



# HELL OR HIGH WATER

**RESILIENT RECOVERY THROUGH DESIGN**

**A SMALL TOWN'S STRUGGLE TO SURVIVE THEIR RISKY POSITION**

**NC STATE** College of Design

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MLA Student Final Project Report

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## HURRICANE MATTHEW DISASTER RECOVERY AND RESILIENCE INITIATIVE (HMDRRI)

The Hurricane Matthew Disaster Recovery and Resilience Initiative was initiated by the Director of the North Carolina Division of Emergency Management in an effort to tap the intellect and abilities of our Universities in support of improved recovery and mitigation. Concurrently, the University of North Carolina's Policy Collaboratory approached the US Homeland Security Coastal Resilience Center to similarly request assistance in helping communities recover from Hurricane Matthew. As a result, the NC Policy Collaboratory and the North Carolina Division of Emergency Management join forces to establish the Initiative.

Emphasis for the Initiative is to response to issues raised in the Spring 2017 Resilient Redevelopment Plans and the State of North Carolina CDBG Action Plan. While data collection and analysis underpin this effort, it is not a research program. Rather, the underlying element of the HMDRRI is to provide help that is not traditionally addressed in post-disaster programs. Key projects include:

- 1) The development of disaster recovery plans,
- 2) Housing assistance strategy (including housing relocation guidance and housing analysis),
- 3) Housing Designs to inform the construction of affordable housing,
- 4) Open Space Guidance (for areas subject to buyout of flood-prone housing),
- 5) Flood Retrofit of Historic Downtowns, and
- 6) a Financial viability assessment of downtown business districts.



## THE COLLEGE OF DESIGN

The College of Design brings together some of the most creative minds from around the world whose interests and expertise span a variety of disciplines. This inspiring and elite group of faculty who provide the experience of academia and professional practice prepare designers to go out and shape the world.

Good design is needed. Now more than ever, design plays a major role in the development of everything from branding to product development and even business practices and procedures. The size and shape of mobile devices; the animation we see on the big screen; the materials used in the buildings we enter – design touches everything around us.

In response to an ever-expanding global interest in all disciplines of design, the College's curriculum is customized to incorporate relevant practices that prepare students for a career in design. Effective design requires attention and sensitivity to the social, economic, political, cultural, and behavioral understanding of the environment and people. Each program within the College of Design is intended to develop the designer's perception, knowledge, skills and problem-solving abilities to develop design solutions for public interest and to serve the needs of users.

The College of Design offers comprehensive undergraduate and graduate degrees in architecture, art + design, graphic design, industrial design, and a graduate degree in landscape architecture. In addition, the College offers a Ph.D. in Design. A selective admissions process ensures a highly motivated and diverse design community. This unique interdisciplinary learning environment ensures that students learn to collaborate with others and see things from new and diverse perspectives.

## NC STATE DEPARTMENT OF LANDSCAPE ARCHITECTURE

Landscape Architecture at NC State has a rich legacy and reputation built on preparing graduates for the rigors of professional practice, leadership, community engagement and research. Graduates are employed in consulting firms, municipal, state and federal agencies, universities, land trusts, start-ups, and new enterprises, engaged in the ever broadening range of activities that embodies landscape architecture.

The department of the program is to teach, learn, research, and apply state of the art practices that create innovative and resilient solutions for landscape situations focused on human and ecosystem health, social equity, and quality of life.

The program emphasizes evidence-based inquiry and design-thinking strategies that position students and graduates to engage with and propel the landscape architecture profession into the future as it evolves in response to environmental and societal imperatives.

**NC STATE**  
College of Design



- Purpose & Scope ○ ①
- Context & Character ○ ②
- Demographics ○ ③
- Flood Impacts ○ ④
- Design Workshop ○ ⑤
- Survey ○ ⑥
- Highground ○ ⑦
- East Town ○ ⑧
- Riverside ○ ⑨
- Main Street ○ ⑩





Inland flooding and extreme rainfall events are a growing concern both regionally and nationally, as these events are mounting in intensity and frequency. The small town of Springs, North Carolina was not immune to the devastating impacts felt from Hurricane Matthew in October 2016. Even as both communities are actively engaged in the process of recovery, the future looms heavy with the understanding that the residents of these two communities will be living with floods. Nearly a year ago, Hurricane Matthew made landfall as a category one hurricane; as it surged northward, it caused unprecedented flooding across the Southeast. FEMA alongside North Carolina State Emergency Management responded, and recovery is ongoing. However, it has become clear that current hazard mitigation and disaster response frameworks do not match the ever-increasing reality of extreme flood events. Current efforts use elevation/relocation/rebuild as a primary strategy; however, their outcomes yield a narrow definition of success with little attention to land-use transition and a fragmented community. This is where the power of design and the tools of landscape architecture can have a transformative and inspirational impact on impacted communities. Current relocation efforts are designed and executed in a top-down socio-political and financial framework, with impacted citizens having little ability to direct the relocation process. As shown in post-Katrina efforts, direct government-to-landowner relationships during hazard mitigation and disaster recovery have been stymied by preconceptions and lack of trust between officials and communities. These major problems are uniquely suited to planning and design-thinking approaches that create innovative solutions for problems related to forced migration and community cohesion.

*Credit: Andrew Craft - Fayetteville Observer - Hurricane Matthew*

The scope and intent of this project is directed both by the mission of the Hurricane Matthew Disaster Recovery and Resilience Initiative (HDMRRI) and direction from NC State faculty and professional leaders involved in design strategies for resilient redevelopment.

An overarching driver throughout the project efforts is to employ the tools and process of design into the current framework for disaster recovery.

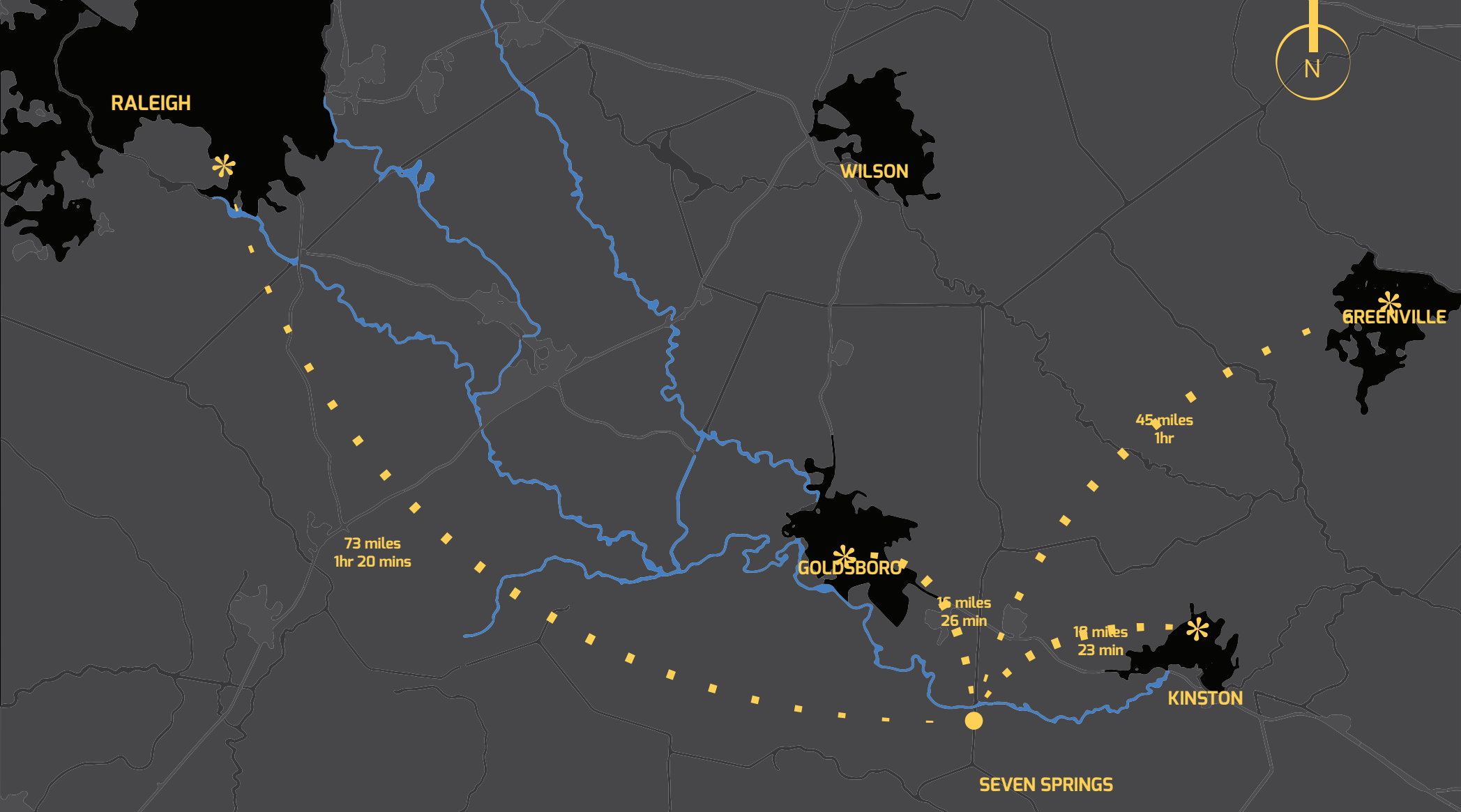
Application of design process and thinking in the disaster recovery framework is a new concept. Within the field of landscape architecture, both MIT and UC Berkley offer courses in disaster resilient design, and the American Society of Landscape Architects (ASLA) have devoted a section of their website to resilient design for natural disasters. In response to the destruction from Hurricane Sandy, the federal government alongside the Rockefeller Foundation created a design competition that has since snowballed into the first true model for the broad application of design in disasters called Rebuild by Design. This effort, while at a much smaller scale, attempts to apply the process and tools used in landscape architecture to improve recovery outcomes for a community struggling to exist after the destruction of Hurricane Matthew in October 2016.

The project's scope is limited to a single town in Eastern North Carolina and was conducted during the 3 month period from September to November 2017.

The town of Seven Springs is one of six towns that the State of North Carolina has identified for focused support through HDMRRI. Each of the six towns will go through a visioning and planning process that leads to a recovery plan, however, in Seven Springs this process has been adapted to incorporate design tools and process. This includes a focus group and design workshop with a final presentation of recommended design strategies that reflect the workshop outcomes.

An secondary intent for this project is to study the impact of public engagement in the design workshop. To accomplish this aim design workshop participants were administered an intake and exit survey meant to elicit changes in mentality sourced from the workshop activities. Desired outcomes from the impact survey set are two fold: to inform future efforts to include design in recovery and to substantiate the value of the design process in public engagement.

The outcomes from this project will be incorporated carried on in the Seven Springs recovery plan developed by HDMRRI and relevant project documents will be submitted to the town of Seven Springs.

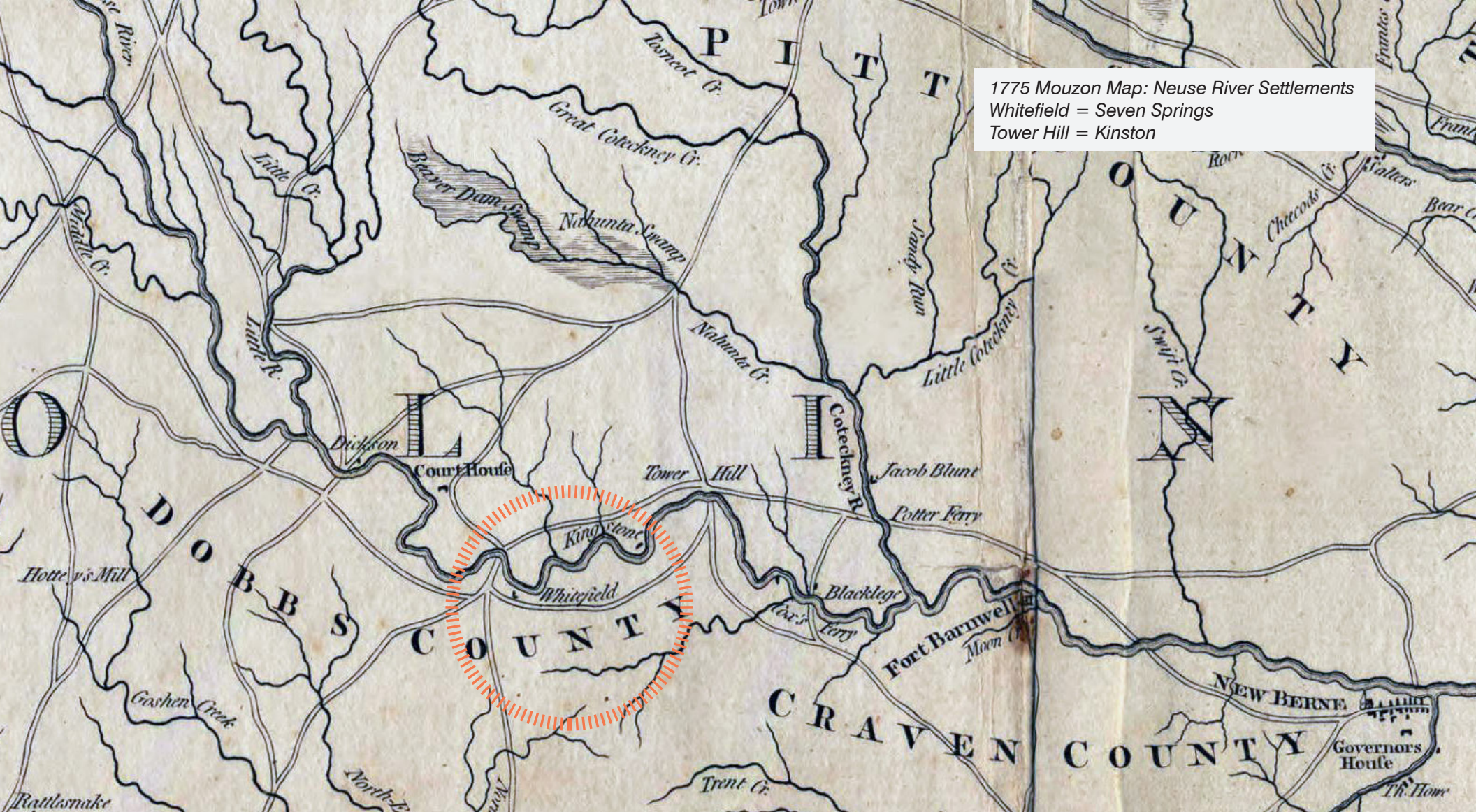


# CONTEXT

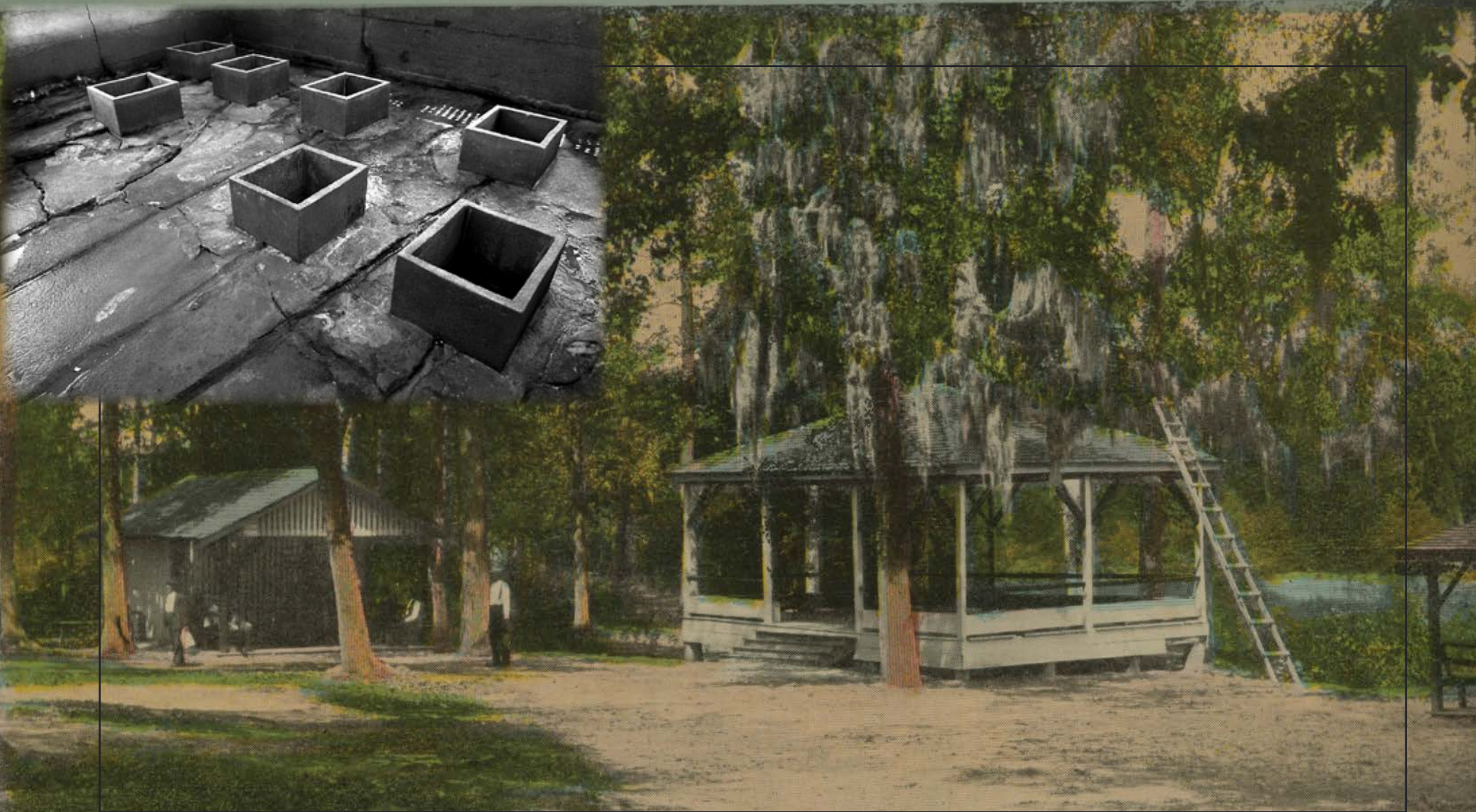
The town of Seven Springs is an historic, river-town located in Wayne County, North Carolina. Just over 70 miles southeast of Raleigh, and an equidistant 17 miles from Goldsboro and Kinston, Seven Springs has the unique position of rural yet accessible. Before recent flooding, Seven Springs hosted a fire/rescue squad, a post office, two restaurants and several other small businesses however, residents must travel out of town for basic services like grocery, gas and medical services. The town has two active churches with racially divided congregations: St. Rest Holy Church, and the historic Methodist Church (org. 1874 Presbyterian); there is a large Baptist Church just outside of the town limits that welcome public events from the community. The town's relationship with the Neuse River including its Wildlife Resource Commission boat landing attracts enough attention to support the Neuse River Trading

Company's offerings of camping, river tours, fishing supplies, and boat rental. Other town amenities include Seven Springs Community Park and a civil war memorial to the Battle at Whitehall. Seven Springs location makes it a perfect weekend destination for more than **3.8 million** residents living within a 100 mile radius of the town. Easy access to the river and less than a mile downstream from the Cliffs of the Neuse State Park, the town of Seven Springs is well positioned for river-centered recreation, weekend camping, and event programming like festivals, concerts and weekly or monthly 'shindigs' that can pull people from Goldsboro, Kinston and Mt. Olive.





1775 Mouzon Map: Neuse River Settlements  
 Whitefield = Seven Springs  
 Tower Hill = Kinston

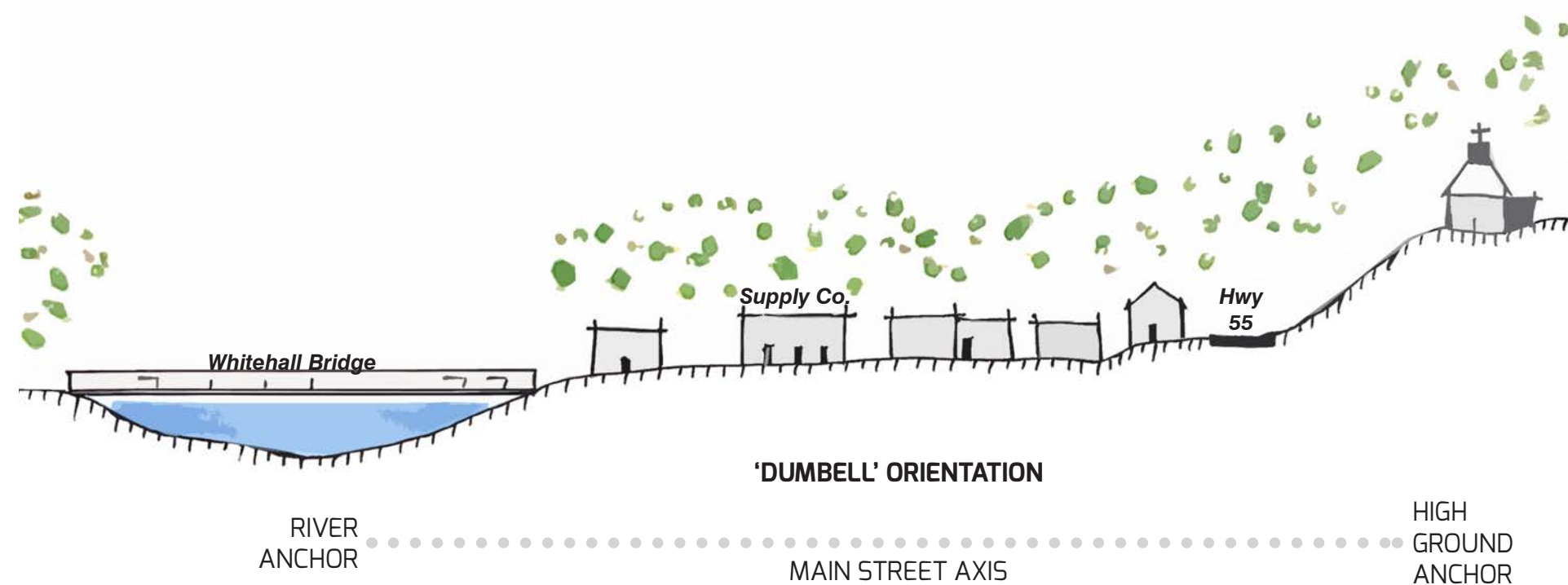


The earliest record of European settlement in the Seven Springs area reach back to 1710 and is referenced on the Mouzon map from 1775 with the title of 'Whitefield' named after the colonizing family surname; it's 1851 incorporated name of 'Whitehall' was later changed to Seven Springs in 1880 and is considered to be the oldest community in Wayne County. The town historic and bucolic character lends a strong argument for the continued preservation of historic structures alongside a campaign to develop a cohesive narrative that can be woven into the landscape with cultural trails, monuments, museums and other programming that celebrates the town's story. In the early 1900's the Whitefield family captured spring water using a cement floor with seven openings to direct the water. Soon after the family built the Seven Springs Hotel and Resort using the spring water to create

pools and selling the water as a cure-all for ailments. The resort gained in popularity of the coming decades, attracting visitors from across Eastern NC who were often told, 'if the water can't cure you, the whiskey surely will.' Seven Springs Hotel has closed and the resort pool and cottages are grown-over, however, the Whitefield (now Maxwell) family heirs still own the site and structure along with much of the property in the area. Notably, the Spring house had a public pavilion that was often the center of community events and offered respite and good prospect to the river for passersby and locals alike. Current town commissioner, Rhonda Hughes, spoke about the importance of the pavilion to the community in previous generations and noted that there are existing construction details that would allow for and replica pavilion to be constructed.



The Neuse River area including Seven springs was inhabited and well-traveled by the Saponi tribe of the Tuscarora. The town has a history of struggle for survival beginning with Battle of Whitehall during the civil war. The battle was an offensive from the Union army in an attempt to destroy the Ironclad Ram Neuse being constructed on the banks of the river. Despite a near complete destruction of the town, the Confederate army held their ground as the Union troops retreated to Kinston. As the smoke cleared from the war, Seven Springs became a destination for vacationers across Eastern North Carolina. Visitors came for the mineral springs and resort run by the original Whitfield family, the hotel and spring pools still stand today but are no longer open to the public. In addition to its continued service as a trading stop between Kinston and Goldsboro, Seven Springs was the closest river landing to the Cliffs on the Neuse, a popular day trip for folks across the region. In 1921 a fire swept the town destroying all the businesses and some of the homes leaving virtually no visible signs of a town. Since the fire the town has slowly re-built but has not enjoyed the attention it once had during its hay-days in the early 19th century. Whitehall bridge still plays an important role in the town structure as it extends the main street axis across the Neuse River to the opposing banks. This historic connection holds opportunity as a conduit for river-centered tourism and recreation to access the nearly pristine riparian areas across the river and supporting the larger historic narrative that highlights the Civil war battle with soldiers on either side of the Neuse.



Seven Springs feels like an historic small town in large part because of the axial relationship its main street plays along the topographic transect from river to highground. Although this positioning is at the heart of the town's struggle with repetitive flooding, it also created a sense of place that touches visitors and residents alike. For many, the historic narrative alongside these geographic elements of the town make it a place well-worth rebuilding, leaving the question of how to re-build in a way that stops the repetitive loss cycle.

# CHARACTER





This historic family home built in 1900 is located on a large lot just adjacent to the General Supply Co. building. Although the basement and electrical infrastructure of the home was damaged in during the flood, the potential for renovation is good. The Shivar family lives nearby in Seven Springs and Goldsboro but the home remains unoccupied since the flood. With its central location and historic character this home could serve as Bed & Breakfast or Town Museum or library if properly floodproofed. As one of a number of historic and damaged homes in Seven Springs, the recovery effort should actively engage state preservation leaders like Preservation NC and the State Historic Preservation Office to work with the FEMA HMGP program to keep these important pieces of history from being demolished. One strategy that has been discussed is to transfer the cost of purchase and demolition to a preservation organization that could commit to relocation, historic renovation and sale in a flood protected areas within or adjacent to the town.



Housing values are low in Seven Springs, even lower now that much of the town's housing stock is severely flood damaged. Falling home values are trouble for the town's tax revenue, however, there is also opportunity revealed for good investment in renovation and restoration of historic and notable structures in town. Floodproofing measures or relocation must be considered for structures identified for preservation. With 65% of housing valued less than \$100K pre-flood, many homes may not be worth saving, HDMRRI in partnership with ASFPM specialists have conducted an assessment that is meant to help inform which structures in Seven Springs are suitable for renovation.



**\$75,800**

*Median value of owner-occupied housing*

*2/3rds of the amount in Goldsboro:  
\$110,400*

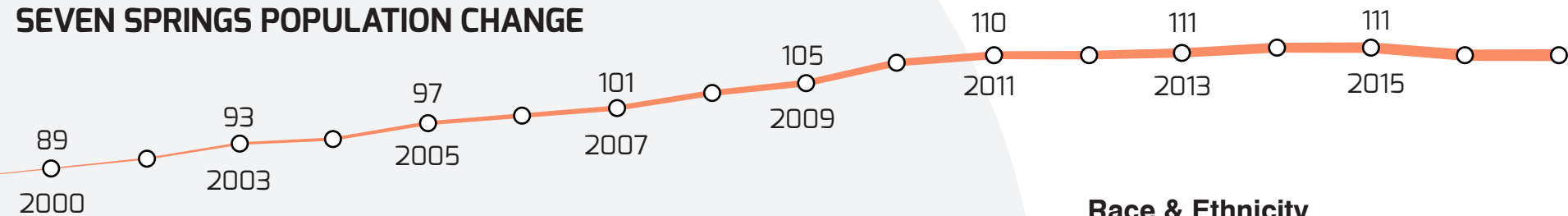
*1/2 the amount across NC:  
\$154,900*

Value of owner-occupied housing units





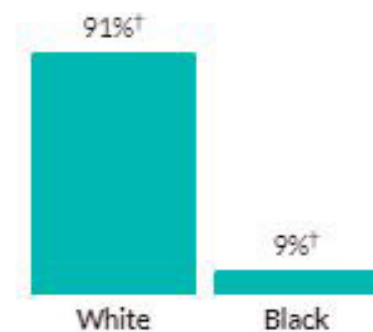
## SEVEN SPRINGS POPULATION CHANGE



As one of the smallest town's in North Carolina, Seven Springs population changes are minimal with a slow and creeping growth up until the recent population crash post-Hurricane Matthew. Mayor Potter noted that at it's lowest the population in Seven Springs reached ~5-10 residents but as of October 2017 has sprung back to approximately half its pre-flood population. It is important to consider that the population within a radius of two miles is more than 1000.

Poverty is a major issue in Eastern North Carolina - Seven Springs and its surrounding community are not immune, with more than double the poverty rate of Raleigh, but a slightly lower poverty rate than nearby Goldsboro (22.3%) and Kinston (38.8%).

## Race & Ethnicity



# 20%

Residents living below poverty line

90% of the rate in Goldsboro, NC  
Metro area: 22.3%

20% higher than the rate in North Carolina: 17.4%

## SEVEN SPRINGS INCOME & AGE

# \$20,817

Per Capita Income

about the same as Goldsboro, NC  
\$21,204

about 80% of the State average:  
\$25,920

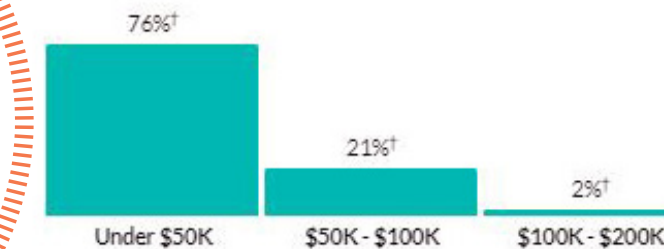
# \$31,250

Median Household Income

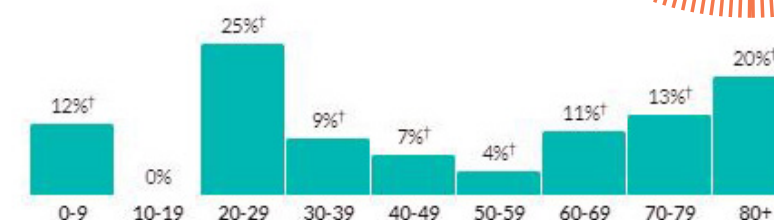
about 3/4 the amount in Goldsboro, NC  
\$40,390

about 2/3rds of the State average:  
\$46,868

## Household Income



## Population by Age Range



# 48

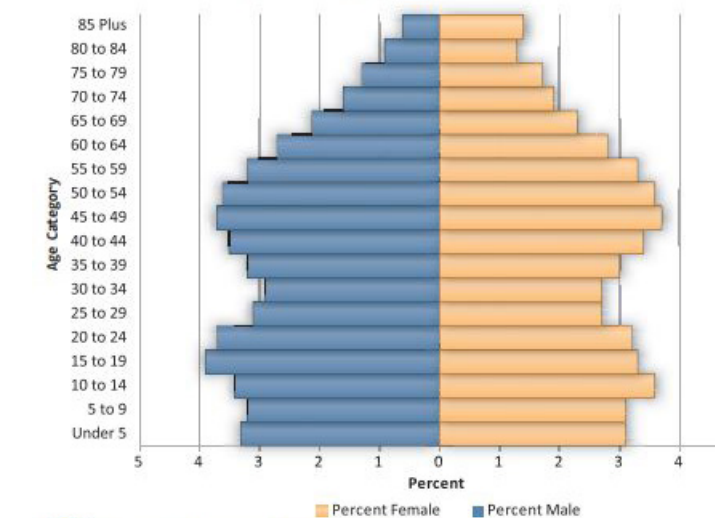
Median Age

Residents in Seven Springs do not fall along the national trend for age distribution, with a higher than normal population over 60 and a lower than normal middle aged population.

1.3 times the age in Goldsboro, NC  
36.7yrs

25% higher than the rate in North Carolina: 38yrs

## National Rural Population by Age and Gender, 2010



Source: HAC Tabulations of 2010 Census of Population and Housing

# DEMOGRAPHICS

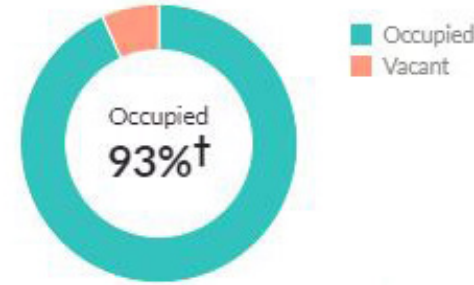
## SEVEN SPRINGS HOUSING

Although accurate housing data is not yet available for post-Matthew Seven Springs the pre-flood data shows relatively high occupancy compared to similar rural communities. The majority of housing is single family detached homes with the remainder being mobile homes. Although this is a common housing type ratio for small and rural communities there is tension within the community surrounding efforts to increase the mobile home housing stock.

Owner-renter ratios have certainly changed since Matthew flooding with the large majority of renters having relocated outside of town and a bastion of homeowners capable of rebuilding remaining in town.

Future housing efforts should consider the creation of flood-safe, housing available at several pricepoints to maintain the social and cultural integrity of the town. With no shortage of vacant property post-hurricane, opportunity for well-planned redevelopment development is feasible.

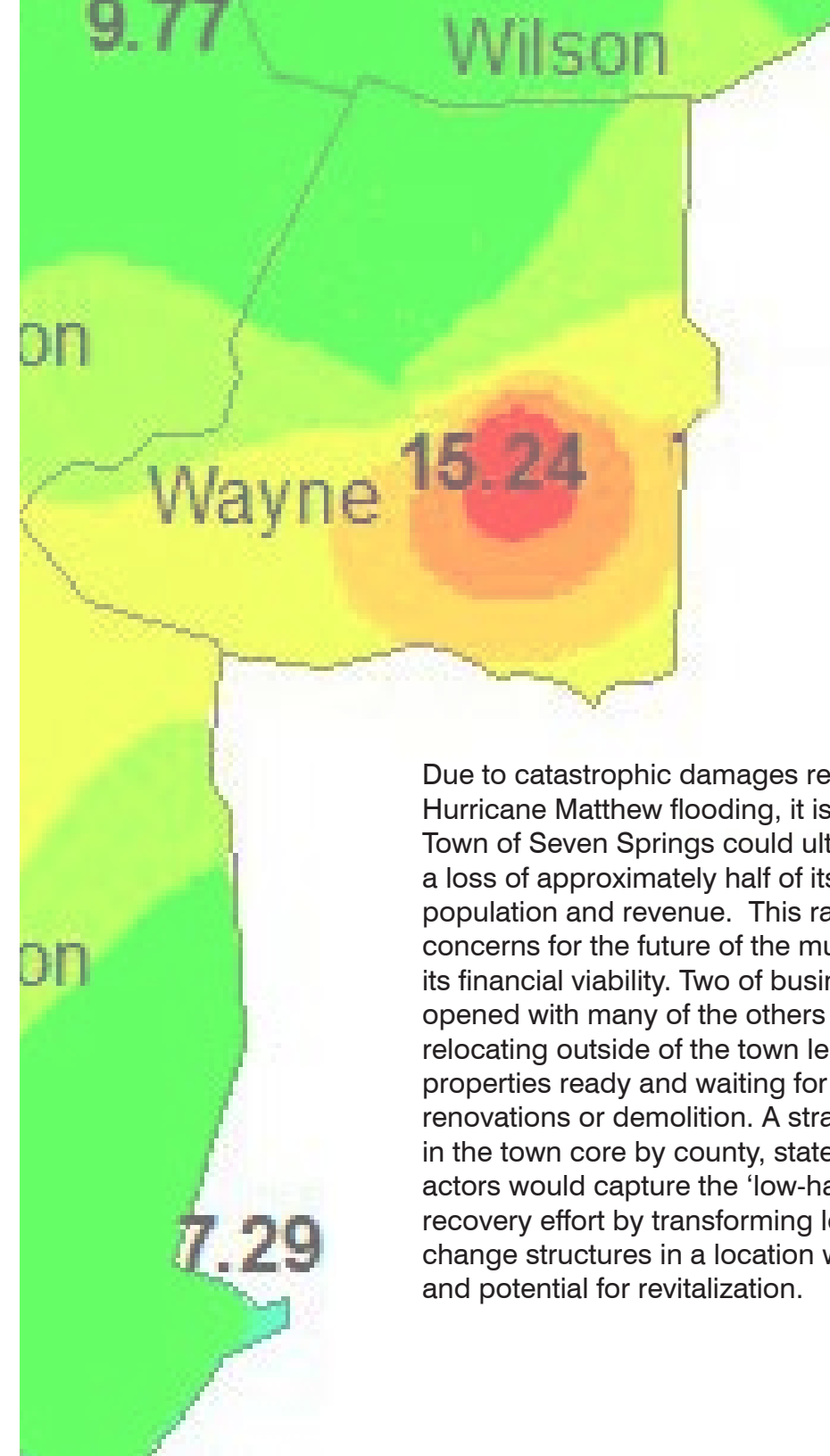
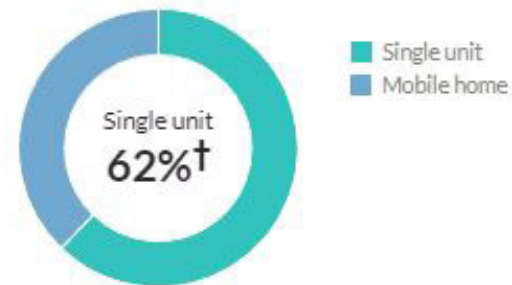
### Occupied vs. vacant



### Owner vs. renter



### Housing Type



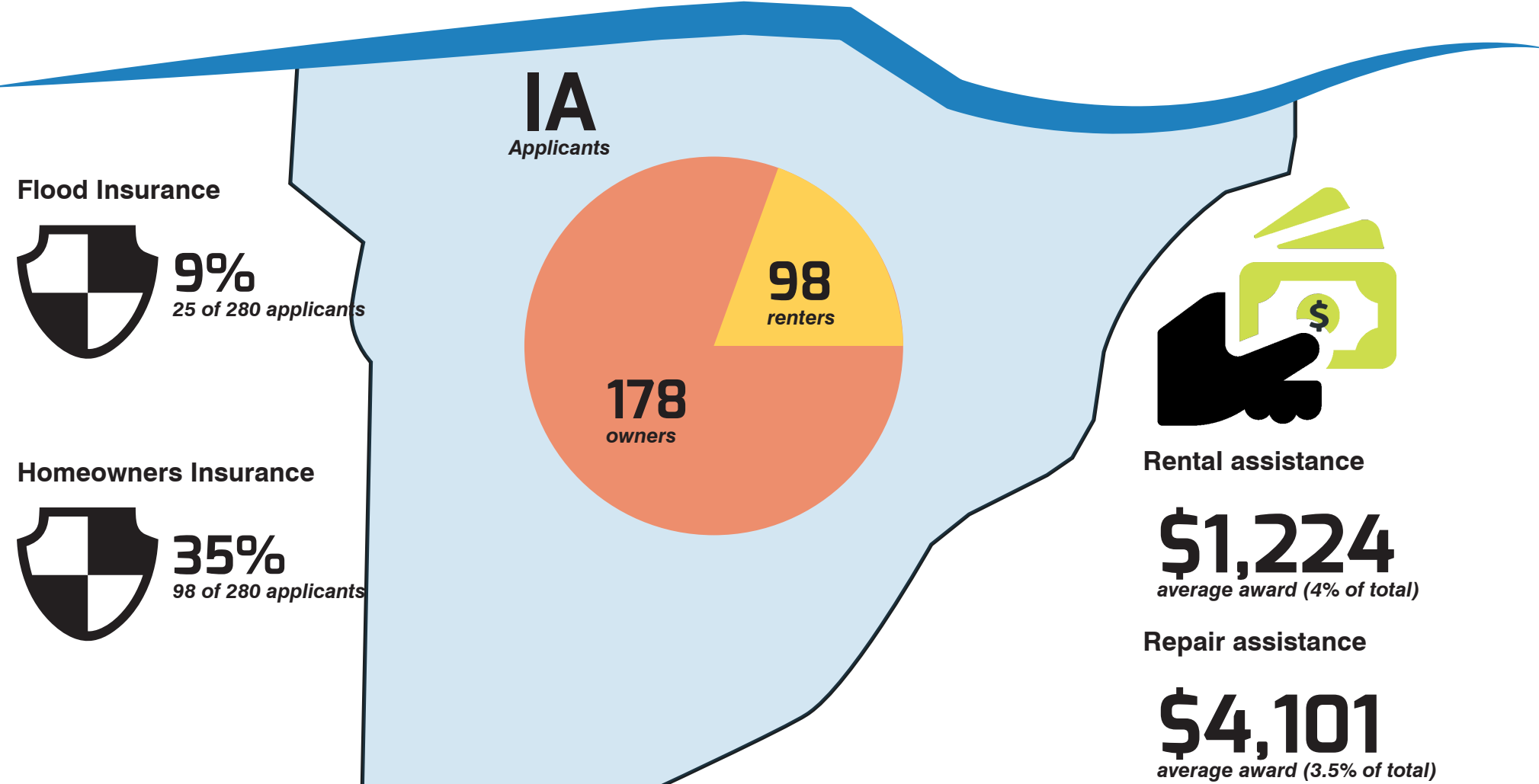
Due to catastrophic damages resulting from Hurricane Matthew flooding, it is anticipated the Town of Seven Springs could ultimately suffer a loss of approximately half of its pre-flood population and revenue. This raises serious concerns for the future of the municipality and its financial viability. Two of businesses have re-opened with many of the others permanently relocating outside of the town leaving many properties ready and waiting for flood-proofing renovations or demolition. A strategic investment in the town core by county, state and federal actors would capture the 'low-hanging fruit' of the recovery effort by transforming low-cost, ready-for-change structures in a location with deep history and potential for revitalization.



Credit: Shorty Jones

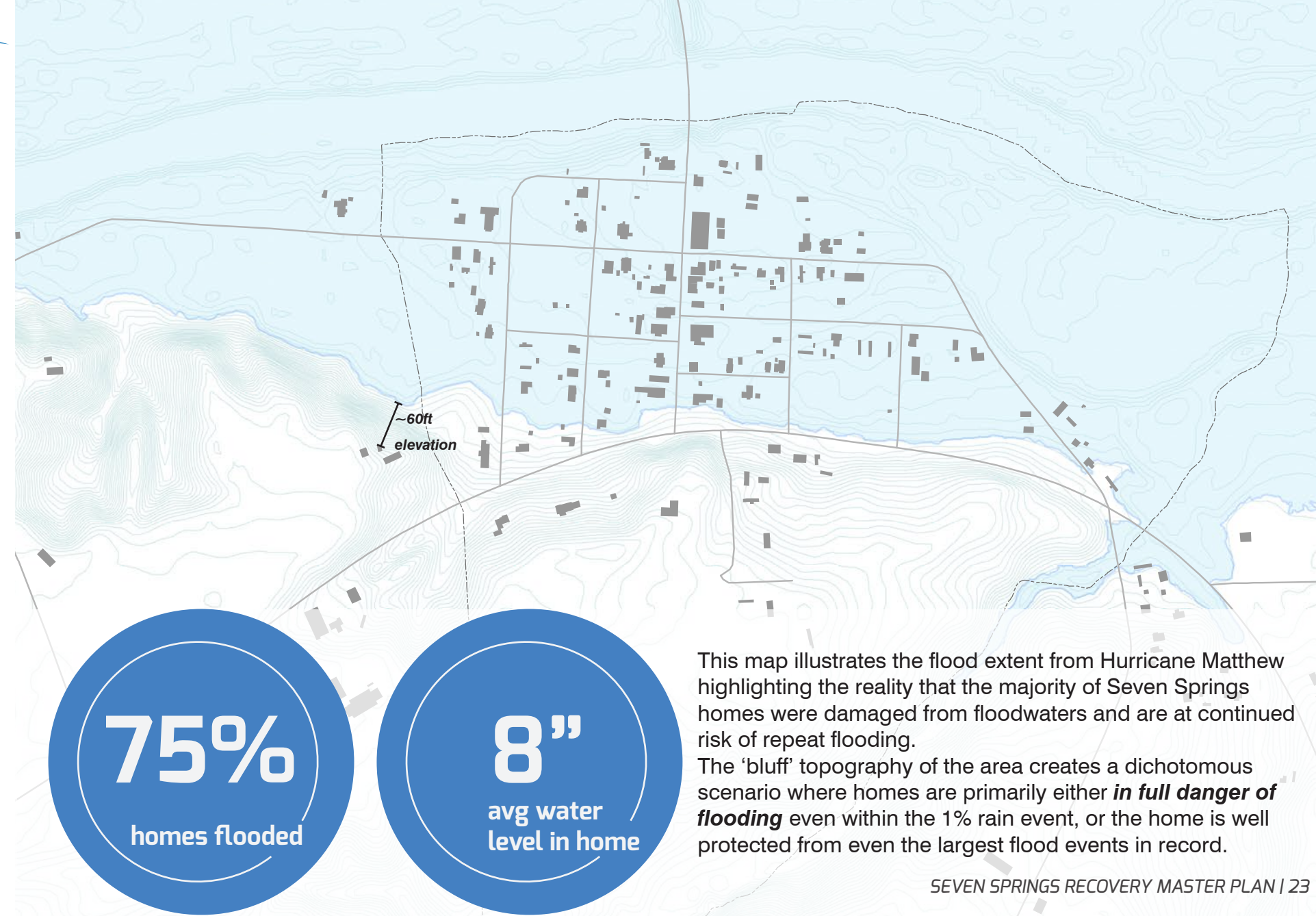


## FEMA FLOOD IMPACT & RESPONSE | SEVEN SPRINGS AREA INDIVIDUAL ASSISTANCE (IA)



FEMA's Individual Assistance data serves as a useful metric in understanding the impact of Hurricane Matthew on local residents. It is important to consider that not all affected households are necessarily represented by this IA data and the Seven Springs data includes residents outside of the town limits but within the Seven Springs zip code area. The owner vs. renter ratio for assistance is significantly higher than reported owner/renter housing ratio in Seven Springs indicating that IA assistance to renters may not have reached some of the affected population. Similar to other affected populations across Eastern NC, very few residents have flood or homeowners insurance.

## HURRICANE MATTHEW FLOOD INUNDATION AREA



This map illustrates the flood extent from Hurricane Matthew highlighting the reality that the majority of Seven Springs homes were damaged from floodwaters and are at continued risk of repeat flooding. The 'bluff' topography of the area creates a dichotomous scenario where homes are primarily either **in full danger of flooding** even within the 1% rain event, or the home is well protected from even the largest flood events in record.



## Workshop Intent

One-part 'research': collecting information, perspectives and desires from residents

One-part 'design process': Building a shared frame of understanding between residents then engaging them together in design thinking and process

## Event framework

Open house style event with 7 guided activity stations. Activities were sequential and laid out in a cyclical pattern from entrance to exit.

# WELCOME TO SEVEN SPRINGS RECOVERY WORKSHOP

NC STATE UNIVERSITY

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

The October 14th design workshop hosted by the Seven Springs Baptist Church brought together nearly half of the current population in town for a progressive engagement event. Each of the seven 'stations' built upon each other starting with an alternating mix of simple 'research' questions and graphic analysis that helped to frame the issue, broaden perspectives and break the ice. The last two activities brought participants into the design phase: first illustrating four conceptual design strategies for town recovery, then an invitation to participate in facilitated design with marks, trace and a map of the town.

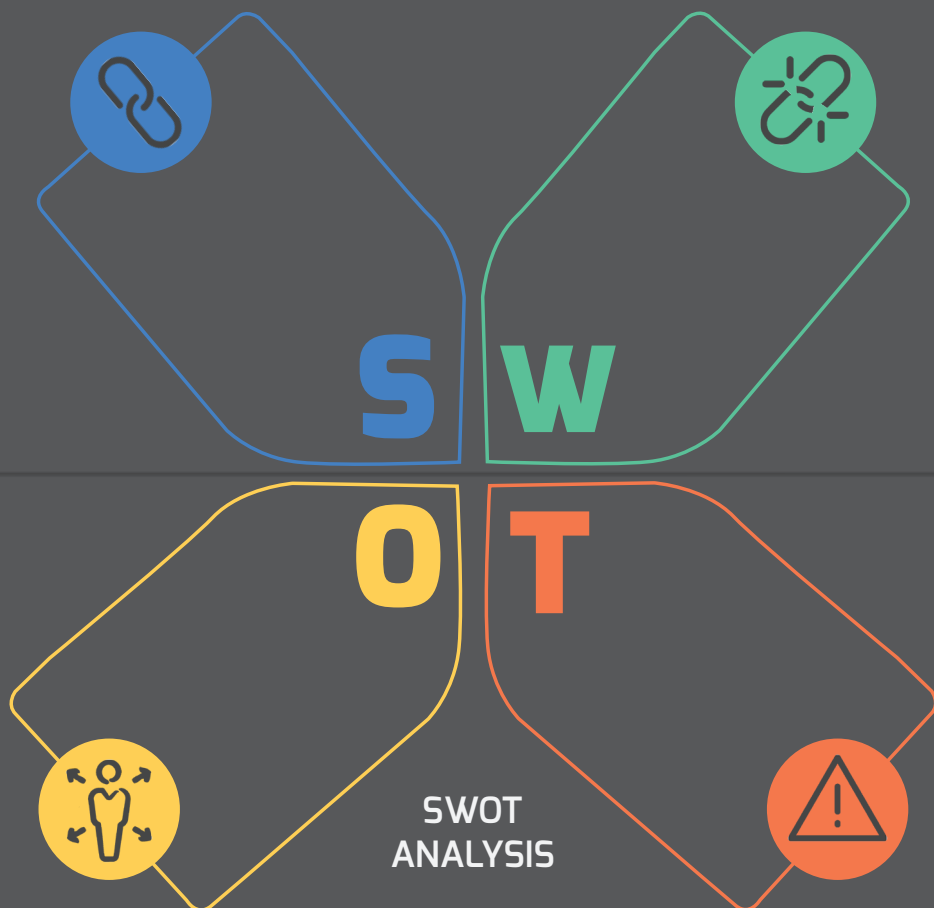
Although some of the participants came to the workshop hoping for direct assistance with their homes or businesses, most people embraced the design-thinking process, discussing with each other to workout ideas that could re-purpose damaged properties, make use of future buy-out lands, and ways of attracting and retaining residents and visitors alike.





## STRENGTH

Civil War History and Historic structures: Battle at Whitehall, Ram Neuse  
 Proximity to Goldsboro, Kinston and the Triangle.  
 Proximity to Cliffs of the Neuse and connection to the Neuse River



*A stronger Seven Springs through better planning*

Recreation destination  
 Historical tourism  
 Regional hub for retirees and elderly

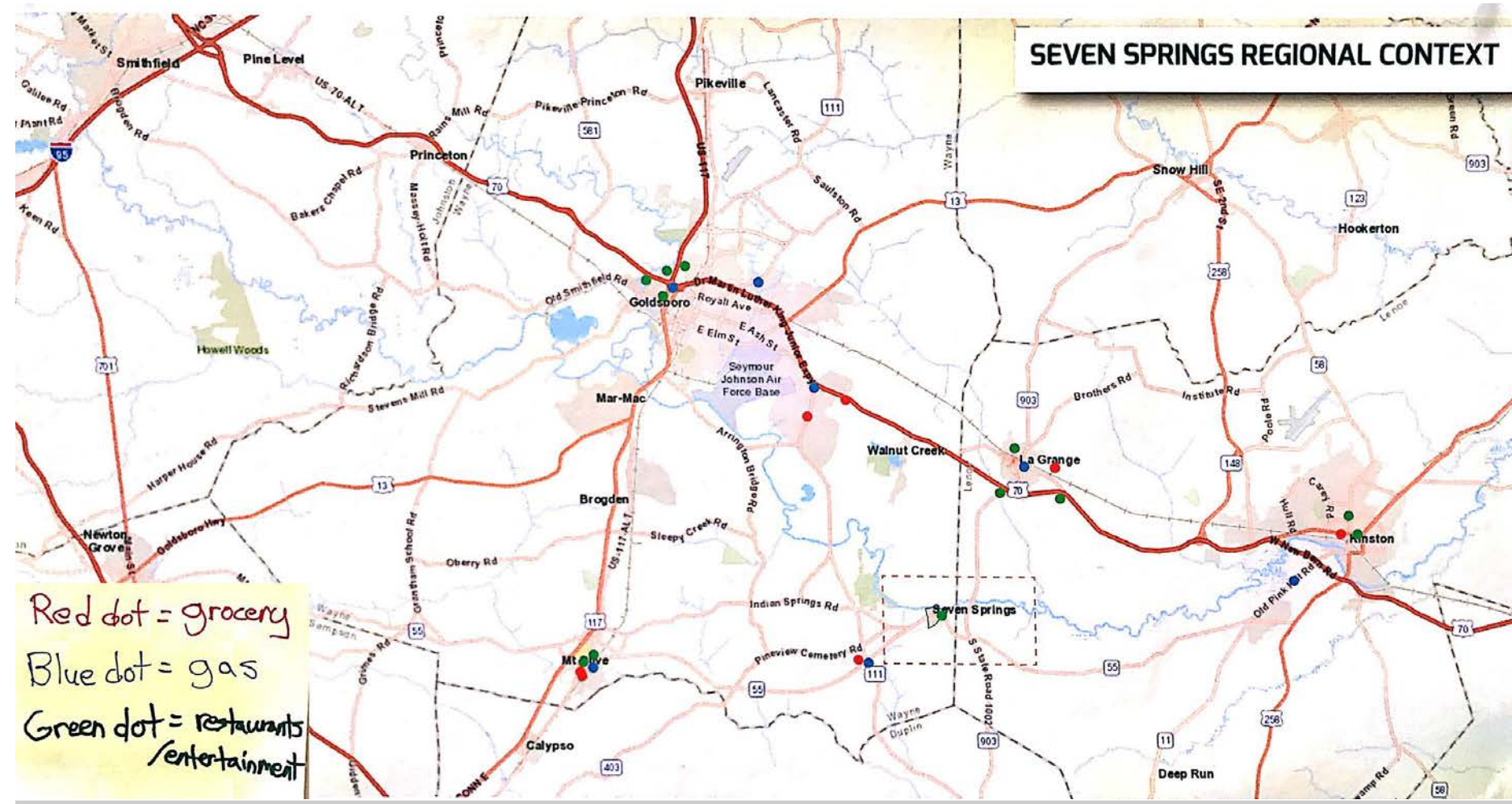
## OPPORTUNITY

## WEAKNESS

Capacity of town government - minimal staff and resources  
 Existing population crisis: post-Matthew population is ~20% of historic population

Future flooding and increase in extreme weather events  
 Aging of rural America: national trend of younger generations leaving rural areas  
 Trend towards urbanization: Draw of the Triangle for services and employment

## THREAT



One of the more telling engagement activities from the design workshop mapped the services that participants and their families frequent. Mae's restaurant was the only service noted within the Seven Springs town limits, with other nearby services including gas and small tienda within a mile of town. Casey's grocery and the Supply Co. in Seven Springs are now closed but in recent past have supplied grocery and gas.

The closest supermarket is a Food Lion in La Grange (13 min) and two Piggly Wigglys nearly equidistant in S. Kinston (15min) and Mt. Olive (18min). There is also a variety of options for restaurants within 15-20 mins of town. With sufficient services in surrounding towns, it seems that the retail market in Seven Springs could only support small convenience shopping for daily essentials and entertainment shopping like, crafts, gifts, ice cream, coffee or a small pub.





**FEMA HAZARD MITIGATION PROGRAM**  
32 PROPERTIES QUALIFIED FOR DEMOLITION



FEMA’s Hazard Mitigation Grant Program has the potential to completely transform the town of Seven Springs. 32 properties within the town have been qualified for acquisition and demolition in the HMGP buy-out program. Although it is unlikely that the funds needed to acquire all 32 properties will not be forthcoming, many of the identified properties will be transitioned to unoccupied, open space with no future chance for redevelopment. This leaves the town with a checkerboard pattern of development that must be thoughtfully addressed to minimize structural decay of the town form.

The before/after graphic scenario attracted quite a bit of attention from residents and helped them to establish a base with which they can begin visualizing future strategies for recovery. Looking at the patterns of potential buy-outs it is clear that a central core of commercial and residential properties will remain along Main St. between Simmons St. and the river. This speaks to the strength of the town axis from the river up to the Methodist church along Main St. Specific attention to renovation and floodproofing to buildings along the Main St. axis could be a much needed life support for a town struggling to survive.

The cluster of historic homes along the north side of East Spring street are all candidates for buy-out by HMGP leaving the largest contiguous piece of undeveloped land adjacent to the town core. This land should be considered for passive or active recreation or other uses that fit the use guidelines and would support revitalization of the town.

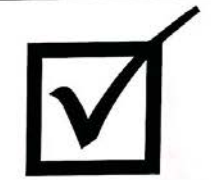
The properties between hwy 55 and Simmons along Main Street are an important area to consider. If they are acquired and demolished the land would need to be actively managed to maintain a Main St. aesthetic.

**PRIORITIES**

Interactive voting graphic for PRIORITIES. It features six panels, each with a text prompt and a dot-matrix map for sticker placement:

- Panel 1:** "We should focus on fixing houses back the way that they were" (Map: 1 blue dot, 1 yellow dot)
- Panel 2:** "We should do things that attract tourism and recreation interests" (Map: 3 blue dots, 1 yellow dot)
- Panel 3:** "We should focus on building attracting small and medium sized buisnesses into town" (Map: 1 blue dot, 1 yellow dot)
- Panel 4:** "We should fix the downtown so that buisnesses can come back to town" (Map: 4 blue dots, 1 yellow dot)
- Panel 5:** "We need to protect our homes and buisnesses from future flooding" (Map: 4 blue dots, 1 yellow dot)
- Panel 6:** "We need to make Seven Springs a better place to live so we can attract new residents" (Map: 4 blue dots, 1 yellow dot)

**CAST YOUR VOTE!**



**AMENITIES**

Interactive voting graphic for AMENITIES. It features six panels, each with an image, a title, and a dot-matrix map for sticker placement:

- Panel 1:** "Historical Trails and Tours" (Image: People on a trail) (Map: 2 blue dots, 1 yellow dot)
- Panel 2:** "Bed & Breakfasts" (Image: Bed and breakfast sign) (Map: 3 blue dots, 1 yellow dot)
- Panel 3:** "Craft Guild Center" (Image: Red house) (Map: 1 blue dot, 1 yellow dot)
- Panel 4:** "Waterfront Destination" (Image: Waterfront scene) (Map: 1 blue dot)
- Panel 5:** "Riverside Retirement Community" (Image: People on a bike path) (Map: Empty map)
- Panel 6:** "Sports Fields: Soccer, Baseball, etc" (Image: Soccer field) (Map: 4 blue dots)

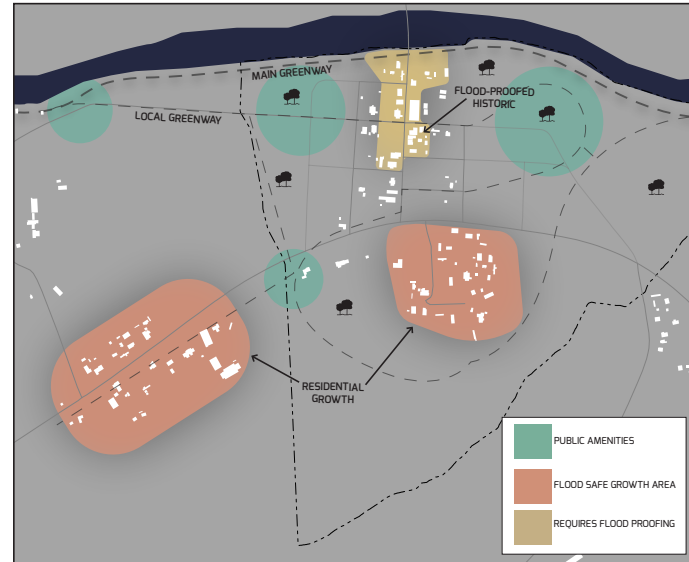
The intent of this voting graphic was two-fold: to seed ideas that spur participants to start thinking about what might be able to ‘fill-in the gaps’ in the coming years, and to establish a hierarchy of priorities held by residents. Interestingly most participants voted for priorities that were in-line with resilient recovery like “protecting their homes from future flooding and creating attractors for tourism and recreation. Most people voted for active and passive recreation amenities along with B&B accommodations for visitors.



# CONCEPT STRATEGIES FOR RECOVERY IN SEVEN SPRINGS

## Strategy 1 // Cluster & Recreate

Cluster new flood-proof development near important remaining buildings downtown, expand growth to high ground areas where traditional building is feasible



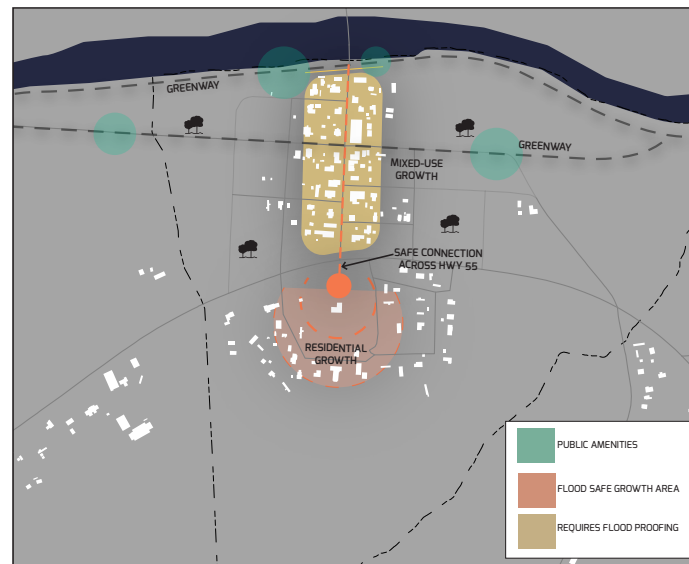
## Strategy 2 // Economize

Establish development areas for flood-proof housing near existing town center, convert newly emptied areas to economic drivers.



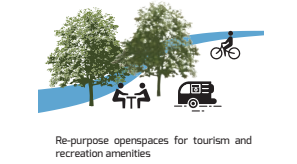
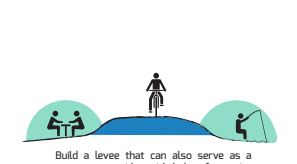
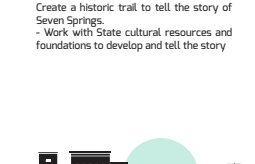
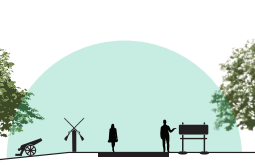
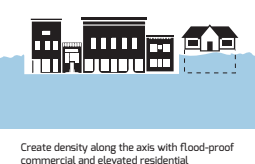
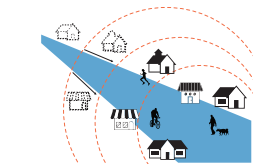
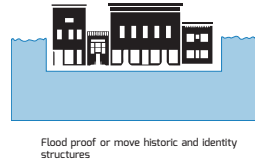
## Strategy 3 // Strengthen the Axis

Use the existing town structure to inform future growth along the axis between the river and the historic church on the hill. Flood proof and elevate buildings in the lower portion of town.



## Strategy 4 // Status Quo with Levee

Build a levee to protect from future flooding. Use the levee as an elevated greenway and hub for public amenities and tourism.



# FOUR FOCUS AREAS ARISE FROM THE WORKSHOP



### HIGHGROUND

- Town-owned land
- Land-owner driven development
- Power-line easement
- Relocation area

### DOWNTOWN

- Save select buildings
- Add some services
- Restoration of homes

### EAST TOWN

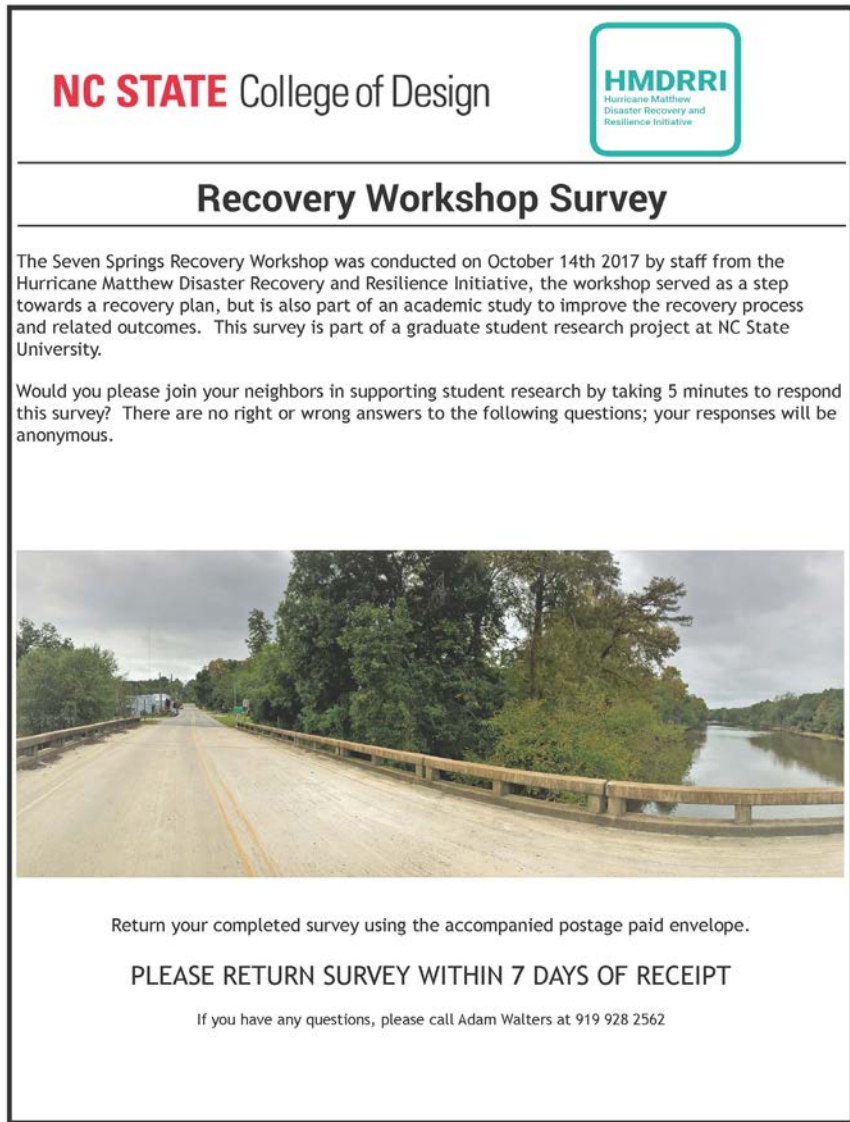
- Fate of historic homes
- Re-purposing buy-out land

### RIVERSIDE

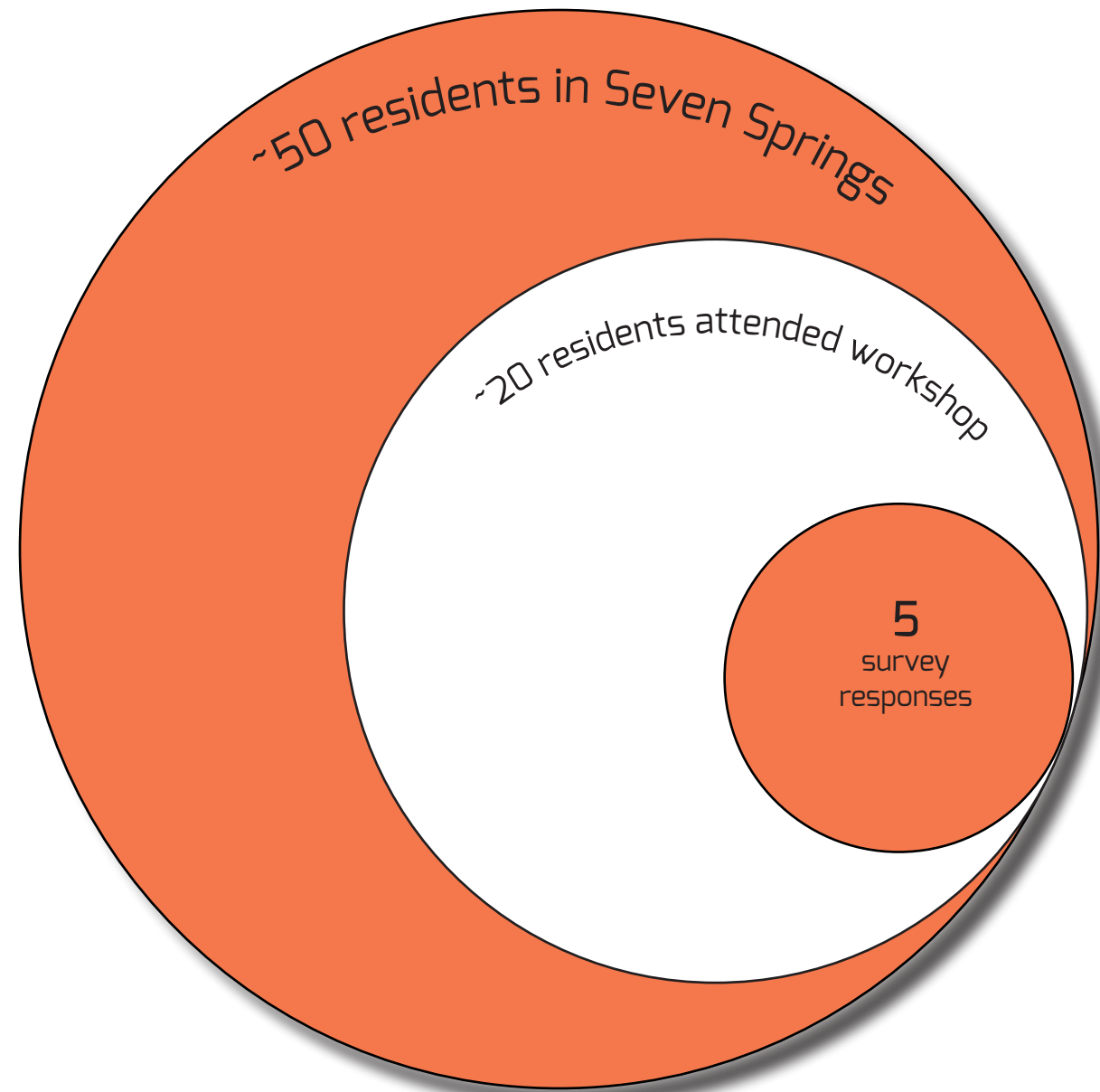
- Public amenities
- Attractions
- Gateway to town



# RECOVERY WORKSHOP SURVEY COVER AND QUESTIONS



- 1**  
How much did the Seven Springs Recovery Workshop change your feelings and image for the town's future
- 2**  
Did the Recovery Workshop offer clarity toward a way forward for Seven Springs? This could be a set of steps, identified resources or connections, or an idea you that can get behind.
- 3**  
Do you feel like this workshop helped others understand your thoughts regarding Seven Springs and recovery?
- 4**  
How much did the information in the Recovery Workshop impact your understanding of the town or the recovery process?
- 5**  
Did you have questions about Seven Springs recovery that were answered during the event?
- 6**  
Do you believe that design and the process of designing is an important part of the recovery process



The workshop survey was intended to help inform future recovery efforts by gathering feedback on the strengths, weaknesses and impacts from the Seven Springs Recovery Workshop activities. A small town population lead to a small workshop and thus an even smaller participant pool for the survey. Although the five returned survey responses represented a relatively good participation rate (>20%), the response data is not sufficient to make any objective or substantiated claims. Notable trends within the mini-sample include:

- 1) A desire to have FEMA and NCEM officials present
- 2) All respondents thought that design and the design process was an important part of recovery
- 3) Most respondents reported either modest to marginal impact from the workshop activities
- 4) Most respondents reported that the workshop helped them talk about their thoughts and feeling around the recovery process and made them feel more understood.

SURVEY

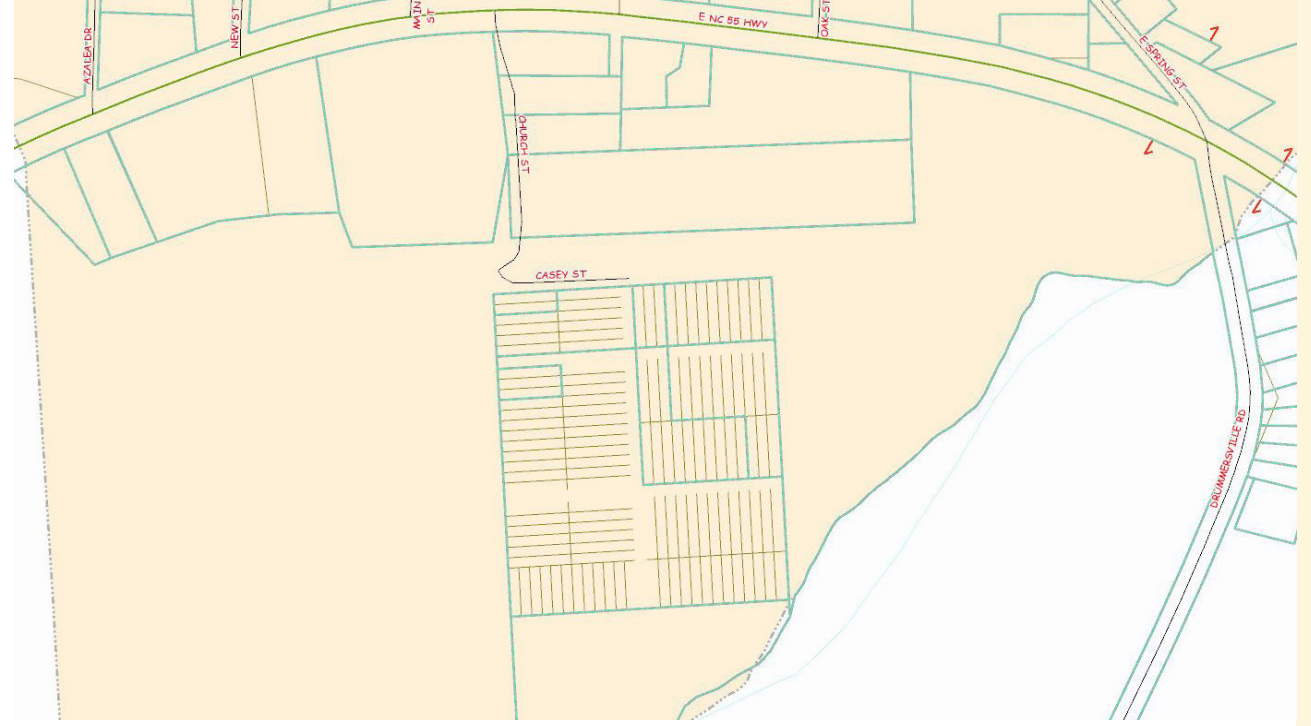




**65**  
Detached  
single  
family homes

**16**  
Unit Apartment

**\$115K**  
Property Tax  
Revenue (State)



With more than three quarters of Seven Springs buildings at risk of repetitive flooding a keystone to smart recovery should include a plan for community-scale migration away from the floodplain. Although it is important for the integrity of town-form to preserve the Main St. axis, many existing homeowners at risk, including HMGP applicants, could support the development of new, flood-safe, housing stock within the town limits. In fact, two of Seven Springs large landowners (Maxwell Morgan and Casey Randall) have joined and sub-divided some of their property in what seems to be move to create a dense housing development within the town limits, but on high ground. The ~114 - 50ft x 150ft sub-parcels indicate a dense, mobile home style development; the design proposed here adapts the existing parcelization to accommodate a mix of detached single family residences, multi-family housing and a retail service building. The new **Highground** development fits the current housing stock in lower Seven Springs and represents housing numbers that reflect projected demand in the area both from flood-displaced Seven Springs residents and some influx of new residents based on pre-flood growth patterns. The **Highground** development has safe connections to the original town-center via two crosswalks with rectangular rapid flashing beacon and center refuge. Greenway connections to Main St., the future ball-fields, and wetlands walk are an important mechanism for establishing a cohesive link across Hwy 55.

**HIGH GROUND**





**REGIONAL RECREATION DESTINATION**



The east-side of Seven Springs is particularly at risk to flooding and many of the homeowners along E. Spring St. are eligible for FEMA HMGP acquisition and demolition. This large area of floodplain buy-out could be re-purposed in a way that provides income and visitation to the Town through the construction of a sports complex. Counties across NC have used floodplain areas not suitable for dwelling units for active recreation programming with success, Green and Wilson counties are examples with similar demographics to Wayne county. There is a sports complex on the Northwest side of Goldsboro, but Seven Springs is well positioned to serve Southern Wayne, Duplin and Lenoir County residents. A phased approach starting with a set of three lighted ballfields will establish Seven Springs as a destination for recreation and allow the needed time to explore expansion of the facility to accommodate other sports. Phase one should include new parking and a wet floodproofed concession bathroom structure resilient to the impacts of repeated flood events. Capital costs for construction could come from CDBG-DR funds at the county-level, but would likely need to be a town-led initiative. A facility of this size would require one full-time staff that would be supported by annual revenue in admissions and league fees. It is feasible that the staff member and machinery used for the ball field could also support general maintenance in the town park and other key maintenance areas. Without a plan for re-purposing the buy-out lands along E. Spring St. the area could be a maintenance burden for the town and detract from efforts to revitalize.

The forested area east of Seven Springs is the largest tract of riparian land in town and could be an ideal location for a low-impact, interpretive, green way trail designed to educate and celebrate the beauty and value of riverine ecologies. A greenway trail through this area also makes an important connection between the High-ground greenway, riverside camping and fishing amenities, and the west side pavilion.



Tourism generated \$22.2 billion in economic impact in North Carolina and represents 9% of employment across the State.

(Source: North Carolina Department of Travel and Tourism, 2010)



Credit: Town of Windsor, NC

The town of Windsor, NC used some of their floodplain to create a unique camping experience along the Cashie river. Their Treehouse camping has attracted world-wide attention and could be a model for a similar venture in Seven Springs



Credit: Hickory Acres Campground

An RV campground adjacent to the Whitehall memorial, to proposed riverside trail and pavilion is an important place-making step that can support the town economically by re-purposing HMGP buy-out lands.



Credit: UNC Photo Archives

The Town of Seven Springs has rich history connected to their namesake spring house and pavilion. The town has construction documents for a replica of the original pavilion that could be a keystone piece of a historic tours and town events.



Credit: Shoreline Trail Organization

Cost effective, flood resilient greenway trails are great investment. Many greenway systems will return \$3 in revenue for every \$1 in expenditure invested. A river walk along the Neuse could transform the way locals perceive the river.



Open spaces such as parks and recreation areas can have a positive effect on nearby residential property values, and can lead to proportionately higher property tax revenues for local governments.

*(Source: Active Living Research, 2010)*



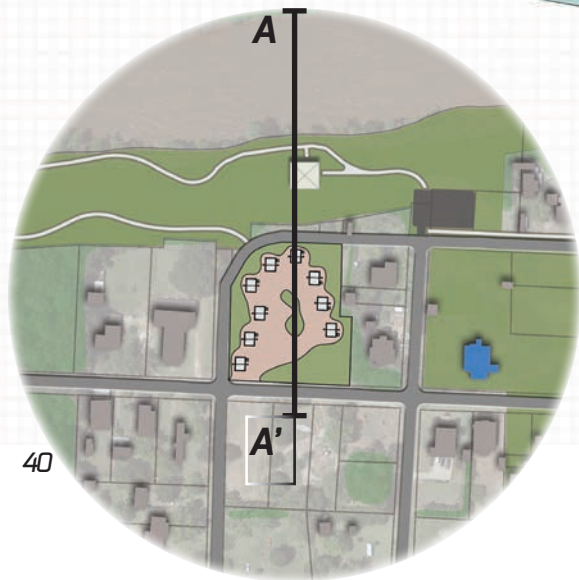
RIVER TRAIL AND BOARD WALK

REPLICA OF HISTORIC PAVILION

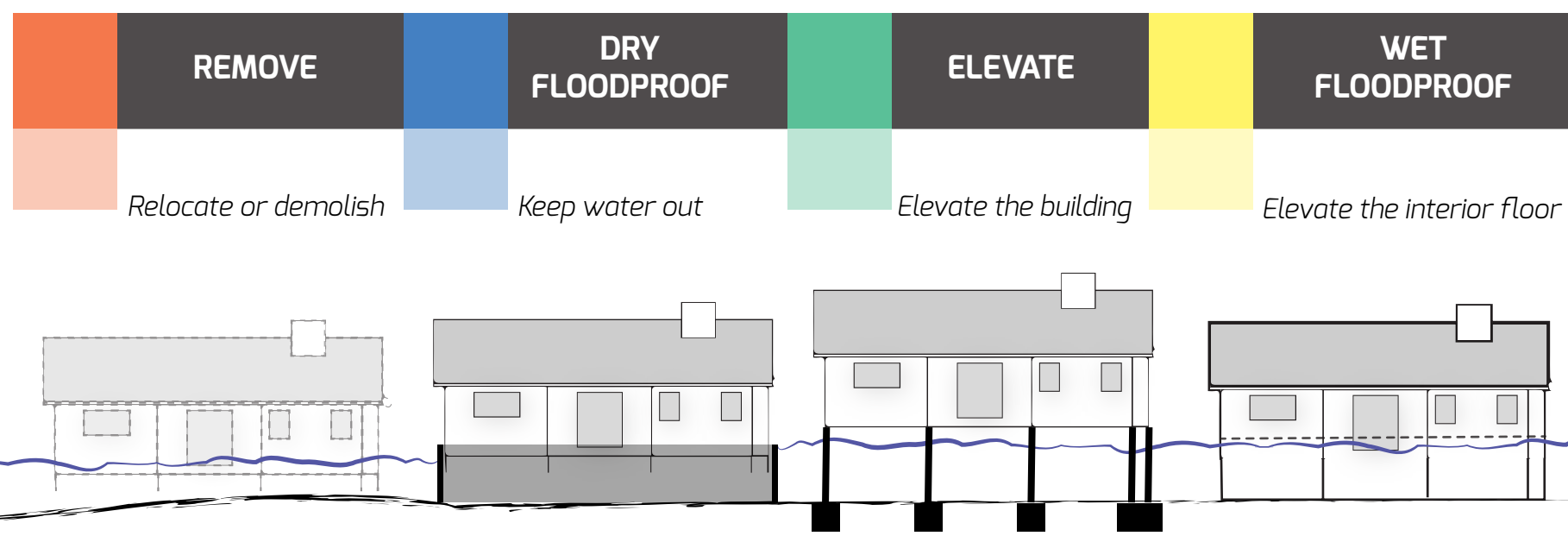
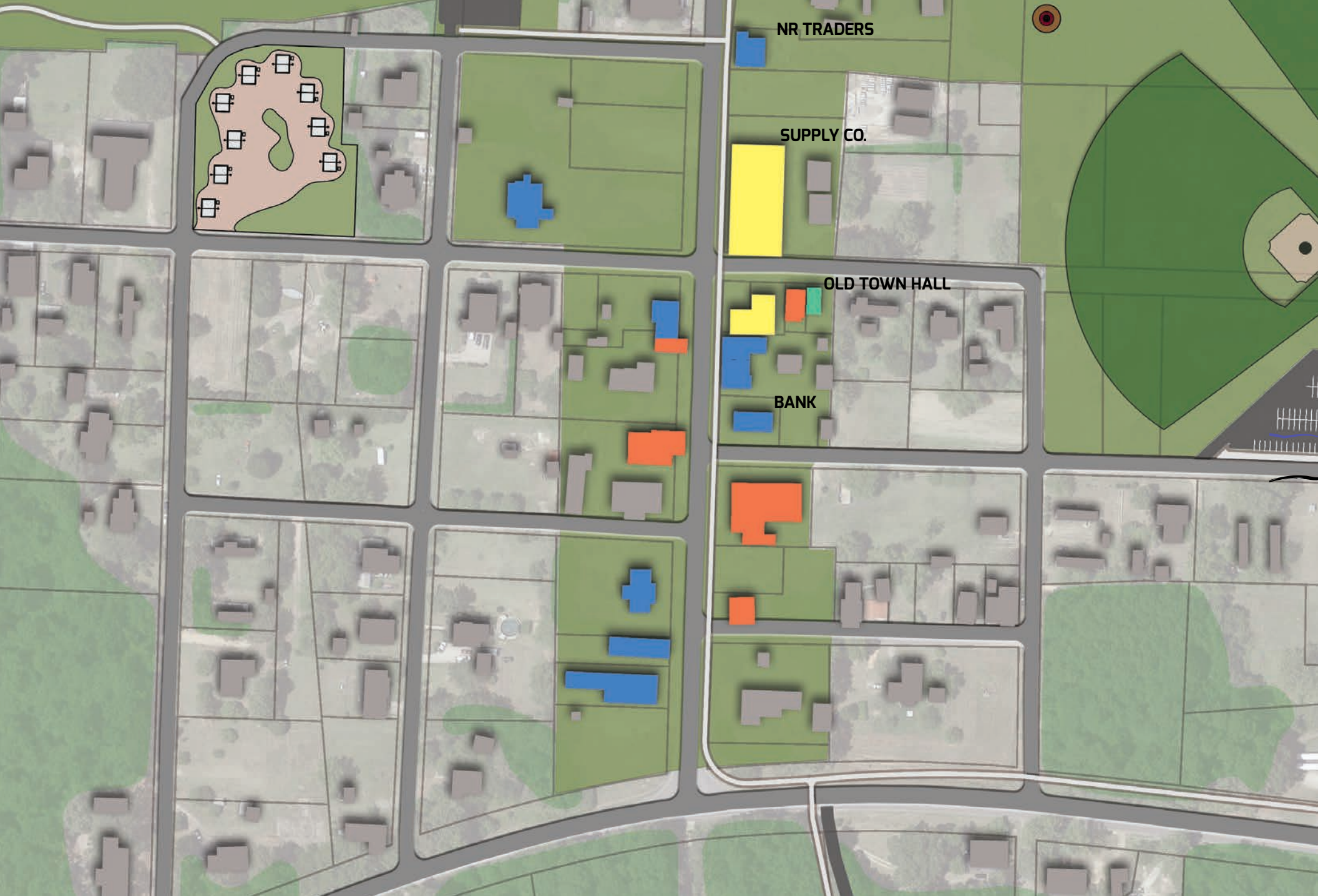
WHITEHALL MEMORIAL

RV CAMPGROUND

TOWN PARK



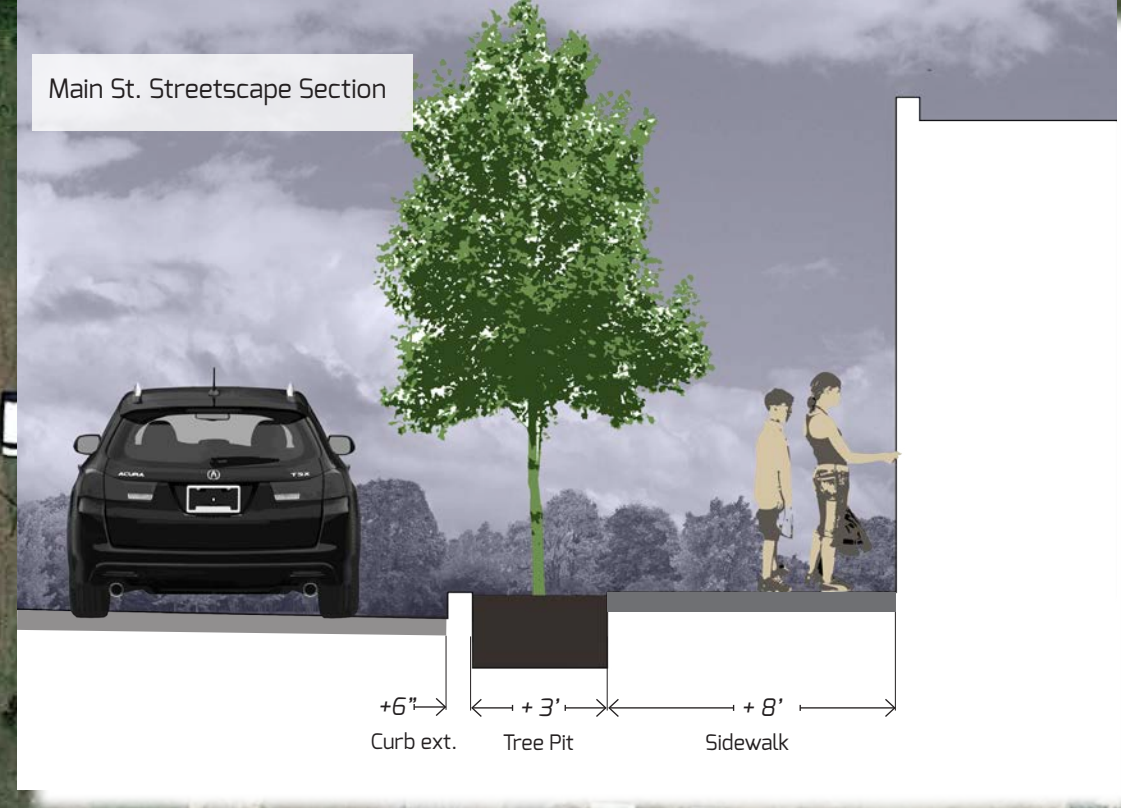




Early October 2017 flood mitigation specialists representing the Association of State of Floodplain Managers visited Seven Springs to conduct an assessment of commercial structures along the Main St. axis. Reports suggested a variety of options with general agreement across the specialists. A clear starting point for commercial recovery is a wet floodproofing of the Supply Co. building, reports suggested interior floor elevation could be a low-cost solution and would provide up to four office/retail spaces to kick-start downtown revitalization. Renovation of the exterior facade will also be important to attract businesses and customers. Demolition of several eye-sore structures is an important early step along with dry floodproofing the bank, post-office and Mae's restaurant. A phased, clustered mitigation & recovery effort as described will allow for the heart of Main St. to re-establish quickly bringing much needed economies to the town. A later phase of flood mitigation should consider dry floodproofing of Marjorie Shivar's home, Neuse River Trading, and the two buildings between Hwy 55 and the Mayor's house. Funding for these efforts could come from a combination of resources including: State flood mitigation and recovery funds (CDBG-DR and ICC), State and County Chamber of Commerce, non-profit organizations like Golden Leaf foundation, and FHA203K Loan.



Main St. Streetscape Section



Main St. Streetscape Perspective



Widen sidewalk at Supply Co.

Small trees between Supply CO. and Mae's

Elevated crosswalks at intersections





# the benefits of Street Trees

- Increased property values
- Cooler streets
- Saves public dollars
- Good for the environment
- Reduced stormwater runoff
- Safer for pedestrians

*Credit: Strongtowns*

Well placed and maintained street trees along the east side of Main St. has the potential to transform the perception of residents and passers-by alike. Urban designer Sarah Kobos writes about this value saying, ‘...a tree-lined street on a hot summer day means the difference between a comfortable walk or bike to work, and an unpleasant, sweat-soaked forced march.’ Not only could an improved streetscape change perception and behavior along the Seven Springs main drag, but there is significant research from the USDA showing the heavy influence that street trees have on property values, ‘a single street tree can add an average of \$12,828 combined to properties within 100ft. In benefit to the bucolic nature of Seven Springs, street trees have been linked to decreased auto speeds, lower crime and a positive correlation with retail shopping.

The message is clear, a streetscape improvement to Main St. is one of the most accessible actions the town of Seven Springs can take to revitalize their town-center. Not only are streetscape improvements within the capacity of a small town to implement, a 2015 study found a \$5.82 return on investment for every dollar spent on street trees.

The streetscape plan recommendations are as follows:  
 ~50’ spacing with deference to entryways, sidewalk overhangs, cross streets and existing streetscape elements. This adds to ~25 trees along the east side of Main St. as shown in pg 44-45 plan.

Primary trees: Medium maturing, deciduous like a Zelkova or Ironwood (*Zelkova serrata*, *Carpinus carolina*)

Secondary trees: Small maturing, deciduous like Redbud or Crepe Myrtle (*Cercis candensis*, *Lagerstromia spp.*)

## SEVEN SPRINGS RECOVERY MASTER PLAN

The future is not someplace we are going to, but a place we are creating. The paths to it are not found, they are made.  
*JANE GARVEY, Deputy Administrator, Federal Highway Administration 97'*

- Riverside**  
Tourism & History
- East Town**  
Recreation & Nature Trails
- Main Street**  
Floodproofing & Streetscape
- Highground**  
Housing for migration and growth



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please help add to this.....

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