

TOWN OF HOLLY RIDGE
Hazard Mitigation Plan
Annex 2
to
Onslow County Hazard Mitigation Plan

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ATTACHMENT 2: TOWN OF HOLLY RIDGE OC MJ-HMP APPROVAL AND ADOPTION ERROR!

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PREFACE (SEE ONSLOW COUNTY MJ HMP)

I. INTRODUCTION

A. Background (See [Onslow County MJ HMP](#))

B. Purpose (See *Onslow County MJ HMP*)

C. Scope (See *Onslow County MJ HMP*)

D. Authority (See *Onslow County MJ HMP*)

E. Participants in the Planning Process

The Town of Holly Ridge participated as part of Onslow County's Hazard Mitigation Plan Task Force. The 2015 update to the Onslow County Multi-Jurisdictional Hazard Mitigation Plan, including the Holly Ridge Annex began with meeting of the Hazard Mitigation Advisory Committee held at the Emergency Operations Center. The Advisory Committee Meetings took place on February 13th, 2014 and May 29th, 2014 with Heather Reynolds, Town Clerk attending as the person designated to update the Town of Holly Ridge Annex.

The Plan was originally adopted in 2004 and was developed in response to the U.S. Congressional directive in 2000 and requires periodic review, update, and additional FEMA approval. North Carolina Emergency Management requires the revised plan by December 31st, 2014, six months prior to the FEMA review, scheduled for June 29th, 2015.

The Town of Holly Ridge Annex to the Onslow County MJHMP was submitted to the Holly Ridge Town Council for approval on September 9th, 2014 at their Regular Monthly Meeting. Once approved by the Holly Ridge Town Council, the Holly Ridge Annex was submitted to Onslow County to be added to the Onslow County MJHMP for approval by NCDDEM and FEMA. A public meeting on the complete update of the Multi-Jurisdictional Hazard Mitigation Plan was held on September 5th, 2014 at 6:00 P.M. at the Onslow County Emergency Operations Center.

The Town of Holly Ridge held a Public Hearing on _____ to hear public comments before formally adopting the Town of Holly Ridge Annex. The complete Onslow County Multi-Jurisdictional Hazard Mitigation Plan and Town of Holly Ridge Annex were adopted by Resolution of the Holly Ridge Town Council on _____, 2015.

The update to the Holly Ridge Annex would not be possible without the assistance of the Onslow County GIS Office, the Onslow County Tax Office, other municipalities in Onslow County, and Onslow County Emergency Operations staff.

F. The Planning Process

1. The Hazard Identification and Analysis Matrix

In a number of meetings, the Town of Holly Ridge participated in preparing the Hazard Identification and Analysis Matrix, using the Onslow County-prepared matrix format. Using the values agreed upon to be used countywide, the Town's staff agreed upon the priority to which each of hazards should be assigned. See [Appendix A – Hazard Identification](#).

2. Vulnerability Assessment

Using Onslow County Tax Department data and Town of Holly Ridge insurance data, the Town's staff developed the number of buildings and property values in the various categories of the worksheet.

The population for the Town of Holly Ridge is 1,268 according to the 2010 U.S. Census with an average household size of 2.17 and average family size of 2.67. The population estimate for the year 2013 is 1,443 from the State Demographer. In 2004, the population data projections were developed using a household factor of 2.49 persons per household (a figure from American FactFinder—Census 2000).

For Future Conditions, a growth factor of 17.5 is applied for analysis of future conditions. Populations of commercial buildings were determined by estimating that the average number of people populating a commercial establishment, which exist in all sizes Town-wide, was ten persons per building. For industrial, there are only two large plants in Town – J & J Snackfoods that has 130 full-time employees and 43 temps. Holly Ridge Industrial Park (Gulfstream) which consists of several businesses, currently employees 39 personnel. There is one other small industry in Town that has 14 employees. There are no schools or hospitals in the corporate limits of the Town.

The current values of municipally owned buildings were taken from the current insurance policies.

For future conditions, studying community experience has dictated that there are two areas within the town that are located in flood prone areas. and there are also two small areas in the ETJ located within the 100-year flood plain. The number and value of future vacant lots are not predictable because future Town Council annexation actions and annexation petitions from owners of property currently outside the Town limits drive this factor.

Town of Holly Ridge has 10.55 miles of Town-owned and maintained roads per the Powell Bill Funding report dated 2014. These are valued at \$150/lf. Although ONWASA owns water and sewer lines, the Town has no records as to their location or the linear feet involved.

3. Capability Assessment

All existing policies and programs that might lend support to hazard mitigation were examined and are listed in [Worksheet #3 – Community Capability Assessment – Town of Holly Ridge](#).

4. Interim Conclusions

During the process of completing the worksheets, a public information meeting was held on June 9, 2009 at the Holly Ridge Town Hall to discuss the need for hazard mitigation, the process being followed in the development of the Onslow County plan and the Town of Holly Ridge Anne.g. In addition to Town Council members, there was one member of the general public in attendance. The participants of that meeting agreed that the Town of Holly Ridge’s predominant hazards are damage from hurricanes & coastal storms. See [Attachment 1- Public Information Meetings](#) to this annex for Public Information Meeting information. To this end, the community goals were established primarily to deal with weather events, their aftermath and the need to bring life back to normal as soon as possible.

5. Values and Goals

The Town has always striven to minimize storm damage, personal injury, and to expedite cleanup after storms to minimize the stress of such storms and to bring life back to normal as soon as possible. To this end, all of the stated goals have existed (unwritten) for many years. At committee meetings, these goals were accepted as still being essential.

6. Mitigation Strategies and Policies

The mitigation strategies were determined by considering what was currently being done and additional strategy that the committee felt might be useful in accomplishing the goals.

7. Implementation Responsibilities

The Town of Holly Ridge only has a very small staff. Responsibility for implementing the plan lies mainly with the Town Council and Town Manager.

8. Monitoring, Evaluating, and Reporting Progress

Most of the strategies were found to be ongoing activities or projects that have no beginning or end, programs that Town departments are always working to improve. Some are considered “budget sensitive” and are indicated by budget year.

9. Revisions and Updates

The Town intends to have an annual evaluation in which to consider new ideas or make “midcourse corrections” in programs that were underway.

G. Adoption of the Plan

The 2015 update of the Holly Ridge Annex to the Onslow County Multi-Jurisdictional Hazard Mitigation Plan was originally presented to the Holly Ridge Town Council on September 9th, 2014 for their approval. The Plan adoption is contingent upon the plan being adopted by the Onslow County Board of Commissioners and then being approved by North Carolina Emergency Management (NCEM) and the Federal Emergency Management Agency (FEMA) Region IV. Once the plan is approved by the above mentioned organizations, the plan will then be submitted to the Holly Ridge Town Council for formal adoption by Resolution. The Resolution of Adoption for the plan can be found in *Attachment #2* to this Annex.

II. COMMUNITY VALUES AND GOALS

The Town of Holly Ridge's predominant natural hazard is damage from hurricanes and coastal storms. To this end, the community goals were established primarily to deal with these storms and their aftermath. The Town strives to minimize storm damage, personal injury, and to expedite cleanup after storms to minimize the stress of such storms and to bring life back to normal as soon as possible.

Generally, the Town's desire is to prevent loss of life and personal injury from all natural hazards. Further, there is a desire on the part of all to minimize the damage to public infrastructure resulting from natural hazards. It is the desire of the Town to educate the public in hazard mitigation so as to manage future development, reducing the vulnerability of private property to natural hazards. A major desire is to expedite post-disaster cleanup, repair and construction. It is important to allow people to get back to normal life as soon as possible.

The Community goals are tabulated in [Worksheet #4 – Community Goals – Town of Holly Ridge](#).

WORKSHEET #4: COMMUNITY GOALS – TOWN OF HOLLY RIDGE

Goal Category (General; Future Development; Existing Structures; Public Education & Outreach; Redevelopment; Natural Resource Protection)	Goal Statements (Include source reference)	New or Existing Goal		Hazard Threat Addressed (type of hazard and/or location)
1. General	Reduce loss of life and personal injury from natural hazards.		Existing	All Hazards
2. Existing Structures	Minimize the damage to public infrastructure resulting from natural hazards.		Existing	Hurricane & Tornado Damage
3. Public Education & Outreach	Provide the local community members access to disaster preparedness information.		Existing	All Hazards
4. General	Expedite post-disaster clean up, repair and construction.		Existing	Hurricane & Tornado Damage
5. Future Development Redevelopment	To preserve and protect key facilities and services from the threat of terrorists or others wishing to damage or destroy public assets	NEW		Entire Area

III. MITIGATION STRATEGIES AND POLICIES

A. Objectives

The Town of Holly Ridge supports Onslow County in the attainment of its objectives; however, there are only a few implementation strategies that are pertinent to the Town’s circumstances (See [Onslow County MJ HMP](#)).

Implementation Strategies	Objectives
3, 5, 9	Support activities that reduce loss of life and personal injury from natural hazards.
2, 6, 8, 10, 11, 12, 13, 14	Support activities that minimize the damage to public infrastructure, public property and private property resulting from natural hazards.
5, 9	Support activities that provide the local community access to disaster preparedness information.
3	Improve storm water drainage
1, 4	Support activities that expedite post-disaster clean up, repair and construction.
1, 4, 5, 6, 7	Provide effective evacuation prior to natural hazard events

B. Mitigation Strategies

The following mitigation strategies have been decided upon to achieve the stated objectives and goals. A number of these are similar to the strategies adopted by Onslow County (See [Onslow County MJ HMP](#)).

1. Develop, enhance, and implement education programs aimed at mitigating natural hazards, and reducing the risk to citizens, public agencies, private property owners, businesses, and schools. (Town Manager; Ongoing)
2. Continue to maintain backup generators to supply electricity to critical Town facilities during periods of power outage. This applies Town-wide. This will be accomplished by Town Manager as budgets allow.
3. Continue to maintain ditching along streets to facilitate drainage. This is a Town-wide program wherever swales provide street drainage. Prisoner labor is used as needed.

4. The Town will develop an evacuation strategy for hazardous material response. This will be applied Town-wide. This is a project of the Fire and Police Department and is currently ongoing.
5. Set up a pamphlet rack in the Town hall to provide public safety and hazard preparedness information.
6. Establish a procedure to assist with evacuation of residents at the local assisted living facility, should this become necessary.
7. Yearly meeting with representatives from Marine Corps Base Camp Lejeune, the NC Forestry Service, Onslow County Emergency Operations Center, and local fire units to discuss response to wildfires which might occur on Base property which abuts Town boundaries.
8. Request a copy of Onslow County's Water Shortage Response Plan and Water Supply Plan.
9. Develop a registry for special needs residents in Town.
10. Currently participating in the NFIP for the areas in the ETJ that are exposed to the 100-year floodplain.
11. Continue the limitation of impervious surface for each lot to minimize storm water runoff in accordance with the Town of Holly Ridge Town Code and CAMA Regulations in the Summerhouse of Everett Bay.
12. Continue the requirement of structures damaged more than 50% be rebuilt in compliance with current standards.
13. Continue the requirement of 2-foot freeboard for all new construction in accordance with current standards.
14. Continue the enforcement of 40 foot height maximum for new structures in accordance with the current standards.
15. Continue the enforcement of the VE Zone Construction standards in accordance with the Town of Holly Ridge Flood Ordinance (Summerhouse).

C. Mitigation Policies/ Actions

The following mitigation strategies have been continuously implemented by the Town of Holly Ridge for many years:

1. Actions
 - a. To counter Rising Water/ Flooding:
 - The Town falls under CAMA, but the CAMA Land Use Plan is maintained by Onslow County.
 - The White Oak River LIDAR mapping has been completed. New DFIRMS are available.
 - Holly Ridge addresses drainage issues as the need arises.

- Local TV stations and Onslow Co. have sophisticated equipment to predict and accurately report weather. They are even able to pinpoint geographic areas. There is a special audible alert that precedes weather advisories.
 - State building codes establish specifications for construction.
 - State and CAMA buffer rules are enforced to improve the quality of storm water runoff.
 - Holly Ridge removes debris as soon as possible after a heavy storm event.
 - Culverts and drains are kept free of debris.
 - Duties of the Flood Plain Administrator have been assigned.
 - Address drainage issues as the need arises.
 - Holly Ridge contracts NC DOT for flooding on State highways and Roads as the need arises.
- b. To counter High Winds:
- The Jones-Onslow Electric Membership Cooperative and Duke-Progress Energy provide electric power to the community and they have a continuous program of tree trimming.
 - Mobile home owners are educated via the radio and television when severe weather is threatening.
 - The National Weather Service monitors and reports wind speeds and storm conditions.
 - Local TV stations and Onslow Co. have sophisticated equipment to predict and accurately report weather. They are even able to pinpoint geographic areas. There is a special audible alert that precedes weather advisories.
 - Holly Ridge removes debris as soon as possible after a high wind event utilizing Town employees, volunteers, contractors, and other assistance.
- c. To counter Winter Storms:
- The National Weather Service monitors and reports winter storms.
 - Local TV stations and Onslow Co. have sophisticated equipment to predict and accurately report weather. They are even able to pinpoint geographic areas. There is a special audible alert that precedes weather advisories.
 - Holly Ridge clears roads on Town-maintained street system and assists the State on State-maintained highways.
 - County Health Department and DSS provide information on heating assistance.
- d. To counter Wildfire:
- The NC Forestry Service has an ongoing wildfire education program.

- Fire risk is announced over the fire nets.
 - Emergency staff meets with the NC Forestry Service personnel at least yearly.
- e. To counter Drought:
- The National Weather Service monitors and reports rainfall.
 - ONWASA has a water conservation plan in effect.
 - Local TV stations and Onslow Co. have sophisticated equipment to predict and accurately report weather. They are even able to pinpoint geographical areas. There is a special audible alert that precedes weather advisories.
- f. Miscellaneous/ General:
- County Health Department and State Division of Social Services both provide educational and resource information.
 - TV and radio stations continue to educate residents on various types of weather/ hazard events and offer suggestions for addressing.
 - Holly Ridge zoning ordinance address nonconforming use.
 - Police alert population of need to evacuate.
 - Regulations exist and are enforced to prevent erosion of the land due to construction.
 - County Schools continue to teach about and prepare children for disasters.
 - Duties of all code enforcement staff (i.e. Building Code, Zoning, CAMA, Flood Plain Administrator) incorporate mitigation strategies.

2. Policies

The policies that have been developed and that will be monitored and improved are shown below. They reinforce the mitigation strategies that are already being implemented and those that are planned.

- a. Continue to actively pursue State and Federal grant funds to assist in the hazard mitigation recommendations included in the plan.
- b. Holly Ridge will continue to encourage projects undertaken by the Holly Ridge Police Department and Holly Ridge Volunteer Fire Department that will lessen the vulnerability of the Town and its residents to natural hazards.
- c. When projects are found to address hazard mitigation, the availability of State and Federal grant funds should be investigated that may assist the Town with the cost. This is a continuation of current policy.
- d. Continue to update and use the existing Holly Ridge Police Standard Operating Procedures.
- e. Town will reinforce citizen education program on water conservation utilizing Onslow County's public information notices.

- f. Make use of the Holly Ridge flood plain, parcel data, and aerial photographs in digital format. The Onslow County GIS is capable of overlaying this coverage on its geographic information system (GIS) and furnishing the Town of Holly Ridge with this support.
- g. Continue to update and use the Town's existing Disaster Response Plan
- h. Currently participating in the NFIP for those areas of town and in the ETJ that are exposed to the 100-year floodplain.
- i. The mitigation strategies will be reviewed at least yearly to evaluate progress on the mitigation strategies selected and identify new strategies, if needed.
- h. Codes and adopted plans and how they will influence mitigation measures are listed below and described in [Appendix C – Capability Assessment:](#)
 - Zoning Ordinance
 - Subdivision Regulations

D. Geographic Planning Area

One planning area was established. All hazards could potentially occur Town-wide.

IV. IMPLEMENTATION

A. Process

The Holly Ridge portion of the Onslow County Hazard Mitigation Plan will be implemented through the delegation of assignments by the Town Manager, and as specified within this plan. In the [Section III, Mitigation Strategies and Policies](#), mitigation actions are listed and assigned to specific departments or divisions. There are several established policies that also support the goals and objectives of the Hazard Mitigation Plan. These are shown on [Worksheet #5- Community Mitigation Policy Summary \(Town of Holly Ridge\)](#).

It will be the responsibility of the Town Manager, as he/ she sees fit, to ensure these actions are ultimately carried out no later than any target completion dates unless reasonable circumstances prevent their implementation (i.e. lack of funding availability). Otherwise, the completion of each proposed mitigation action has been determined feasible within the timeframe allowed. It should be noted that a great many of these mitigation actions are intended to be ongoing without start or completion dates and are actually being accomplished as a normal part of a department's routine duties.

B. Funding Sources

The only funding currently identified are local funds obtained during the annual budgeting process. Should grants become available for projects such as these, they will be investigated and applied for.

WORKSHEET # 5: GEOGRAPHIC PLANNING AREA POLICIES TOWN OF HOLLY RIDGE

Policy	Geographic Planning Area	Type(s) of Hazard This Policy will Target	Funding (Amount and source: local match required?)	Responsible Party/ Start & Completion Date	Benchmarks and Indicators of Progress (Monitoring and Evaluation)	Priority (high, medium, low)
Public Education and Outreach. Work with the County to ensure implementation of a viable public education and outreach program for mitigation, preparedness, response, and recovery. Refer to the OC MJ-HMP for more information.	Town-wide	All Hazards	Town of Holly Ridge General Fund \$ 0	Town Manager Continually ongoing	This is an ongoing activity, year-round	High

Worksheet # 5: Geographic Planning Area Policies Town of Holly Ridge – Cont:

Policy	Geographic Planning Area	Type(s) of Hazard This Policy will Target	Funding (Amount and source: local match required?)	Responsible Party/ Start & Completion Date	Benchmarks and Indicators of Progress (Monitoring and Evaluation)	Priority (high, medium, low)
Continue to actively pursue State and Federal grant funds to assist in the hazard mitigation recommendations included in the plan.	Town-wide	All Hazards	Grants	Town Manager Continually ongoing	Grant application. Grants received.	Medium
Holly Ridge will continue to encourage projects undertaken by the Holly Ridge Police Department & Holly Ridge Fire Department that will lessen the vulnerability of the Town and its residents to natural hazards.	Town-wide	All Hazards	Town of Holly Ridge General Fund	Town Manager Continually ongoing	List of special needs residents. Hazard Material plan. Evacuation plan for ALF.	Medium

Worksheet # 5: Community Mitigation Policy Summary Town of Holly Ridge - Cont:

Policy	Geographic Planning Area	Type(s) of Hazard This Policy will Target	Funding (Amount and source: local match required?)	Responsible Party/ Start & Completion Date	Benchmarks and Indicators of Progress (Monitoring and Evaluation)	Priority (high, medium, low)
Continue to update and use the existing Holly Ridge Police Standard Operating Procedures.	Town-wide	All Hazards	Town of Holly Ridge General Fund	Police Chief Ongoing	The Procedures are reviewed annually. Changes are made, as they are found necessary.	Medium
Town will continue to cooperate with Onslow County's current water conservation plan water shortage response plan.	Town-wide	Drought	None	Town Manager Continually ongoing	The Town does not own the water supply system, just the water distribution system.	Medium
New initiative: Town, whenever possible will reinforce to the citizens, the need for water conservation especially during periods of drought.	Town-wide	Drought	None	Town Manager Ongoing	Yearly insertions of water CCR to water users.	Medium

Worksheet # 5: Community Mitigation Policy Summary Town of Holly Ridge - Cont:

Policy	Geographic Planning Area	Type(s) of Hazard This Policy will Target	Funding (Amount and source: local match required?)	Responsible Party/ Start & Completion Date	Benchmarks and Indicators of Progress (Monitoring and Evaluation)	Priority (high, medium, low)
Currently participating in the NFIP for those areas in the ETJ that are exposed to the 100-year floodplain.	Town-wide	Flooding	Town of Holly Ridge General Fund None	Town Manager	Evidence of contact with NFIP staff and Onslow County's Floodplain administrator. Evidence of consideration by Town Council.	Medium
The mitigation strategies will be reviewed at least yearly to evaluate progress on the mitigation strategies selected and identify new strategies.	Town-wide	All Hazards	Town of Holly Ridge General Fund None	Town Manager Start 7/1/09 Review annually	Annual Review in July of activities, plans and proposed actions.	Medium

Worksheet # 5: Community Mitigation Policy Summary Town of Holly Ridge - Cont:

Policy	Geographic Planning Area	Type(s) of Hazard This Policy will Target	Funding (Amount and source: local match required?)	Responsible Party/ Start & Completion Date	Benchmarks and Indicators of Progress (Monitoring and Evaluation)	Priority (high, medium, low)
Make use of the Holly Ridge flood plain, parcel data, and aerial photographs in digital format. The Onslow County GIS is capable of overlaying this coverage on its geographic information system (GIS) and furnishing the Town of Holly Ridge with this support.	Town-wide	All Hazards	Town of Holly Ridge General Fund None	Code Enforcement	This is an ongoing activity, year-round	Medium
Continue to update and use the Town's existing Disaster Response Plan	Town-Wide	All Hazard	Town of Holly Ridge General Fund None	Town Council, Town Manager & Town Clerk	Annually	High

IV. MONITORING, EVALUATING, AND REPORTING PROGRESS

The Town Manager and Town Council is responsible for the ongoing monitoring, and yearly evaluation of the status of the Town's Hazard Mitigation goals, objectives and strategies and for providing a yearly progress report to NC DEM Hazard Mitigation Section.

A. Monitoring

The Town Manager will continually monitor the strategies identified in the Town Hazard Mitigation Plan and will keep the Town Council apprised of the results.

B. Evaluating

1. Benchmarks

The Town Manager will evaluate the Town's progress against the benchmarks stated on the Communities Mitigation Policy Summary Form.

2. Responsibility

a. Updating the Vulnerability Assessment

The Town Manager is responsible for updating the Vulnerability Assessment as needed.

b. Updating the Capability Assessment

The Town Manager is responsible for updating the Town's Capability Assessment as needed.

C. Public Involvement

Whenever changes to Hazard Mitigation Plan are contemplated, the public will be offered an opportunity to comment on the proposed change.

D. Reporting

The Town Manager is responsible for reporting yearly the status of the Town's Hazard Mitigation Strategies and Plan to NC DEM Hazard Mitigation Section.

V. REVISIONS AND UPDATES

The Town Manager will draft the plan maintenance report and present the findings to the Town Council with recommendations for updates and revisions. As updates occur, the date, reason and responsible party should be noted.

APPENDIX A: HAZARD IDENTIFICATION (*SEE OC MJ HMP*)

See attached [Worksheet #1- Hazard Identification and Analysis Matrix](#) for Town of Holly Ridge prioritization.

A. Hurricanes

Between the years 1950 and 2014, there have been 19 tropical storms/ hurricanes that in some way affected the Town of Holly Ridge according to a query of the NOAA website (Onslow County data). Seven of these were significant enough to cause damages.

No hurricane striking Holly Ridge has ever caused a recorded death. Property damage from falling trees has occurred. The major expense to the community has been for hauling off tree debris after the storm.

B. Tsunamis

In recorded history, there have never been any reports of tsunamis striking eastern North Carolina, so this is not considered a problem, even though the impact could be severe.

C. Flooding

True flooding in Holly Ridge has been nonexistent, although standing water may occur in some areas of Town after extreme rains, usually associated with a hurricane.

D. Nor'easter

There is no record of a Nor'easter specifically impacting Holly Ridge.

E. Tornado/ Extreme Storms

Although tornado warnings occur several times a year in eastern North Carolina, Holly Ridge has not had any confirmed tornado hit.

F. Drought/ Heat Wave

North Carolina is blessed with, on the average, adequate rainfall, and does not generally suffer from what others describe as drought.

G. Wildfire

In Holly Ridge, the Town is susceptible to wildfires due to the proximity to woodland areas. There have been no wildfires reported within the last 50 years in the Holly Ridge Town limits.

H. Winter Storm/ Freezes

Over the past 30 years, severe winter storms/ freezes in Holly Ridge seem to occur, on the average, every ten years. Less severe freezes occur almost every year but do not cause major problems.

I. Earthquake

There has never been any record of seismic activity in recorded history in Holly Ridge.

J. Landslide

The coastal plain of North Carolina (and Holly Ridge) is very close to being flat. There are no cuts into hills to cause a landslide, so this is not considered a problem.

This information is based on discussions in the Town's committee, memories of long-time Town employees, data taken from the National Weather Service, and recorded history of this area. Because resources are limited, the Town has chosen to direct its efforts to mitigating damages caused by hurricanes and coastal storms. These hazards boil down to high winds, excessive rain and their aftermath.

**WORKSHEET #1: HAZARD IDENTIFICATION AND ANALYSIS MATRIX
TOWN OF HOLLY RIDGE**

Hazard	Category / Degree of Risk					PRI Score
	Probability	Impact	Spatial Extent	Warning Time	Duration	
Atmospheric Hazards						
Drought and Heatwave	Likely	Minor	Negligible	12-24 hrs	Less than 24 hrs	1.8
Severe Thunderstorm / Hail	Highly Likely	Minor	Small	Less than 6 hrs	Less than 6 hrs	2.4
Hurricane & Coastal Storm	Likely	Critical	Large	More than 24 hrs	Less than 24 hrs	2.9
Tornado	Likely	Minor	Small	Less than 6 hrs	Less than 6 hrs	2.1
Winter Storm	Possible	Minor	Large	More than 24 hrs	Less than 1 week	2.1
Geological Hazards						
Earthquake	Unlikely	Minor	Negligible	Less than 6 hrs	Less than 6 hrs	1.3
Landslide & Sinkhole	Unlikely	Minor	Negligible	Less than 6 hrs	Less than 6 hrs	1.6
Tsunami	Unlikely	Limited	Small	6-12 hrs	More than 1 week	2
Hydrologic Hazards						
Erosion	Highly Likely	Minor	Negligible	More than 24 hrs	More than 1 week	2.2
Dam & Levee Failure	Unlikely	Limited	Small	Less than 6 hrs	More than 1 week	2.1
Flood	Highly Likely	Limited	Moderate	6-12 hrs	Less than 1 week	3
Storm Surge	Likely	Limited	Moderate	More than 24 hrs	Less than 24 hrs	2.4
Other Natural Hazards						
Wildfire	Highly Likely	Minor	Small	Less than 6 hrs	Less than 24 hrs	2.5

PRI VALUE = [(PROBABILITY x .30) + (IMPACT x .30) + (SPATIAL EXTENT x .20) + (WARNING TIME x .10) + (DURATION x .10)]

APPENDIX B: VULNERABILITY ASSESSMENT

A. Narrative Summary:

The data in this appendix was taken from county tax maps, GIS and databases, county GIS mapping, insurance records, Town facility databases and Federal census data. Other data was taken from personal knowledge of the Town's committee members.

1. Major Physical Features in the Town of Holly Ridge

The Town of Holly Ridge is located in Onslow County just a short distance from the Pender County line and from the coast. The Town is surrounded by the unincorporated areas of Onslow County. The Town of Holly Ridge is 3.83 square miles in area and has a Census 2010 population of 1268. US Highway 17 runs through the Town. 10.55 miles of roadway are maintained by the Town of Holly Ridge.

2. Critical Facilities and Public Buildings

Because the Town of Holly Ridge is so small, there are few critical facilities located within its boundaries. There are no schools and limited (clinic's) medical facilities in Town. There are four municipal buildings; Town Hall, Police Department, Community Center, and Maintenance Building. There is one fire/ rescue squad building. The ONWASA sewer treatment facility is located within the Town's ETJ. There is a recreation building and a concession stand located on a Town owned park. There are several lift stations and a sewer collection system owned by ONWASA.

3. Community Exposure to all Hazards

Only flooding can generally be considered site-specific, because it occurs in the areas adjacent to New River and major streams feeding New River. These are the areas most susceptible to flooding. All other hazards that Jacksonville may be subject to are not site-specific, but town wide.

4. Repetitive Loss Structures

There are no dwellings that are repetitive-loss structures in the Town of Holly Ridge. If any become repetitive losses or are discovered to be repetitive losses they will be relocated, raised, or otherwise removed from flooding hazards, the Town of Holly Ridge will depend upon Onslow County to provide that service as they have done in the past, following Hurricane Fran in 1996.

5. Geographic Planning Areas and Demographics for Each Hazard

- a. Documentation of Loss Estimates (See [Onslow County MJ-HMP](#))

b. Geographic Planning Areas Process

The geographic planning areas were selected based on the types of hazards that have been experienced during the last fifty years and where the damage was located or could potentially be located.

c. Geographic Planning Areas Hazards

The actual hazards are also based on the experience of the community.

d. Geographic Planning Areas Present and Future Vulnerabilities

The only vulnerabilities that can be anticipated are along the Intracoastal Waterway and along the river and its tributaries. These are the only fixed points where damage has occurred due to specific known events – flooding due to hurricanes.

6. Geographic Planning Area Vulnerability Assessment

As described elsewhere, the primary hazard for which this community needs to plan for and does plan for are hurricanes and associated flooding. The major activity and public expenditures that are associated with these events is debris cleanup and disposal. Experience in this community has taught most to build high enough to avoid floodwaters. Public structures certainly observe this restriction except for those types of structures that must be in those locations (such as sewerage lift stations). In those cases, all possible precautions are taken to avoid or at least minimize damage and enable the facility to be quickly restored to operation.

[Worksheet #2 – Geographic Planning Area \(GPA\) Vulnerability Assessment – Citywide \(Town of Holly Ridge\)](#) follows:

**WORKSHEET #2: GEOGRAPHIC PLANNING AREA VULNERABILITY ASSESSMENT
TOWN OF HOLLY RIDGE**

Type of Development	Current Conditions			Potential Future Conditions (2020)		
	Number of Existing Private Buildings	Current Value/ Projected Loss (structure value)	Current Population	Projected Number of Private Buildings developed under existing policies) (If	Projected Value	Projected population
Single-Family Residential	764	\$140,032,020		981	\$185,533,645	
Multi-Family Residential	48	\$6,859,650		61	\$8,576,865	
Commercial	120	\$19,639,810		124	\$20,782,730	
Industrial	2	\$4,766,200		2	\$4,616,005	
Other (Vacant)	1663	\$48,379,440		1676	\$43,533,160	
Subtotal	2,597	\$219,677,120		2,844	\$263,042,405	

Worksheet #2: GPA Vulnerability Assessment Town of Holly Ridge - Cont:

Current Conditions				Potential Future Conditions (2020)		
Type of Development	Number of Existing Public Buildings and Critical Facilities	Current Replacement Value	Current Number of People	Projected Number of Public Buildings and Critical Facilities	Projected Replacement Value (1.146)	Projected Number of People
Town owned streets	10.55 Town-owned street miles per Powell Bill data	(\$150/lf)	0	(growth 3.146) 14 miles	(\$153/lf)	N/A
Police Station	1	\$406,753	11	1	\$467,766	11
Community Building	1	\$577,109	0	1	\$663,675	0
Public Works Bldg	1	\$135,390	4	1	\$155,699	4
Municipal Bldg	1	\$472,875	7	1	\$543,806	7
Concession stand	1	\$28,949	0	1	\$33,291	0
Municipal Park Shelter	1	\$43,860	0	1	\$50,439	0
Park Pavillion	1	\$26,928	0	1	\$30,967	0
Subtotal			22			22
TOTAL:	7	\$1,691,864	22	7	\$1,945,643	22

APPENDIX C: CAPABILITY ASSESSMENT

A. Existing Policies and Programs

1. CAMA Land Use Plan

The Holly Ridge CAMA Land Use Plan was adopted in January 2009. It was developed to protect natural resources and to insure effective and efficient use of infrastructure. This is formally adopted by Onslow County and approved by the State. Zoning Ordinance

The Town of Holly Ridge Zoning Ordinance protects property values and natural resources. The Zoning Ordinance is formally adopted by the Town Council.

2. Building Codes and Inspections

The State of North Carolina has adopted the International Building Code, which provides many legislated requirements (tie-downs, straps, etc) for protecting buildings that must be installed during the initial construction. Through this State program, the Town Council adopts these building standards, which are managed and enforced by the Holly Ridge Code Enforcement.

3. Subdivision Regulations

The Town of Holly Ridge Subdivision Regulation addresses the suitability of land for development and regulates density. This regulation was adopted by the Town Council in 2005 and was last amended in March of 2009.

4. Storm Water

Storm water is not really an issue for the Town. Prison labor and/or the Holly Ridge Maintenance Department is used to clean out ditches and culverts as needed.

B. Jurisdictional Capability

1. Legal

The legislative authority of the Town Council, a local government is described in *Appendix C, Paragraph A. Legal Capabilities*, of the [Onslow County Multi-Jurisdictional Hazard Mitigation Plan](#).

2. Fiscal

History has shown that grants for mitigation purposes are difficult to get through the approval process so local funds are anticipated to be the source of funds for hazard mitigation. The Town will continue to pursue funding through available grant programs.

3. Political

At the Regular Municipal Election held in 2013, the Mayor and two candidates who received the highest number of votes were elected to four-year terms, while the remaining three candidates who were elected serve a two-year term.

The Holly Ridge Town Council meets at 7:00 p.m. on the second Tuesday of each month at the Town Hall located at 212 N. Dyson Street, Holly ridge.

4. Technical

The Town has the technical ability to develop the necessary ordinances, regulations or change existing rules to meet the needs of hazard mitigation.

5. Institutional

The Town has the professional staff to either accomplish the tasks shown or to contract the work to be done and monitored.

C. Analysis of Capability

After gathering the preceding capability information, the data was analyzed and evaluated. The analyzed and evaluated data provided the framework for developing the Town's recommendations for specific mitigation actions. The data draws attention to special opportunities currently viable for the Town to capitalize upon, and also identifies shortfalls in the Town's jurisdiction's capabilities.

[Worksheet #3 – Community Capability Assessment \(Town of Holly Ridge\)](#) provides a summary of the Town's existing policies and programs and their effectiveness at mitigating natural hazards. In general, this assessment shows that the Town has been committed to mitigating the effects of natural hazards but in response to recent storm events, additional action may need to be taken.

An acceptability assessment is a useful analytical step, which can help the Town of Holly Ridge both prioritize and focus limited resources on the most critical of its mitigation needs. Having reviewed which natural hazards pose the greatest threats, the capability of the Town to respond, and the particular Town areas planning jurisdiction that are most vulnerable, the Town can then decide whether this level of risk is acceptable. Town officials and planners can use these conclusions to focus local mitigation efforts on those areas where they are most critically needed, thus making the most of limited financial personnel, and material resources. Conclusions can also help determine whether it is necessary to increase the area's capability in certain areas to reduce its vulnerability.

WORKSHEET #3: COMMUNITY CAPABILITY ASSESSMENT TOWN OF HOLLY RIDGE

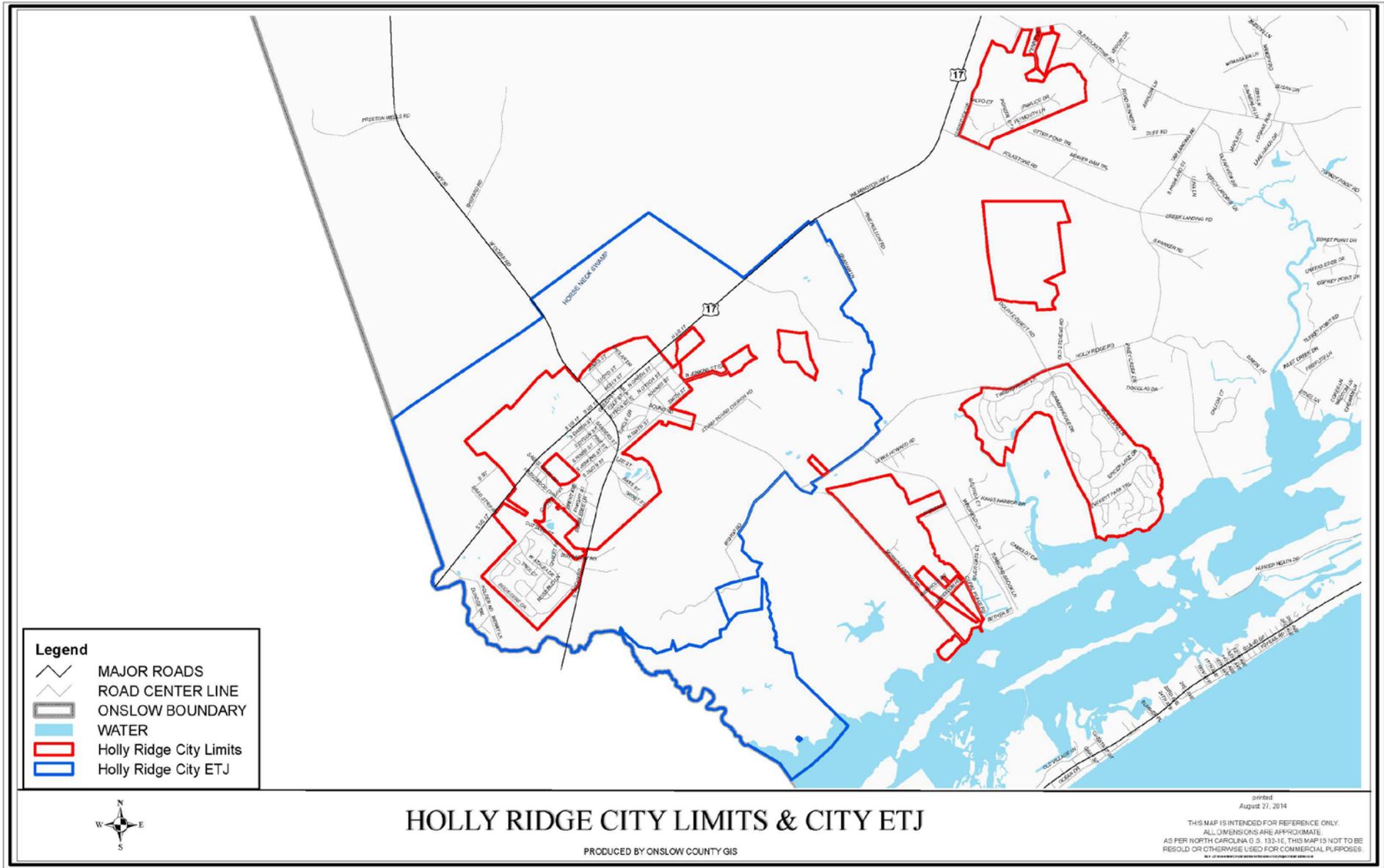
Policies and Programs (e.g. Zoning Ordinance)	Policy/ Program Status (e.g. Potential or Existing Policy/ Program)	Document Reference (e.g. Comprehensive Plan and page number)	Effectiveness of Mitigation (e.g. Low, Medium, High)	Rationale for Effectiveness (e.g. Low, because allows development in flood plain)	Recommendations for Incorporating Into Hazard Mitigation Strategy (e.g. Amend ordinance to restrict development in floodplain, page III-4 of plan)
Storm Water Ordinance	Existing	_ Storm water Ordinance _	low	Holly Ridge is not affected by standing storm water.	Continue to enforce Town Ordinance
Zoning Ordinance	Existing	Section 7-92 Nonconforming uses	medium	Ensures that nonconforming structures which might be a hazard in high winds, are not permitted to be rebuilt (see ordinance for details)	Continue to enforce Town Ordinance

Worksheet #3: Community Capability Assessment Town of Holly Ridge - Cont:

Policies and Programs (e.g. Zoning Ordinance)	Policy/ Program Status (e.g. Potential or Existing Policy/ Program)	Document Reference (e.g. Comprehensive Plan and page number)	Effectiveness of Mitigation (e.g. Low, Medium, High)	Rationale for Effectiveness (e.g. Low, because allows development in flood plain)	Recommendations for Incorporating Into Hazard Mitigation Strategy (e.g. Amend ordinance to restrict development in floodplain, page III-4 of plan)
Subdivision Ordinance	Existing	Section 8-31	low	Addresses the suitability of land for development and provides for runoff control. Holly Ridge is not susceptible to flooding.	Continue to enforce Town Ordinance

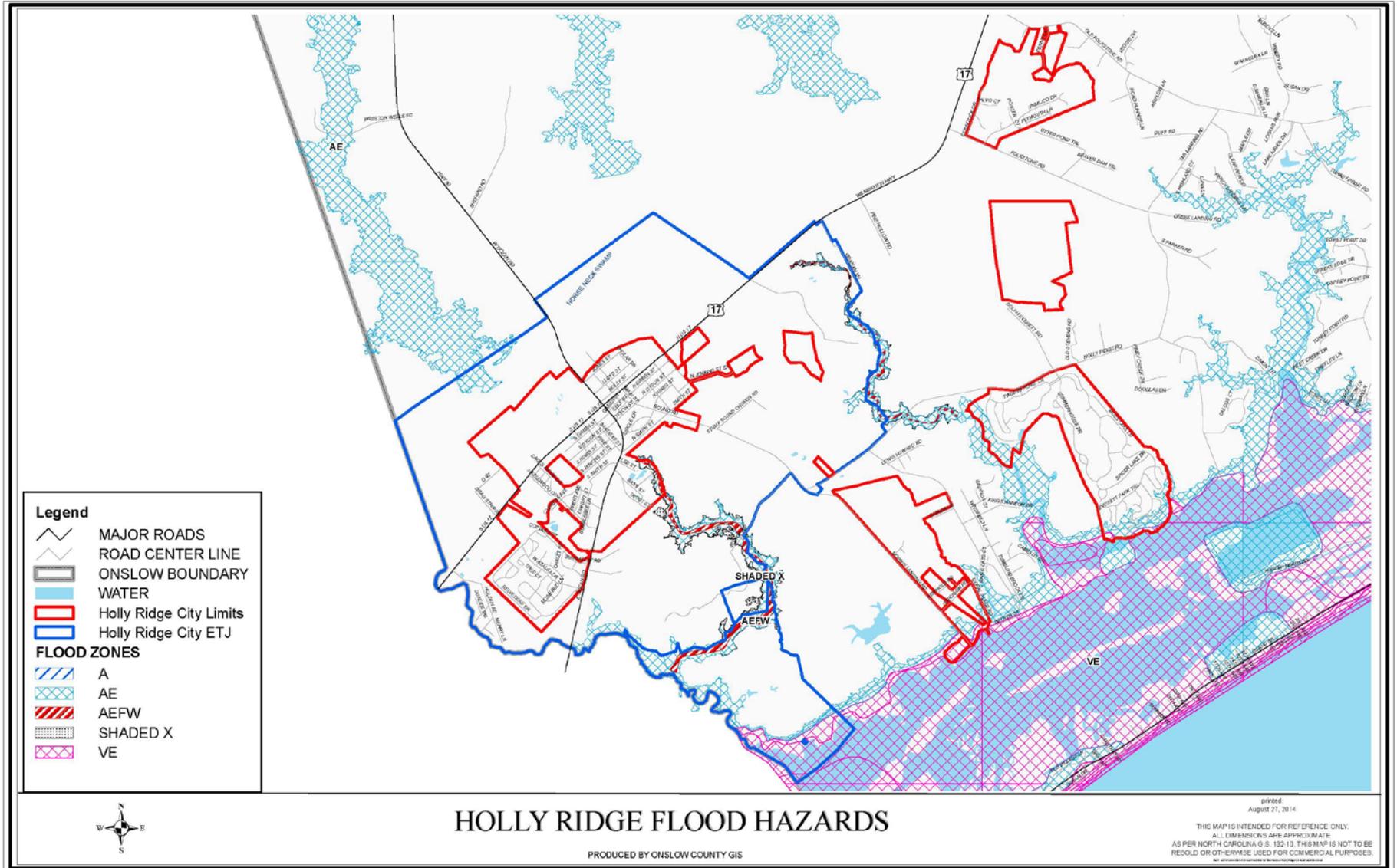
TOWN OF HOLLY RIDGE ETJ AND CITY LIMITS – MAP #1

Town of Holly Ridge ETJ and City Limits - Map #1



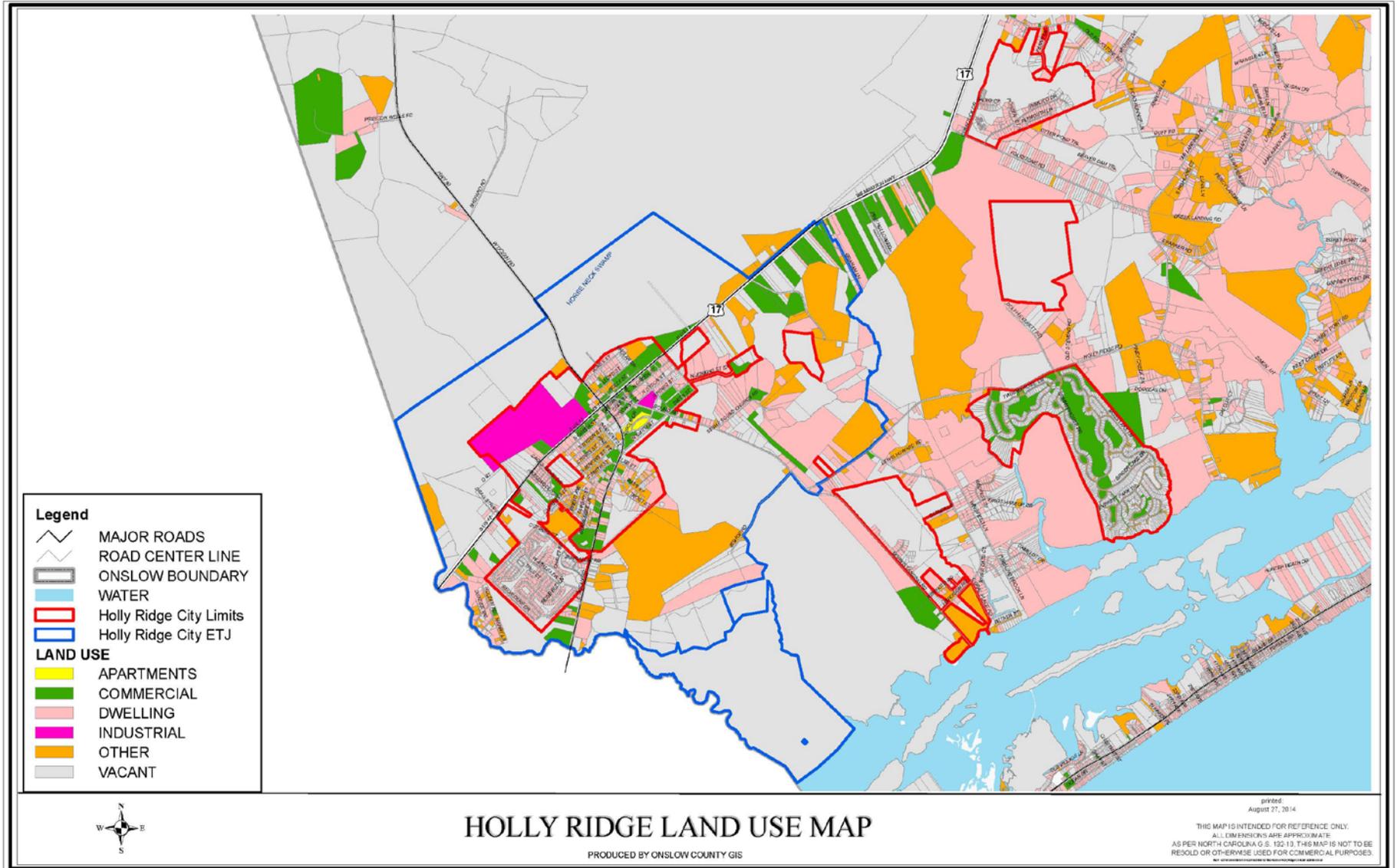
TOWN OF HOLLY RIDGE FLOOD ZONES - MAP #2

Town of Holly Ridge Flood Zones - Map #2



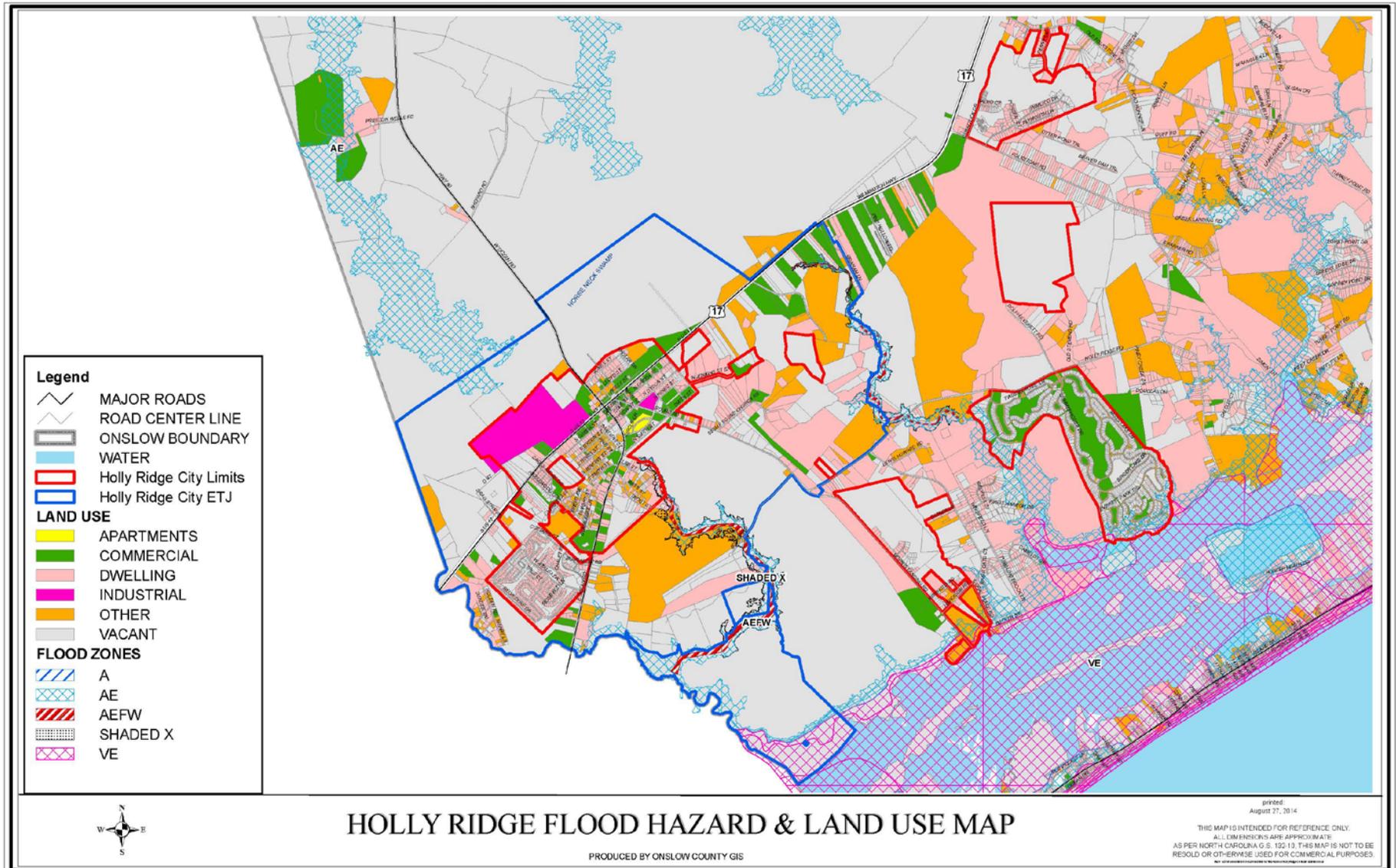
TOWN OF HOLLY RIDGE LAND USE – MAP #3

Town of Holly Ridge Land Use - Map #3



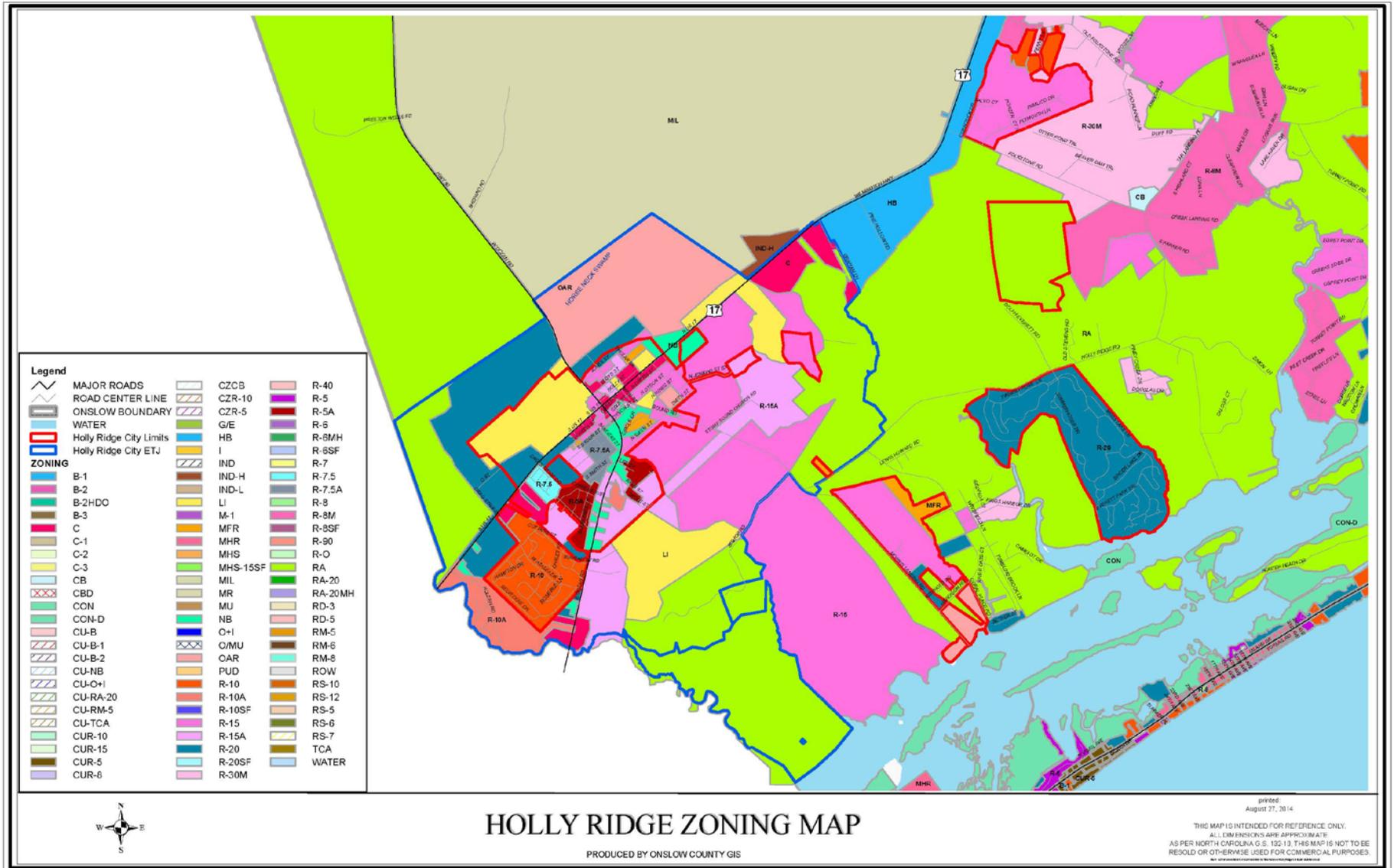
TOWN OF HOLLY RIDGE FLOOD HAZARD AND LAND USE – MAP #4

Town of Holly Ridge Flood Hazard and Land Use - Map #4



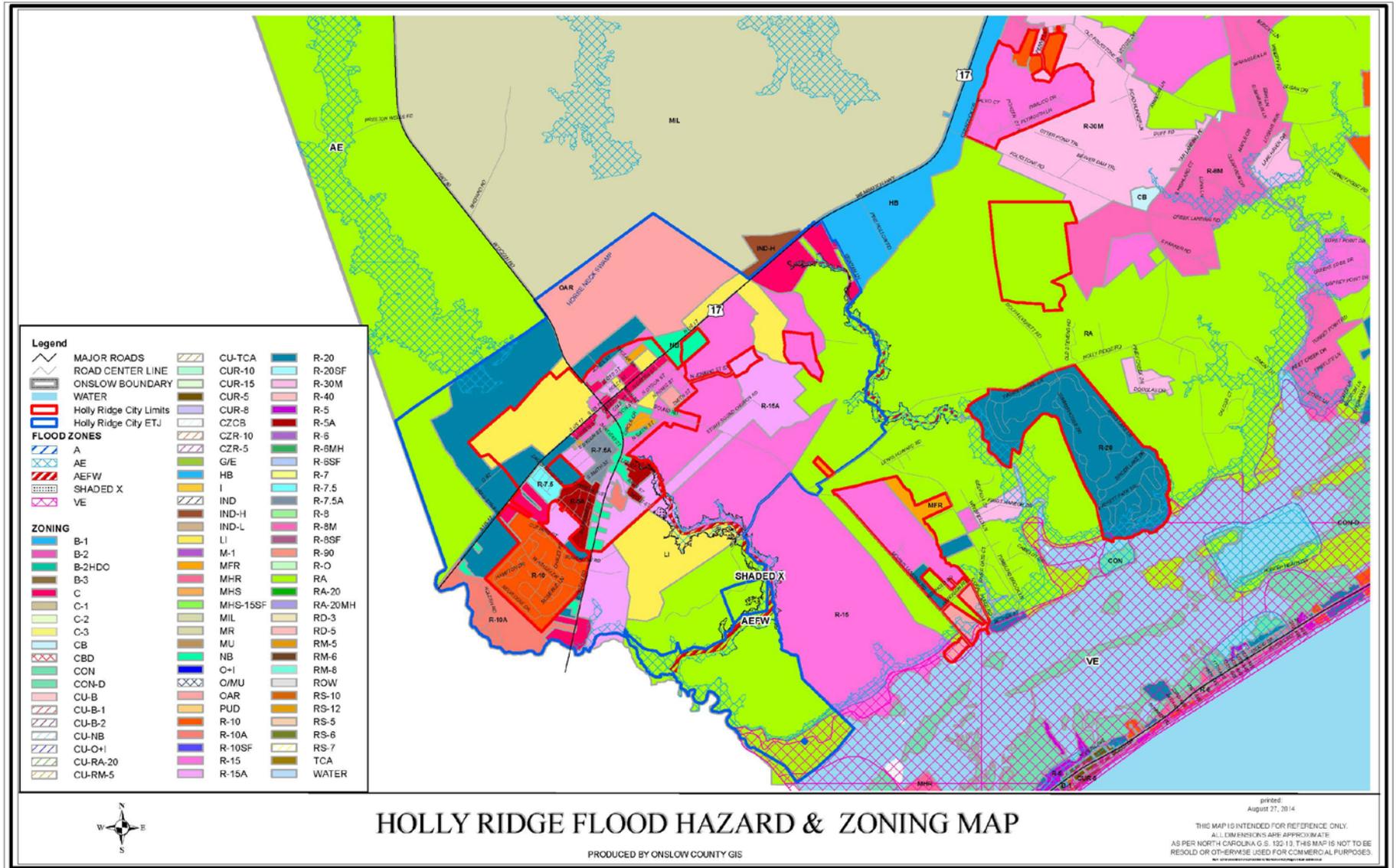
TOWN OF HOLLY RIDGE ZONING – MAP #5

Town of Holly Ridge Zoning - Map #5



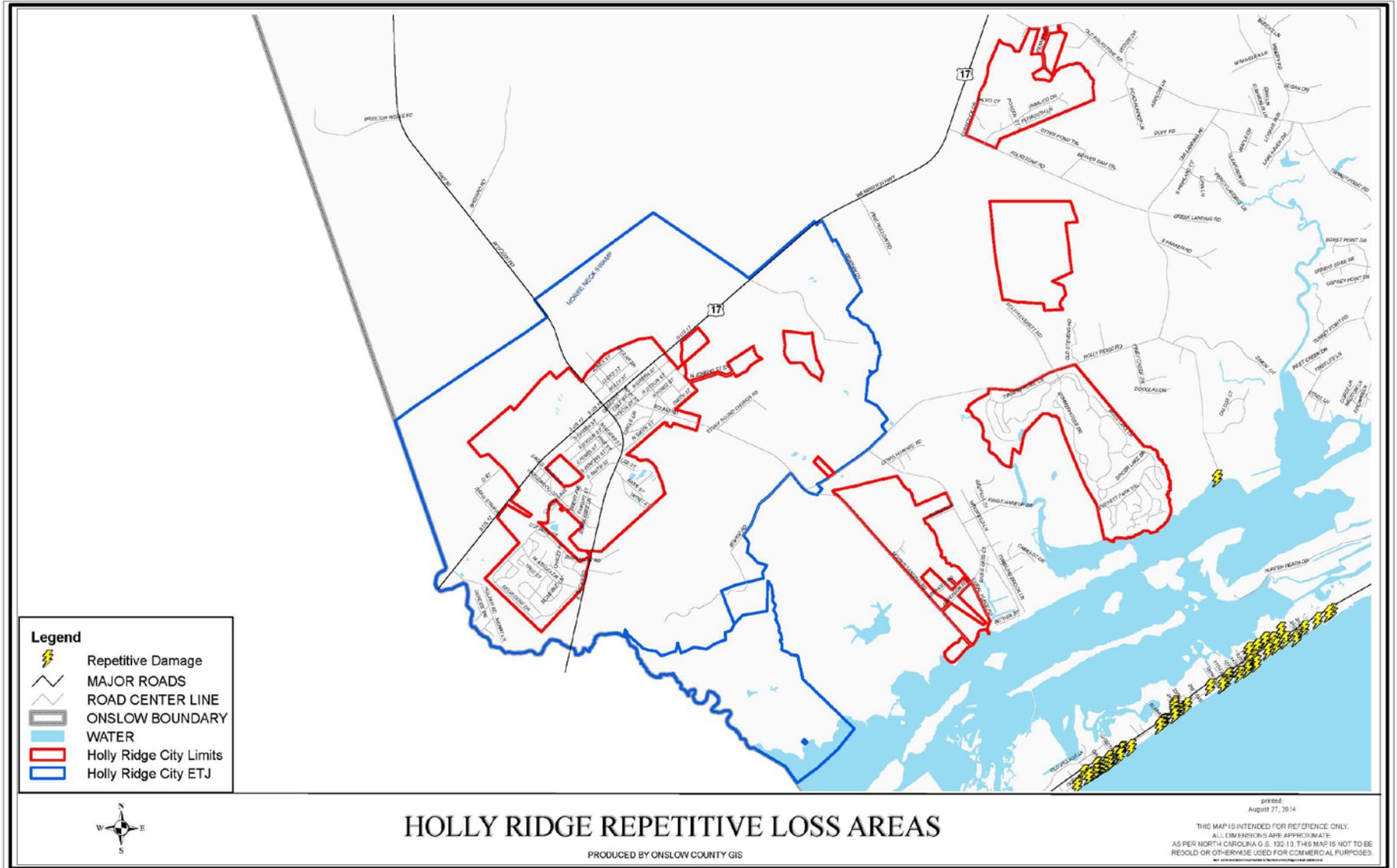
TOWN OF HOLLY RIDGE FLOOD HAZARD AND ZONING – MAP #6

Town of Holly Ridge Flood Hazard and Zoning - Map #6



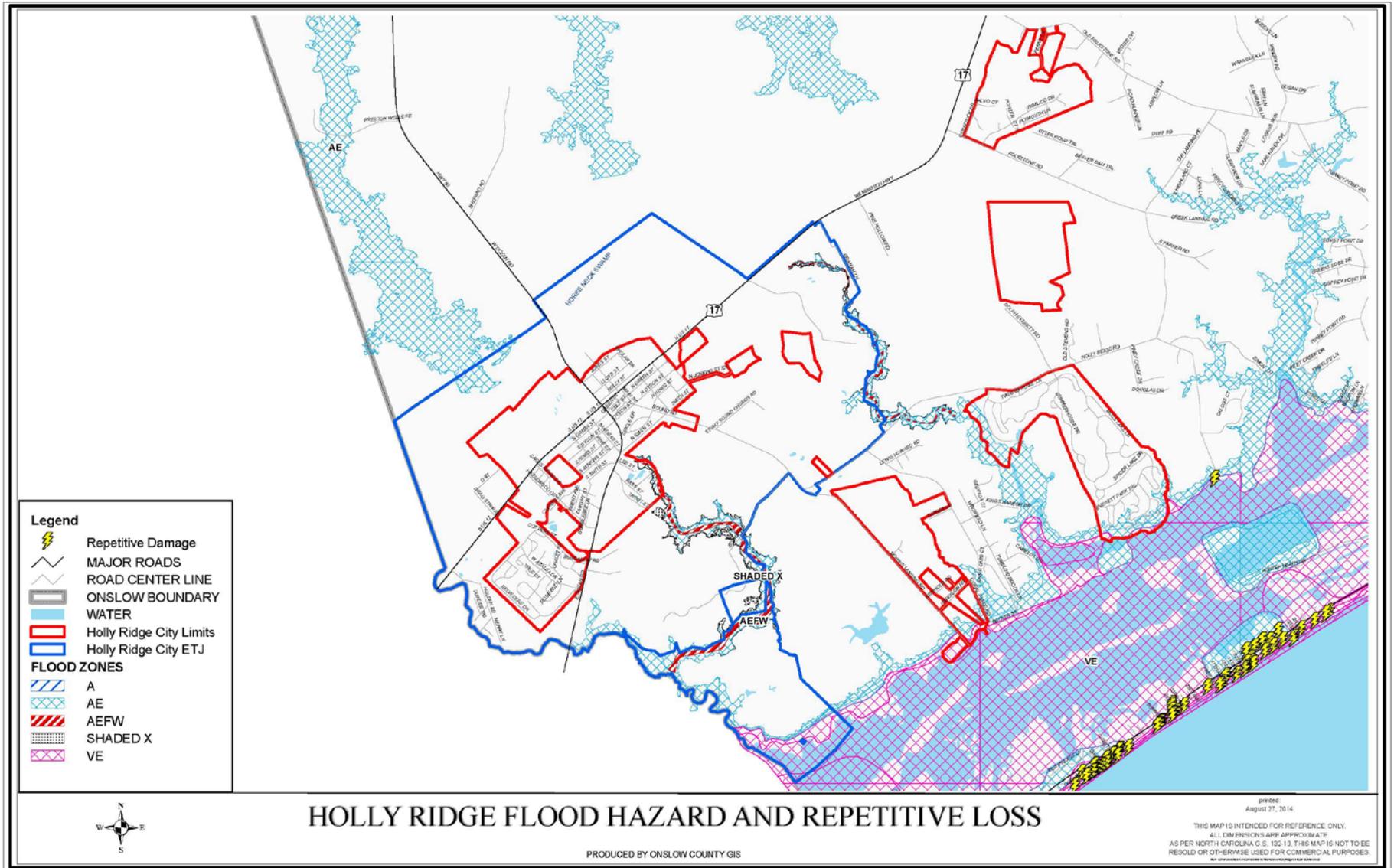
TOWN OF HOLLY RIDGE REPETITIVE LOSS AREAS – MAP #7

Town of Holly Ridge Repetitive Loss Areas - Map #7



TOWN OF HOLLY RIDGE FLOOD HAZARD AND REPETITIVE LOSSES AREAS – MAP #8

Town of Holly Ridge Flood Hazard and Repetitive Loss Areas - Map #8



TOWN OF HOLLY RIDGE FLOOD HAZARD & CRITICAL FACILITIES – MAP #9

Holly Ridge Flood Hazard and Critical Facilities - Map #9

