



# Program for Public Information

## Town of Morehead City, NC



Flood Information for  
Residents of  
Morehead City  
located in or near the  
Floodplain

Morehead City Planning &  
Inspections Department  
706 Arendell Street  
Morehead City, NC 28557  
(252)726-6848, extension 125  
[www.moreheadcity.nc.gov](http://www.moreheadcity.nc.gov)

This brochure is to inform you that  
your property is located within a  
special flood hazard area (flood  
zone AE or VE). The enclosed  
brochure will help you understand  
the extent of the hazard.



June 2017







This Program for Public Information was prepared by the Town of Morehead City under grant award #NA14NOS4190076 to the Department of Environmental Quality, Division of Coastal Management from the Office for Coastal Management, National Oceanic and Atmospheric Administration. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of DEQ, OCM, or NOAA.



## Town of Morehead City 2017 Program for Public Information (PPI)

### Background

The Community Rating System (CRS) is a part of the National Flood Insurance Program (NFIP). It provides reductions to flood insurance premiums in participating communities. The reductions are based on community floodplain management programs, including public information activities. To keep those discounts, communities must continue to implement their programs and provide status reports to the NFIP each year. The Town of Morehead City (the “Town”) has been an active participant of the CRS since 1992. The Town is currently rated as a Classification 8 which rewards policy holders with a 10 percent reduction in their flood insurance premiums. Non-SFHA policies (Standard X Zone policies) receive a 5% discount, and preferred risk policies receive no discount.

A Program for Public Information (PPI) is an ongoing effort to prepare, implement, and monitor a range of public information activities. The objective of CRS credit for a PPI is to allow communities to think “outside” of the box and be creative in their approach to outreach for flooding. It provides credit for information programs that are designed to meet local needs and that are monitored, evaluated, and revised to improve their effectiveness. The Town has developed its PPI in accordance with the CRS credit criteria found within Activity 330.

Over the years, the Town, through several departments and in coordination with stakeholder groups and outside agencies, has prepared multiple outreach messages to educate the public on the hazards associated with flooding. The Town has been working on stormwater issues along the Bogue Sound, Calico Creek, and Crab Point Bay to reduce flooding, especially to repetitive loss properties and associated areas which are subject to localized stormwater flooding.

With advances in technology and greater familiarity with web-based services, the Town has realized that mailing information directly to property owners may not be the most effective method to get certain messages across. The PPI planning process provides the ability for the Town to consider other options for disseminating messages about the flood hazard to the community and to leverage other stakeholders through their messaging and materials. The Town has developed its PPI in accordance with the CRS credit criteria found within Activity 330.

**This PPI was created in coordination with the Floodplain Mitigation Plan (FMP). A Floodplain Mitigation Planning Committee (FMPC) was established to oversee the development of not only the FMP, but also the PPI. This single committee had the opportunity to learn more detail about the major flooding problems in the Town along with the unique problems associated with repetitive loss properties. Therefore; this committee will be referred to as the PPI Committee throughout this document.**

### Step 1: Establish a PPI Committee

A PPI should assess all the community’s needs for flood-related information and coordinate all the resources that can deliver information. It should recommend a range of activities that convey information to residents, businesses, tourists, school children, and other audiences in and around the community. It should have an objective review of what is being done and how public information activities could be improved. Therefore, a PPI needs to be developed by a committee that consists of members from both



inside and outside local government. The committee could be an existing committee, such as a mitigation planning committee or advisory board, or a subcommittee of an existing group, so long as it meets the membership criteria.

### **1.1 Membership and Stakeholders**

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The PPI Committee's membership must meet the following CRS criteria:

- There must be at least five people on the committee.
- There must be representation from the community's floodplain management office.
- There must be representation from the community's public information office, if there is one.
- At least half of the members must be from outside the local government ("stakeholders").

The CRS encourages engagement of groups and people outside the local government in planning and conducting outreach projects. As outlined above, at least one-half of the members of the PPI committee must be representatives from outside the local government. These could be members of the public, representatives of key community organizations, and/or agencies and organizations that would likely implement the recommended outreach projects.

The participants comprising the PPI Committee for the Town were selected in accordance with the above CRS criteria and include the following:

1. Sandi Watkins – Town of Morehead City, Planning & Inspections
2. Robert Davis – Town of Morehead City, Planning & Inspections
3. Dale Price – Town of Morehead City Public Works
4. Dykeman Baily – Town of Morehead City, Fire Department (Emergency Manager)
5. Whitney Jenkins – NC Coastal Reserve
6. Rachel Love-Adrick – NC Coastal Management
7. Scot Alexander Brennan – NC Farm Bureau Insurance
8. Michael Lupton – Putnam Real Estate
9. Ronald Cullipher – Stroud Engineering
10. John Odom – Prestige Land Surveying

**Note: The Town did not have a Public Information Officer (PIO) at the time the PPI was prepared.**

#### **Committee Meetings**

The PPI committee met three (3) times during the planning process to complete the outreach program. Each PPI committee meeting was held at the Town Municipal Chambers at 202 South 8th Street. The meeting dates and objectives covered included:

- Meeting # 1 – January 12, 2017 – Assessment of the community's current public information needs (PPI planning process, assessment of the flood hazard, exposed buildings, flood insurance coverage, and identification of target audiences and areas).
- Meeting # 2 – February 16, 2017 – Define target outreach messages and other potential outreach projects along with dissemination methods.
- Meeting # 3 – April 22, 2014 – Review the draft PPI

#### **Goals for the PPI**

The PPI committee developed 3 primary goals to guide the overall implementation of this Program for Public Information to better educate the public about the flood risks facing the Town and how to protect themselves as well as their homes and businesses from flood damage; and to understand the importance of flood insurance.



**Goal 1:** Encourage property owners, through education and outreach measures, to protect homes and businesses.

**Goal 2:** Reduce damage through flood resilient strategies and measures.

**Goal 3:** Increase the preparedness capability of the public to respond to and recover from flood events.

## **Step 2: Assess the Community's Public Information Needs**

The Town of Morehead City, situated in the Outer Coastal Plain of eastern North Carolina, is a port town in Carteret County on North Carolina's Crystal Coast. The Town has a total land area of approximately 6.8 square miles and is located at the mouth of the Newport River on the Bogue Sound, directly inland from the barrier island community of Atlantic Beach. Because the Town is located in a unique low-lying area, it is particularly susceptible to flooding from major rain events and storm surge. Flooding within the Town can be attributed to tidal flooding resulting from hurricanes and tropical storms and heavy rainfall that overburdens the drainage system within the community.

Morehead City is located completely within the White Oak River Basin, which covers 1,382 square miles and spans 6 counties and 24 municipalities. The White Oak Basin contains four sub-basins: the New River, the White Oak River, the Newport River, and the North River, as well as the Bogue, Back, and Core Sounds.

The Town is served by U.S. highway 70 and North Carolina highway 24. US-70 connects Morehead City to the Cities of Havelock and New Bern to the west and to the Core Sound communities to the northeast. NC-24 connects Morehead City west to the City of Jacksonville. According to the U.S. Census Bureau's American Community Survey, the Town had an estimated total population of 9,162 in 2015. Approximately 50% of the total land area in Morehead City is developed, and 60% of that area is in residential use.

Wetlands in Morehead City generally follow the major hydrology and are found within areas that are deemed "flood hazard areas," which face additional regulations that make these areas difficult to develop. According to the Town's 2007 Core Land Use Plan, the Town's planning jurisdiction contain approximately 1,229 acres of wetlands. In fact, 49% of the Town lies within the 100-year floodplain in the effective FIRM (this number increases to 57% in the preliminary FIRM). Areas along the waterfront, particularly surrounding Calico Bay inlets and the Harbor Channel are most at risk of flooding. It is important to realize, respect and maintain the natural flood protection benefits and floodplain functions provided by these sensitive lands, and the natural and beneficial functions of this undeveloped coastal flood zone should be incorporated into local outreach and flood mitigation programs. The PPI should promote the environmental preservation and protection of coastal floodplain functions which include hydrologic and hydraulic processes, geomorphic processes and biologic processes. The seasonal and storm-generated variations in water flow, including periodic flooding, are part of the normal function of the floodplain. These variations keep erosion and accretion in equilibrium, replenish soils, recharge groundwater, and filter impurities. In coastal areas, water differences are based on tides, currents, wave action, and storm surges—all of which form shorelines, coastal wetlands, dunes, barrier islands, and estuaries.

The central portion of the Town, between the waterfronts, has an area of X-Zone; however, this area which has a slightly higher elevation is still subject to low level flooding and has several repetitive loss properties.



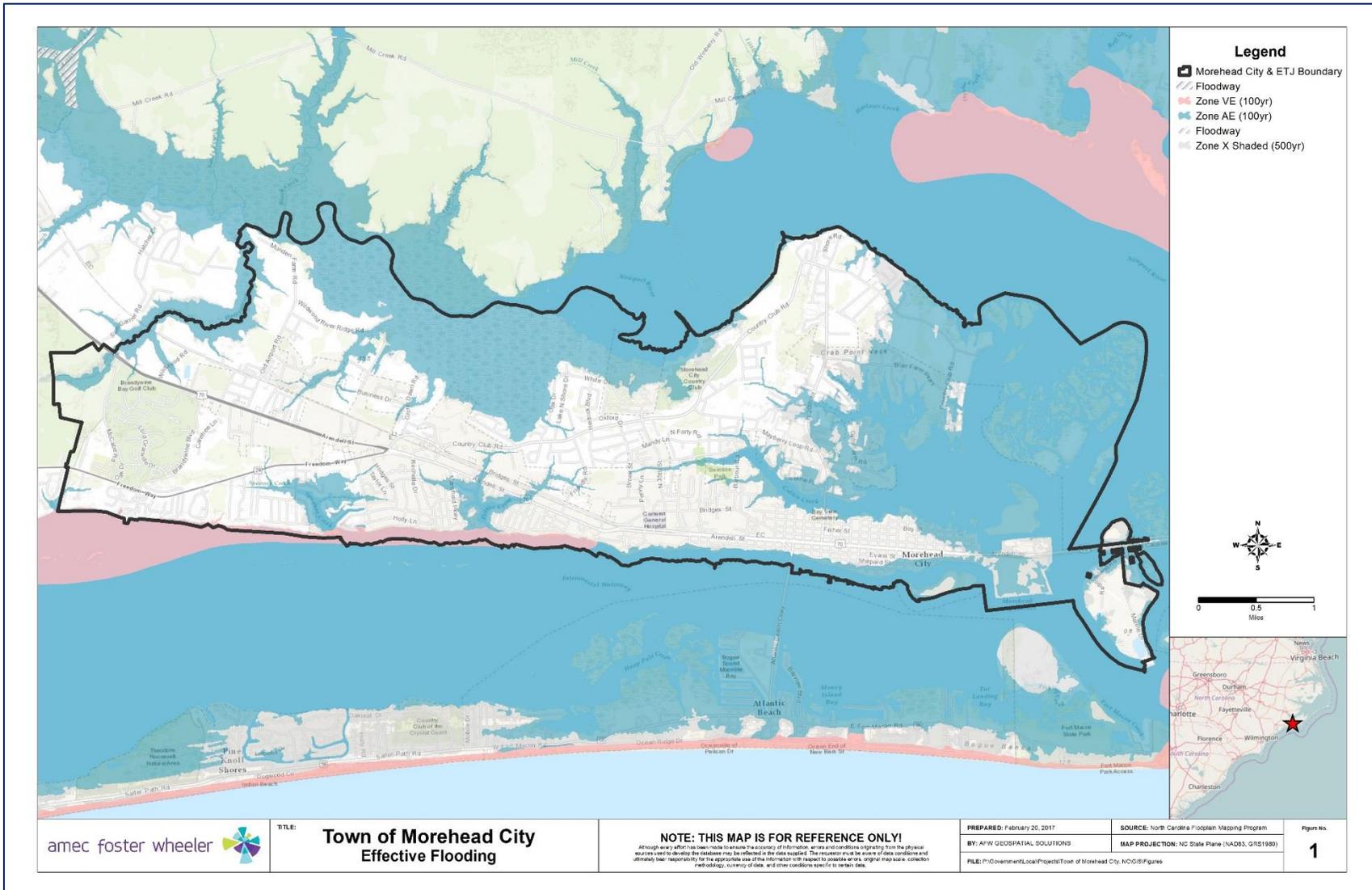
## **2.1 Delineate Target Areas**

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To develop an effective local outreach program that raises public awareness about flood related issues, it is necessary to identify and assess the areas within the community that are considered flood-prone. The PPI Committee identified the following target areas and concluded that outreach projects should be directed to all properties (residential, commercial and public) within these areas:

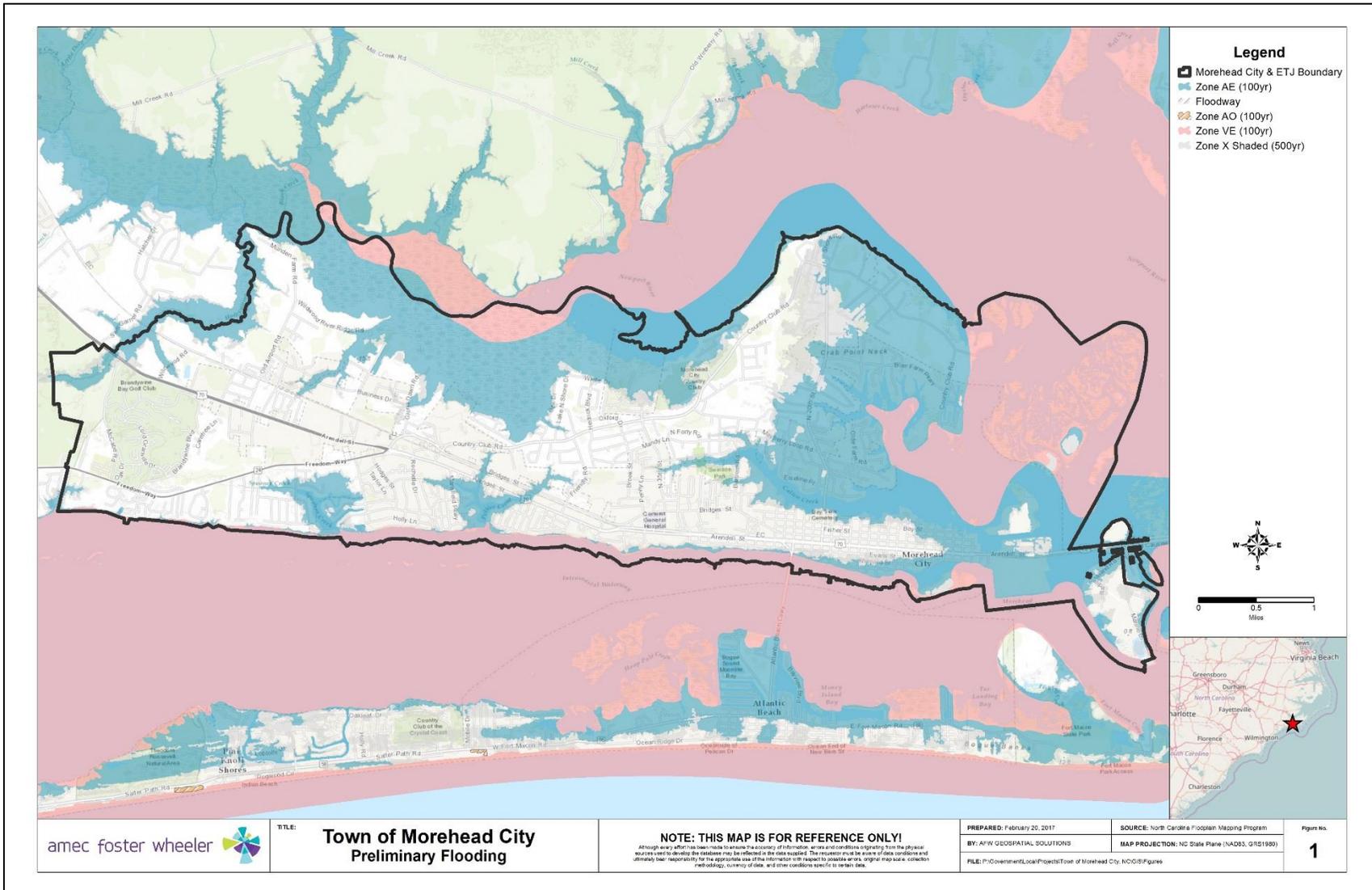
### **Target Area #1: The Special Flood Hazard Area**

According to the 2004 Effective FIRM, the Town contains 1,905.63 acres of water area, almost entirely in the flood zone AE. Under the Effective FIRM, approximately 49% of the Town is located within a Special Flood Hazard Area (SFHA). The 2016 Preliminary FIRM shows 1,907.54 acres of water area, primarily within flood zone VE. Figure 1 reflects the mapped flood insurance zones for the Town under the Effective FIRM. Figure 2 depicts the mapped flood insurance zones for the Town under the Preliminary FIRM. Figure 3 and Figure 4 depict the depth of flooding that can be expected within the Town during the 100-yr flood event according to the Effective FIRM and Preliminary FIRM, respectively.



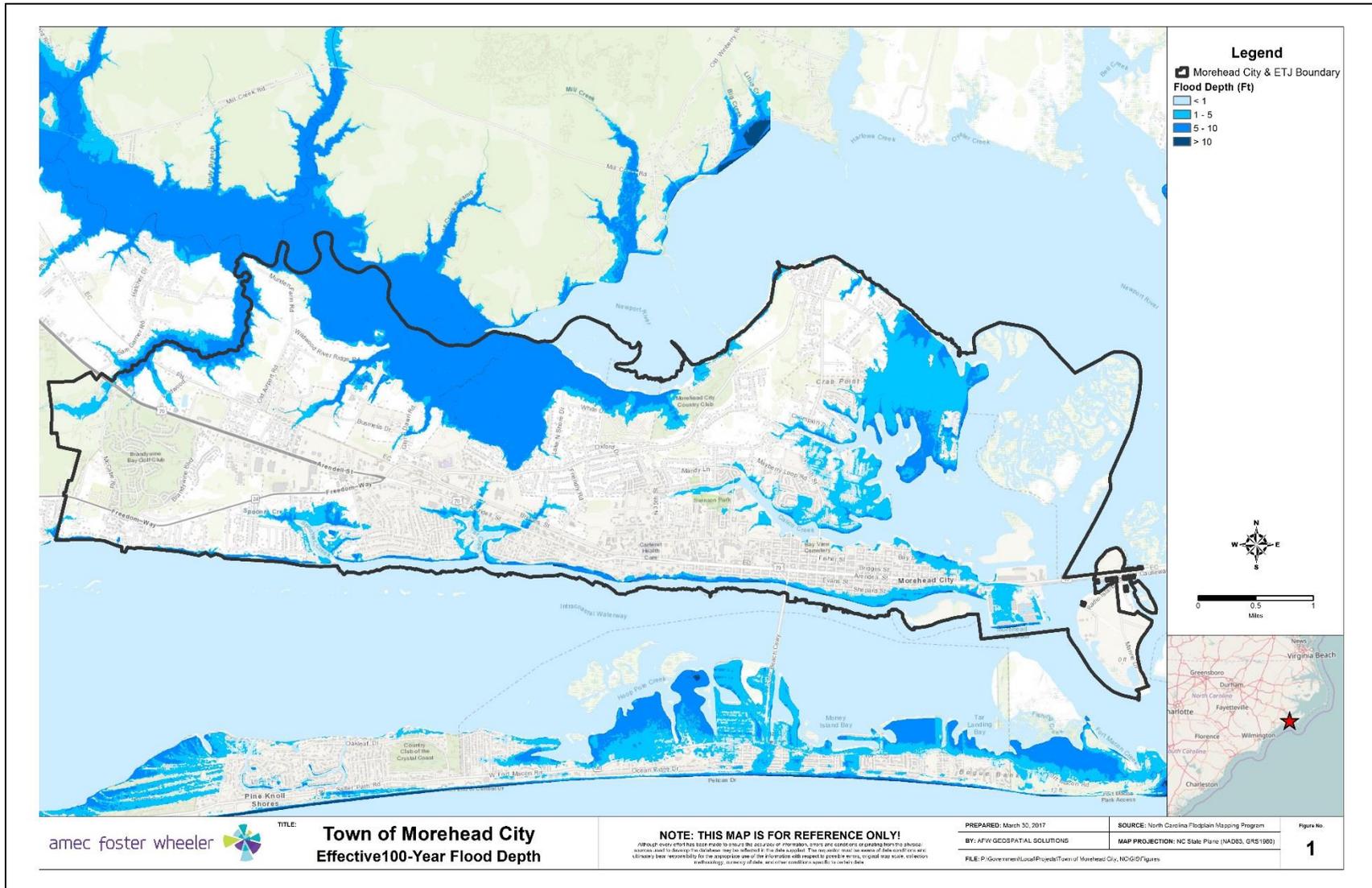
Source: Town of Morehead City, FEMA 2004 Effective DFIRM

Figure 1 – Morehead City Effective FIRM Flood Zones



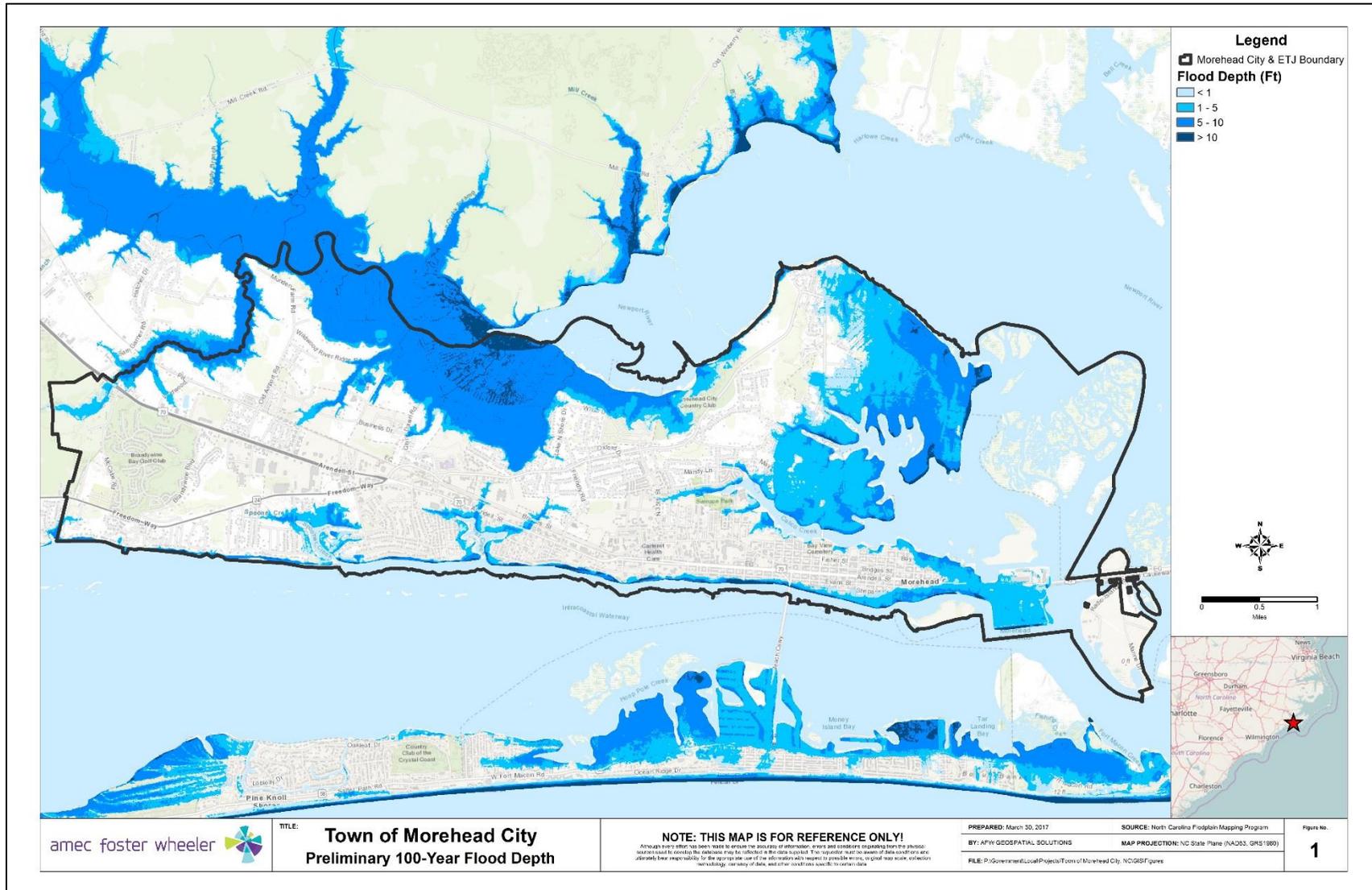
Source: Town of Morehead City, FEMA 2016 Preliminary DFIRM

**Figure 2 – Morehead City Preliminary FIRM Flood Zones**



Source: Depths derived from FEMA 2004 Effective DFIRM

**Figure 3 – Morehead City Effective FIRM 100-yr Flood Depths**



Source: Depths derived from FEMA 2016 Preliminary DFIRM

**Figure 4 – Morehead City Preliminary FIRM 100-year Flood Depths**



Table 1 and Table 2 are summary tables that shows the building count and improved value of parcels by mapped FEMA flood zone for the Effective and Preliminary FIRMs, respectively. Based on this analysis, between 1,573 and 2,253 improved parcels fall within the 1% annual chance floodplain for a total value of \$773,983,015 to \$955,972,072. Additionally, there are 6,716 to 6,027 improved parcels outside of the SFHA with a value of \$2,536,447,230 to \$2,356,104,411. Note: Improved parcels indicate that a structure is present; however, the structure may or may not be insurable.

**Table 1 – Building Count by FEMA Flood Zone, Effective FIRM**

Flood Zone	Building Count	Improved Value	Estimated Content Value	Total Value <sup>1</sup>
Zone AE	1,555	\$501,228,812	\$263,969,425	\$765,198,237
Zone VE	18	\$7,130,531	\$1,654,248	\$8,784,778
Zone X (shaded)	423	\$112,757,323	\$66,398,554	\$179,155,877
Zone X (unshaded)	6,293	\$1,421,298,910	\$935,992,443	\$2,357,291,353
<b>Total</b>	<b>8,289</b>	<b>\$2,042,415,576</b>	<b>\$1,268,014,670</b>	<b>\$3,310,430,245</b>

Source: North Carolina Emergency Management, Risk Management, 2016; FEMA 2004 DFIRM

**Table 2 – Building Count by FEMA Flood Zone, Preliminary FIRM**

Flood Zone	Building Count	Improved Value	Estimated Content Value	Total Value <sup>1</sup>
Zone AE	2,232	\$604,364,825	\$339,792,093	\$944,156,918
Zone VE	21	\$9,040,286	\$2,774,868	\$11,815,154
Zone X (shaded)	763	\$193,907,875	\$99,896,005	\$293,803,880
Zone X (unshaded)	5,264	\$1,239,488,460	\$822,812,071	\$2,062,300,531
<b>Total</b>	<b>8,280</b>	<b>\$2,046,801,446</b>	<b>\$1,265,275,037</b>	<b>\$3,312,076,483</b>

Source: North Carolina Emergency Management, Risk Management, 2016; FEMA 2016 DFIRM

**Target Area #2: Areas of Localized Stormwater Flooding**

Localized stormwater flooding can also occur throughout the Town. Localized stormwater flooding occurs when heavy rainfall and an accumulation of runoff overburden the stormwater drainage system within the community. The cause of localized stormwater flooding in Morehead City can be attributed to its generally flat topography, abundance of water features, and the large amount of developed and impervious land, which limits ground absorption and increases surface water runoff. Figure 5 depicts areas of localized stormwater flooding. These areas are summarized in Table 3 below:

**Table 3 – Localized Flooding Areas**

Area	Street Name or Intersection	Type of Flooding
1	Portion of Hwy 70 near McCabe Road	Heavy Rain
2	Lowe's Home Improvement Entrance on Hwy 70	Heavy Rain
3	Taylor Street Area	Heavy Rain
4	Waldron Drive Area	Heavy Rain
5	Portion of Country Club Road	Heavy Rain
6	Joslyn Drive between Jersey St and Anne Neal Rd	Heavy Rain
7	N 20th Street Near Blair Farm Parkway	Heavy Rain
8	Shep Willis Road	Heavy Rain
9	Portion of South Yaupon Terrace	Tidal
10	Bridges Street between N 14th and N 15th Street	Heavy Rain

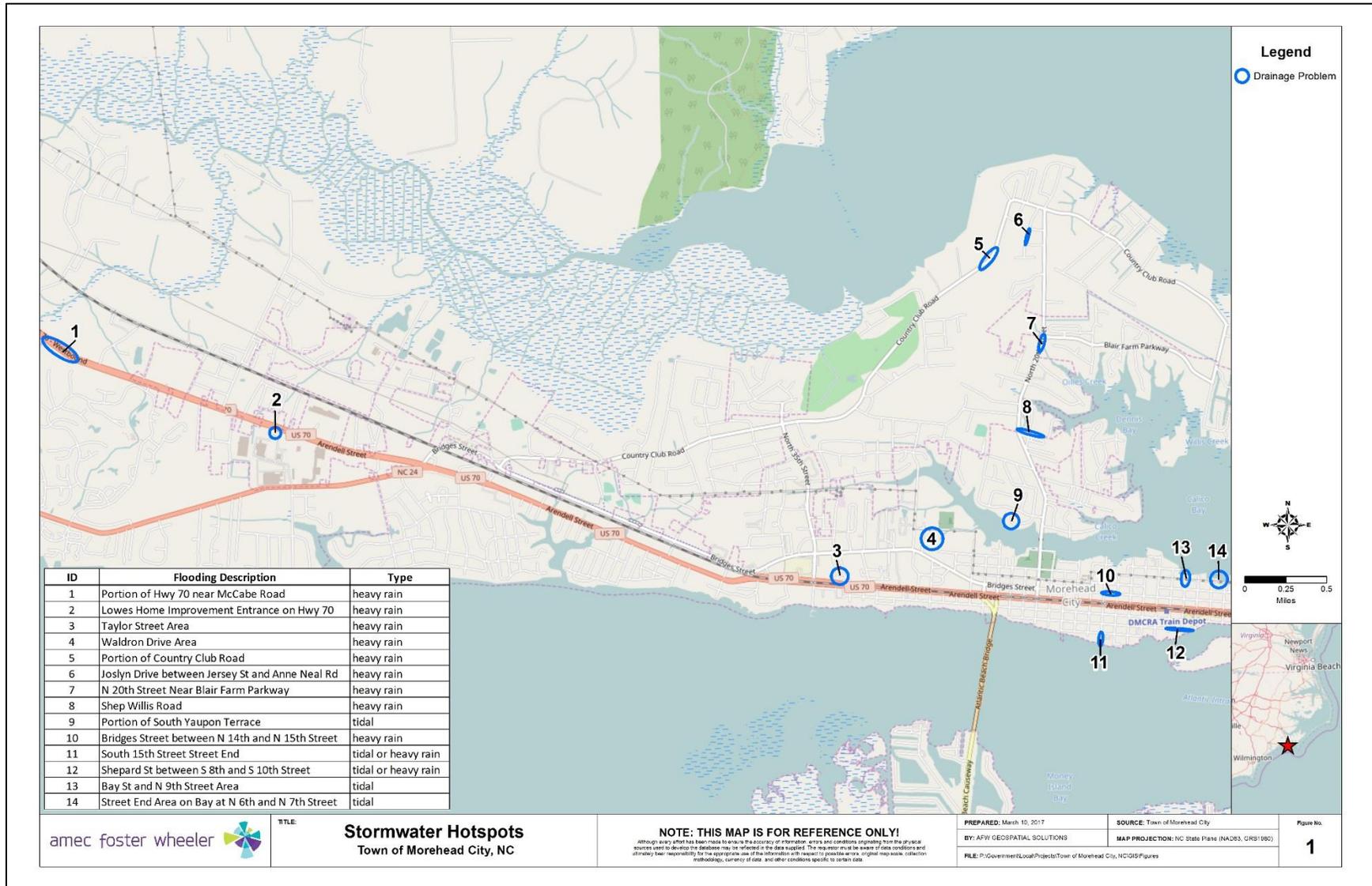


11	South 15th Street Street End	Tidal or Heavy Rain
12	Shepard St between S 8th and S 10th Street	Tidal or Heavy Rain
13	Bay St and N 9th Street Area	Tidal
14	Street End Area on Bay at N 6th and N 7th Street	Tidal

Localized flooding may be caused by the following issues:

- ▶ **Inadequate Capacity** – An undersized/under capacity pipe system can cause water to back-up behind a structure which can lead to areas of ponded water and/or overtopping of banks.
- ▶ **Clogged Inlets** – debris covering the asphalt apron and the top of grate at catch basin inlets may contribute to an inadequate flow of stormwater into the system. Debris within the basin itself may also reduce the efficiency of the system by reducing the carrying capacity.
- ▶ **Blocked Drainage Outfalls** – debris blockage or structural damage at drainage outfalls may prevent the system from discharging runoff, which may lead to a back-up of stormwater within the system.
- ▶ **Improper Grade** – poorly graded asphalt around catch basin inlets may prevent stormwater from entering the catch basin as designed. Areas of settled asphalt may create low spots within the roadway that allow for areas of ponded water.
- ▶ **Impervious Surface** – An increase in impervious surface creates increased runoff which leads to an increase in the volume of water travelling to a collection point.

An analysis of the localized stormwater flooding issues identified 14 distinct areas that are affected by this type of flood hazard.



Source: Town of Morehead City, 2017

Figure 5 – Areas of Localized Flooding



### Target Area #3: Repetitive Loss Areas

Properties categorized as repetitive loss properties have a greater need for flood protection. Per 2016 NFIP records, there are 7 mitigated repetitive loss property and 26 unmitigated repetitive loss properties in Town.

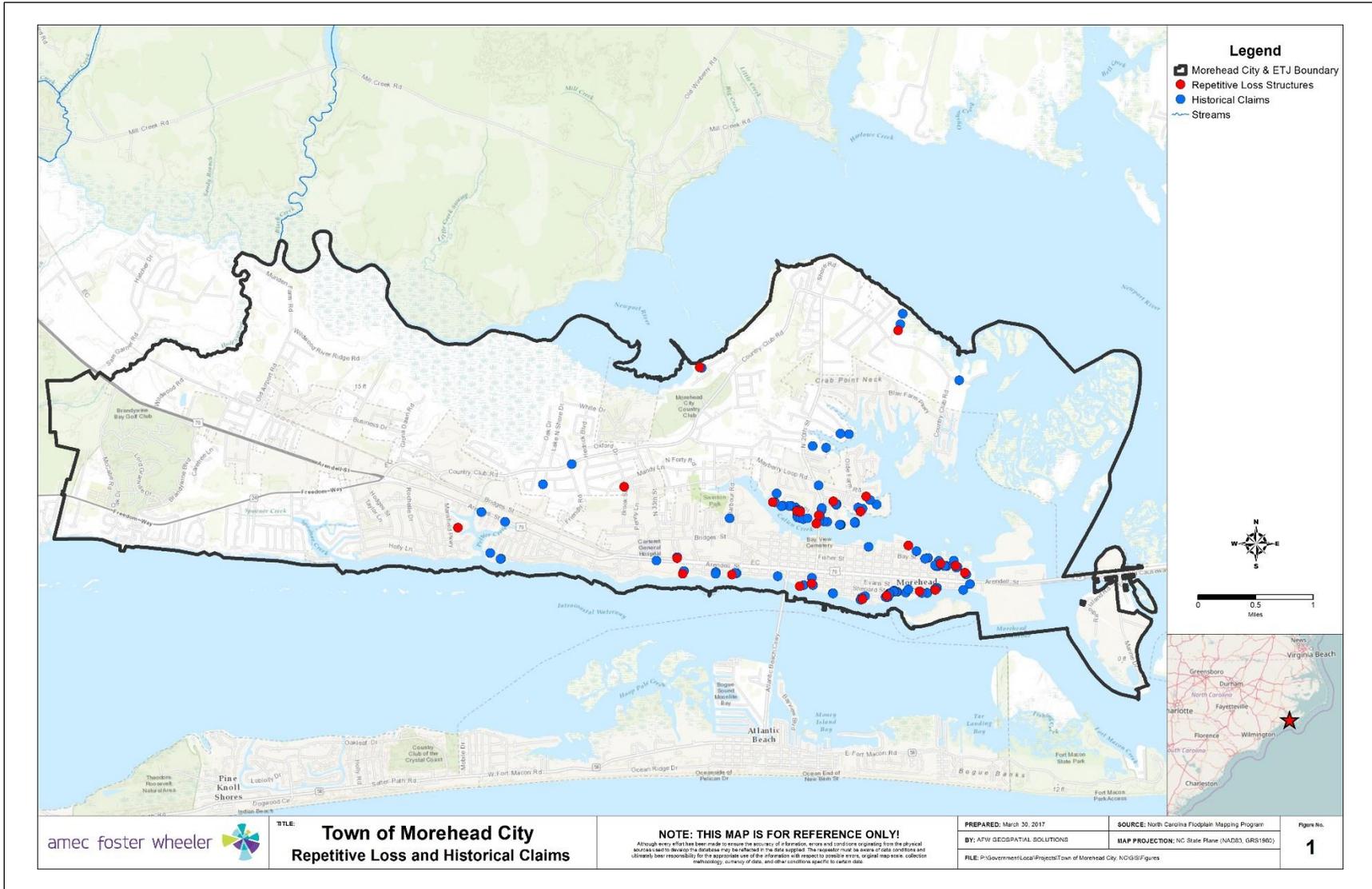
Table 4 below details the repetitive loss building count categorized by FEMA flood zone.

**Table 4 – Repetitive Loss Buildings by Flood Zone**

Flood Zone	Building Count		Total Building Payment	Total Content Payment	Total Paid
	Insured	Uninsured			
AE	7	3	\$334,934	\$590	\$334,934
A03	1	0	\$5,188	\$37	\$5,225
A05	0	1	\$5,529	\$0	\$5,529
A06	3	3	\$75,375	\$10,811	\$86,186
A07	3	1	\$192,609	\$97,293	\$289,902
A08	1	3	\$115,270	\$11,207	\$126,477
C	1	1	\$27,697	\$821	\$28,518
X	4	1	\$81,102	\$0	\$97,630
<b>Total</b>	<b>20</b>	<b>13</b>	<b>\$837,704</b>	<b>\$120,759</b>	<b>\$974,401</b>

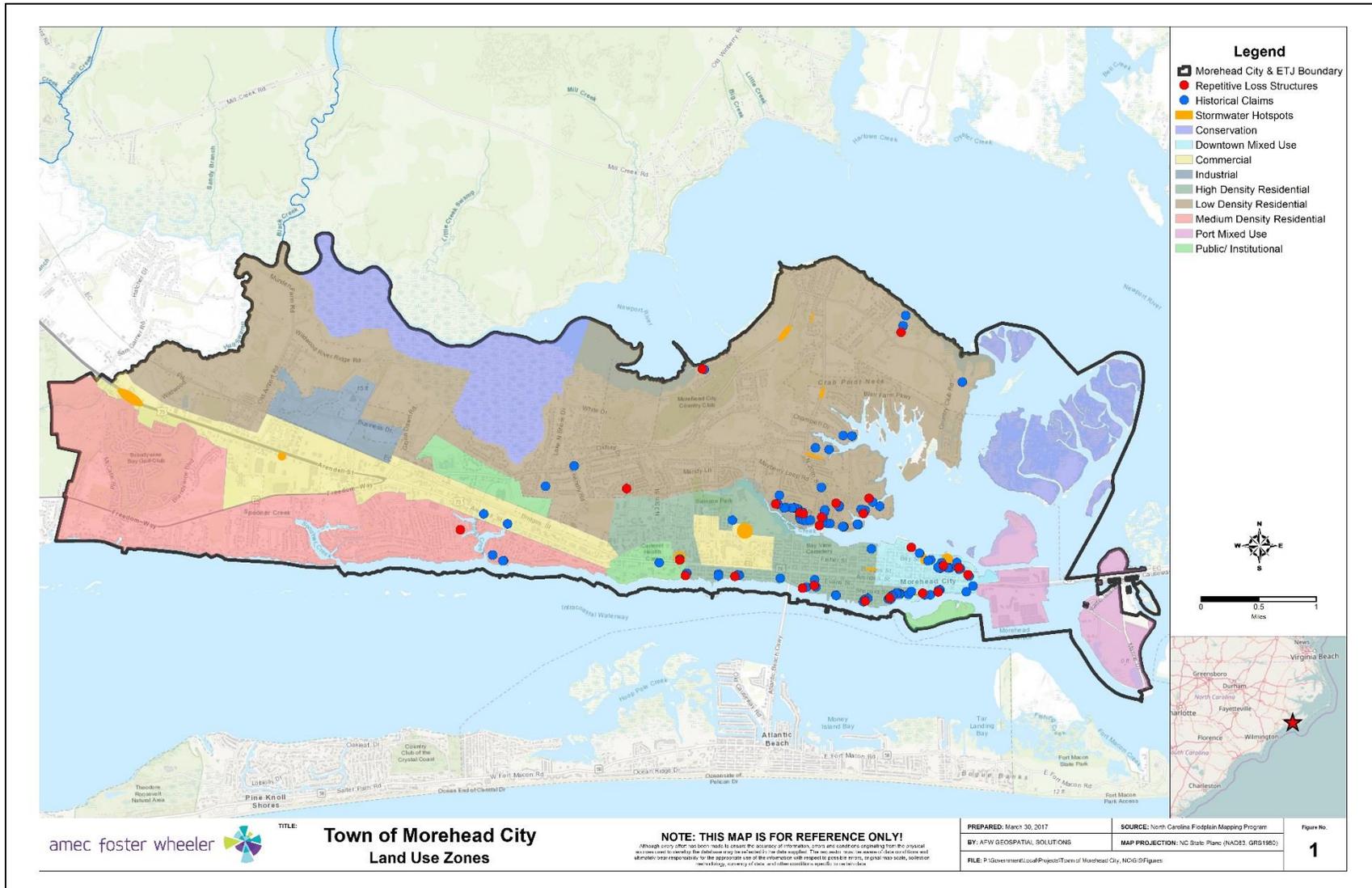
Source: NFIP Repetitive Loss Data, 2016

Figure 6 illustrates the location of repetitive loss properties and historic claims properties (those with one claim paid against the NFIP). Figure 7 illustrates the same repetitive loss properties in relation to the known localized flooding areas described in Target Area #2 and overlaid with future land use.



Source: NFIP Repetitive Loss Data, 11/30/16

Figure 6 – Repetitive Loss and Historical Claims Properties



Source: Town of Morehead City Planning & Inspections Department; NFIP Repetitive Loss Data, 11/30/2016

**Figure 7 – Repetitive Loss Properties and Localized Flooding Areas**

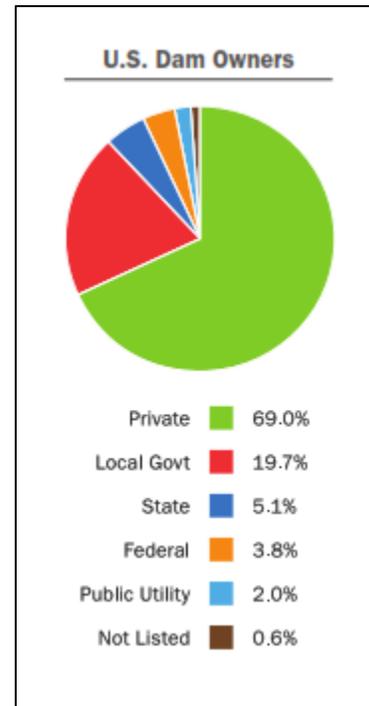
**Target Area #4: Dam Inundation Area**

Properties which are subject to a dam breach often have very little time to react to such an event. Therefore, preparedness education becomes essential to protect valuables in the building and to save lives.

According to FEMA Publication 956 – Living with Dams, almost 70 percent of dams in the US are privately owned. They are regulated the same as bridges and factories where inspections are conducted either by individual states or by the federal government.



Getty Images: Picture of flooding downstream from the California Oroville Dam



Dam failures have low probability but high consequences, but good planning and increased safety programs can reduce property damage and save lives. FEMA Publication 956 indicates that dam failure generally falls within 3 major categories:

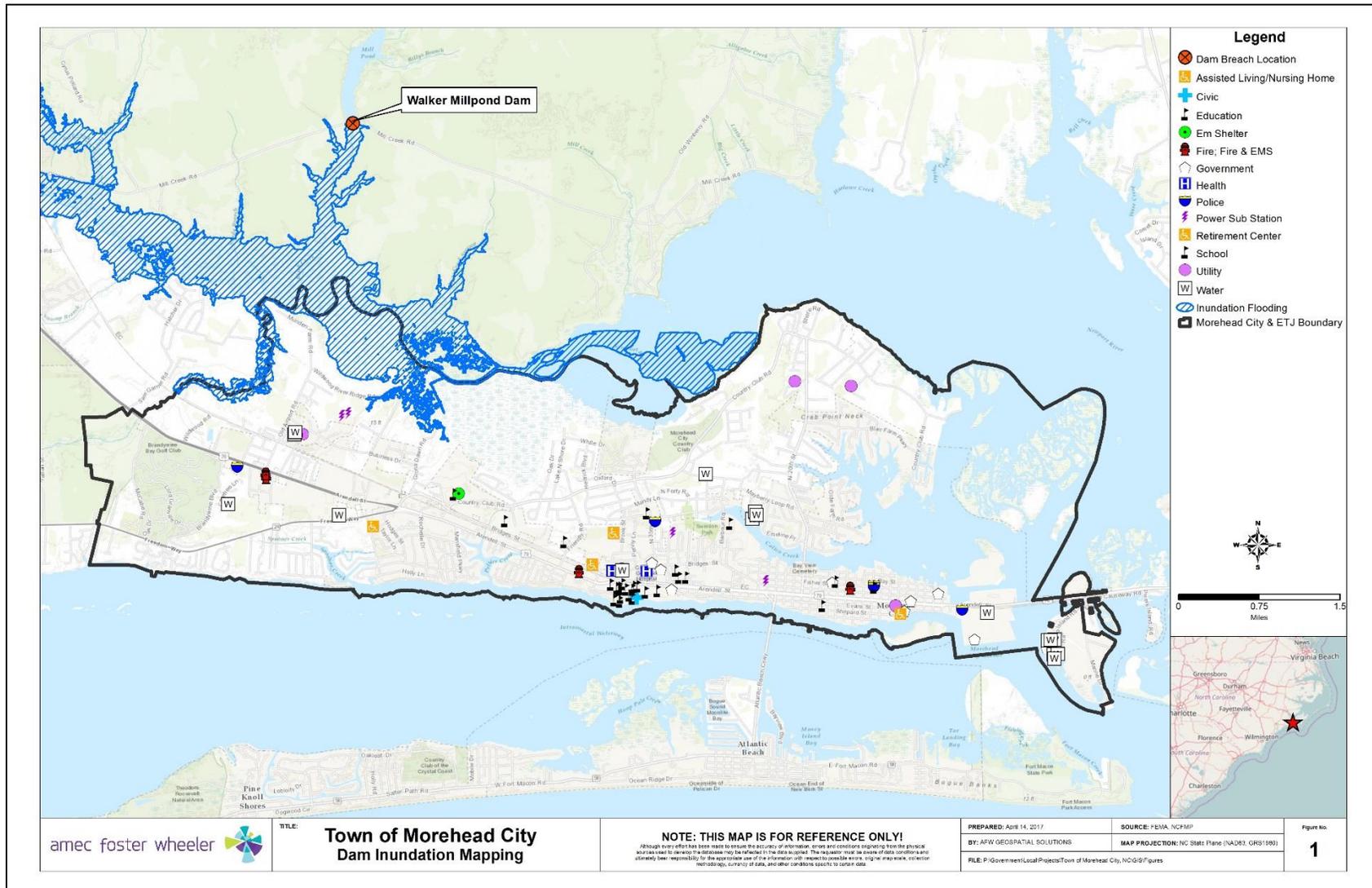
- Structural failure (foundation defects);
- Mechanical failure (malfunctioning gates and valves); and
- Hydraulic failure (overtopping).

FEMA also indicates that the following problems can contribute to dam failure including: Inadequate design, embankment -stability problems, malfunction of dam equipment, damage from vandalism, spillway damage or malfunction, and seepage problems.

An analysis of the four target areas described above concludes the following:

1. The entire Town and all flood zones are subject to flooding, and the PPI should strive to reach all residents and businesses within the Town, especially within the SFHA.
2. Repetitive loss locations are distributed across flood zones with multiple properties located outside of the flood zone in the Unshaded X-Zone.
3. There are between 5,264 and 6,293 buildings located within an Unshaded Zone X flood zone with a value of between \$2,357,291,353 and \$2,062,300,531. These property owners need to be made aware that they are subject to flood risk and that flood insurance is available to them.
4. Several of the repetitive loss properties could be attributed to localized flooding issues.
5. Residents and businesses located within a dam inundation zone need to be informed of the risks of being located downstream from a dam and should be prepared to evacuate.

The inundation area for the Walker Millpond Dam are shown in Figure 8 on the following page.



Source: North Carolina Department of Environmental Quality, March 2017

**Figure 8 – Walker Millpond Dam Inundation Area**



## **2.2 Assess Flood Insurance Coverage (Flood Insurance Assessment)**

One valuable source of information on flood hazards is current flood insurance data for active policies and past claims. Flood insurance is required as a condition of federal aid or a mortgage or loan that is federally insured for a building located in a FEMA flood zone. An analysis of the NFIP data provided the following insight into areas susceptible to flooding in the Town:

1. Where do active flood insurance policies exist?
2. Where have flood insurance claims been paid in the past?
3. How many buildings are exposed to the flood hazard versus how many buildings have coverage?
4. How does the average amount of coverage compare to the amount of expected flood damage from the 100-yr flood?

Figure 9 shows the location of active flood insurance policies in reference to the Preliminary FIRM. There are significant concentrations of policies within the AE Zone along the southern coast and inlets. However, there is a noticeable lack of policies in and along the AE Zone in northern Morehead City near the Newport River and around the Calico Bay and Crab Point Bay. The latter areas in particular have experienced substantial growth in recent years and should be a focus for flood protection and flood insurance outreach.

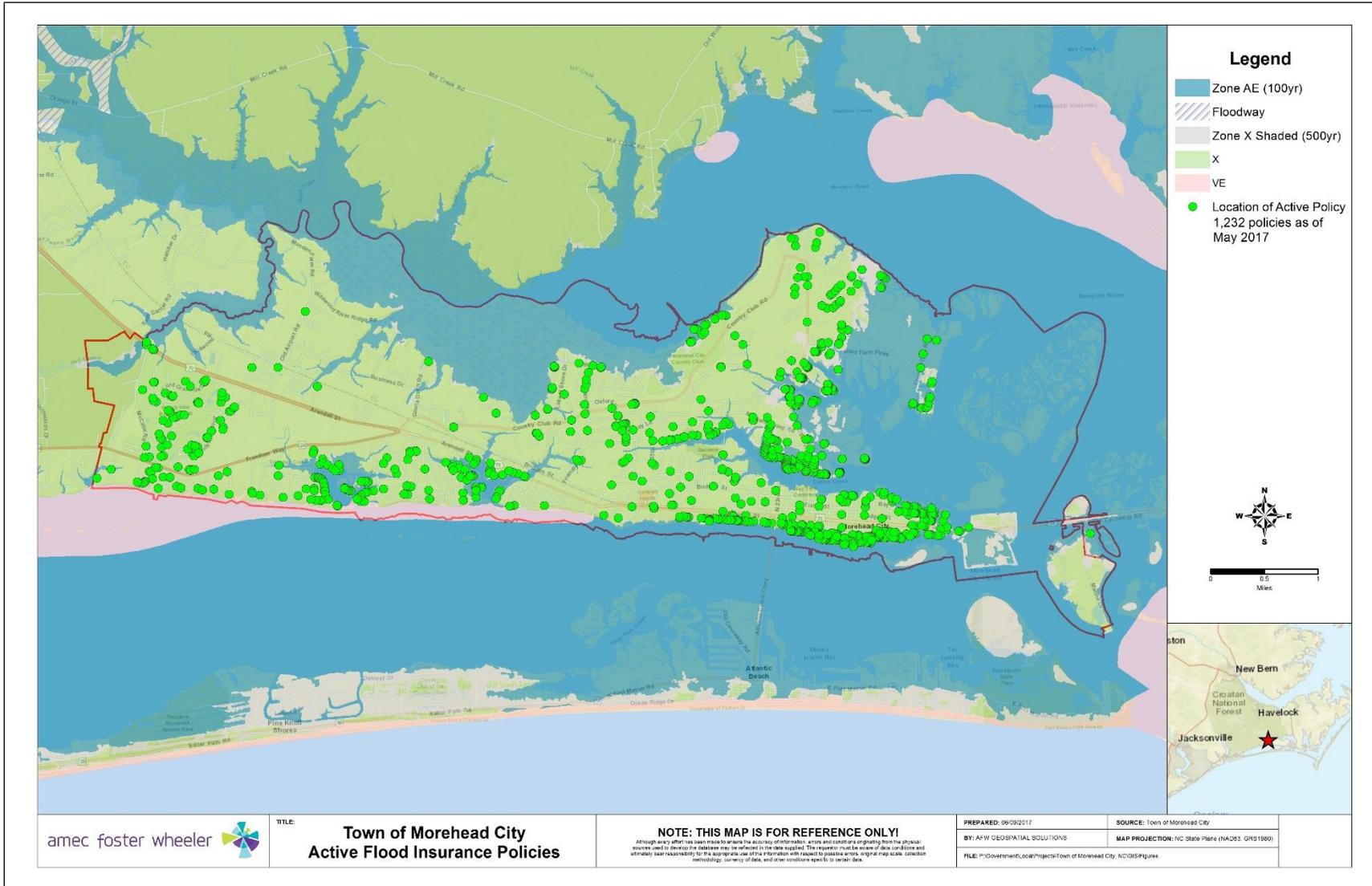


Figure 9 – Flood Insurance Policies in Force



Table 5 summarizes key statistics of policies in force and past claims by flood zone.

**Table 5 – NFIP Policy and Claims Data by Flood Zone**

Flood Zone	Number of Policies in Force	Total Premium	Total Coverage	Number of Closed Paid Losses	Total of Closed Paid Losses
A01-30 & AE Zones	889	\$621,261	\$222,507,900	119	\$1,147,141.02
A Zones	0	\$0	\$0	0	\$0.00
AO Zones	0	\$0	\$0	0	\$0.00
AH Zones	0	\$0	\$0	0	\$0.00
AR Zones	0	\$0	\$0	0	\$0.00
A99 Zones	0	\$0	\$0	0	\$0.00
V01-30 & VE Zones	5	\$14,370	\$1,050,000	3	\$24,645.47
V Zones	0	\$0	\$0	0	\$0.00
D Zones	0	\$0	\$0	0	\$0.00
<b>B, C &amp; X Zone</b>					
Standard	60	\$73,312	\$15,045,400	18	\$244,111.26
Preferred	499	\$208,705	\$158,144,000	17	\$143,641.22
<b>Total</b>	<b>1,453</b>	<b>\$917,648</b>	<b>\$396,747,300</b>	<b>157</b>	<b>\$1,559,538.00</b>

Source: FEMA Community Information System, April 2014

Table 6 compares the number of policies in force with the number of buildings located within each flood zone.

**Table 6 – Percentage of Buildings Insured**

Flood Zone	Number of Policies in Force	Number of Buildings	% Insured
<b>Effective FIRM</b>			
A01-30 & AE Zones	889	1,555	57.2%
V01-30 & VE Zones	5	18	27.8%
B, C & X Zones	559	6,716	8.3%
<b>Total</b>	<b>1,453</b>	<b>8,289</b>	<b>17.5%</b>
<b>Preliminary FIRM</b>			
A01-30 & AE Zones	889	2,232	39.8%
V01-30 & VE Zones	5	21	23.8%
B, C & X Zones	559	6,027	9.3%
<b>Total</b>	<b>1,453</b>	<b>8,280</b>	<b>17.5%</b>

Source: FEMA Community Information System as of 01/31/2017, FEMA Effective 2004 DFIRM, FEMA Preliminary 2016 DFIRM

The notable statistic in Table 6 is that while there are 1,573 located within the 100-year flood zone mapped on the 2004 Effective DFIRM, only 56% of these buildings carry an active flood insurance policy. The 2016 Preliminary DFIRM shows an increase in flood risk, with 2,253 buildings located within the 100-yr flood zone, only 40% of which carry an active flood insurance policy. Furthermore, only approximately 9% of buildings within the X Zone are insured, yet as the repetitive loss figures previously showed, flooding is not limited to the 100-yr flood zones.

Table 7 compares number of buildings present, number of policies in force, total coverage and a calculation of loss estimate values for the 100-yr flood.



**Table 7 – Flood Loss Estimates by Flood Zone**

Flood Zone	Number of Buildings	Number of Policies in Force	Total Value <sup>1</sup>	Total Coverage	Loss Estimate
<b>Effective FIRM</b>					
A01-30 & AE Zones	1,555	889	\$765,198,237	\$222,507,900	\$45,066,142
V01-30 & VE Zones	18	5	\$8,784,778	\$1,050,000	\$0
<b>Total</b>	<b>1,573</b>	<b>1,453</b>	<b>\$773,983,015</b>	<b>\$645,220,600</b>	\$45,066,142
<b>Preliminary FIRM</b>					
A01-30 & AE Zones	2,232	889	\$944,156,918	\$222,507,900	\$102,101,225
V01-30 & VE Zones	21	5	\$11,815,154	\$1,050,000	\$0
<b>Total</b>	<b>2,253</b>	<b>1,453</b>	<b>\$955,972,072</b>	<b>\$645,220,600</b>	\$102,101,225

Source: Town of Morehead City; FEMA 2004 Effective DFIRM; FEMA 2016 Preliminary DFIRM

<sup>1</sup>Total value does not include land value.

An analysis of existing flood insurance coverage shows that existing building coverage does exceed the loss estimate for the 100-yr flood zone of both the Effective and Preliminary FIRMs; however, this statistic does not consider buildings outside the SFHA nor does it account for the large number of uninsured proprietries (44-60%) that would have no coverage in the event of a flood loss. Moreover, this estimate does not consider the impacts of a flood more severe than the modeled 100-year flood, which would cause greater damages and impact buildings outside the SFHA.

**Insurance Conclusions:**

1. Across all flood zones, 18% of properties are covered by a flood insurance policy; therefore, 82% are not.
2. Only 9% of the buildings in the X Zone have a flood insurance policy and 89% of those policies are preferred risk policies.
3. A higher percentage of buildings in the AE Zone are insured as compared to the entire floodplain.

**Insurance Recommendations:**

1. Increase the number of Flood Insurance Policies in both AE and VE Zones.
2. Concentrate on retention of flood policies in the AE Zone.
3. Increase the number of Standard Flood Insurance Policies in the X Zones.

**Repetitive Flooding:** Repetitive flood loss was analyzed to determine the number of insured repetitive loss properties in each FEMA flood zone. According to 2016 NFIP records, there are 26 unmitigated properties with a total payment of \$653,995. Of those 26 unmitigated repetitive loss properties, 69% are insured. Table 8 details repetitive loss building counts, FEMA flood zones and total payment.

**Table 8 – Repetitive Loss Summary Table (Unmitigated Properties)**

Flood Zone	Building Count		Total Building Payment	Total Content Payment	Total Paid
	Insured	Uninsured			
AE	7	2	\$325,806	\$590	\$326,396
A05	0	1	\$5,529	\$0	\$5,529
A06	3	2	\$53,172	\$330	\$53,502
A07	3	0	\$146,806	\$69,952	\$216,758
A08	0	2	\$27,218	\$0	\$27,218
C	1	0	\$14,361	\$0	\$14,361
X	4	1	\$81,102	\$0	\$97,630
<b>Total</b>	<b>18</b>	<b>8</b>	<b>\$653,995</b>	<b>\$87,400</b>	<b>\$741,395</b>

Source: NFIP Repetitive Loss Data, 2016



## **2.3 Determine Target Audiences**

According to the 2011-2015 American Community Survey 5-Year Estimates, 7.4% of Town residents are Hispanic or Latino and 9.6% of residences have a language other than English spoken in the home. Approximately 23.6% of the population is considered as living below the poverty level. These social and economic factors were considered by the committee in ensuring that the right messages, tools and resources were used to overcome obstacles. The committee recognized that messages would need to be distributed in difference forms and using different sources in order to reach all target audiences. The following groups have been identified as target audiences who need special messages on flood protection:

### **Target Audience #1: Special Flood Hazard Area (SFHA)**

An analysis of FEMA flood zones and repetitive loss properties shows that the entire Town and all flood zones are subject to flooding; however, the SFHA covers over half of the town and contains the most serious flooding problems. Therefore, the PPI should focus on residents and businesses within the SFHA.

### **Target Audience #2: Areas of Localized Stormwater Flooding**

Heavy rainfall can often overburden the drainage system and cause traffic issues along with potential damage to property. The Town has identified 14 specific locations “hot spots” where outreach can be targeted to remind residents not to drive through flooded streets.

### **Target Audience #3: Repetitive Loss Properties/Areas**

Properties in these areas have been hit more often by flooding, so they have a greater need for flood protection information. Only 69% of these properties are insured.

### **Target Audience #4: Dam Inundation Area**

Properties located downstream of a dam have a unique flood issue. Not only are they exposed to a flash flood potential, but they are equally at risk of other flood hazards experienced by residents in other parts of town.

### **Target Audience #5: Homeowners Associations**

Home Owner Associations have access to entire neighborhoods and often host neighborhood events. Educating and partnering with this audience would be an efficient way to reach large groups of residents at one time.

### **Target Audience #6: Real Estate, Lending and Insurance Companies, and Surveyors**

This group plays a key role in conveying information about flood insurance to homeowners. The PPI Committee will make sure this group is informed and equipped with the tools needed to convey flood risk and flood insurance information to residents.

### **Target Audience #7: Landscapers**

There has been a consistent problem with landscapers sweeping vegetation/debris into nearby storm drains which clogs the system and causes stormwater to back-up and overflow into the surrounding area.

Flood problems can occur anywhere in Town due to local stormwater issues. In addition to the target audiences detailed above, the PPI Committee identified the following Stakeholders as being able to provide support and informational materials to supplement and enhance the outreach efforts detailed in this PPI:

- FEMA
- North Carolina Emergency Management
- North Carolina Floodplain Managers Association
- North Carolina Division of Coastal Management
- Carteret County Emergency Management



- Carteret Community College
- Carteret County Homebuilders Association
- Downtown Morehead City Revitalization Association

## 2.4 Inventory Other Public Information Efforts

A key part of developing a public information program is becoming aware of other public information activities targeted at Town residents. The information in Table 8 came from past projects, staff research, and PPI Committee members. Knowing what messages are currently reaching the residents of the Town is essential in determining what types of projects or messages are effective and which ones may need to be revised or what new projects are necessary to encourage residents and businesses to adopt behaviors to protect their property and their lives and make the Town more resilient.

**Table 9 – Existing Public Information Efforts**

Organization	Project	Subject Matter	Frequency
Planning & Inspections Department	Town Website	Various flood-related topics*	Year-Round
Planning & Inspections Department	Outreach Brochure mailed to SFHA	6 Primary CRS Topics and general flood preparedness and awareness topics	Annually
Planning & Inspections Department	Outreach brochure and information available at office	6 Primary CRS Topics and general flood preparedness and awareness topics	Year-Round
Planning & Inspections Department	FEMA Brochures & Information available at office	Various flood-related topics*	Year-Round
Carteret County Planning & Inspections Department	Outreach Brochure mailed to all taxpayers	6 Primary CRS Topics and general flood preparedness and awareness topics	Annually
Carteret County Planning & Inspections Department	Outreach brochure and information available at office	6 Primary CRS Topics and general flood preparedness and awareness topics	Year-Round
Carteret County Planning & Inspections Department	County website	Various flood-related topics*	Year-Round
North Carolina Flood Risk Information System	Map inquiry service	Flood hazard, insurance	Year-Round
Planning & Development Services	Elevation certificates	Building and insurance data	Year-Round
Town Manager, Public Works Department	Capital Improvement Planning	Stormwater drainage, flood protection, water quality	Annually
Planning & Inspections Department	Local Surveyors' Group Meeting	Various flood-related topics	Annually

**\* Note: Various Flood-Related Topics mean Prevention and Regulatory, Property Protection, Natural Resource Protection, Emergency Services, and Public Information**





### Step 3: Formulate Messages

After reviewing the Community Needs Assessment, the PPI Committee reviewed the existing outreach projects and their dissemination methods and developed the following priority messages. Table 9 summarizes each message and the desired outcome. Topics A through F are the CRS Activity 330 Priority Topics and Topics G through J are the additional topics which were identified by the PPI Committee.

The 10 topics identified below are covered by various projects which are listed in Table 10. In addition, the 6 Target Audiences are addressed through these projects.

**Table 10 – Topics, Messages, and Outcomes**

Topic	Message	Outcome(s)
A. Know your flood hazard	1. Your property is subject to flooding	Increase number of FIRM inquires
	2. Your property is in a repetitively flooded area	Reduce future repetitive loss properties
	3. Don't drive through flooded streets (know where to drive and where not to drive)	Reduce damages to vehicles, emergency rescues, and responders
B. Insure your property	1. You need flood insurance	Increase number of flood insurance policies
	2. Your homeowner's policy does not cover flood damage	Increase number of flood insurance policies
	3. Renters should protect contents with flood insurance	Reduce damage to contents
	4. Lower cost Preferred Risk Policies (PRP) are available	Increase number of PRP policies
C. Protect yourself and your family	1. Turn around don't drown	Reduce rescues and deaths
	2. Know the flood warning signals	Reduce rescues and deaths
D. Protect your property from the hazard	1. Elevate HVAC exterior units	Reduce number of flood damaged HVAC units
	2. Don't begin work without proper permits	Reduce red tag violations
	3. Don't throw trash or debris in streams, channels or open bodies of water	Reduce pollution and overbank flow
	4. Grant monies are available to help elevate your home	Increase financial opportunities
E. Build responsibly	1. Get a permit before you start construction	Reduce citations
	2. Know the substantial damage rules	Reduce citations
	3. Keep areas open (setbacks) between homes and property lines	Maintain proper drainage
F. Protect natural floodplain functions	1. Don't dump in storm drains	Improve water quality
	2. Report erosion control measures not working	Contain erosion on construction sites
	3. Don't disturb natural floodplain areas	Reduce grading, fill, and earth movement
G. Flood Education	1. Promote floodplain management and NAI concepts	Reduce damage to buildings and natural floodplain functions
	2. Promote flood education for real estate agents, insurance agents and lenders	Increase flood awareness
H. General Preparedness	1. Identify and document your personal belongings	Reduce delays in receiving insurance payments
	2. Prepare emergency flood kit & plan	Save important insurance, real estate, and other important documents, pictures, etc. and know how to contact other family members



Topic	Message	Outcome(s)
I. Be aware of other hazards (Coastal Erosion)	1. Know that coastal erosion can undermine building foundations	Reduce potential damage to property
	2. Sea Level Rise can impact coastal erosion	Reduce potential damage to property
J. Hurricane Preparedness	1. Prepare a safety checklist and know evacuation routes	Protect family and reduce damage
	2. Prepare an emergency supply kit	Protect family

**Step 4: Identify Outreach Projects to Convey the Messages**

The overall strategy is to make information available to target audiences in a manner that will encourage each audience to adapt behaviors to improve preparedness and decrease future flood damage. Table 10 provides a list of program elements which include various public information pieces, website information, and various meetings to homeowner associations, etc. There are 15 projects and initiatives that will be implemented during 2017/2018.

New proposed projects, developed through discussions at the committee meetings, are highlighted below, as are other effective outreach projects which have been implemented by the Town over the past several years. Together these projects will provide enhanced information to the public as well as to specific targeted audiences.

**Flood Response Preparations**

In addition to projects that are implemented every year, the PPI Committee recommends projects that will be implemented during and after a flood. These 3 projects are drafted and made ready for production and dissemination after a flood warning. These projects are listed at the end of Table 9.

**Step 5: Examine Other Public Information Initiatives**

The PPI Committee and Town staff worked together to identify other Public Information Initiatives (PII) which provide additional information to citizens in the Town and to improve access to information and services provided by the Town. Those other public information initiatives include:

**Activity 310:** All Elevation Certificates are accessible on the Town’s website. See **OP #2** on page 27 and **OP #7** on page 28.

**Activity 320:** Publicize Activity 320 on the Town’s website to encourage more map inquiry request from the public by listing the types of information available. The service is already publicized to the three target audiences via a direct mail letter. See **OP #3** on page 27.

**Activity 350:** Enhancement of the Town’s website to include updated information consistent with the topics on the updated flood brochure along with Elevation Certificates, LOMA’s, and a link to real time gauge and rainfall data on the North Carolina FIMAN website. The updated website will also include links to various stakeholder groups such as FEMA, NCEM, Carteret County Emergency Management, etc. See **OP #2** on page 27.

**Activity 360:** Undertake Activity 360 (PPA and PPV) and publicize Activity 360 on the updated Flood Brochure and in the Town’s website so a wider audience is aware of this service. Additionally, this service will be discussed at homeowner association meetings so that an even wider audience is aware that the Town provides this service. See **OP#4** on page27.



## **Step 6: Implement, Monitor and Evaluate the Program**

### **6.1 Adoption**

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This document will become effective when it is adopted by the Town Council.

### **6.2 Evaluation**

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The PPI Committee along with Town Staff will monitor the projects as they are developed, as well as the results. They will record inputs from PPI Committee members and suggestions from other Town employees and stakeholders participating in the activities. That input will be sent by e-mail to committee members for consideration and evaluation.

The PPI Committee will meet once per year to review the implementation of these projects and initiatives. At that time, the status of the projects will be explained and progress toward the outcomes will be discussed. The Committee will recommend to the appropriate Town offices and the stakeholders who implement projects whether the projects should be changed or discontinued. The Committee will meet and review the outcomes of each individual activity to change, add, or approve them. Tables 8 and 9 will be revised as needed. The outcomes and revisions will be submitted as part of the Town's annual recertification package to the Community Rating System and submitted to the Town Council for their review and consideration. A report will be submitted to the Town Council explaining the annual changes to the PPI – projects, messages, and outcomes.



**Table 11 – PPI Projects and Initiatives**

Target Area & Audience(s)	Topic(s) (See Table 9)	Message(s) (See Table 9)	Project(s)	Assignment	Schedule	Stakeholder
<b>Outreach Projects</b>						
<b>Target Area #1: Special Flood Hazard Area (SFHA)</b>	All 10 Topics on Pages 24 and 25.	Your property is subject to flooding	<b>OP #1</b> Updated Flood Protection Brochure will be mailed to all property owners in SFHA annually	Planning & Inspections Department	Annually	N/A
		You need flood insurance	<b>OP #2</b> Enhanced website to include updated information on the 6 Priority and 4 additional topics, Elevation Certificates, LOMAS, and links to the NC FIMA real time gauge website (CRS Activity 350)	Planning and Inspections Department	Year-Round	NCEM
		Turn around don't drown				
		Know the flood warning signals	<b>OP #3</b> Provide information to inquirers about information on the FIRM (CRS Activity 320) and publicize this service on the updated Flood Brochure under OP# 1, on the enhanced website under OP# 3, and when Speaking to homeowner Associations under OP #16.	Planning and Inspections Department	Year-Round	NCEM
		Elevate exterior HVAC Units				
		Get a permit before beginning work	<b>OP #4</b> Undertake Property Protection Advice (PPA) and Protection Advice After a Site Visit (PPV) (CRS Activity 360) and publicize this service on the updated flood brochure and on the enhanced website	Public Works Department	Year-Round	N/A
		Promote flood education for lenders, insurance agents, real estate agents and surveyors				
		Identify Personal belongings	<b>OP #5</b> Updated Flood Brochure will be placed on the counter of the Planning and Inspections Office and at the Council Chambers (Separate Building)	Planning & Inspections Department	Annually	N/A
Sea Level Rise can impact coastal erosion	<b>OP #6</b> Develop informational materials for HVAC Contractors to educate them on elevating HVAC units above the BFE plus freeboard	Planning & Inspections Department, Carteret County Emergency Management	Annually	HVAC Contractors		
Prepare an emergency supply kit						
Know substantial damage rules						



<i>Continued from above</i>	<i>Continued from above</i>	<i>Continued from above</i>	<b>OP #7</b> Maintain copies of elevation certificates and make them available at the Planning & Inspections Department office and website	Planning & Inspections Department	Year-Round	N/A
			<b>OP #8</b> Provide FEMA/NFIP Brochures to local real estate agencies, insurance agents, and lenders to ensure they are informing clients when property for sale is located within a SFHA.	Planning & Inspections Department	Year-Round	FEMA
			<b>OP #9</b> Ensure that the local library maintains information relating to flooding and flood protections	Planning & Inspections Department	Year-Round	NCEM and FEMA
			<b>OP #10</b> Maintain Copies of Substantial Damage rules and regulations (flyer) at the Planning and Inspections Department	Planning & Inspections Department	Year-Round	N/A
<b>Target Area #2: Areas of Localized Stormwater Flooding</b>	Know your flood hazard  Protect yourself and your family  Protect your property from the hazard	Don't drive through flooded streets (know where to drive and where not to drive)  Turn around don't drown  Don't throw trash or debris in streams, channels or open bodies of water  Don't dump in storm drains	<b>OP #11</b> Mail a notice to all property owners in the Localized Flooding Target Area on the dangers associated with flooding in low-lying areas, turn around don't drown and how property can be damaged from flood waters along with explanation of localized stormwater flooding.	Planning and Inspections Department	Annually	N/A
			<b>OP #12</b> Place no dumping signs on top of drainage inlets	Public Works Department	Annually	N/A
<b>Target Area #3: Repetitive Loss Properties/Area</b>	All 10 Topics on Pages 24 and 25	All Messages on Pages 24 and 25	<b>OP #13</b> Updated Flood Protection Brochure will be mailed to all property owners in the repetitive loss areas annually along with the letter required under CRS Section 501-504	Planning and Inspections Department	Annually	N/A
<b>Target Area #4: Dam Inundation Area</b>	All 10 Topics on Pages 24 and 25	All Messages on Pages 24 and 25	<b>OP #14</b> Updated Flood Protection Brochure will be mailed to all property owners in the dam inundation area annually along with a letter explaining the risks of being located in this area.	Planning and Inspections Department	Annually	N/A
<b>Target Audience # 5 Homeowner Associations</b>	All 10 Topics on Pages 24 and 25	All Messages on Pages 24 and 25	<b>OP #15</b> Speak to 2 Homeowner Associations each year covering the 10 topics on the update flood brochure and provide NCEM Hurricane preparedness brochures	Planning and Inspections Department	Annually	NCEM



<b>Target Audience #6</b> Real Estate, Lending, Insurance Companies and Surveyors	All 10 Topics on Pages 24 and 25	All Messages on Pages 24 and 25	<b>OP #16</b> Speak to the Coastal Chapter of NC Surveyors Association on the 10 floodplain Management topics on the update Flood Protection Brochure	Planning and Inspections Department	Annually	Surveyor's Association
<b>Target Audience #7</b> Landscapers	Protect Natural Floodplain Functions	Don't dump in storm drains	<b>OP #17</b> Provide brochure to landscapers on the benefits of not blowing leaves and grass clippings down the storm drain	Planning and Inspections Department	Year-Round	Landscapers
<b>Flood Response Projects</b>						
<b>Target Area #1: Special Flood Hazard Area (SFHA) and Repetitive Loss Areas (RLAA)</b>	Know your flood hazard  Protect yourself and your family  Protect your property from the hazard  Build responsibly  General preparedness	Don't drive through flooded streets (know where to drive and where not to drive)	<b>FRP #1</b> Provide "After a Flood: The First Steps" brochure to flooded property owners which provides information on the dangers of flood water, listen for local warnings, don't drive through flooded streets, stay healthy (emotional stress), and cleaning up and repairing your home	Planning and Inspections Department	Ready to go before and after a flood	FEMA and American Red Cross
		Turn around don't drown  Get a permit before you start construction	<b>FRP #2</b> Provide copies of "Repairing your flooded home" FEMA 234 publication to flooded property owners which provides information on protecting your home from further damage, getting organized, drying out your flooded home, restoring utilities, clean up, rebuilding and preparing for the next flood.	Planning and Inspections Department	Ready to go before and after a flood	FEMA and American Red Cross
		Know the flood warning signals	<b>FRP #3</b> Provide information on the Town's Substantial Damage rules and the need to get a building permit before rebuilding	Planning and Inspections Department	Ready to go before and after a flood	N/A
		Know substantial damage rules  Identify and document your personal belongings  Prepare an emergency supply kit	<b>FRP #4</b> Morehead City will work with Carteret County to disseminate FRP handouts and materials (Flood brochure & FEMA: F-300, F-663, F-001, F-217, F-777, F-671, B-475, B-477). <ul style="list-style-type: none"> <li>Staff will review handouts, materials, and brochures at least once a year to ensure they are still relevant and appropriate.</li> <li>Approximately 72 hours before a major storm event, staff will begin to make copies of the FRP handouts and materials from the master file located in the Department of Planning &amp; Development main Beaufort, NC office. Each handout will be collated and a packet of</li> </ul>	Planning and Inspections Department & Carteret County Planning and Development Office	Ready to go before and after a flood	FEMA and Carteret County



<i>See above</i>	<i>See above</i>	<i>See above</i>	<p>handouts and other FRP materials will be created for delivery to the six locations listed below.</p> <ul style="list-style-type: none"><li>Approximately 48 hours before a major storm event, staff will distribute the packets of FRP handouts and materials to the six locations listed below.</li></ul> <p><b>Walmart Supercenter</b>, 300 NC Highway 24 Morehead City, NC 28557</p> <p><b>Lowe's Home Improvement</b>, 5219 US Highway 70, Morehead City, NC 28557</p> <p><b>Lowe's Home Improvement</b>, 401 WB Mclean Drive, Cape Carteret, NC 28584</p> <p><b>Dollar General</b>, 229 US Highway 70, Sealevel, NC 28577</p> <p><b>Walmart Neighborhood Market</b>, 6645 US Highway 70, Newport, NC 28570</p> <p><b>Billy's Grocery Store</b>, 1016 Island Road, Harkers Island, NC 28531</p>	<i>See above</i>	<i>See above</i>	<i>See above</i>
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End of Report