an option	JDB
63	18043	FB	AA	Minor flooding <substantial damage 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/rebuild 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 structurally 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 included 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 Town Hall Could elevate floor Actually 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	Florist High ceiling – hardwood floor – elevate floor? Note: the conditions to the rear of the building do Not immediately lend themselves 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	<p>Actually two buildings</p> <p>Fair Bluff Family Practice Clinic - should have gone with "w"</p> <p>HVAC to be elevated</p> <p>Different slabs - would require significant work to seal up</p>	JM
159	17964	FB	W	<p>Carolina Class Salon</p> <p>Pressed tin ceiling</p> <p>Raise flooring - Note: ceiling at 14'</p> <p>Some wet floodproofing - removable panels for ease of drying out</p> <p>Remember the constraint of interdependency of buildings</p>	JM
160	17965	FB	Y	<p>Senior Center</p> <p>Address: 1100 Main St (at one point was a Red Lion Food Center)</p> <p>Raising floor could be a hardship - skirting red flag due to interdependency with other buildings</p> <p>Consider wet floodproofing traditional with flooring et al.</p> <p>County has already cleaned it out</p> <p>Drop ceiling, raise floor?</p> <p>Use the building for another function</p>	JM
161	17749	FB	Z	<p>Fuel tank to anchor or elevate or both</p> <p>Yokos</p>	JM
162	18043	FB	AA	<p>Scott Properties</p> <p>CMU sides one back, brick front, and one side</p> <p>Back = storage?</p> <p>Elevate the HVAC</p> <p>Consider dry floodproofing</p> <p>Need sealant, a number of intrusion points</p>	JM

# **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 (SHPO) 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 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 hygroscopic 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 that 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.