

Resilient Coastal Communities Program

Pamlico County Resilience Strategy

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A. Introduction

A.1 Overview

The Resilient Coastal Communities Program (RCCP) was developed by the North Carolina Division of Coastal Management with the goal of helping to build more resilient communities through thorough planning with technical and financial assistance. This document outlines the deliverables created during Phases 1 and 2 during the program. Phase 1 focuses on performing a risk and vulnerability assessment for coastal hazards. Phase 2 focuses on identifying and prioritizing projects to improve the community's response to coastal hazards. Throughout both phases, steps were taken to engage the community through a Community Action Team (CAT) and stakeholder engagement strategy. Additionally, existing efforts, plans, and policies were reviewed.

A.2 Community Description

Pamlico County is a county of approximately 13,000 residents in North Carolina. In recent years, the county has been impacted by several hurricanes including Floyd, Dennis 1 & 2, Isabelle, Joquin, Irene, and Florence [1]. The county was notably impacted by Hurricane Irene in 2011 and was still recovering when it was impacted by Hurricane Matthew (2016). In the last 25 years, 12 hurricanes and 14 Tropical Storms have passed within 60 nautical miles or less of the county. Additionally, residents report frequent flooding due to heavy precipitation events, sea level rise, tidal flooding, riverine flooding, and Nor'easters. A photo taken by a community member in the Town of Vandemere within Pamlico County after a recent windy day is shown in **Figure 1**. The photograph shows how wind driven tides impact coastal areas within the county. Additionally, many towns, residential areas, and assets are accessible by single routes that are subject to frequent flooding. Residents report being blocked from entering/exiting their communities due to flooding.



Figure 1: Road in Vandemere following a minor wind event

A.3 Definitions and Terms

Throughout the document, the following definitions and terms will be referenced.

1. *Resiliency* [2]– The capacity of a community, business, or natural environment to prevent, withstand, respond to, and recover from a disruption
2. *Community Action Team (CAT)* [3] – A group of key stakeholders that provided targeted input throughout the program
3. *Vulnerability* [2]– The propensity or predisposition of assets to be adversely affected by hazards.
4. *Risk* [2]– The potential for negative consequences where something of value is at stake.
5. *Hazard* [2] – An event or condition that may cause injury, illness, or death to people or damage to assets.

B. Vision and Goals

The vision and goals for the project were developed with the Community Action Team (CAT) as described in Step 2 of Phase 1. The vision focuses on where the community wants to be in the next 10 years in relation to coastal hazards. The goal statements identify the steps the community wants to take to reach the vision. The vision and goals were designed to consider the triple bottom line approach to resilience by considering people, the planet, and profit. Vision and Goals statements developed by the CAT are shown in **Figure 2**

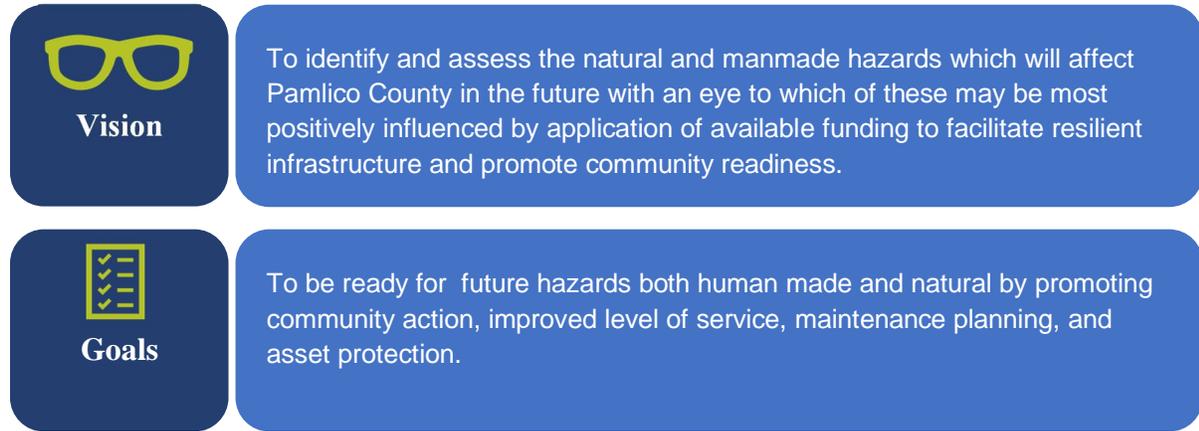


Figure 2: Pamlico County Resilient Coastal Communities Program Vision and Goals

The vision and goals were developed at the first CAT meeting. The CAT was presented with examples and definitions of vision and goal statements. Additionally, the consulting team explained the triple bottom line approach. The CAT reviewed the example statements and highlighted any pieces that they thought were applicable to their community. Following the review of the examples, the project consultants lead a brainstorming discussion. The CAT was presented with a series of questions and discussion points related to the vision and goals statements. Examples included discussions on coastal hazards faced by the community and ranking of community priorities. The consulting team then presented the CAT with draft statements which the CAT revised as appropriate for their community.

C. Community Action Team Report

C.1 Introduction

The Community Action Team (CAT) was developed in line with Step 1 of Phase 1. Members were selected with the goal of identifying key stakeholders to provide targeted input and champion the efforts. Additionally, an effort was made to create a diverse team with a variety of experience. Throughout the project, four CAT meetings were held to get targeted input from the community throughout the process. These meetings were focused on the community vision and goals, critical assets and critical natural infrastructure, local hazards and calls for action, and vulnerability solutions. Additionally, the consulting team reached out to the CAT for assistance engaging the community throughout the project and providing local knowledge.

C.2 Community Action Team Development

The Community Action Team (CAT) was selected by the County Manager (Tim Buck) and the Emergency Management Planner (Autumn Hardison) after reviewing the requirements of the Program Handbook with Kimley-Horn staff. Kimley-Horn provided the County Manager and Emergency Management Planner with a form that detailed the CAT selection guidelines and criteria and worked with the town to select the Community Action team. **Figure 3** reflects the selected members of the CAT for Pamlico County.

Figure 3: Pamlico County CAT Members

<i>Name</i>	<i>Organization, Stakeholder Group</i>	<i>Title</i>	<i>Contribution, Reason Selected</i>
Tim Buck	Pamlico County	County Manager	Trusted community leader, key decision maker, understanding of demographics, prior grants manager, native, 25+ years of local government knowledge
Candy Bohmert	Pamlico County	Commissioner, Natural Resource Conservationist	Provide technical assistance to carry out land use practices, decision maker
Chris Murray	Pamlico County	Emergency Manager, Fire Marshal	Community leader, logistics expert, decision maker, first responder liaison, native
Hiram Lupton	NC DOT + Pamlico News + Pamlico County	Surveyor, Journalist, Planning Board Chairman	Understanding of County topography and terrain, flood zone expert, native, NCDOT partnership contact, Planning Board decision maker, media outlet, trusted community figure, official during last CAMA Land Use Plan update 2012

Ray Bennett Jr.	Pamlico County	Building Inspector	Knowledge of County growth, past damage, building trends, understanding of low-lying flood prone areas in relation to social vulnerability, Floodplain Administrator, native, 14+ years as CAMA Local Permit Officer
Autumn Hardison	Pamlico County	Emergency Planner, Floodplain Administrator	Grants manager, CRS coordinator, Floodplain Administrator, native

C.3 Meeting Summaries

C.3.1 CAT Meeting 1 – Community Vision and Goals

Meeting Agenda

Location: Microsoft Teams
 Time / Date: 9:00 am 9/8/2021
 Subject: RCCP CAT Meeting 1

Introduction of CAT members

- Welcome and Introduce CAT Members
- Summary of RCCP project and goals
- Role of CAT members

Introduction of Meeting Topic: Vision and Goals

- Review Pamlico County Hazard Mitigation Plan vision and goals
- Example statements and goals from other communities

Drafting of Community Specific Vision and Goal Statements

- Discussion on community specific vision and goal statements
- Draft community specific vision and goal statements
- Finalization of vision and goal statements if consensus reached

Next Steps

- CAT framework
- Project next steps

Attendees

- | | | |
|-------------------------|------------------------|------------------------|
| • Travis Crissman (KHA) | • Danielle Curri (KHA) | • Tancred Miller (DCM) |
| • Autumn Hardison (CAT) | • Candy Bohmert (CAT) | • Hiram Lupton (CAT) |
| • Ray Bennett (CAT) | • Tim Buck (CAT) | |

Minutes

The consulting team began the meeting by giving an overview of the project and the steps outlined in the Planning Guide. Each of the steps in Phases 1 and 2 were highlighted and the final deliverables were reviewed. Next, the consulting team reviewed the role of a CAT member. CAT members were asked to provide local insight and expertise, help set vision and goals, provide targeted input, and encourage community engagement. The consulting team requested that the members actively participate, be transparent, consider alternative ideas, work towards an optimal solution, and think big. The consulting team then shifted to the main objective of the meeting of setting the project vision and goals. The CAT team was presented with definitions of vision and goal statements and an explanation of the triple bottom line approach. They were then shown examples from the Pamlico Sound Regional Hazard Mitigation Plan (PSRHMP) and other community plans. They were asked to reflect on the statements and highlight anything that resonated with their community. Next, the consulting

team led a brainstorming session to frame the discussion towards their specific community. The CAT discussed challenges they have faced from coastal hazards and priorities of the community. Following the discussion, the consulting team shared some draft vision and goal statements. The CAT reviewed the statements and revised them per their community. The CAT ultimately selected the following statements:

Vision: “To identify and assess the natural and manmade hazards which will affect Pamlico County in the future with an eye to which of these may be most positively influenced by application of available funding to facilitate resilient infrastructure and promote community readiness.”

Goals: “To be ready for future hazards both human made and natural by promoting community action, improved level of service, maintenance planning, and asset protection.”

From the discussion and formation of the vision and goals, the CAT highlighted that they want to be more competitive for grant funding. Their community utilizes grants for infrastructure improvements. Additionally, they want to be more prepared for coastal hazards supported by their infrastructure. Following the formation of the vision and goals, the consulting team reviewed the next steps of the project and the CAT.

C.3.2 CAT Meeting 2 – Critical Assets and Critical Natural Infrastructure

Meeting Agenda

Location: Microsoft Teams
 Time / Date: 9:00 am 10/6/2021
 Subject: Critical Assets and Public Engagement

Critical Assets and Infrastructure

- Review list provided by Autumn Hardison

Public Engagement Strategy

- Method of communicating with residents, questionnaire, public meeting
- Public Meeting #1 agenda and schedule

Attendees

- Travis Crissman (KHA)
- Danielle Curri (KHA)
- Tancred Miller (DCM)
- Autumn Hardison (CAT)
- Candy Bohmert (CAT)
- Hiram Lupton (CAT)
- Ray Bennett (CAT)
- Tim Buck (CAT)

Minutes

Prior to the CAT Meeting, Autumn Hardison provided a list of critical assets from available county GIS data. This was used to create a preliminary list which was reviewed with the CAT to make additions or edits. The CAT also discussed the role played by these facilities during extreme events and their role in the community.

The following key points were identified during the discussion:

- The Fire Departments will be provided by Ms. Hardison following the meeting. These often serve as hubs during events.
- The Community Center on Goose Creek Island serves as both the post office and a meeting center for the community.
- There are several phone line office centers and cells towers that should be included. Ms. Hardison will be able to provide these.
- The electrical facilities represent a variety of critical assets from distribution points to sub stations.

Following the discussion of critical assets, the focus was changed to how to best reach the community for the first public meeting. It was decided the best way to reach the community would be through a mailer with the public meeting information and questionnaire. The water department will include the mailer in the water bill for November as a second sheet. Additionally, Ms. Bohmert will coordinate with Oriental because they do their own billing. The questionnaires will be returned via the online platform, mailing them to the water department, or dropping them off at the water department.

C.3.3 CAT Meeting 3 – Local Hazards and Calls for Action

Meeting Agenda

Location: Microsoft Teams
 Time / Date: 9:00 am 11/3/2021
 Subject: Critical Assets and Public Engagement

- Overview of risk and vulnerability assessment
- Review and discussion of local hazards identified based on Pamlico Regional Hazard Mitigation Plan and/or other sources
- Identify additional local hazards
- Discussion of calls to action (events that trigger the need for taking action or calling for assistance)

Attendees

- Travis Crissman (KHA)
- Danielle Curri (KHA)
- Tancred Miller (DCM)
- Autumn Hardison (CAT)
- Candy Bohmert (CAT)
- Hiram Lupton (CAT)
- Ray Bennett (CAT)
- Tim Buck (CAT)

Minutes

To start the meeting, the consulting team gave an overview of the vulnerability assessment portion of the project. They reviewed the steps detailed by the planning guide, input needed from the CAT, and how the vulnerability assessment relates to Phase 2. Next, the consulting team shifted to discussing the objective of the meeting, to get feedback on identified local hazards and calls to action. To begin identifying hazards, the consulting team reviewed the required hazard considerations detailed in the planning guide (flooding (rainfall, tidal, and riverine), storm surge, and sea level rise). Maps of these hazards were shown using online GIS tools including the NOAA Sea Level Rise Viewer (sea level rise and tidal flooding), NC FRIS (riverine flooding), and NOAA National Storm Surge Hazard Maps (storm surge). For rainfall, local knowledge was relied on to identify hot spots. The hazards were presented to the CAT in the form of preliminary maps showing the community and the hazard extents. Members held a discussion regarding the geographic extents of the hazards and related it to their personal experience. Additionally, the hazards included in the PSRHMP were presented to the community for reference. During the CAT meeting, an emphasis was placed on discussing calls to action for the community or events that initiate a community response.

Several Key Points were identified from this discussion:

- Wind plays an important factor in the flooding experienced by the community. Hobucken and Lowland experience tidal flooding from wind. The main road between the communities and access to Lowland experience flooding. Paradise Shores, Florence Road, the Oriental main road, and Hodges Street all experience flooding from wind tides. In the past, school has been delayed due to wind.

-
- Riverine Flooding maps should be more severe. Ms. Hardison shared that the floodplains were reduced. Oriental has some areas that are no longer shown in a floodplain.
 - Rainfall flooding hot spots include the New Ditch Road area, Mill Pond Road, and the Sandhill Canal. Callison Road had issues in the past when the drains were clogged. Many of the DOT pipes are reported to not have been sized to consider surcharging related to wind tides.
 - Hurricane flooding depends greatly on the approach angle and speed. Slow moving Category 1 storms have caused extreme flooding. Additionally, the flooding depends on how much water is currently built up due to wind tides.
-

C.3.4 CAT Meeting 4 – Vulnerability Solutions

Meeting Agenda

Location: Microsoft Teams
 Time / Date: 10 am 3/8/2022
 Subject: Vulnerability Solutions

- Share vulnerability score results
- Discuss project portfolio
- Prioritize projects

Attendees

- | | | |
|-------------------------|------------------------|------------------------|
| • Travis Crissman (KHA) | • Danielle Curri (KHA) | • Mackenzie Todd (DCM) |
| • Autumn Hardison (CAT) | • Chris Murray (CAT) | • Hiram Lupton (CAT) |

Minutes

Due to a last-minute county emergency, several of the CAT member were unable to attend the scheduled meeting. The consulting team met with Autumn Hardison and Mackenzie Todd and reviewed the vulnerability score results and initial project portfolio. Following feedback from Ms. Hardison, the consulting team made revisions to the Project Portfolio and sent the portfolio to the other CAT members to comment on. CAT members ranked the presented projects in order of priority using an online ranking survey. Based on the survey, the highest priority projects were Pamlico Middle School Relocation; Undergrounding of Electric along NC 55 near Callison Road; and Drainage, Ditch, and Tributary Dredging and Maintenance Program. For raising road grades, the order of priority was Goose Creek Island roads, the Paradise Shores roads, and Florence/Whortonsville Road area. The order of priority for living shoreline options were Dawson’s Creek Public Access/Park, River Road Bridge Abutments, and Camp Seagull Point.

D. Stakeholder Engagement Strategy

D.1 Introduction

The Resilient Coastal Communities Program (RCCP) was developed by the North Carolina Division of Coastal Management with the goal of helping to build more resilient communities through thorough planning with technical and financial assistance. As stated by the *North Carolina Resilient Coastal Communities Program Planning Handbook*,

“Getting from resilience planning to action requires jointly created ideas, buy-in, and commitment from a diverse group of stakeholders.”

This document outlines a community engagement strategy to ensure participation from public stakeholders in the program during the risk and vulnerability assessment and project planning, prioritization, and selection.

D.2 Engagement Approach

The engagement approach was designed with the following four goals in mind based on the *North Carolina Resilient Coastal Communities Program Planning Handbook*:

1. Promote representation and equitable outcomes for marginalized communities and vulnerable populations
2. Build trust, relationships, and partnerships
3. Gain feedback and validation during the risk and vulnerability assessment
4. Gain local assistance with the prioritization of projects

D.3 Strategies

The engagement approach includes several strategies to ensure the goals are met. The first strategy is to *inform and empower*. Resiliency is a complicated issue and solutions will vary for each community. The engagement plan will work to effectively communicate with participants regardless of their background and empower them to share their own experiences, solutions, and priorities. The engagement will highlight the importance of implementing resiliency strategies and costs of inaction.

The engagement approach is also designed to integrate *online and offline engagement*. Throughout the process, the engagement plan will work to ensure community members without internet access are given opportunities to participate and engage. The plan will also leverage online engagement tools to reach the community.

As stated in the goals, the engagement approach places an emphasis on *outreach to vulnerable and historically underrepresented community members*. Pamlico County has a population of approximately 13,000 residents. The rural community contains limited centralized community organizations and gathering centers. Based on Community Action Team feedback and the historic vulnerability of the entire community, an approach was created with the intention of reaching out to residents through a flyer in their water bill.

Lastly, the engagement approach will include *measurable outreach*. Most Pamlico County residents utilize the Pamlico County Water Department; therefore, the measured outreach percentage of the community will be high. Every household will have the opportunity to provide feedback both via a questionnaire (online or hard copy) and via 2 public meetings to be conducted.

D.4 Elements for Outreach

D.4.1 Community Engagement Stage A: Risk and Vulnerability Assessment

Community Engagement Stage A is focused on getting community feedback and suggestions on identified local hazards during the risk and vulnerability assessment. The Web Content and Print media will leverage *online and offline engagement* to ensure all community members are reached regardless of internet access. This will also allow for outreach to *vulnerable and historically underrepresented community members* by aiming to reach most Pamlico County residents. Public meeting materials will be developed to *inform and empower* community members regardless of their knowledge of resiliency. In Stage A, a questionnaire will be used, and public meeting attendance will be tracked to allow for *measurable outreach*.

Outreach Method	Schedule	Intended Audience	Purpose	Responsibilities	
				Consultant Team	Grantee Administrator
Print Media	Mid-late October	Community Members	<ul style="list-style-type: none"> • Provide background information on the project • Notify the community about the upcoming public meeting • Gather information on a questionnaire • Provide QR codes for online questionnaire responses and virtual meeting access 	<ul style="list-style-type: none"> • Create print media content (Mailer and questionnaire) • Create online content (online questionnaire and virtual meeting access) • Analyze questionnaire responses 	<ul style="list-style-type: none"> • Distribute in the November water bill. • Collect questionnaire in drop box or via mail.
Public Meeting #1	Early December	Community Members	<ul style="list-style-type: none"> • Give an overview on the program and project vision / goals • Collect community feedback on identified local hazards and suggestions on additional local hazards. 	Create meeting materials, facilitate meeting, and summarize feedback.	Secure meeting location and promote / publicize the meeting.

D.4.2 Community Engagement Stage B: Project Development

Community Engagement Stage B is focused on getting community feedback and suggestions on identified potential solutions during the project prioritization. The Web Content and Print media will leverage *online and offline engagement* to ensure all community members are reached regardless of internet access. This will also allow for outreach to *vulnerable and historically underrepresented community members* by aiming to reach most Pamlico County residents. Public meeting materials will be developed to *inform* community members about identified projects and *empower* them to share their own ideas and give feedback.

Outreach Method	Schedule	Intended Audience	Purpose	Responsibilities	
				Consultant Team	Grantee Administrator
Print Media	Early-mid January	All Property Owners	<ul style="list-style-type: none"> • Provide a summary of the first Public Meeting • Notify the community about the upcoming public meeting • Share results from the questionnaire • Provide QR codes for virtual meeting access 	<ul style="list-style-type: none"> • Create content (Text, graphics) • Create online content (virtual meeting access) 	Distribute in the January water bill.
Public Meeting #2	Late January	Community Members	<ul style="list-style-type: none"> • Share results from the first questionnaire • Collect community feedback on identified potential solutions. • Summarize the next steps of the project. 	Create meeting materials, facilitate meeting, and summarize feedback.	Secure meeting location and promote / publicize the meeting.

D.5 Community Involvement Results

In Stage A, a questionnaire and public meeting were used to engage the community. The public meeting was held on December 7, 2021 jointly with the Vandemere RCCP with approximately 12 attendees. The questionnaire received 269 responses. Detailed questionnaire results have been provided to DCM. Overall key points from the questionnaire and public meeting are highlighted below:

- 63% of residents completing the questionnaire reported experiencing limited access to their residence during an extreme weather event. The most frequently reported causes were downed trees or other debris (46%), downed power lines (36%), water on main road outside subdivision (33%), and water on subdivision street (31%).
- 38% of residents completing the questionnaire reported limited access to a critical facility or service during an extreme weather event. The most frequent reported critical facility or service affected included cable or internet service (25%), fuel for automobile (24%), telephone (20%), hospital/ medical 19% and food/ water (18%).
- Residents reiterated that wind plays a large role in the level of flooding experienced from the sound.
- Residents noted several flooding hotspots including Millpond Road, NC 304 near Lynchs Beach Loop Road, Trent Road, Orchard Creek Road, and Straight Road.
- Residents noted the raising of Highway 55 near Reelsboro has caused increase runoff onto properties below.

The second public meeting was held on March 10, 2022 jointly with the Vandemere RCCP with approximately 13 attendees. Notice of the public meeting was provided via the county website and an email to the questionnaire respondents. The consultants presented the proposed project portfolio and provided time for feedback from the community.

E. Review of Existing Local and Regional Efforts

E.1 Existing Local and Regional Efforts

As outlined in Step 3 of the Planning Guide, a review of existing plans, ordinances, policies, and programs was performed. During this process, existing resiliency measures in place were identified. These existing measures were built upon and gaps were identified for the completion of the vulnerability and risk assessment. The documents reviewed are listed in **Figure 4**. Summaries of the documents are enclosed in **Appendix A**.



Figure 4: Reviewed documents

E.2 Identified Gaps

From the review of existing local and regional efforts, a series of gaps were identified. These gaps were considered throughout the plan. The identified gaps are shown below in **Figure 5**.

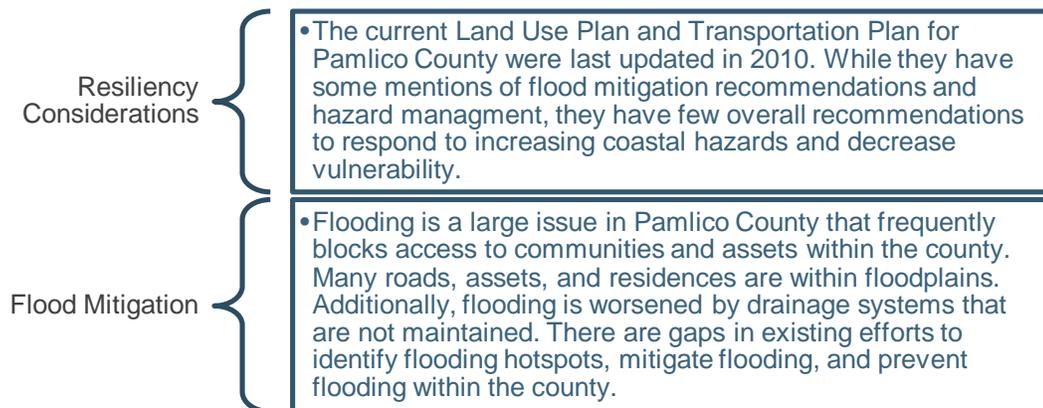


Figure 5: Identified Gaps in Current Local Efforts

F. Risk and Vulnerability Assessment Report

F.1 Introduction

The main deliverable of Phase 1 is the Risk and Vulnerability Assessment (RVA) Report. This document outlines process taken to complete the RVA and the results of the RVA. As described in the *Resilient Coastal Communities Program Planning Handbook* [2], the assessment will evaluate risks to the community’s vulnerable populations and critical assets from a number of coastal and climate hazards, including flooding (rainfall, tidal, and riverine), storm surge, sea level rise, and other locally relevant hazards.

The following process was taken to complete the RVA as shown in **Figure 6**. First, hazards were identified with the Community Action Team (CAT) based on their experience and the requirements in the planning guide. Additionally, the consulting team reviewed hazards that were included by existing plans. The consulting team then mapped the hazards and their spatial relationship to the critical assets. This information was used to assess vulnerability based on a vulnerability scoring protocol developed specifically for the RVA. Following the vulnerability assessment, risk was estimated for the critical assets.



Figure 6: Risk and Vulnerability Assessment Process

The report and maps created in the RVA will be used to complete Phase 2 of the RCCP which is focused on Planning, Project Identification, and Prioritization. Project needs will be identified based on the vulnerability and risk of the community.

F.2 Critical Assets

The Critical Assets included in the assessment were identified in conjunction with the CAT based upon FEMA’s Community Lifelines Framework [4]. Minutes of this process are included in **C.3.2**. A community lifeline “enables the continuous operation of critical government and business functions and is essential to human health and safety or economic security” [4]. For Pamlico County most of the critical assets are government facilities, grocery stores, utilities, medical resources, fuel stations, fire stations, and community centers. Overall, 84 critical assets were identified. The initial critical assets were provided by Pamlico County Emergency Management in spreadsheet format with GIS data as available. The list was then reviewed with the CAT to adjust as needed. Descriptions and geolocation are provided in **Appendix B**.

F.3 Hazard Identification

F.3.1 Methods

To calculate vulnerability and risk for a community, the hazards faced by the community must be identified and mapped. In conjunction with the CAT, the consulting team identified a series of hazards faced by the community. Minutes of this meeting are included in **C.3.3**. Additionally, an emphasis was placed on understanding community *calls to action* or events that initiate a community response or need for assistance. To begin identifying hazards, the consulting team reviewed the required hazard considerations and located data sources. As required by the RCCP Planning Guide, the following hazards are included in this study: *flooding (rainfall, tidal, and riverine), storm surge, and sea level rise (minimum 30-year projection)* [3]. For rainfall, the questionnaires completed as a part of the Community Engagement Strategy were utilized to identify hotspots. The consulting team also consulted the PSRHMP [5] to review hazards identified for the community. The following hazards are considered as a part of this study and the referenced sources to quantify these hazards are shown in **Figure 7**:

Figure 7: Pamlico County identified Hazards and Utilized Sources.

<i>Hazard</i>	<i>Source</i>
Rainfall Flooding	Community Engagement Questionnaires, CAT members
Tidal Flooding/ Sea Level Rise	NC Spatial Data Download QL2 Digital Elevation Model [6]
Riverine Flooding	North Carolina Flood Risk Information System [7]
Storm Surge	National Storm Surge Hazard Maps [8]

During the project, the following calls to action were identified as shown in **Figure 8**. Currently, county response to extreme weather primarily focuses on hurricane events. Pamlico County Emergency Management (PCEM) takes a series of steps to communicate and assist residents. These steps are typically isolated to hurricane events and are not taken during other flooding events.

Figure 8: Pamlico County Calls to Action

<i>Call to Action</i>	<i>Response</i>
Hurricane/Tropical Storm	<ul style="list-style-type: none"> • PCEM shares information on social media once the county is confirmed in the “cone of uncertainty” • The County Chairman of the Board declares a State of Emergency if needed • Evacuation voluntary/mandatory directives are given • Code Red call is generated regarding evacuation information, government office closure, and shelter opening • Shelter opens depending on evacuation needs • After the event, points of distribution are opened in impacted areas based on commerce and utility availability. Code Red calls are generated regarding mealtimes, government operations, and shelter status.

F.3.2 Hazard Extents

The identified Hazards were mapped using GIS as shown in **Appendix D**. From the mapping of the hazards, the following trends were identified:

- Rainfall flooding primarily impacts roads within the county and can isolate residents by blocking ingress/egress.
- Tidal flooding / sea level rise impacts properties and roadways along the shoreline and low-lying areas. The low-lying communities of Hobucken and Lowland are heavily impacted with as little as 1 to 2 feet of tidal flooding / sea level rise.
- Many individual communities are significantly impacted by the 1% Flood Hazard Zone or 0.2% Flood Hazard Zone including Hobucken, Lowland, Mesic, Vandemere, and Oriental.
- For Category 2 Hurricanes and greater, over half the land area in the county including many individual communities are impacted by storm surge.

F.4 Vulnerability Assessment

F.4.1 Introduction

The vulnerability assessment focuses on quantifying the vulnerability of critical assets and natural infrastructure to the previously identified hazards. Vulnerability is determined in relation to exposure, sensitivity, and adaptive capacity as defined by the Planning Guide [2] below:

1. *Exposure* – The probability of physical contact between an asset and a hazard.
2. *Sensitivity* – The degree to which asset is impacted by a hazard
3. *Adaptive Capacity* – The current ability of an asset to change its characteristics or behavior in response to a hazard.

Vulnerability is calculated for an asset utilizing the function shown in **Figure 9**.

$$\text{Vulnerability} = \text{Exposure} + \text{Sensitivity} - \text{Adaptive Capacity}$$

Figure 9: Vulnerability Function

Additionally, the CDC's Social Vulnerability Index (SVI) was mapped and supplemented with local insight. Ultimately, a vulnerability index was developed to score the cumulative vulnerability for the critical assets while considering social vulnerability.

F.4.2 Metrics

Based on the Planning Guide and available data sources, a vulnerability index was developed to quantify exposure, sensitivity, and adaptive capacity for each of the identified hazards. The vulnerability index was then used to score the vulnerability for each critical asset and each hazard. For exposure, sensitivity, and adaptive capacity, the scoring for each ranged from 0 to 3. Using the vulnerability equation, the vulnerability score ranged from 0 to 6. High vulnerability is demonstrated by a score greater than 4. Medium vulnerability is demonstrated by a score between 2 and 4. Low vulnerability is demonstrated by a score less than 2. To start, overall general guidelines for exposure, sensitivity, and adaptive capacity were developed as shown in **Figure 10**.

Figure 10: Overall Vulnerability Index

<i>Score</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>
0	Unlikely to occur	Asset not impacted	No implemented solutions
1	Low probability of contact	Asset minimally impacted (retains function)	Implemented solution to reduce sensitivity
2	Medium probability of contact	Asset impacted (loses some function)	Implemented solution to reduce exposure
3	High probability of contact	Asset destroyed (loses all function)	Implemented solution to reduce exposure and sensitivity

These guidelines were used to define vulnerability indices for each identified hazard to score exposure, sensitivity, and adaptive capacity. The indices were developed based on available GIS data and feedback from the CAT. Boundaries for the scoring were set for each hazard based on the guidelines and data type. The scoring metrics for each hazard are shown in **Appendix F**.

The following assumptions were made when developing the scoring indices:

- When quantifying adaptive capacity in Pamlico County, the most frequent type of adaptive capacity encountered was raised buildings. In these cases, the adaptive capacity was assumed to be the same for each type of flooding.
- It was assumed that assets could not have a total vulnerability score less than zero.
- An adjustment was provided to account for social vulnerability in the adaptive capacity metrics. If an asset was in a high socially vulnerable area, the adaptive capacity was reduced to represent the difficulty the community faces in recovery due to social vulnerability factors.
- For storm surge, the depth of storm surge from a Category 2 Hurricane was utilized to quantify sensitivity. The storm surge from a Category 2 Hurricane was utilized because in the last 20 years the highest category hurricanes to pass within a 60-mile radius of Pamlico County were Category 2 Storms [9]. In the last 20 years, nineteen tropical storms and hurricanes have passed within a 60-mile radius of Pamlico County. Five of these storms were Category 2 events.
- For riverine flooding and tidal flooding, an adjustment was made to the sensitivity score if the assets had a low probability of contact with the hazard. This adjustment was made to make the vulnerability scores more accurate compared to assets with a higher probability of contact.

F.4.3 Social Vulnerability Findings

The CDC’s Social Vulnerability Index (SVI) quantifies factors that impact a community’s ability to respond and recover from disasters [10]. There are four themes quantified to reach the SVI which include Socioeconomic Status, Household Composition, Race/Ethnicity/Language, and Housing/Transportation. Examples of these factors used to quantify the themes include household income, access to transportation, housing type, housing composition, and language barriers. The themes are mapped in GIS and displayed in quartiles compared to other areas. In the PSRHMP [4], social vulnerability was reviewed from a county level for Pamlico County. Within Pamlico County, social vulnerability is scored for each of the four census tracts.

As a part of the RCCP, the social vulnerability findings from the regional hazard mitigation plan were reviewed and supplemented using local knowledge. Additionally, updated social vulnerability data from 2018 was utilized [11]. Overall, the county scored as having medium to high social vulnerability compared to other counties in the United States. The Social Vulnerability is mapped in **Appendix C**. In **Figure 11**, the social vulnerability ranking variables are shown, detailing the ranking of the census tract compared to other census tracts in North Carolina. For example, for Overall Social Vulnerability for census tract 9501.01 was more socially vulnerable than 57% of other census tracts within North Carolina.

<i>Census Tract</i>	<i>Socio-economic Status Theme</i>	<i>Household Composition and Disability Theme</i>	<i>Minority Status and Language Theme</i>	<i>Housing Type and Transportation Theme</i>	<i>Overall Social Vulnerability</i>
9501.01	38%	62%	44%	77%	57%
9501.02	89%	66%	68%	98%	91%
9502.01	34%	51%	47%	31%	37%
9502.02	45%	52%	5%	16%	24%

Figure 11: Pamlico County Social Vulnerability by Census Tract

A series of factors contributed to high social vulnerability within Pamlico County. In Census Tract 9501.01, the high social vulnerability for housing type and transportation was driven by a high percentage of residents living in mobile homes and a high number of households with more people than rooms. For Census Tract 9501.02, the high overall social vulnerability was largely driven by the socio-economic status theme and housing type and transportation theme. The high scores within these themes are attributed to high unemployment, low income per capita, a high percentage of residents living in mobile homes, and a high percentage of residents living in group quarters. Census Tract 9502.01 had medium to low social vulnerability. Its highest social vulnerability factor was residents over the age of 65. Census Tract 9502.02 had the lowest overall social vulnerability. The highest social vulnerability factor for this census tract was residents over 65.

As a part of the RCCP, the social vulnerability for Pamlico County was reviewed and supplemented with local knowledge. The following factors have been noted throughout the planning process that hamper response: population age, transportation access, and housing

conditions. The factors are described in **Figure 12**. By identifying social vulnerability within the community, officials and responders can identify which areas are more likely to require assistance during hazardous events.

Figure 12: Factors contributing to Social Vulnerability in Pamlico County

<i>Factor</i>	<i>Description</i>
Population Age	<ul style="list-style-type: none"> Pamlico County has a large population of elderly residents and is a popular retirement location. Elderly residents frequently need more assistance responding to hazards and are more likely to require medical attention.
Transportation Access	<ul style="list-style-type: none"> Many roads within Pamlico County serve as the single access points to communities and critical assets. When these roads flood or become blocked, this isolates anyone from entering or exiting.
Housing Conditions	<ul style="list-style-type: none"> In the social vulnerability scoring, Pamlico County consistently scored high for percentage of residents in mobile homes. Residents in mobile homes are more vulnerable to coastal hazards. Additionally, homes that have not been repaired from past storms are more vulnerable to future storms.

F.4.4 Vulnerability Findings

Each of the critical assets was run through the scoring metrics to quantify exposure, sensitivity, and adaptive capacity. This was used to calculate the total vulnerability for the critical assets in Pamlico County. The cumulative scores for vulnerability, exposure, sensitivity, and adaptive capacity are shown in **Appendix E**. The scoring, vulnerability indices, and results by hazard are shown in **Appendix F**. The cumulative vulnerability score for each critical asset that scored above a three is shown in **Figure 13**. These assets have medium high cumulative vulnerability.

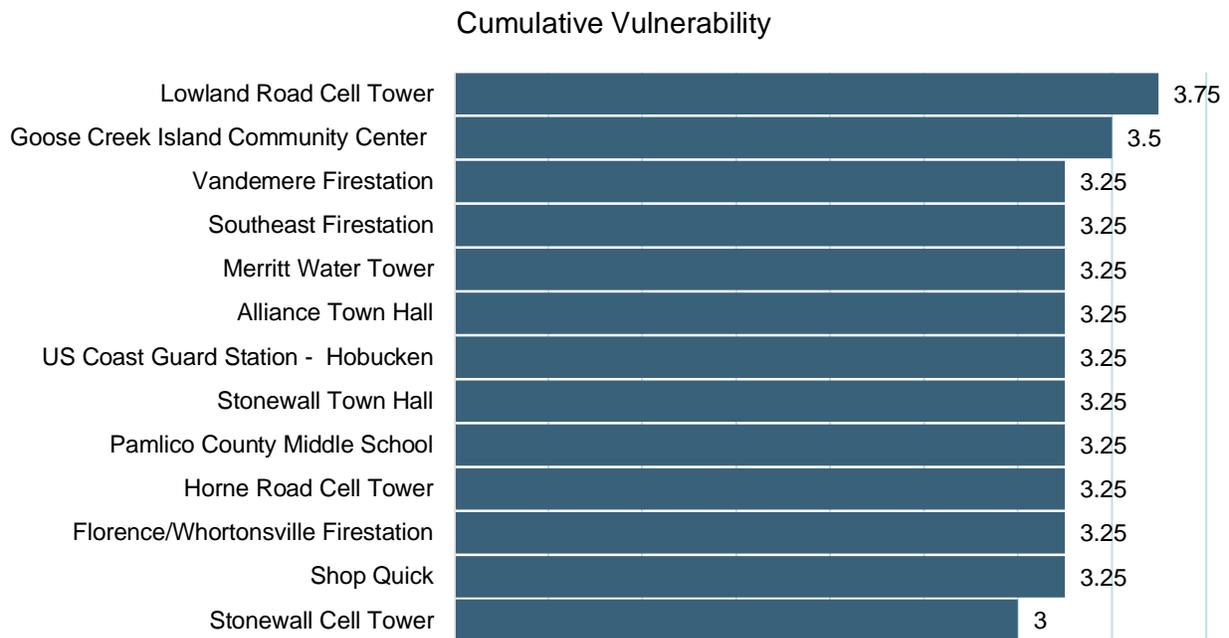


Figure 13: Cumulative Vulnerability for Medium High Vulnerability Critical Assets

Overall, *58% of the critical assets had medium vulnerability*. Variations in the scores can be seen in the scoring of their exposure, sensitivity, and adaptive capacity as shown in **Appendix E**. *Most critical assets had low adaptive capacity*. Few critical assets had all the buildings on the property raised or other adaptations. Additionally, high social vulnerability reduced the adaptive capacity of critical assets.

The Lowland Road Cell Tower had the highest overall vulnerability. The Lowland Road Cell Tower was highly vulnerable to tidal flooding/ sea level rise, riverine flooding, and storm surge. The Cell Tower is in the 100-year floodplain and is projected to experience 7 feet of storm surge during a Category 2 Storm. Additionally, the asset is projected to experience tidal flooding/ sea level rise with a 2-foot increase above mean high or higher water.

From the hazards reviewed, the *average vulnerability for all the critical assets was the highest for storm surge*. During a Category 2 event, 64% of critical assets experience storm surge, with ranges from two to seven feet. This storm surge can be exasperated by wind driven tides experienced by Pamlico County prior to the storm impacting the community. During a Category

5 storm, most of Pamlico County is projected to experience greater than nine feet of storm surge [8].

In addition to the critical assets reviewed, *roads within Pamlico County are highly vulnerable to flooding*. Throughout the project, a large number of roads impacted by flooding were identified by the CAT and community. These roads are detailed in **Appendix F**. Many roads within the county fall in the 100-year floodplain and are not raised above the base flood elevation. Additionally, many roads within Pamlico County serve as the only ingress and egress into towns, neighborhoods, and residential communities. When these roads become blocked, entire communities can become isolated from critical assets, emergency personnel, and their properties. Additionally, most of these low-lying roads are also projected to experience storm surge during a Category 2 Hurricane. Residents reported many roads being impacted by rainfall flooding which can be worsened by wind tides and unmaintained drainage ditches. These rainfall hot spots were identified through the questionnaires and CAT meetings.

Overall, 84 critical assets were reviewed and 34 of the critical assets are government facilities. *Pamlico County has many critical government facilities that are vulnerable to coastal hazards*. Of the government facilities, 23 had medium vulnerability and 11 had low vulnerability.

From discussions with the CAT, additional vulnerabilities were also recognized that were not scored as critical assets. The CAT and questionnaire responses reported powerlines along Callison road being highly vulnerable to flooding and falling over due to ground inundation. The consulting team reviewed this area and confirmed that it falls within the 100-year floodplain. Additionally, the community has expressed an interest protecting shorelines that are eroding. These shorelines provide ecological benefits and protect many coastline communities. Oriental installed a living shoreline along Whittaker Pointe and there is interest in using this approach to protect other coastline communities and road crossings such as Dawson's Creek Public Access, River Road Abutments, Wiggins Point Road, and Camp Seagull Point.

In summary, the key findings of the overall vulnerability assessment include:

- 58% of the critical assets had medium vulnerability.
- Most critical assets had low adaptive capacity.
- The Lowland Road Cell Tower had the highest overall vulnerability.
- The average vulnerability for all the assets was the highest for storm surge.
- Roads within Pamlico County are highly vulnerable to flooding. This isolates the critical assets and residents.
- Pamlico County has many critical government facilities that are vulnerable to coastal hazards.

F.5 Risk Assessment

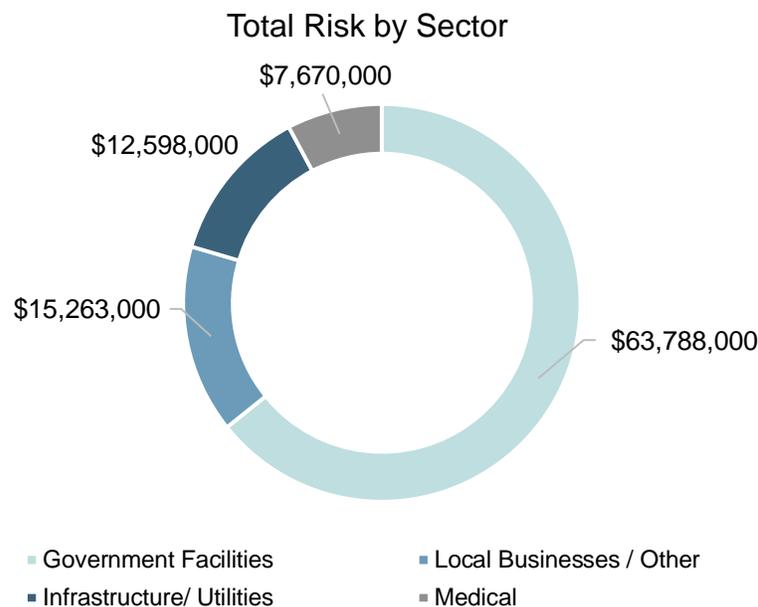
F.5.1 Metrics

After quantifying vulnerability, a risk assessment was performed. Risk is defined as “the potential for negative consequences where something of value is at stake” [1]. The estimated value of each critical asset was calculated to determine the value at risk. To quantify the value at risk, Pamlico County’s Tax Record GIS data was utilized to reference building values [12]. The building data value was utilized which includes structural infrastructure assets. For the assets that did not have building data value, the value of the assets was estimated based on available data and comparable assets.

The critical assets were grouped into four sectors to quantify damages. The four sectors evaluated were government facilities, local businesses, medical and infrastructure/ utilities. The classification of each critical asset by sector is shown in **Appendix G**.

F.5.2 Risk Findings

The value at risk was quantified for each critical asset as shown in **Appendix G**. The total for each sector was then calculated and is shown in **Figure 14**.



<i>Sector</i>	<i>Number of Critical Assets at Risk</i>	<i>Asset Value</i>
Government Facilities	34	\$ 63,788,000
Local Businesses / Other	18	\$ 15,263,000
Infrastructure/ Utilities	22	\$ 12,598,000
Medical	10	\$ 7,670,000

Figure 14: Total Value at Risk by Sector

Overall, the sector with the highest value at risk was Government Facilities. This sector included facilities such as government offices, Fire/ EMS Stations, schools, jails, and town halls. The value was driven by the value of the schools including the Pamlico County Schools, Arapahoe Charter School, and Pamlico Community College. The schools accounted for 76% of the total value of the Government Facilities. Additionally, many of the county facilities such as the Courthouse Property, Sherriff's Office and Social Services/ Senior Services were valued at over \$2 million dollars each. This value does not quantify all the equipment, documents, and other resources kept in these county facilities.

The Local Businesses sector had the second highest value at risk. This sector included assets such as grocery stores, nursing homes, and gas stations. Overall, the value in this sector was driven by larger stores and developments as Wal Mart, Food Lion, and the Nursing Homes.

The Infrastructure/ Utilities and Medical sectors were the two lowest overall value at risk sectors. The Infrastructure/ Utilities sector value was most influenced by the cost of the water towers and the FPI Carolinas Solar Farm. The Medical sector had the lowest number of critical assets and the lowest overall value at risk. Most medical facilities are outside of the county.

F.6 Conclusion

The RVA validated the feedback given by the community throughout the planning process. The County is vulnerable to coastal hazards including riverine flooding, tidal flooding, storm surge, and rainfall flooding. Overall, most critical assets had medium vulnerability. Few critical assets had adaptive capacity. Additionally, many roads within Pamlico County are highly vulnerable to flooding. This can isolate residents from accessing critical assets and their properties. It can also inhibit first responders from reaching residents in need. Communities within Pamlico experience high to medium high social vulnerability which lowers resiliency to coastal hazards.

G. Project Portfolio

During Phase 2, the consulting team worked with the CAT and community members to identify, plan, and prioritize a number of projects to increase the resiliency of the community. The identified projects address vulnerabilities identified in the RVA. In addition to infrastructure actions, policy based, and nature-based solutions were considered.

<i>Project Name</i>	<i>Relocate Pamlico County Middle School</i>	
Project Description	School has been flooded twice in 10-years. Each time damaged >50% tax value; no flood insurance for one incident. Ineligible for HMP and FMA. Tied for 3rd most vulnerable facility. Project is to redevelop the less vulnerable elementary school property to combine elementary and middle school.	
Natural/Nature-Based?	No	
Hazard(s) addressed by project	Flooding (rainfall/tidal/riverine)	
Type of Solution	Infrastructure	
Project Estimated Cost	Very High (\$500,000+)	The county estimates the total cost at around \$75M
Potential Implementation Funding Sources		
Projected Estimated Timeline	24+ months	
Priority Rating	High	
Project Map or Location	See Figure 15 for relocation site.	

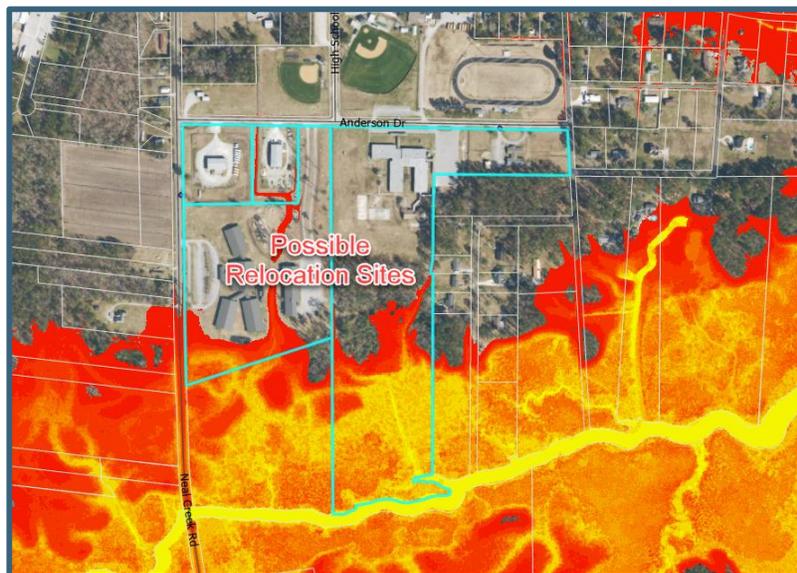


Figure 15: Elevation Map showing 100-year floodplain in relation to Middle School Relocation Sites

<i>Project Name</i>	<i>Undergrounding of Electric</i>	
Project Description	Move electrical service lines from aerial to underground. Power poles regularly lean or fall due to constant ground saturation.	
Natural/Nature-Based?	No	
Hazard(s) addressed by project	Flooding (rainfall/tidal/riverine)	Wind
Type of Solution	Infrastructure	
Project Estimated Cost	Very High (\$500,000+)	
Potential Implementation Funding Sources	FEMA Hazard Mitigation	
Projected Estimated Timeline	24+ months	
Priority Rating	High	
Project Map or Location	Power lines located along Highway 55 starting around Callison Road. Around 2.25 miles in length. See Figure 16 .	

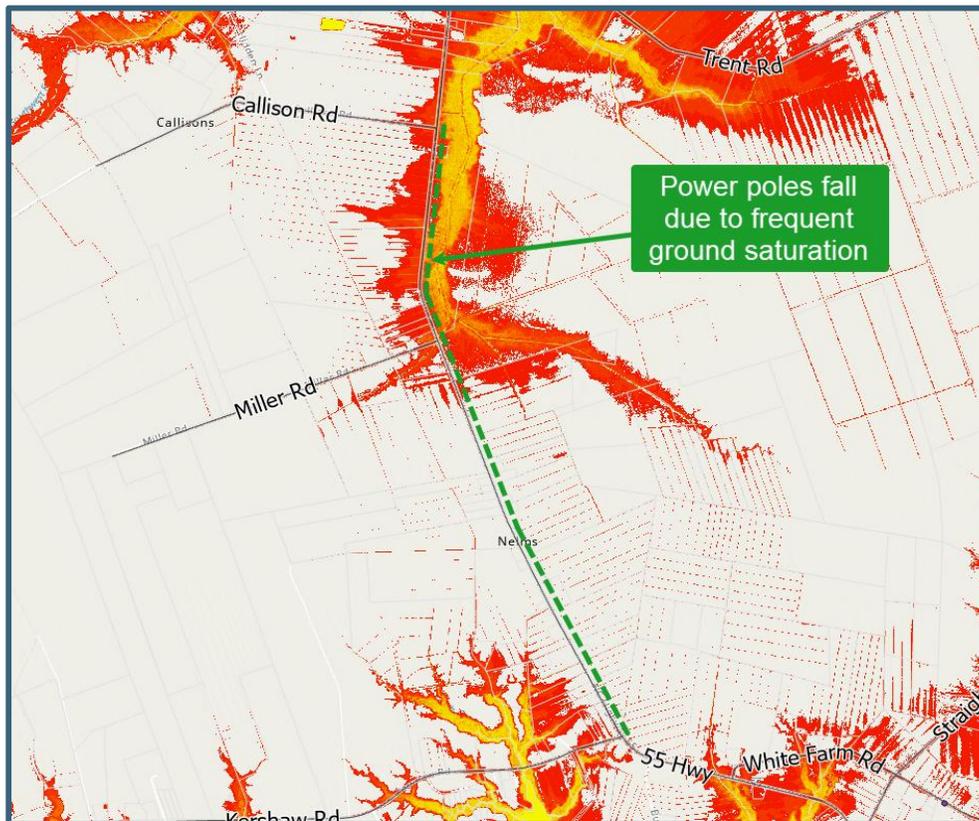


Figure 16: Proposed undergrounding of powerlines along Callison Road

<i>Project Name</i>	<i>Drainage, Ditch, and Tributary Dredging and Maintenance Program</i>	
Project Description	Develop long term financial model and maintenance schedule for drainage and conveyance system. Implement changes to County codes as necessary to enable easement acquisition and maintenance access.	
Natural/Nature-Based?	No	
Hazard(s) addressed by project	Flooding (rainfall/tidal/riverine)	
Type of Solution	Infrastructure	Plans and policies
Project Estimated Cost	Very High (\$500,000+)	High cost for perpetual maintenance.
Potential Implementation Funding Sources	None identified at this time	
Projected Estimated Timeline	24+ months	
Priority Rating	High	
Project Map or Location	Countywide	

<i>Project Name</i>	<i>Consolidation of Government Facilities for Reduced Vulnerability</i>	
Project Description	Program to study and implement consolidation of vulnerable critical government facilities to reduce overall vulnerability	
Natural/Nature-Based?	No	
Hazard(s) addressed by project	Flooding (rainfall/tidal/riverine)	
Type of Solution	Infrastructure	Plans and policies
Project Estimated Cost	Very High (\$500,000+)	Cost of study low compared to cost of actual consolidation activities.
Potential Implementation Funding Sources	None identified at this time	
Projected Estimated Timeline	24+ months	
Priority Rating	High	
Project Map or Location	Distributed across multiple County owned properties.	

<i>Project Name</i>	<i>Future Land Use Planning (LUP)</i>	
Project Description	Develop LUP to incorporate policies to improve resiliency. Overarching premise is to avoid new vulnerabilities, address existing vulnerabilities, and incorporate coastal hazards into vulnerability strategy	
Natural/Nature-Based?	No	
Hazard(s) addressed by project	Flooding, sea level rise, wind, and storm surge	
Type of Solution	Plans and policies	Ordinances
Project Estimated Cost	Medium (\$50,000-\$200,000)	
Potential Implementation Funding Sources		
Projected Estimated Timeline	6-12 months	
Priority Rating	Medium	
Project Map or Location	N/A	

<i>Project Name</i>	<i>Drainage Infrastructure Study</i>	
Project Description	Inventory major drainage culverts, rapid hydrologic / hydraulic capacity assessment, develop maintenance and upgrade program	
Natural/Nature-Based?	No	
Hazard(s) addressed by project	Flooding (rainfall)	Flooding (riverine)
Type of Solution	Plans and policies	
Project Estimated Cost	Medium (\$50,000-\$200,000)	
Potential Implementation Funding Sources		
Projected Estimated Timeline	12-24 months	
Priority Rating	Medium	
Project Map or Location	Countywide at various locations; major FEMA mapped crossings prioritized.	

<i>Project Name</i>	<i>Road Vulnerability Study</i>	
Project Description	Study to quantify vulnerability at major county roads based on criticality, frequency of flooding, duration of flooding. Prioritize vulnerable roads; comparative hydraulic; prioritization of road related resiliency initiatives; more competitive with DERPO funding.	
Natural/Nature-Based?	No	
Hazard(s) addressed by project	Flooding (rainfall/tidal/riverine)	
Type of Solution	Plans and policies	
Project Estimated Cost	Medium (\$50,000-\$200,000)	May be combined with Drainage Infrastructure Study for more cost effectiveness.
Potential Implementation Funding Sources		
Projected Estimated Timeline	6-12 months	
Priority Rating	Low	
Project Map or Location	Countywide at various locations; major FEMA mapped crossings prioritized.	

<i>Project Name</i>	<i>Living Shorelines</i>	
Project Description	Construct living shorelines to reduce erosion and dissipate wave energy along the coastline.	
Natural/Nature-Based?	Yes	
Hazard(s) addressed by project	Storm Surge	Wind
Type of Solution	Infrastructure	
Project Estimated Cost	Very High (\$500,000+)	
Potential Implementation Funding Sources	None identified at this time.	
Projected Estimated Timeline	24+ months	
Priority Rating	Low	
Project Map or Location	See Figure 17 , Figure 18 , and Figure 19 .	



Figure 17: Proposed Dawson's Creek Living Shoreline



Figure 18: Proposed River Road Bridge Abutments Living Shoreline



Figure 19: Proposed Wiggins Point Road Living Shoreline

<i>Project Name</i>	<i>Raise road to 100-yr floodplain elevation</i>	
Project Description	Raise road elevations to reduce frequency of overtopping.	
Natural/Nature-Based?	No	
Hazard(s) addressed by project	Flooding (rainfall/tidal/riverine)	Sea level rise
Type of Solution	Infrastructure	
Project Estimated Cost	Very High (\$500,000+)	
Potential Implementation Funding Sources	BRIC	
Projected Estimated Timeline	24+ months	
Priority Rating	High	
Project Map or Location	Roads on Figure 20, Figure 21, Figure 22, Figure 23 shaded in yellow or red. Four areas: Goose Creek Island (7 miles) Florence/Whortonsville Road (9 miles), Callison Road (500 feet), New Ditch Farm Road (700 feet).	

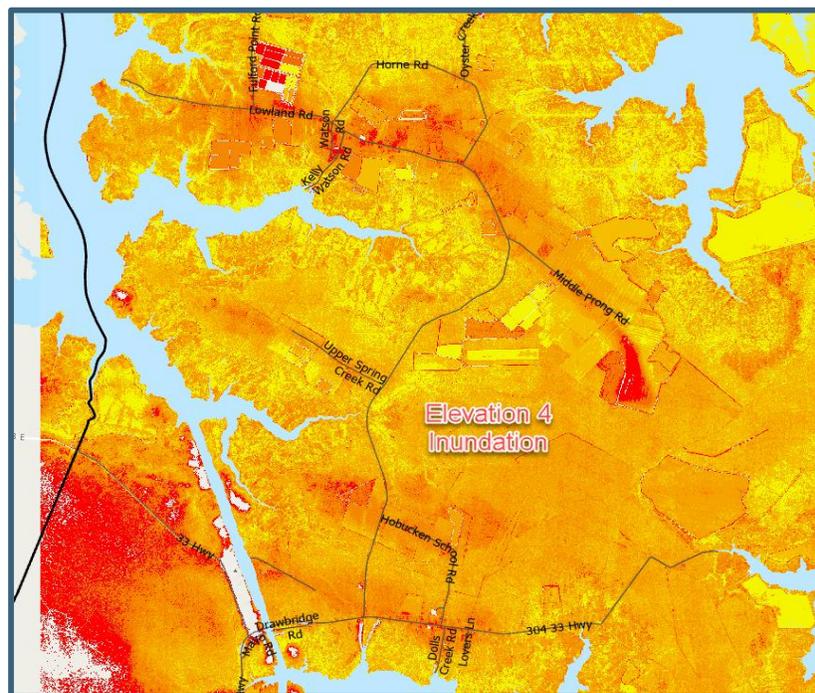


Figure 20: Goose Creek elevation map showing roads in the 100-year floodplain

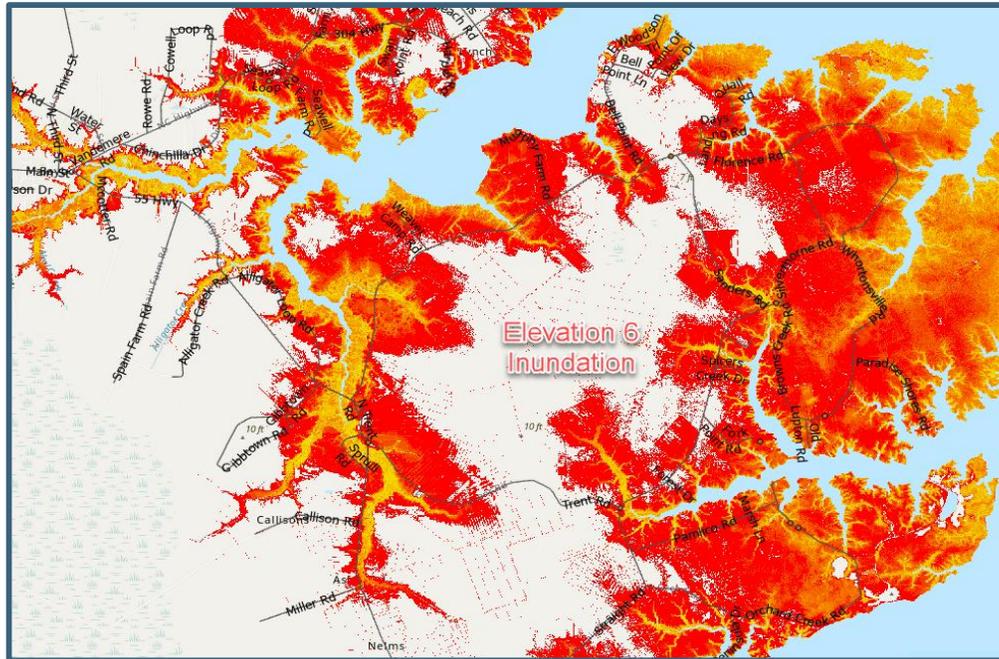


Figure 21: Florence/Whortonsville Road elevation map showing roads in the 100-year floodplain

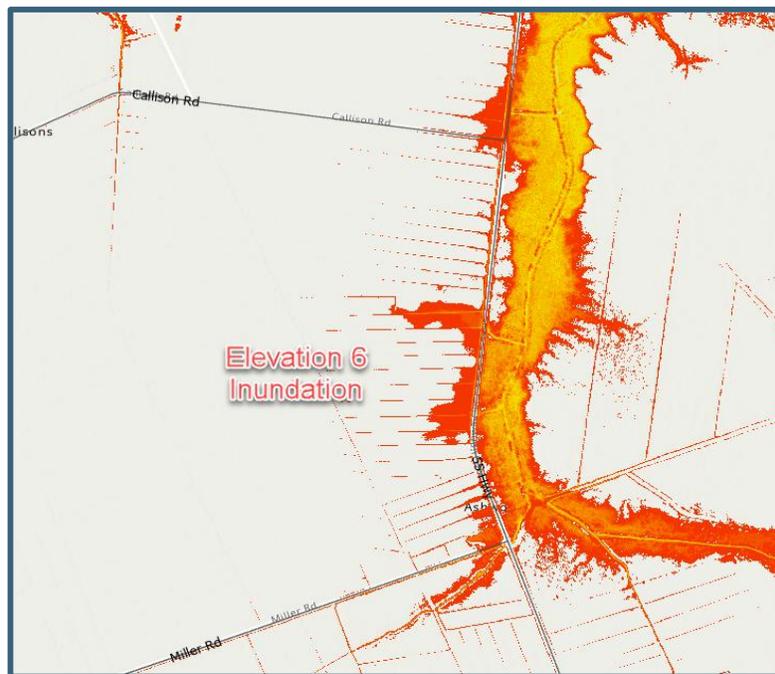


Figure 22: Callison Road elevation map showing sections in the 100-year floodplain

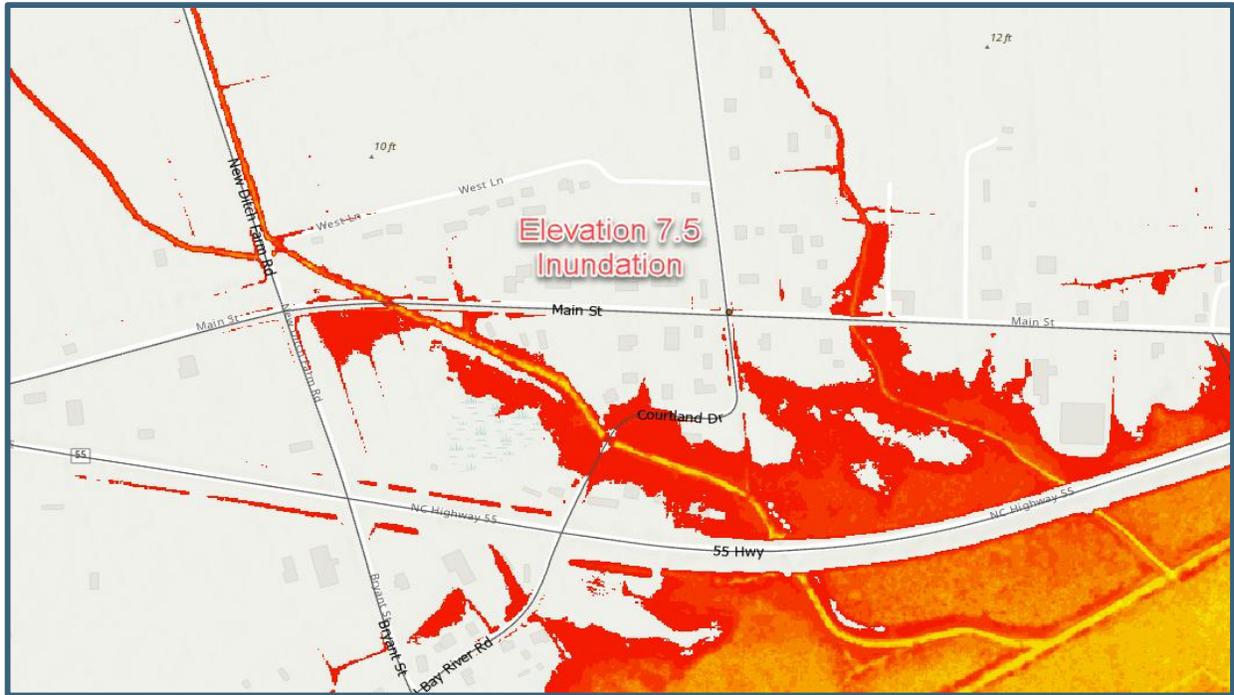


Figure 23: New Ditch Farm Road elevation map showing sections in the 100-year floodplain

H. References

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Appendix A – Existing Local and Regional Efforts

The following documents are the relevant documents reviewed to identify existing local and regional efforts. They represent a variety of sources from existing hazard mitigation plans, ordinances, and engineering plans.

<p><i>Pamlico County Flood Damage Prevention Ordinance [12]</i></p>	<ul style="list-style-type: none"> • The Pamlico County Flood Damage Prevention Ordinance details ordinances to minimize losses due to flooding and promote public health, safety, and general welfare. • The document includes provisions to restrict or prohibit uses dangerous to the community, requirements for new construction vulnerable to floods to be protected against flood damage, control the alteration of natural floodplains, stream channels, and natural protective barriers, control development that may increase erosion or flood damage, and prevent or regulate the construction of flood barriers. • Proposed mitigation efforts in Pamlico County include a variety of government strategies to better prepare the communities and residents for coastal hazards.
<p><i>Pamlico Sound Regional Hazard Mitigation Plan [5]</i></p>	<ul style="list-style-type: none"> • The purpose of the Pamlico Sound Regional Hazard Mitigation Plan (PSRHMP) is "to identify, assess, and mitigate hazard risk to better protect the people and property within the Region from the effects of natural and human-caused hazards." • The plan includes Pamlico County and Vandemere. It completed a regionwide hazard identification and risk assessment, mitigation strategies, and mitigation action plans.
<p><i>Town of Vandemere - Drainage Study [13]</i></p>	<ul style="list-style-type: none"> • The Town of Vandemere had a consulting firm perform a Drainage Study in 2019. • The study included a survey of existing drainage systems throughout the town and a memo detailing drainage improvement recommendations. • The town has not implemented the proposed improvements since the completion of the study.
<p><i>Hurricane Matthew Resilient Redevelopment Plan Pamlico County [14]</i></p>	<ul style="list-style-type: none"> • The Hurricane Matthew Resilient Redevelopment Plan was developed as part of the North Carolina Redevelopment Planning program to provide a roadmap for community rebuilding and revitalization assistance for communities damaged by Hurricane Matthew. • The document details storm damage, storm impact, and strategies for resilient redevelopment following Hurricane Matthew.

<p><i>Pamlico County Joint CAMA Land Use Plan [15]</i></p>	<ul style="list-style-type: none"> ● The document is the current land use plan adapted by Pamlico County, including Vandemere. ● The plan helps ensure that new development and land uses are consistent with the county's goals. ● Additionally, it is used by local governments to develop ordinances related to development. The county is currently looking to update this plan.
<p><i>Pamlico County Comprehensive Transportation Plan [16]</i></p>	<ul style="list-style-type: none"> ● The document covers transportation needs identified in Pamlico County through 2035. ● Recommendations to help mitigate flooding include improvements to SR 1230 (Lowland Road) and SR 1322 (Trent Road).

Appendix B – Critical Assets

Critical Assets Locations

In the table below, the critical assets are listed with their current address. Additionally, a definition is provided to give context to the selection of the critical asset.

<i>Critical Asset</i>	<i>Definition</i>	<i>Address</i>
Ag Cooperative Extension Office	Government	13724 NC Hwy 55 Bayboro, NC 28515
Alliance Town Hall	Government	934 Main Street Alliance, NC 28509
Arapahoe Charter School k-12	Schools	9005 NC Hwy 306 S Arapahoe, NC 28510
Arapahoe Firestation	Firestation	8155 NC-306, Arapahoe, NC 28510
Arapahoe Town Hall	Government	8257 NC Hwy 306 S Arapahoe, NC 28510
Bay River Metropolitan Sewer Office	Miscellaneous	101 4th St, Bayboro, NC 28515
Bayboro Pharmacy	Pharmacy	702 Main Street Bayboro, NC 28515
Bayboro Sewer Treatment Plant	Miscellaneous	1448 NC-304 Bayboro, NC 28515
Bayboro Town Hall	Government	301 Main Street Bayboro, NC 28515
Bayboro Water Tower 1	Water Tower	102 4th Street Bayboro, NC 28515
Bayboro Water Tower 2	Water Tower	3191 Mill Pond Road Bayboro, NC 28515
Bryant Funeral Home	Funeral Home	52 Bryant St, Alliance, NC 28509, USA
Carolina Telephone / Century Link	Phone Service	103 Vandemere Road Bayboro, NC 28515
County Manager / Finance	Government	302 Main Street Bayboro, NC 28515
CVS Pharmacy	Pharmacy	10775 NC Hwy 55 Grantsboro, NC 28529

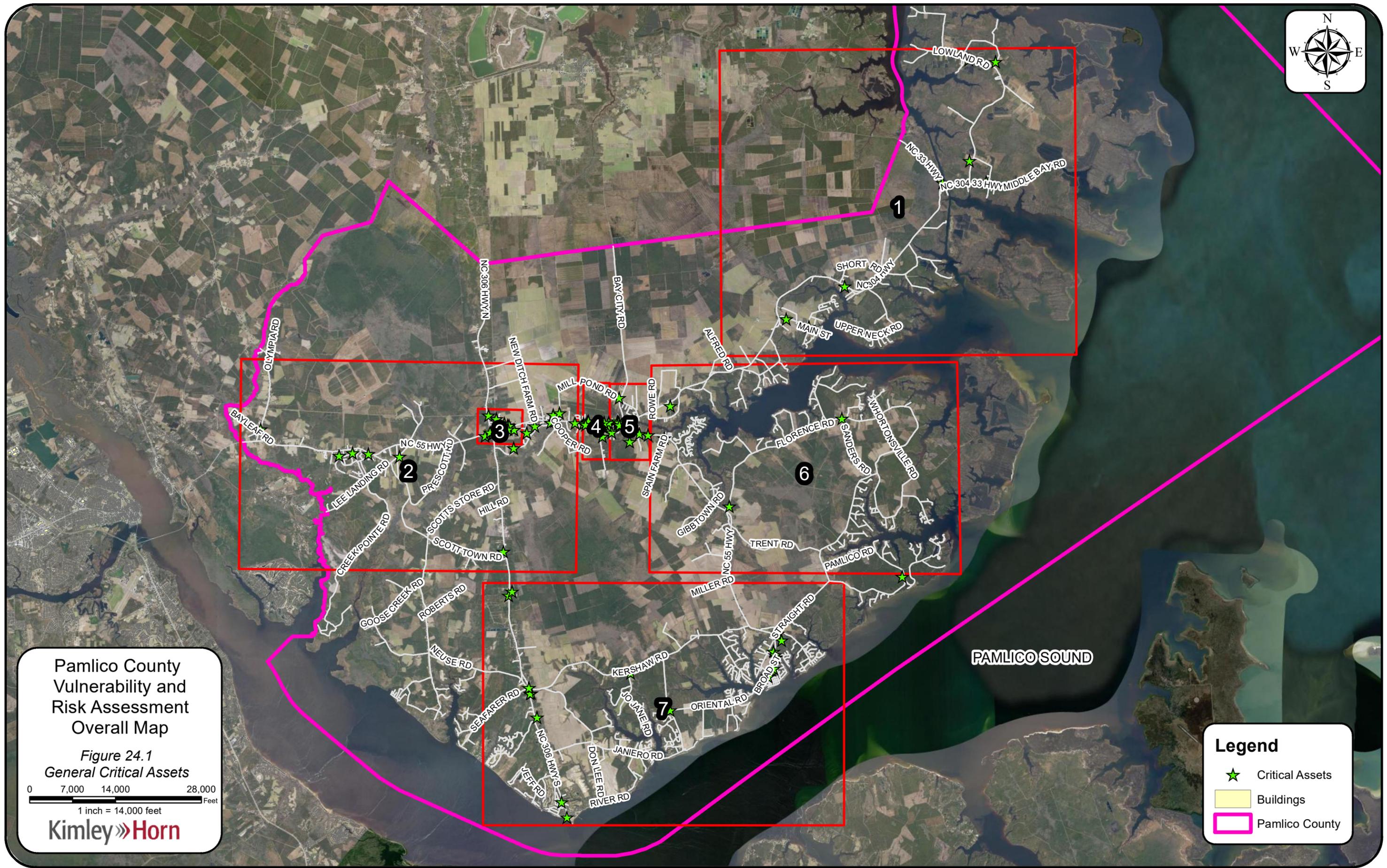
<i>Critical Asset</i>	<i>Definition</i>	<i>Address</i>
Dollar General - Arapahoe	Grocery	8055 NC Hwy 306 S Arapahoe, NC 28510
Dollar General - Grantsboro	Grocery	11421 NC Hwy 55 Grantsboro, NC 28529
Dollar General - Oriental	Grocery	1403 Broad Street Oriental, NC 28571
Duke Energy + Natural Gas Distribution Station	Energy Distribution Station	175 Mill Pond Road Alliance, NC 28509
Family Dollar	Grocery	13881 NC Hwy 55 Bayboro, NC 28515
Family Eye Care	Medical	13820 NC Hwy 55 Bayboro, NC 28515
Florence/Whortonsville Firestation	Firestation	5208 Florence Road Merritt, NC 28556
Food Lion	Grocery	11560 NC Hwy 55 Grantsboro, NC 28529
FPI Carolinas Solar Farm	Solar Farm	80 Mill Pond Road Bayboro, NC 28515
Gardens of Pamlico	Congregate Living	22 Magnolia Way Grantsboro, NC 28529
Goose Creek Island Community Center	Miscellaneous	145 Hobucken School Road Hobucken, NC 28537
Goose Creek Island Firestation	Firestation	5212 Lowland Road Lowland, NC 28552
Grantsboro Town Hall	Government	10628 NC Hwy 55 Grantsboro, NC 28529
Grantsboro Water Tower	Water Tower	3720 NC-306 Grantsboro, NC 28529
Grantsboro/Silverhill Firestation	Firestation	35 NC-306 Grantsboro, NC 28529
Grantsbrook Nursing Home	Congregate Living	290 Keel Road Alliance, NC 28509
Group Home	Congregate Living	554 NC Hwy 306 N Grantsboro, NC 28529

<i>Critical Asset</i>	<i>Definition</i>	<i>Address</i>
Handy Mart	Fuel	13881 NC Hwy 55 Bayboro, NC 28515
HeadStart	Daycare	11313 NC Hwy 55 Grantsboro, NC 28529
Heartworks	Daycare	709 Main Street Bayboro, NC 28515
Horne Road Cell Tower	Cell Tower	161 Horne Road Lowland, NC 28552
Learn As We Grow	Daycare	13482 NC Hwy 55 Bayboro, NC 28515
Lee Landing Road Cell Tower	Cell Tower	694 Neuse Road New Bern , NC 28560
Lowland Road Cell Tower	Cell Tower	632 Lowland Road Lowland, NC 28552
Max Mini Mart	Fuel	902 Broad Street Oriental, NC 28571
Merritt Water Tower	Water Tower	170 Florence Road Merritt, NC 28556
Mesic Town Hall	Government	9275 NC-304 Bayboro, NC 28515
Minnesott Beach Town Hall	Government	11758 NC-306, Minnesott Beach, NC 28510
NCDOT Ferry - Minnesott Beach to Cherry Branch	Miscellaneous	12040 NC-306 Minnesott Beach, NC 28510
New Bern Water Tower	Water Tower	146 Dixon Road New Bern, NC 28560
NOVA Urgent Care	Medical	11179C NC-55 Grantsboro, NC 28529
Olympia Firestation	Firestation	394 Olympia Road, New Bern, NC 28560
Oriental Medical Center	Medical	901 Broad Street Oriental, NC 28571
Oriental Police Department	Emergency Services	507 Church Street Oriental, NC 28515

<i>Critical Asset</i>	<i>Definition</i>	<i>Address</i>
Oriental Sewer Treatment Plant	Miscellaneous	790 White Farm Road Oriental, NC 28571
Oriental Town Hall	Government	507 Church Street Oriental, NC 28571
Oriental Water Tower	Water Tower	4116 Kershaw Road Oriental, NC 28571
Oriental Water Treatment Plant	Miscellaneous	1300 Gilgo Road Oriental, NC 28571
Pamlico Christian Academy	Schools	11089 NC Hwy 55 Grantsboro, NC 28529
Pamlico Coastal Carolina Health Center	Medical	313 Main Street Bayboro, NC 28515
Pamlico Community College	Hurricane Shelter	5049 NC Hwy 306 S Grantsboro, NC 28529
Pamlico Community Health Center	Medical	313 Main Street Bayboro, NC 28515
Pamlico County Courthouse	Government (Includes Emergency Management, Tax Clerk, District Attorney, Register of Deeds, Health Department, and Critical Storage)	202 Main Street Bayboro, NC 28515
Pamlico County Elementary School	Schools	515 Anderson Drive Bayboro, NC 28515
Pamlico County High School	Schools	601 Main Street Bayboro, NC 28515
Pamlico County Middle School	Schools	15526 NC Hwy 55 Stonewall, NC 28583
Pamlico County Primary School	Schools	323 Neals Creek Road Bayboro, NC 28515
Pamlico Pharmacy	Pharmacy	11326 NC Hwy 55 Grantsboro, NC 28529
Pamlico Rescue Squad	Medical	911 Grace Daniels Rd, Bayboro, NC 28515

<i>Critical Asset</i>	<i>Definition</i>	<i>Address</i>
Piggly Wiggly	Fuel and Grocery	1400 Broad Street Ext Oriental, NC 28571
Pinedale Food Mart	Fuel and Grocery	6814 NC Hwy 55 New Bern, NC 28560
Reelsboro Firestation	Firestation	105 Holland Drive New Bern, NC 28560
River Dunes Cell Tower	Cell Tower	28 Back Cove Circle Oriental, NC 28571
Sewer Sprayfield	Miscellaneous	5044 NC-306 Grantsboro, NC 28529
Sheriff's Office/ Jail / 911 Center	Emergency Services	200 Main Street Bayboro, NC 28515
Shop Quick	Fuel	15818 NC Hwy 55 Stonewall, NC 28583
Smilin' Faces	Daycare	14174 NC Hwy 55 Bayboro, NC 28515
Social Services/ Senior Services	Government	828 Main Street Bayboro, NC 28515
Southeast Firestation	Firestation	182 Straight Road Oriental, NC 28571
Speedway	Fuel	10816 NC Hwy 55 Granstboro, NC 28529
Stonewall Cell Tower	Cell Tower	212 McCotter Road Stonewall, NC 28583
Stonewall Town Hall	Government	74 Spain Farm Road Stonewall, NC 28583
Tideland Distribution Station	Energy Distribution Station	239 Lucynda Avenue Grantsboro, NC 28529
Triangle Firestation	Firestation	202 4th Street Bayboro, NC 28515
US Coast Guard Station - Hobucken	Coast Guard	196 NC Hwy 33 Hobucken, NC 28537
Vandemere Firestation	Firestation	1042 Pennsylvania Ave Vandemere, NC 28587
Vandemere Water Tower	Water Tower	286 NC-307 Vandemere, NC

<i>Critical Asset</i>	<i>Definition</i>	<i>Address</i>
Wal Mart	Fuel and Grocery	11233A NC Hwy 55 Granstboro, NC 28529
Water Department	Government	102 4th St, Bayboro, NC 28515



Pamlico County
Vulnerability and
Risk Assessment
Overall Map

Figure 24.1
General Critical Assets

0 7,000 14,000 28,000
Feet

1 inch = 14,000 feet

Kimley **Horn**

Legend

- ★ Critical Assets
- Buildings
- ▭ Pamlico County

Number	Critical Asset	Number	Critical Asset
1	Ag Cooperative Extension Office	43	Minnesott Beach Town Hall
2	Alliance Town Hall	44	NCDOT Ferry - Minnesott Beach to Cherry Branch
3	Arapahoe Charter School k-12	45	New Bern Water Tower
4	Arapahoe Firestation	46	NOVA Urgent Care
5	Arapahoe Town Hall	47	Olympia Firestation
6	Bay River Metropolitan Sewer Office	48	Oriental Medical Center
7	Bayboro Pharmacy	49	Oriental Police Department
8	Bayboro Sewer Treatment Plant	50	Oriental Sewer Treatment Plant
9	Bayboro Town Hall	51	Oriental Town Hall
10	Bayboro Water Tower 1	52	Oriental Water Tower
11	Bayboro Water Tower 2	53	Oriental Water Treatment Plant
12	Bryant Funeral Home	54	Pamlico Christian Academy
13	Carolina Telephone / Century Link	55	Pamlico Coastal Carolina Health Center
14	County Manager / Finance	56	Pamlico Community College
15	CVS Pharmacy	57	Pamlico Community Health Center
16	Dollar General - Arapahoe	58	Pamlico County Courthouse
17	Dollar General - Grantsboro	59	Pamlico County Elementary School
18	Dollar General - Oriental	60	Pamlico County High School
19	Duke Energy + Natural Gas Distribution Station	61	Pamlico County Middle School
20	Family Dollar	62	Pamlico County Primary School
21	Family Eye Care	63	Pamlico Pharmacy
22	Florence/Whortonsville Firestation	64	Pamlico Rescue Squad
23	Food Lion	65	Piggly Wiggly
24	FPI Carolinas Solar Farm	66	Pinedale Food Mart
25	Gardens of Pamlico	67	Reelsboro Firestation
26	Goose Creek Island Community Center (POD Location)	68	River Dunes Cell Tower
27	Goose Creek Island Firestation	69	Sewer Sprayfield
28	Grantsboro Town Hall	70	Sheriff's Office/ Jail / 911 Center
29	Grantsboro Water Tower	71	Shop Quick
30	Grantsboro/Silverhill Firestation	72	Smilin' Faces
31	Grantsbrook Nursing Home	73	Social Services/ Senior Services
32	Group Home	74	Southeast Firestation
33	Handy Mart	75	Speedway
34	HeadStart	76	Stonewall Cell Tower
35	Heartworks	77	Stonewall Town Hall
36	Horne Road Cell Tower	78	Tideland Distribution Station
37	Learn As We Grow	79	Triangle Firestation
38	Lee Landing Road Cell Tower	80	US Coast Guard Station - Hobucken
39	Lowland Road Cell Tower	81	Vandemere Firestation
40	Max Mini Mart	82	Vandemere Water Tower
41	Merritt Water Tower	83	Wal Mart
42	Mesic Town Hall	84	Water Department



**Pamlico County
Vulnerability and
Risk Assessment
Index 1**

*Figure 24.2
General Critical Assets*

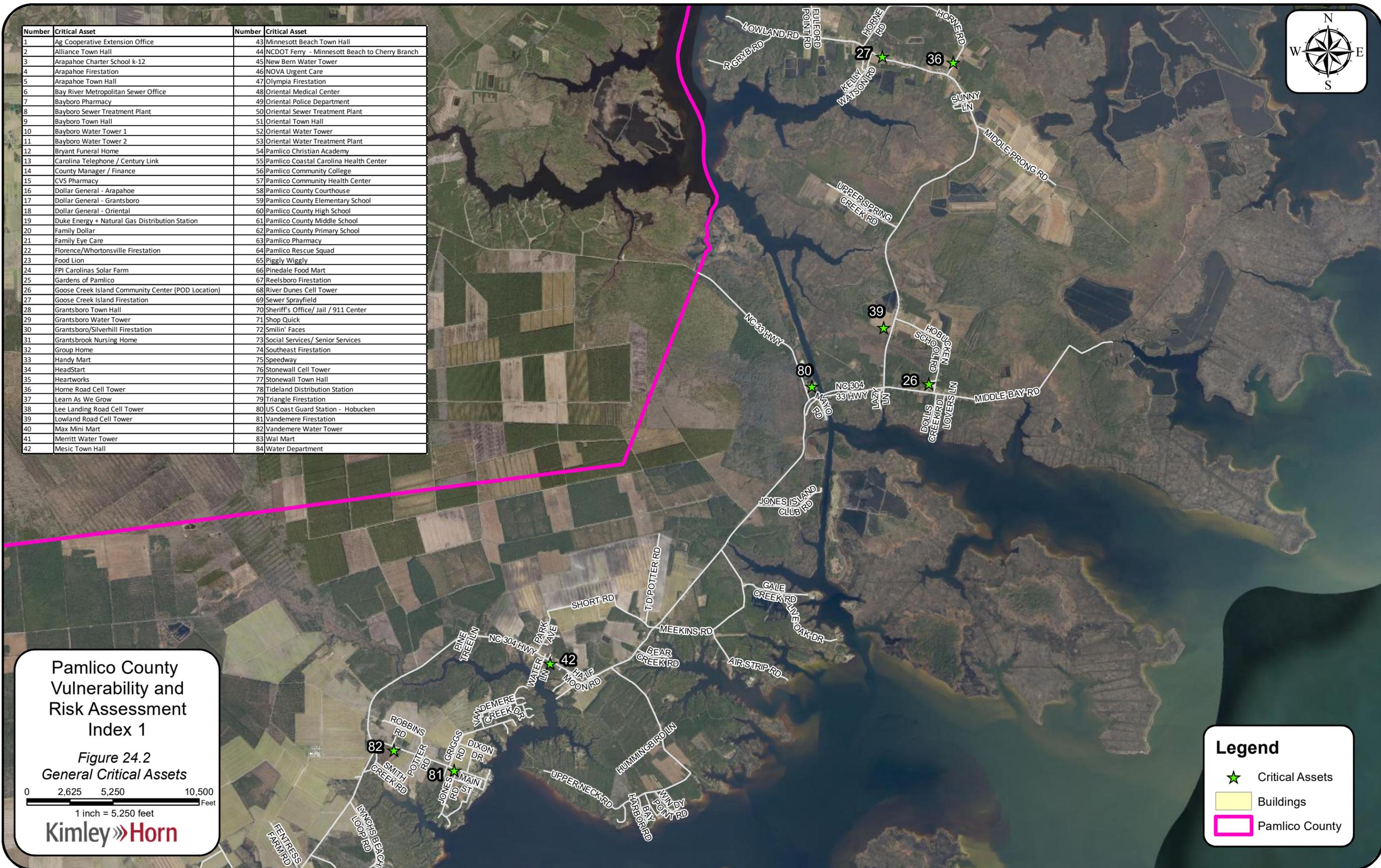
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Feet

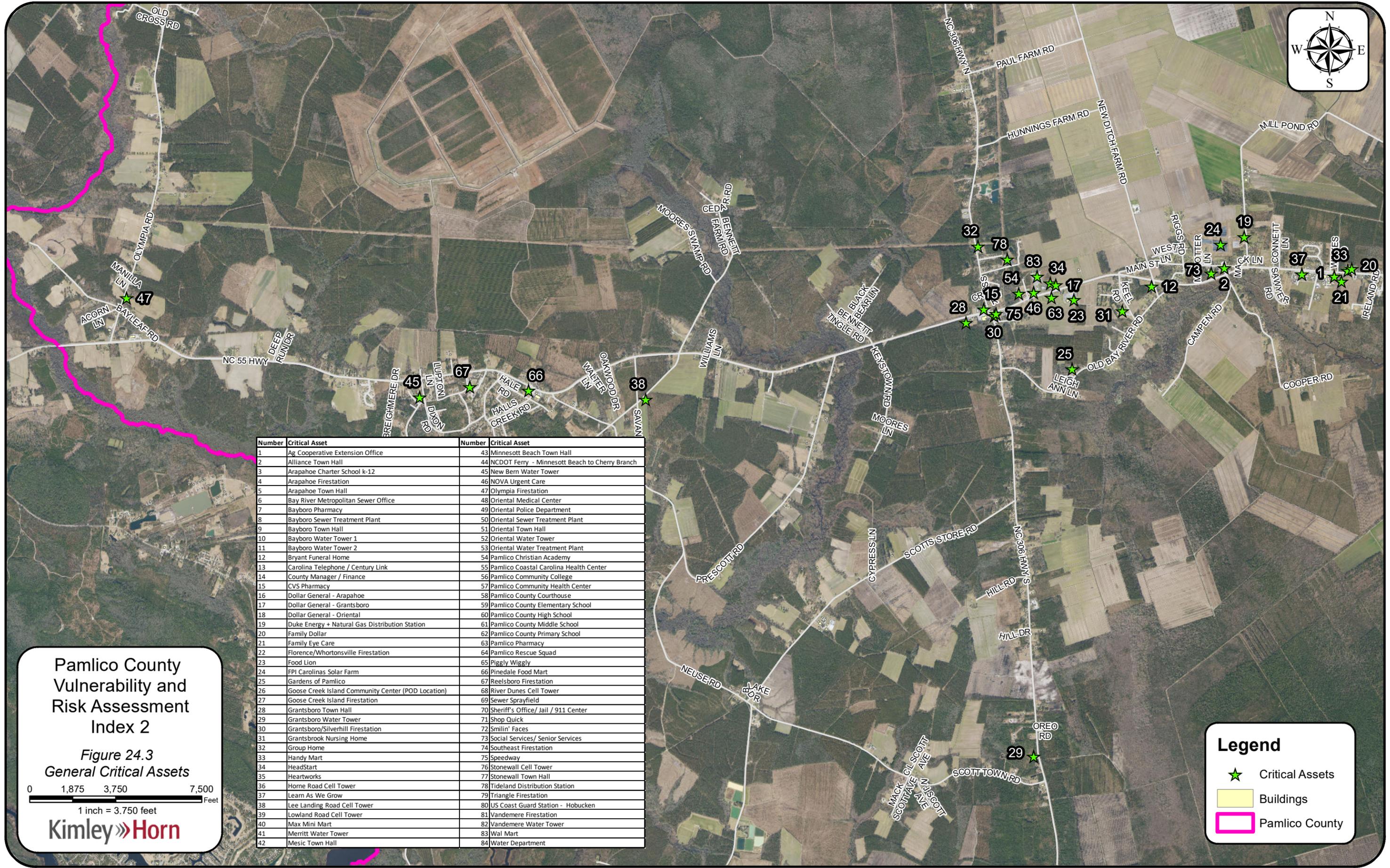
1 inch = 5,250 feet

Kimley»Horn

Legend

- Critical Assets
- Buildings
- Pamlico County





Number	Critical Asset	Number	Critical Asset
1	Ag Cooperative Extension Office	43	Minnesott Beach Town Hall
2	Alliance Town Hall	44	NCDOT Ferry - Minnesott Beach to Cherry Branch
3	Arapahoe Charter School k-12	45	New Bern Water Tower
4	Arapahoe Firestation	46	NOVA Urgent Care
5	Arapahoe Town Hall	47	Olympia Firestation
6	Bay River Metropolitan Sewer Office	48	Oriental Medical Center
7	Bayboro Pharmacy	49	Oriental Police Department
8	Bayboro Sewer Treatment Plant	50	Oriental Sewer Treatment Plant
9	Bayboro Town Hall	51	Oriental Town Hall
10	Bayboro Water Tower 1	52	Oriental Water Tower
11	Bayboro Water Tower 2	53	Oriental Water Treatment Plant
12	Bryant Funeral Home	54	Pamlico Christian Academy
13	Carolina Telephone / Century Link	55	Pamlico Coastal Carolina Health Center
14	County Manager / Finance	56	Pamlico Community College
15	CVS Pharmacy	57	Pamlico Community Health Center
16	Dollar General - Arapahoe	58	Pamlico County Courthouse
17	Dollar General - Grantsboro	59	Pamlico County Elementary School
18	Dollar General - Oriental	60	Pamlico County High School
19	Duke Energy + Natural Gas Distribution Station	61	Pamlico County Middle School
20	Family Dollar	62	Pamlico County Primary School
21	Family Eye Care	63	Pamlico Pharmacy
22	Florence/Whortonville Firestation	64	Pamlico Rescue Squad
23	Food Lion	65	Piggly Wiggly
24	FPI Carolinas Solar Farm	66	Pinedale Food Mart
25	Gardens of Pamlico	67	Reelsboro Firestation
26	Goose Creek Island Community Center (POD Location)	68	River Dunes Cell Tower
27	Goose Creek Island Firestation	69	Sewer Sprayfield
28	Grantsboro Town Hall	70	Sheriff's Office/ Jail / 911 Center
29	Grantsboro Water Tower	71	Shop Quick
30	Grantsboro/Silverhill Firestation	72	Smilin' Faces
31	Grantsbrook Nursing Home	73	Social Services/ Senior Services
32	Group Home	74	Southeast Firestation
33	Handy Mart	75	Speedway
34	HeadStart	76	Stonewall Cell Tower
35	Heartworks	77	Stonewall Town Hall
36	Home Road Cell Tower	78	Tideland Distribution Station
37	Learn As We Grow	79	Triangle Firestation
38	Lee Landing Road Cell Tower	80	US Coast Guard Station - Hobucken
39	Lowland Road Cell Tower	81	Vandemere Firestation
40	Max Mini Mart	82	Vandemere Water Tower
41	Merritt Water Tower	83	Wal Mart
42	Mesic Town Hall	84	Water Department

**Pamlico County
Vulnerability and
Risk Assessment
Index 2**

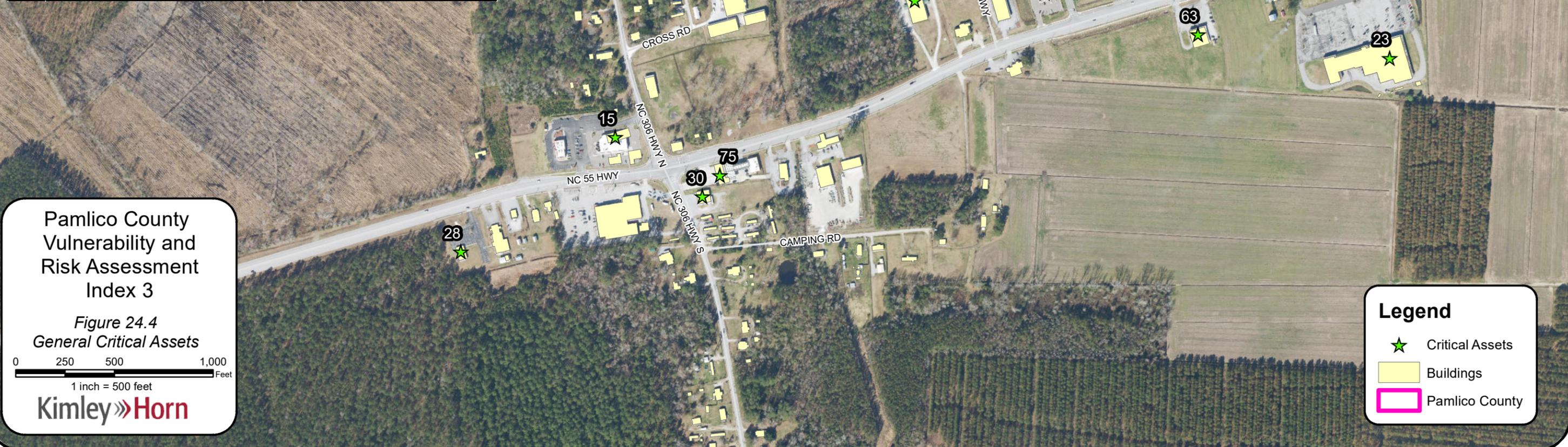
*Figure 24.3
General Critical Assets*

0 1,875 3,750 7,500
Feet
1 inch = 3.750 feet
Kimley»Horn

Legend

- ★ Critical Assets
- Buildings
- Pamlico County

Number	Critical Asset	Number	Critical Asset
1	Ag Cooperative Extension Office	43	Minnesott Beach Town Hall
2	Alliance Town Hall	44	NCDOT Ferry - Minnesott Beach to Cherry Branch
3	Arapahoe Charter School k-12	45	New Bern Water Tower
4	Arapahoe Firestation	46	NOVA Urgent Care
5	Arapahoe Town Hall	47	Olympia Firestation
6	Bay River Metropolitan Sewer Office	48	Oriental Medical Center
7	Bayboro Pharmacy	49	Oriental Police Department
8	Bayboro Sewer Treatment Plant	50	Oriental Sewer Treatment Plant
9	Bayboro Town Hall	51	Oriental Town Hall
10	Bayboro Water Tower 1	52	Oriental Water Tower
11	Bayboro Water Tower 2	53	Oriental Water Treatment Plant
12	Bryant Funeral Home	54	Pamlico Christian Academy
13	Carolina Telephone / Century Link	55	Pamlico Coastal Carolina Health Center
14	County Manager / Finance	56	Pamlico Community College
15	CVS Pharmacy	57	Pamlico Community Health Center
16	Dollar General - Arapahoe	58	Pamlico County Courthouse
17	Dollar General - Grantsboro	59	Pamlico County Elementary School
18	Dollar General - Oriental	60	Pamlico County High School
19	Duke Energy + Natural Gas Distribution Station	61	Pamlico County Middle School
20	Family Dollar	62	Pamlico County Primary School
21	Family Eye Care	63	Pamlico Pharmacy
22	Florence/Whortonsville Firestation	64	Pamlico Rescue Squad
23	Food Lion	65	Piggly Wiggly
24	FPI Carolinas Solar Farm	66	Pinedale Food Mart
25	Gardens of Pamlico	67	Reelsboro Firestation
26	Goose Creek Island Community Center (POD Location)	68	River Dunes Cell Tower
27	Goose Creek Island Firestation	69	Sewer Sprayfield
28	Grantsboro Town Hall	70	Sheriff's Office/ Jail / 911 Center
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32	Group Home	74	Southeast Firestation
33	Handy Mart	75	Speedway
34	HeadStart	76	Stonewall Cell Tower
35	Heartworks	77	Stonewall Town Hall
36	Home Road Cell Tower	78	Tideland Distribution Station
37	Learn As We Grow	79	Triangle Firestation
38	Lee Landing Road Cell Tower	80	US Coast Guard Station - Hobucken
39	Lowland Road Cell Tower	81	Vandemere Firestation
40	Max Mini Mart	82	Vandemere Water Tower
41	Merritt Water Tower	83	Wal Mart
42	Mesic Town Hall	84	Water Department



**Pamlico County
Vulnerability and
Risk Assessment
Index 3**

*Figure 24.4
General Critical Assets*

0 250 500 1,000
Feet

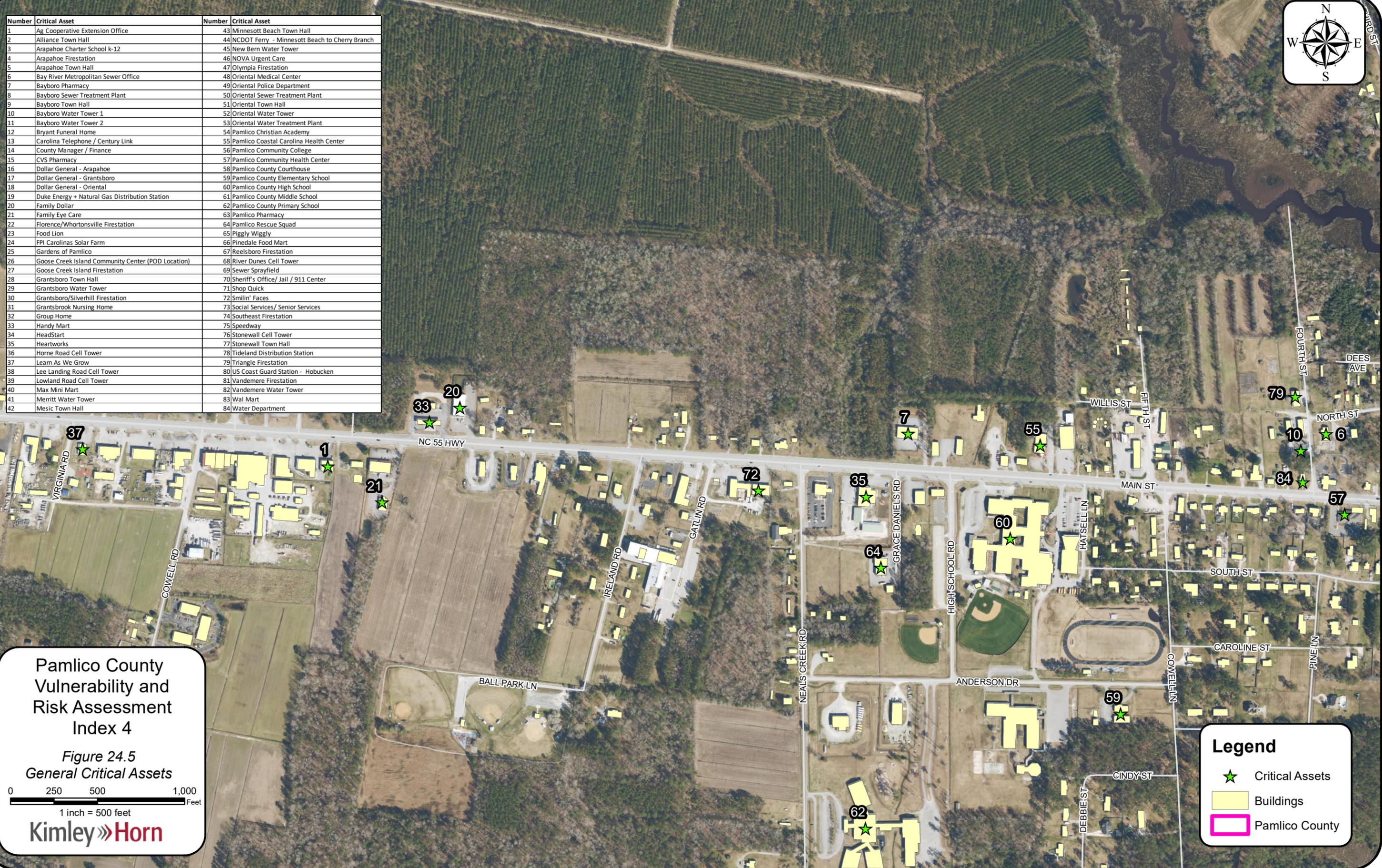
1 inch = 500 feet



Legend

-  Critical Assets
-  Buildings
-  Pamlico County

Number	Critical Asset	Number	Critical Asset
1	Ag Cooperative Extension Office	43	Minnesott Beach Town Hall
2	Alliance Town Hall	44	NC DOT Ferry - Minnesott Beach to Cherry Branch
3	Arapahoe Charter School k-12	45	New Bern Water Tower
4	Arapahoe Firestation	46	NOVA Urgent Care
5	Arapahoe Town Hall	47	Olympia Firestation
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7	Bayboro Pharmacy	49	Oriental Police Department
8	Bayboro Sewer Treatment Plant	50	Oriental Sewer Treatment Plant
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10	Bayboro Water Tower 1	52	Oriental Water Tower
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15	CVS Pharmacy	57	Pamlico Community Health Center
16	Dollar General - Arapahoe	58	Pamlico County Courthouse
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37	Learn As We Grow	79	Triangle Firestation
38	Lee Landing Road Cell Tower	80	US Coast Guard Station - Hobucken
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40	Max Mini Mart	82	Vandemere Water Tower
41	Merritt Water Tower	83	Wal Mart
42	Mesic Town Hall	84	Water Department



**Pamlico County
Vulnerability and
Risk Assessment
Index 4**

*Figure 24.5
General Critical Assets*

0 250 500 1,000
Feet

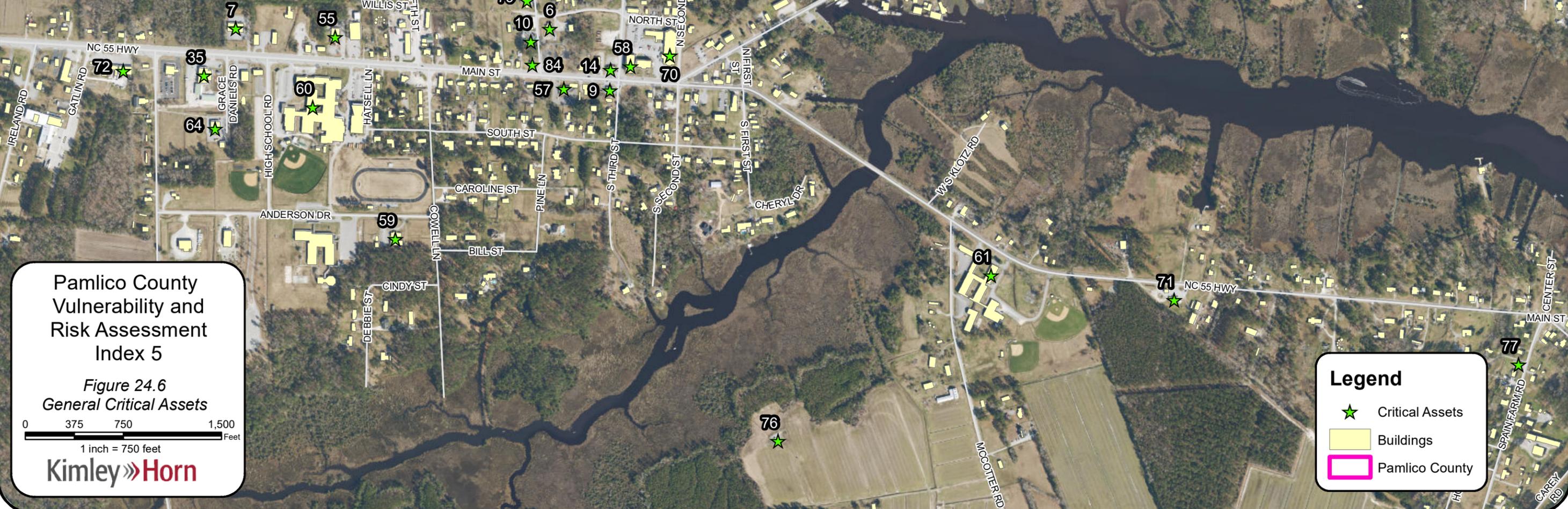
1 inch = 500 feet



Legend

- Critical Assets
- Buildings
- Pamlico County

Number	Critical Asset	Number	Critical Asset
1	Ag Cooperative Extension Office	43	Minnesott Beach Town Hall
2	Alliance Town Hall	44	NC DOT Ferry - Minnesott Beach to Cherry Branch
3	Arapahoe Charter School k-12	45	New Bern Water Tower
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5	Arapahoe Town Hall	47	Olympia Firestation
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24	FPI Carolinas Solar Farm	66	Pinedale Food Mart
25	Gardens of Pamlico	67	Reelsboro Firestation
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35	Heartworks	77	Stonewall Town Hall
36	Horne Road Cell Tower	78	Tideland Distribution Station
37	Learn As We Grow	79	Triangle Firestation
38	Lee Landing Road Cell Tower	80	US Coast Guard Station - Hobucken
39	Lowland Road Cell Tower	81	Vandemere Firestation
40	Max Mini Mart	82	Vandemere Water Tower
41	Merritt Water Tower	83	Wal Mart
42	Mesic Town Hall	84	Water Department



**Pamlico County
Vulnerability and
Risk Assessment
Index 5**

*Figure 24.6
General Critical Assets*

0 375 750 1,500
Feet

1 inch = 750 feet



Legend

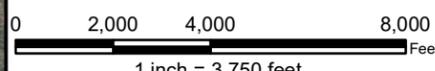
- ★ Critical Assets
- Buildings
- Pamlico County



Number	Critical Asset	Number	Critical Asset
1	Ag Cooperative Extension Office	43	Minnesott Beach Town Hall
2	Alliance Town Hall	44	NC DOT Ferry - Minnesott Beach to Cherry Branch
3	Arapahoe Charter School k-12	45	New Bern Water Tower
4	Arapahoe Firestation	46	NOVA Urgent Care
5	Arapahoe Town Hall	47	Olympia Firestation
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8	Bayboro Sewer Treatment Plant	50	Oriental Sewer Treatment Plant
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32	Group Home	74	Southeast Firestation
33	Handy Mart	75	Speedway
34	HeadStart	76	Stonewall Cell Tower
35	Heartworks	77	Stonewall Town Hall
36	Horne Road Cell Tower	78	Tideland Distribution Station
37	Learn As We Grow	79	Triangle Firestation
38	Lee Landing Road Cell Tower	80	US Coast Guard Station - Hobucken
39	Lowland Road Cell Tower	81	Vandemere Firestation
40	Max Mini Mart	82	Vandemere Water Tower
41	Merritt Water Tower	83	Wal Mart
42	Mesic Town Hall	84	Water Department

**Pamlico County
Vulnerability and
Risk Assessment
Index 6**

Figure 24.7
General Critical Assets



1 inch = 3,750 feet



Legend

- Critical Assets
- Buildings
- Pamlico County



**Pamlico County
Vulnerability and
Risk Assessment
Index 7**

*Figure 24.8
General Critical Assets*

0 2,250 4,500 9,000
Feet

1 inch = 4,500 feet

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Number	Critical Asset	Number	Critical Asset
1	Ag Cooperative Extension Office	43	Minnesott Beach Town Hall
2	Alliance Town Hall	44	NCDOT Ferry - Minnesott Beach to Cherry Branch
3	Arapahoe Charter School k-12	45	New Bern Water Tower
4	Arapahoe Firestation	46	NOVA Urgent Care
5	Arapahoe Town Hall	47	Olympia Firestation
6	Bay River Metropolitan Sewer Office	48	Oriental Medical Center
7	Bayboro Pharmacy	49	Oriental Police Department
8	Bayboro Sewer Treatment Plant	50	Oriental Sewer Treatment Plant
9	Bayboro Town Hall	51	Oriental Town Hall
10	Bayboro Water Tower 1	52	Oriental Water Tower
11	Bayboro Water Tower 2	53	Oriental Water Treatment Plant
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21	Family Eye Care	63	Pamlico Pharmacy
22	Florence/Whortonsville Firestation	64	Pamlico Rescue Squad
23	Food Lion	65	Piggly Wiggly
24	FPI Carolinas Solar Farm	66	Pinedale Food Mart
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35	Heartworks	77	Stonewall Town Hall
36	Home Road Cell Tower	78	Tideland Distribution Station
37	Learn As We Grow	79	Triangle Firestation
38	Lee Landing Road Cell Tower	80	US Coast Guard Station - Hobucken
39	Lowland Road Cell Tower	81	Vandemere Firestation
40	Max Mini Mart	82	Vandemere Water Tower
41	Merritt Water Tower	83	Wal Mart
42	Mesic Town Hall	84	Water Department

Legend

- ★ Critical Assets
- Buildings
- Pamlico County

Appendix C – Social Vulnerability Maps

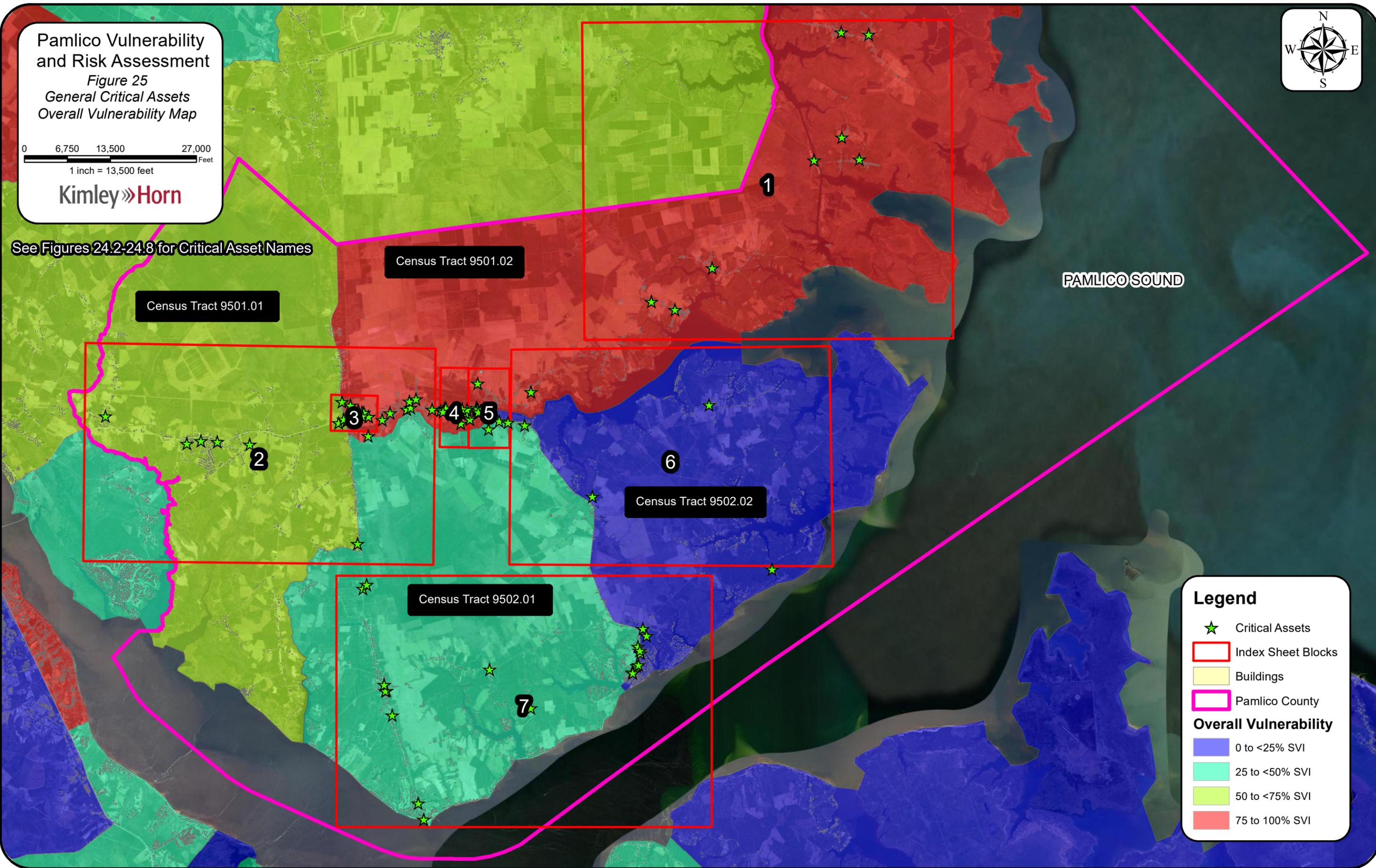
The following maps detail the overall social vulnerability for Pamlico County when compared to other census tracts within North Carolina. Additionally, the maps are broken into the four social vulnerability themes: Socioeconomic Vulnerability, Household Composition and Disability Vulnerability, Minority Status and Language Vulnerability, and Housing Type and Transportation Vulnerability.

Pamlico Vulnerability and Risk Assessment
Figure 25
General Critical Assets
Overall Vulnerability Map

0 6,750 13,500 27,000 Feet
1 inch = 13,500 feet



See Figures 24.2-24.8 for Critical Asset Names



Legend

- ★ Critical Assets
- Index Sheet Blocks
- Buildings
- Pamlico County

Overall Vulnerability

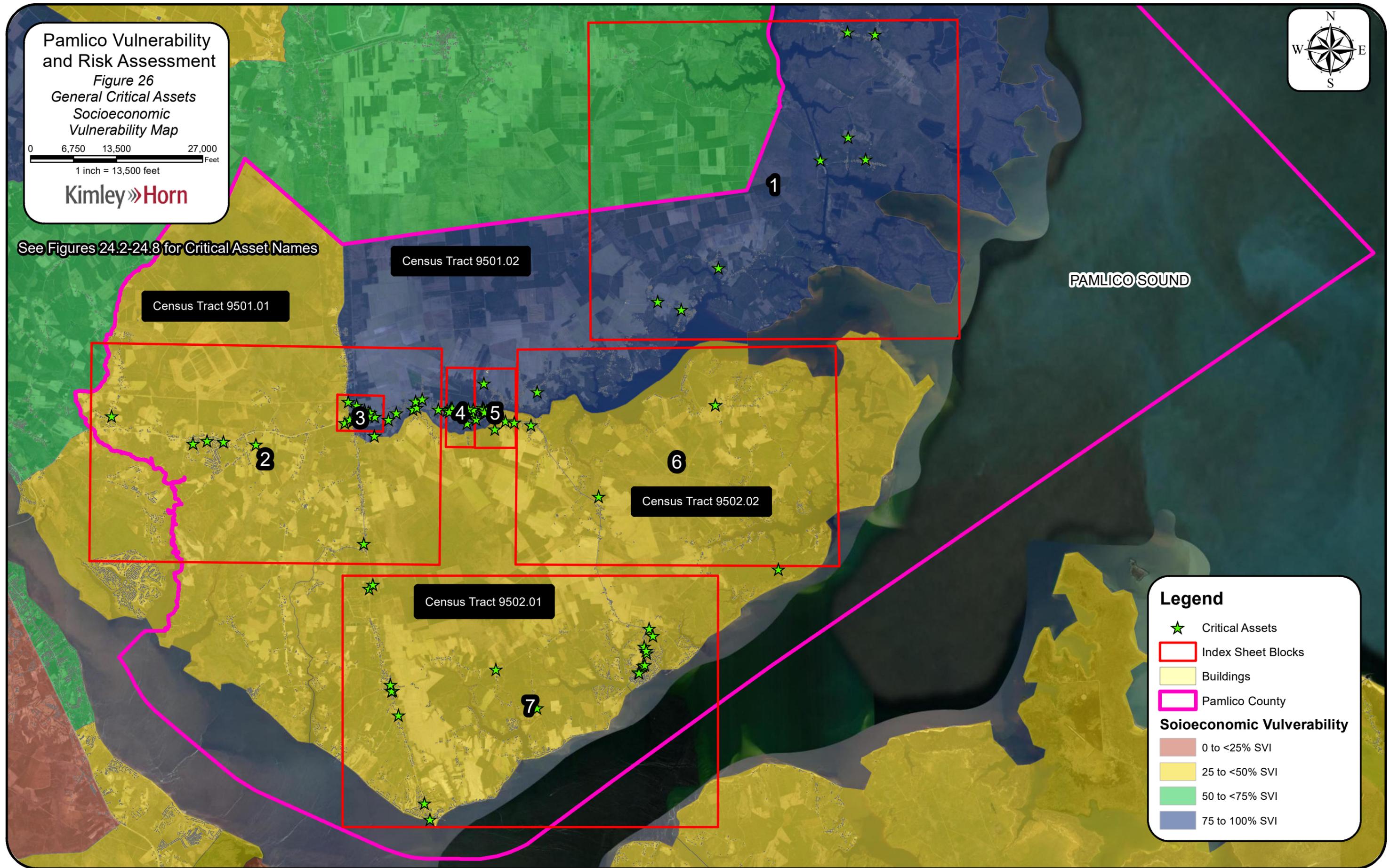
- 0 to <25% SVI
- 25 to <50% SVI
- 50 to <75% SVI
- 75 to 100% SVI

Pamlico Vulnerability and Risk Assessment
 Figure 26
 General Critical Assets
 Socioeconomic Vulnerability Map

0 6,750 13,500 27,000 Feet
 1 inch = 13,500 feet



See Figures 24.2-24.8 for Critical Asset Names



Legend

- ★ Critical Assets
- Index Sheet Blocks
- Buildings
- Pamlico County

Socioeconomic Vulnerability

- 0 to <25% SVI
- 25 to <50% SVI
- 50 to <75% SVI
- 75 to 100% SVI

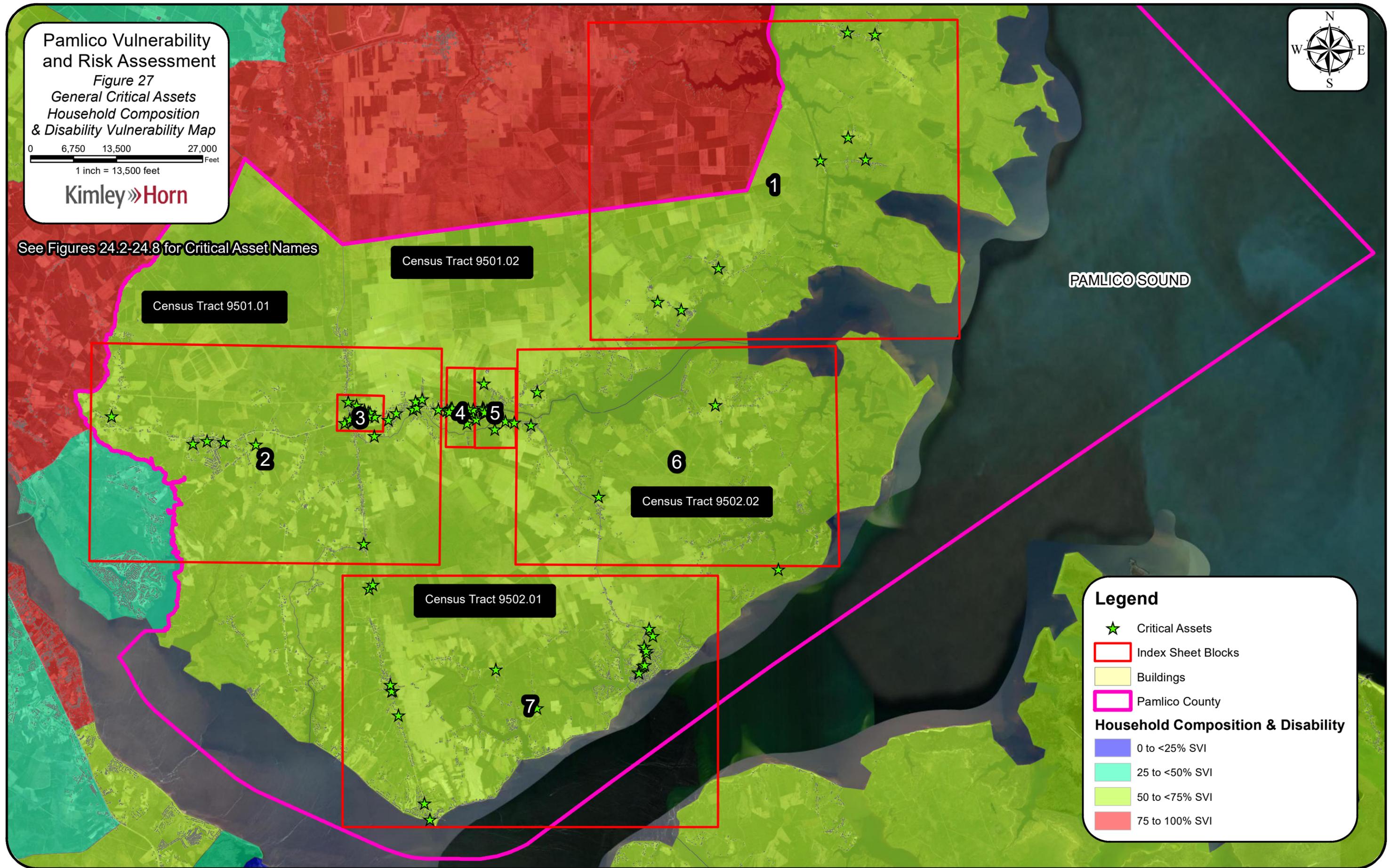
Pamlico Vulnerability and Risk Assessment
Figure 27
General Critical Assets
Household Composition
& Disability Vulnerability Map

0 6,750 13,500 27,000 Feet
 1 inch = 13,500 feet

Kimley»Horn



See Figures 24.2-24.8 for Critical Asset Names



Legend

- ★ Critical Assets
- Index Sheet Blocks
- Buildings
- Pamlico County

Household Composition & Disability

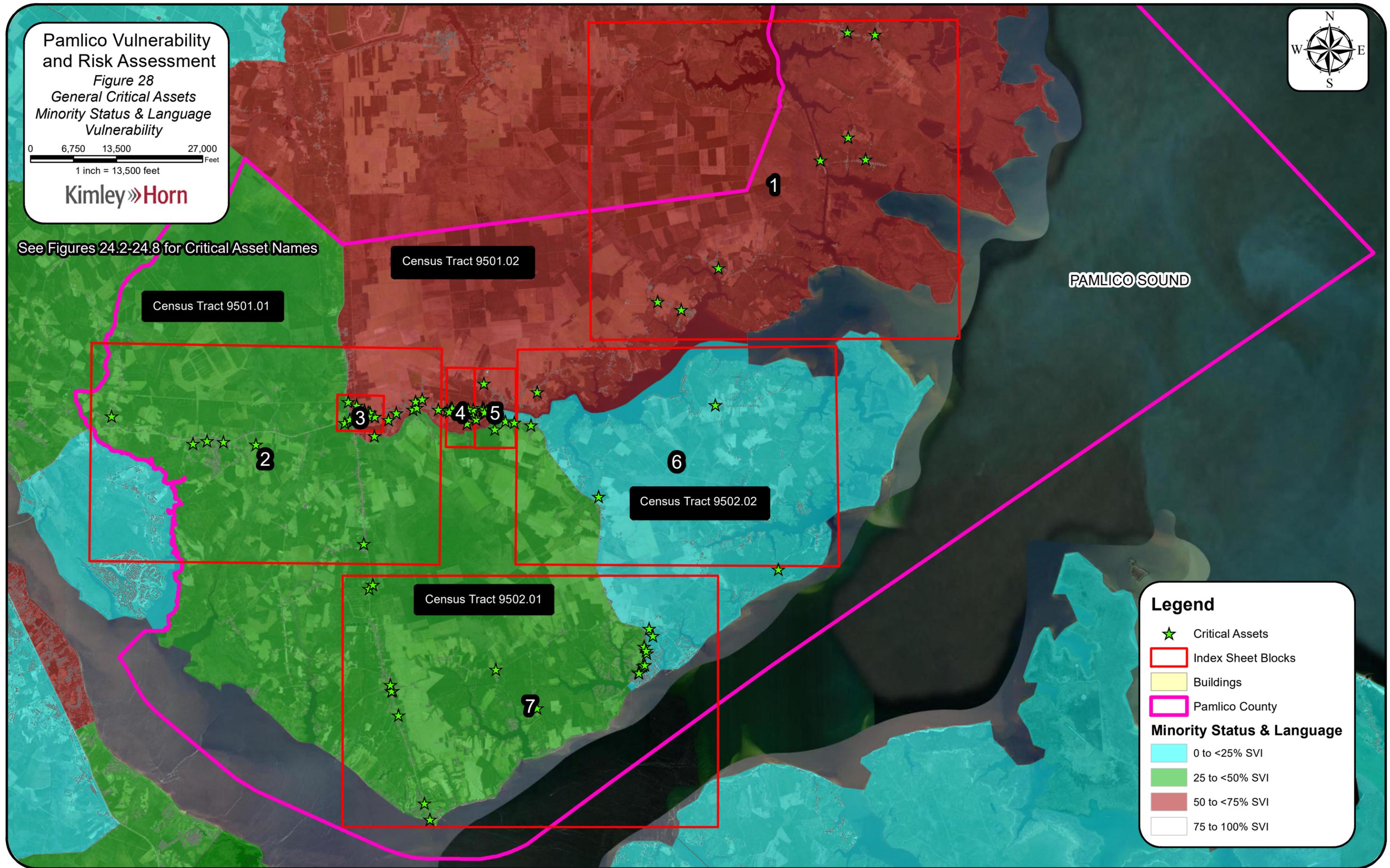
- 0 to <25% SVI
- 25 to <50% SVI
- 50 to <75% SVI
- 75 to 100% SVI

Pamlico Vulnerability and Risk Assessment
Figure 28
General Critical Assets
Minority Status & Language Vulnerability

0 6,750 13,500 27,000 Feet
 1 inch = 13,500 feet



See Figures 24.2-24.8 for Critical Asset Names



Legend

- ★ Critical Assets
- Index Sheet Blocks
- Buildings
- ▭ Pamlico County

Minority Status & Language

- 0 to <25% SVI
- 25 to <50% SVI
- 50 to <75% SVI
- 75 to 100% SVI

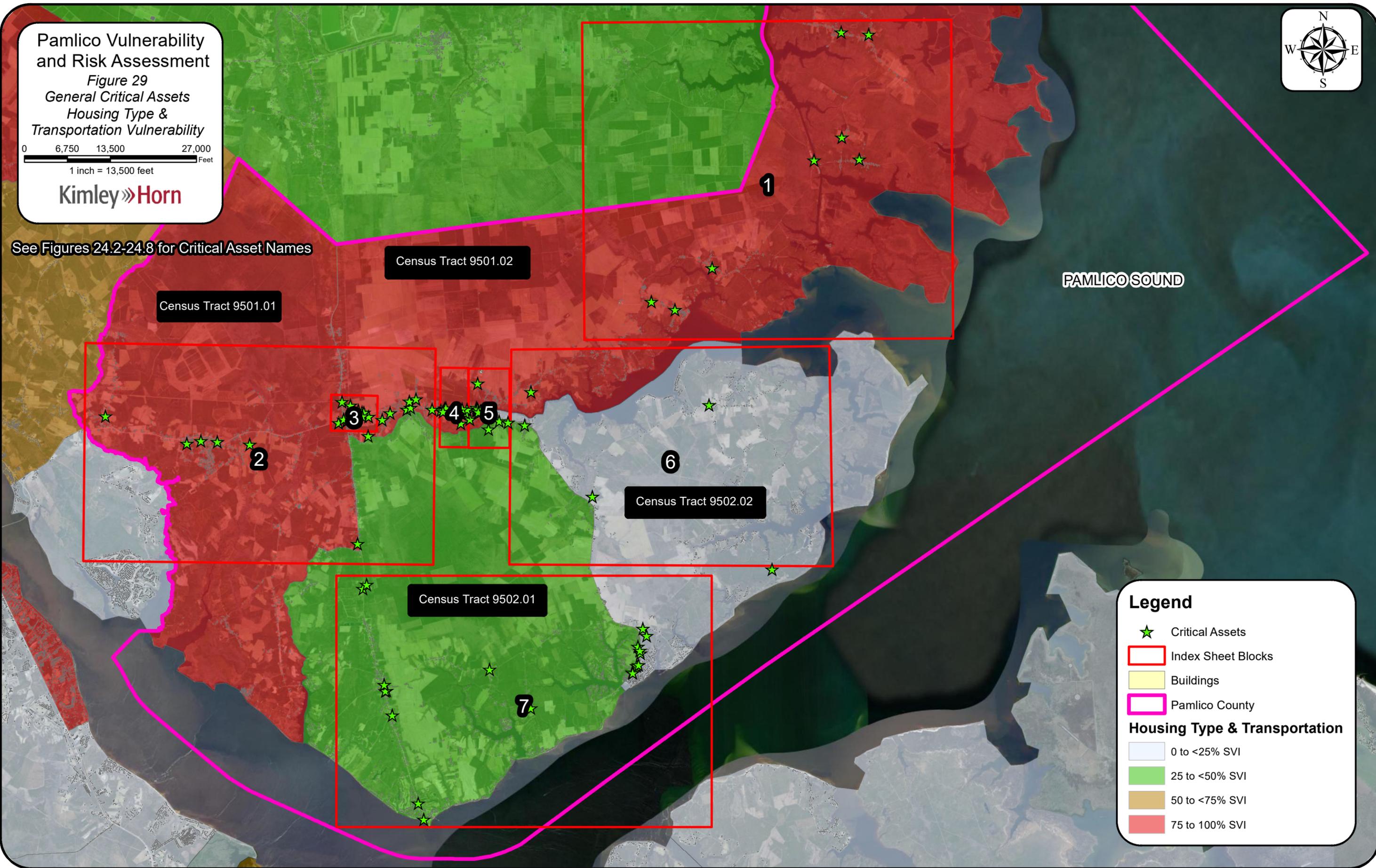
Pamlico Vulnerability and Risk Assessment
Figure 29
General Critical Assets
Housing Type & Transportation Vulnerability

0 6,750 13,500 27,000
Feet

1 inch = 13,500 feet



See Figures 24.2-24.8 for Critical Asset Names



Legend

- ★ Critical Assets
- ▭ Index Sheet Blocks
- ▭ Buildings
- ▭ Pamlico County
- Housing Type & Transportation**
- ▭ 0 to <25% SVI
- ▭ 25 to <50% SVI
- ▭ 50 to <75% SVI
- ▭ 75 to 100% SVI

Appendix D – Hazard Maps

The following maps show the identified hazards in relation to the critical assets for Pamlico County. The hazards mapped include Category 1 Storm Surge, Category 2 Storm Surge, Riverine Flooding, and Sea Level Rise / Tidal Flooding.

Pamlico Vulnerability
and Risk Assessment
Figure 30
Hazard Map
Category 1 Storm Surge

0 6,750 13,500 27,000
Feet
1 inch = 13,500 feet

Kimley»Horn



See Figures 24.2-24.8 for Critical Asset Names

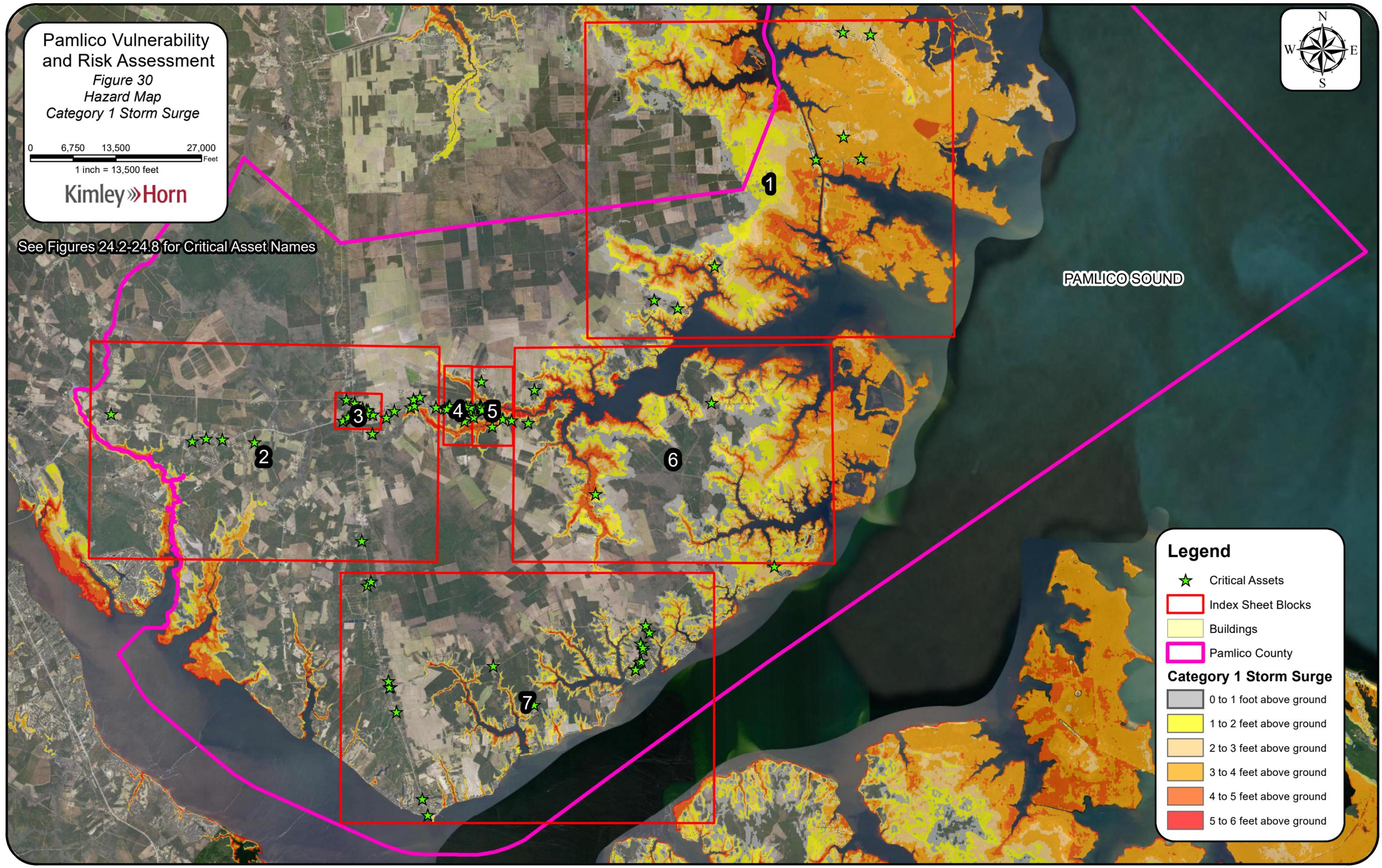
PAMLICO SOUND

Legend

- ★ Critical Assets
- Index Sheet Blocks
- Buildings
- Pamlico County

Category 1 Storm Surge

- 0 to 1 foot above ground
- 1 to 2 feet above ground
- 2 to 3 feet above ground
- 3 to 4 feet above ground
- 4 to 5 feet above ground
- 5 to 6 feet above ground



Pamlico Vulnerability and Risk Assessment

Figure 31
Hazard Map
Category 2 Storm Surge

0 6,750 13,500 27,000 Feet

1 inch = 13,500 feet

Kimley»Horn



See Figures 24.2-24.8 for Critical Asset Names

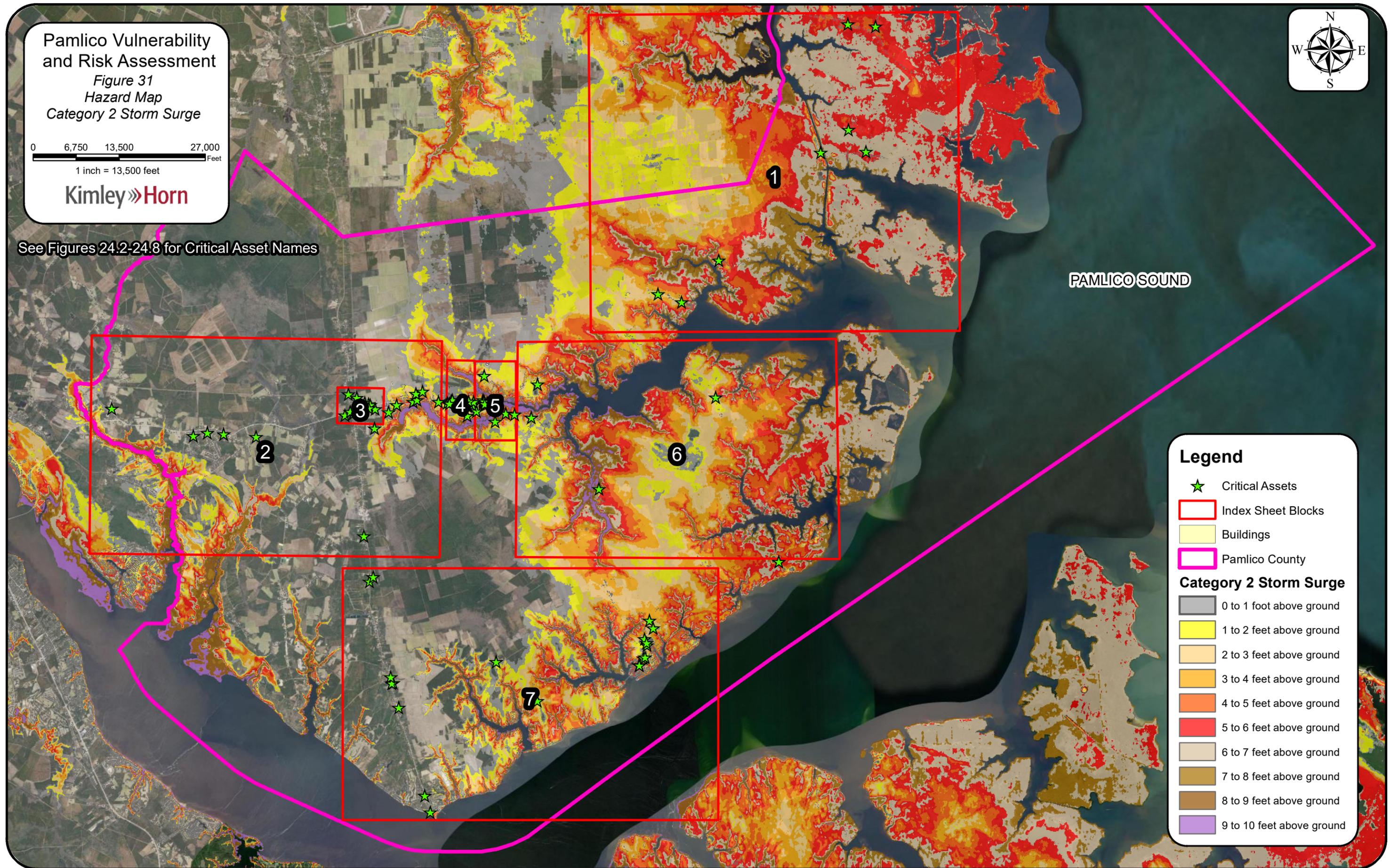
PAMLICO SOUND

Legend

- ★ Critical Assets
- Index Sheet Blocks
- Buildings
- Pamlico County

Category 2 Storm Surge

- 0 to 1 foot above ground
- 1 to 2 feet above ground
- 2 to 3 feet above ground
- 3 to 4 feet above ground
- 4 to 5 feet above ground
- 5 to 6 feet above ground
- 6 to 7 feet above ground
- 7 to 8 feet above ground
- 8 to 9 feet above ground
- 9 to 10 feet above ground



Pamlico Vulnerability
and Risk Assessment

Figure 32
Hazard Map
Riverine Flooding

0 6,750 13,500 27,000
Feet

1 inch = 13,500 feet

Kimley»Horn

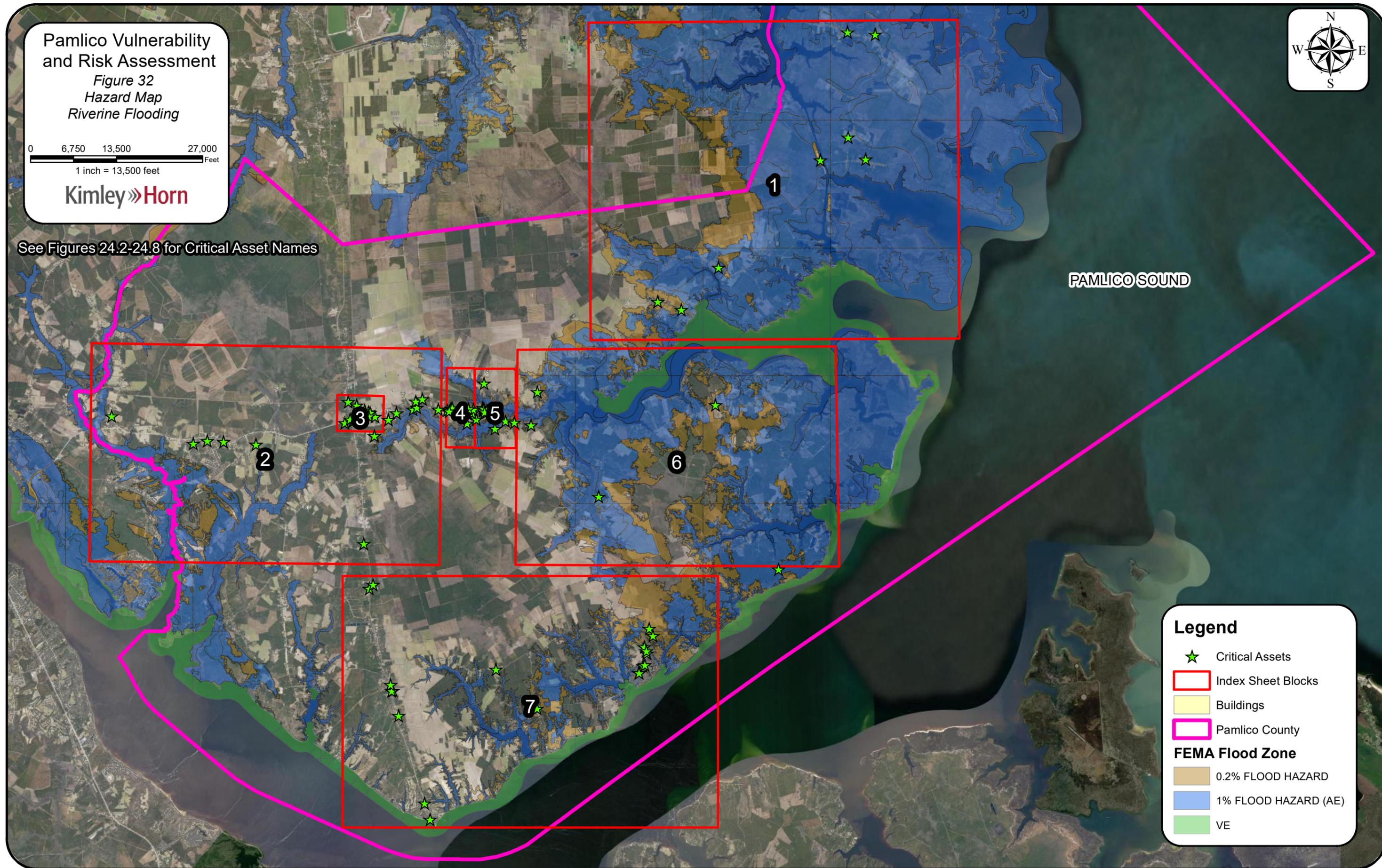


See Figures 24.2-24.8 for Critical Asset Names

PAMLICO SOUND

Legend

- ★ Critical Assets
- Index Sheet Blocks
- Buildings
- Pamlico County
- FEMA Flood Zone**
 - 0.2% FLOOD HAZARD
 - 1% FLOOD HAZARD (AE)
 - VE



Pamlico Vulnerability
and Risk Assessment

Figure 33
Hazard Map
SLR, Tidal, Rainfall Flooding

0 6,750 13,500 27,000
Feet

1 inch = 13,500 feet

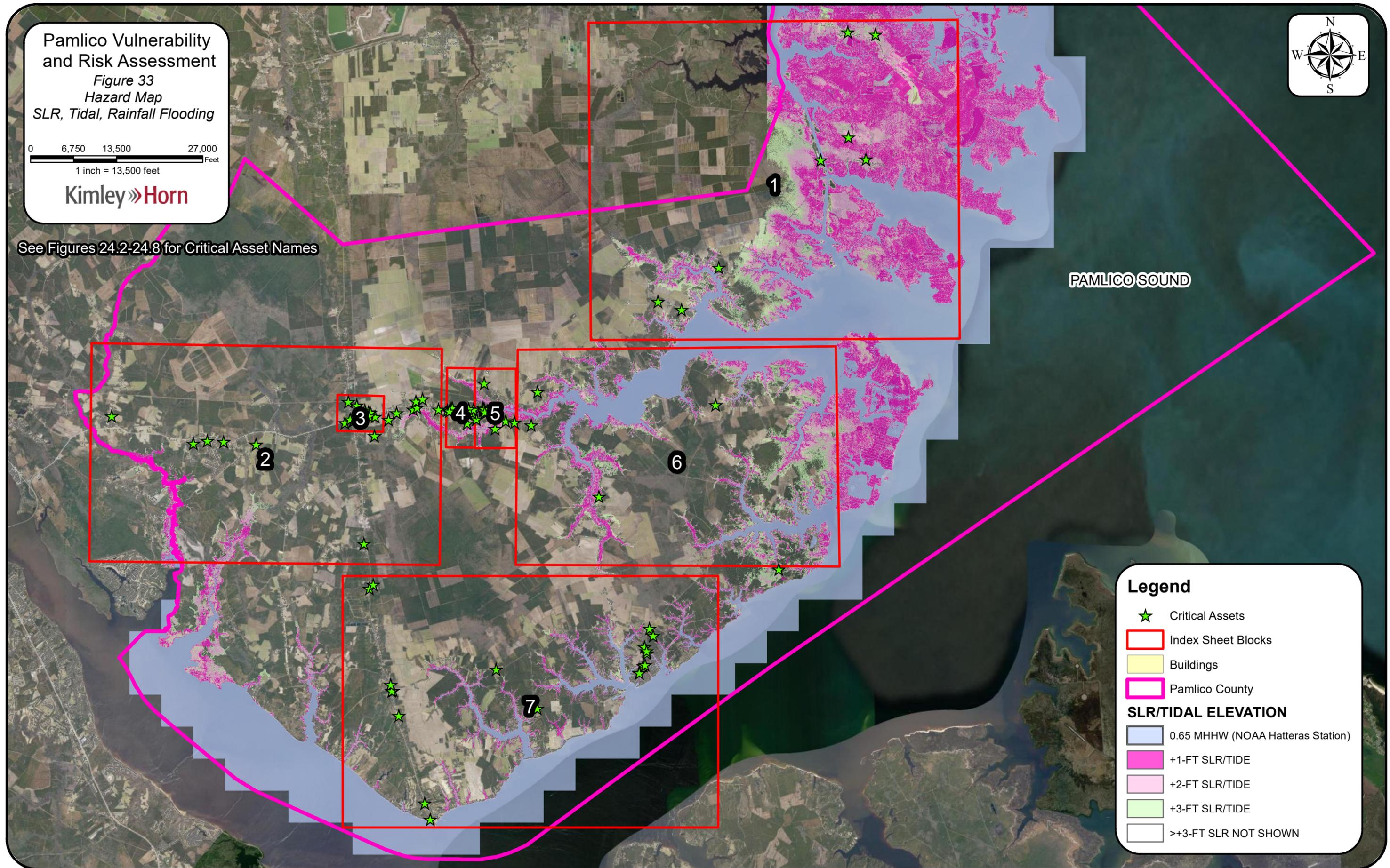


See Figures 24.2-24.8 for Critical Asset Names

PAMLICO SOUND

Legend

- ★ Critical Assets
- Index Sheet Blocks
- Buildings
- Pamlico County
- SLR/TIDAL ELEVATION**
 - 0.65 MHHW (NOAA Hatteras Station)
 - +1-FT SLR/TIDE
 - +2-FT SLR/TIDE
 - +3-FT SLR/TIDE
 - >+3-FT SLR NOT SHOWN



Appendix E – Cumulative Vulnerability

Vulnerability Index

In the table below, the developed vulnerability index is shown with the total scores for each critical asset.

<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Ag Cooperative Extension Office	1.25	1.25	0	2.5
Alliance Town Hall	1.5	1.75	0	3.25
Arapahoe Charter School k-12	0.75	1	0	1.75
Arapahoe Firestation	0.75	1	0	1.75
Arapahoe Town Hall	0.75	1	0	1.75
Bay River Metropolitan Sewer Office	1.25	1.25	0	2.5
Bayboro Pharmacy	1.25	1.25	0	2.5
Bayboro Sewer Treatment Plant	1.25	0.75	0	2
Bayboro Town Hall	1.25	1.25	0	2.5
Bayboro Water Tower 1	1.25	0.75	0	2
Bayboro Water Tower 2	1.25	0.75	0	2
Bryant Funeral Home	1.25	1.25	0	2.5
Carolina Telephone / Century Link	1.25	1.25	0	2.5
County Manager / Finance	1.25	1.25	0	2.5
CVS Pharmacy	0.75	1	0	1.75
Dollar General - Arapahoe	0.75	1	0	1.75
Dollar General - Grantsboro	0.75	1	0	1.75
Dollar General - Oriental	1.25	1.5	0	2.75
Duke Energy + Natural Gas Distribution Station	1.25	1	0	2.25
Family Dollar	0.75	1	0	1.75
Family Eye Care	1.25	1.25	0	2.5
Florence/Whortonsville Firestation	1.5	1.75	0	3.25
Food Lion	0.75	1	0	1.75
FPI Carolinas Solar Farm	1.25	0.75	0	2
Gardens of Pamlico	0.75	1	0	1.75
Goose Creek Island Community Center	1.75	1.75	0	3.5
Goose Creek Island Firestation	1.75	1.25	1	2.25
Grantsboro Town Hall	0.75	1	0	1.75
Grantsboro Water Tower	0.75	0.5	0	1.25
Grantsboro/Silverhill Firestation	0.75	1	0	1.75
Grantsbrook Nursing Home	1.25	1.5	0	2.75

<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Group Home	0.75	1	0	1.75
Handy Mart	0.75	1	0	1.75
HeadStart	0.75	1	0	1.75
Heartworks	1.25	1.25	0	2.5
Horne Road Cell Tower	1.75	1.5	0	3.25
Learn As We Grow	1.25	1.5	0	2.75
Lee Landing Road Cell Tower	0.75	0.5	0	1.25
Lowland Road Cell Tower	2	1.75	0	3.75
Max Mini Mart	1.25	1.25	0	2.5
Merritt Water Tower	1.75	1.5	0	3.25
Mesic Town Hall	1.75	1.25	1	2.25
Minnesott Beach Town Hall	0.75	1	0	1.75
NCDOT Ferry - Minnesott Beach to Cherry Branch	0.75	0.5	0	1.25
New Bern Water Tower	0.75	0.5	0	1.25
NOVA Urgent Care	0.75	1	0	1.75
Olympia Firestation	0.75	1	0	1.75
Oriental Medical Center	1.25	1.25	0	2.5
Oriental Police Department	1.25	1.5	0	2.75
Oriental Sewer Treatment Plant	1.5	1	0	2.5
Oriental Town Hall	1.25	1.5	0	2.75
Oriental Water Tower	1.25	0.75	0	2
Oriental Water Treatment Plant	1.25	1	0	2.25
Pamlico Christian Academy	0.75	1	0	1.75
Pamlico Coastal Carolina Health Center	1.25	1.25	0	2.5
Pamlico Community College	0.75	1	0	1.75
Pamlico Community Health Center	1.25	1.25	0	2.5
Pamlico County Courthouse	1.25	1.25	0	2.5
Pamlico County Elementary School	1.25	1.25	0	2.5
Pamlico County High School	1.25	1.25	0	2.5
Pamlico County Middle School	1.5	1.75	0	3.25
Pamlico County Primary School	1.25	1.25	0	2.5
Pamlico Pharmacy	0.75	1	0	1.75
Pamlico Rescue Squad	1.25	1.25	0	2.5
Piggly Wiggly	1.25	1.25	0	2.5
Pinedale Food Mart	0.75	1	0	1.75
Reelsboro Firestation	0.75	1	0	1.75
River Dunes Cell Tower	1.75	1	0	2.75

<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Sewer Sprayfield	0.75	0.5	0	1.25
Sheriff's Office/ Jail / 911 Center	1.25	1.5	0	2.75
Shop Quick	1.5	1.75	0	3.25
Smilin' Faces	1.25	1.25	0	2.5
Social Services/ Senior Services	1.25	1.5	0	2.75
Southeast Firestation	1.5	1.75	0	3.25
Speedway	0.75	1	0	1.75
Stonewall Cell Tower	1.5	1.5	0	3
Stonewall Town Hall	1.5	1.75	0	3.25
Tideland Distribution Station	0.75	0.5	0	1.25
Triangle Firestation	1.25	1.5	0	2.75
US Coast Guard Station - Hobucken	1.5	1.75	0	3.25
Vandemere Firestation	1.5	1.75	0	3.25
Vandemere Water Tower	1.25	1	0	2.25
Wal Mart	0.75	1	0	1.75
Water Department	1.25	1.25	0	2.5

Appendix F – Vulnerability by Hazard

Rainfall Flooding

Scoring Metrics

	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>
0	Not Exposed to Culvert Flooding	Not impacted by Culvert Flooding	No implemented solutions
1	Within 500 feet of reported rainfall flooding	Exposed to Rainfall Flooding	Implemented solution to reduce sensitivity
2	-	-	Implemented solution to reduce exposure
3	-	-	Implemented solution that reduces both exposure and sensitivity

Results

Utilizing the questionnaire sent out in Community Engagement Stage A, the consultant team mapped reported rainfall flooding hot spots. From these hot spots, the critical assets were checked if any of the critical assets were within 500 feet of the rainfall hot spots. None of the critical assets were within 500 feet of the hot spots, therefore they received a vulnerability score of zero.

From the questionnaire and CAT meetings, the issues with rainfall flooding largely stem from roads being blocked from flooding. The assets themselves were not reported to be impacted. Therefore, the consulting team reviewed the hot spots of road flooding to identify road vulnerabilities and the need for projects such as drainage improvements and road raising.

Vulnerable Roads Reported:

- Orchard Creek Road
- Trent Road
- Ragan Road
- Goose Creek Island Community
- Trent Creek Drive
- Alligator Loop
- Lowland and Hobucken Communities
- Swan Point Road
- Chapel Creek Drive
- Longview Road
- Broad Street
- Straight Road
- Hodges Road
- Hwy 304 near Hobucken
- Lynches Beach Loop Road
- Whortonsville Road

Key Findings:

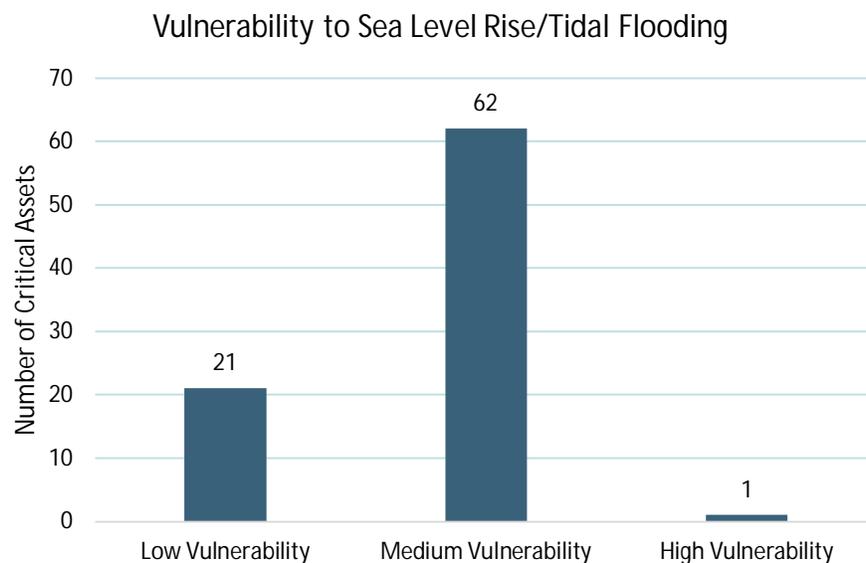
- Critical Assets were not directly exposed to rainfall flooding; however, residents may be isolated from critical assets due to roads flooding.
- Through the questionnaires, residents identified many roads within Pamlico County that experience rainfall flooding. Many of these roads are within the 100-year floodplain.

Tidal Flooding / Sea Level Rise

Scoring Metrics

	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>
0	Mean Higher High Water	-	No implemented solutions
1	Greater than +3 water level increase	Culverts	Implemented solution to reduce sensitivity
2	+3 to +1 water level increase	Utility/ Infrastructure Facility or Buildings (raised)	Implemented solution to reduce exposure
3	Less than or equal to +1 water level increase	Buildings (not raised)	Implemented solution that reduces both exposure and sensitivity

Results



Highly Vulnerable Critical Assets:



Key Findings:

- The Lowland Road Cell Tower is highly vulnerable to sea level rise/ tidal flooding.
- 75% of Critical Assets had medium or high vulnerability to sea level rise/tidal flooding
- Few assets have adaptive capacity to reduce their vulnerability to sea level rise/tidal flooding
- Low lying communities such as Hobucken and Lowland are highly vulnerable to sea level rise/tidal flooding.
- Many roads along the coastline and crossing tributaries are vulnerable to impacts from sea level rise/tidal flooding. In Hobucken and Lowland, the flooding of NC 304 and Lowland Road have the potential to isolate these communities. This is shown in **Appendix D**.

Scores:

<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Goose Creek Island Firestation	1	1	1	1
Mesic Town Hall	1	1	1	1
Bayboro Sewer Treatment Plant	1	1	0	2
Bayboro Water Tower 1	1	1	0	2
Bayboro Water Tower 2	1	1	0	2
Duke Energy + Natural Gas Distribution Station	1	1	0	2
FPI Carolinas Solar Farm	1	1	0	2
Grantsboro Water Tower	1	1	0	2
Horne Road Cell Tower	1	1	0	2
Lee Landing Road Cell Tower	1	1	0	2
Merritt Water Tower	1	1	0	2
NCDOT Ferry - Minnesott Beach to Cherry Branch	1	1	0	2
New Bern Water Tower	1	1	0	2
Oriental Sewer Treatment Plant	1	1	0	2
Oriental Water Tower	1	1	0	2
Oriental Water Treatment Plant	1	1	0	2
River Dunes Cell Tower	1	1	0	2
Sewer Sprayfield	1	1	0	2
Stonewall Cell Tower	1	1	0	2
Tideland Distribution Station	1	1	0	2
Vandemere Water Tower	1	1	0	2
Ag Cooperative Extension Office	1	2	0	3
Alliance Town Hall	1	2	0	3
Arapahoe Charter School k-12	1	2	0	3
Arapahoe Firestation	1	2	0	3
Arapahoe Town Hall	1	2	0	3
Bay River Metropolitan Sewer Office	1	2	0	3
Bayboro Pharmacy	1	2	0	3
Bayboro Town Hall	1	2	0	3
Bryant Funeral Home	1	2	0	3
Carolina Telephone / Century Link	1	2	0	3
County Manager / Finance	1	2	0	3
CVS Pharmacy	1	2	0	3
Dollar General - Arapahoe	1	2	0	3
Dollar General - Grantsboro	1	2	0	3
Dollar General - Oriental	1	2	0	3
Family Dollar	1	2	0	3
Family Eye Care	1	2	0	3
Florence/Whortonsville Firestation	1	2	0	3
Food Lion	1	2	0	3
Gardens of Pamlico	1	2	0	3

<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Goose Creek Island Community Center	1	2	0	3
Grantsboro Town Hall	1	2	0	3
Grantsboro/Silverhill Firestation	1	2	0	3
Grantsbrook Nursing Home	1	2	0	3
Group Home	1	2	0	3
Handy Mart	1	2	0	3
HeadStart	1	2	0	3
Heartworks	1	2	0	3
Learn As We Grow	1	2	0	3
Max Mini Mart	1	2	0	3
Minnesott Beach Town Hall	1	2	0	3
NOVA Urgent Care	1	2	0	3
Olympia Firestation	1	2	0	3
Oriental Medical Center	1	2	0	3
Oriental Police Department	1	2	0	3
Oriental Town Hall	1	2	0	3
Pamlico Christian Academy	1	2	0	3
Pamlico Coastal Carolina Health Center	1	2	0	3
Pamlico Community College	1	2	0	3
Pamlico Community Health Center	1	2	0	3
Pamlico County Courthouse	1	2	0	3
Pamlico County Elementary School	1	2	0	3
Pamlico County High School	1	2	0	3
Pamlico County Middle School	1	2	0	3
Pamlico County Primary School	1	2	0	3
Pamlico Pharmacy	1	2	0	3
Pamlico Rescue Squad	1	2	0	3
Piggly Wiggly	1	2	0	3
Pinedale Food Mart	1	2	0	3
Reelsboro Firestation	1	2	0	3
Sheriff's Office/ Jail / 911 Center	1	2	0	3
Shop Quick	1	2	0	3
Smilin' Faces	1	2	0	3
Social Services/ Senior Services	1	2	0	3
Southeast Firestation	1	2	0	3
Speedway	1	2	0	3
Stonewall Town Hall	1	2	0	3
Triangle Firestation	1	2	0	3
US Coast Guard Station - Hobucken	1	2	0	3
Vandemere Firestation	1	2	0	3
Wal Mart	1	2	0	3
Water Department	1	2	0	3
Lowland Road Cell Tower	2	2	0	4

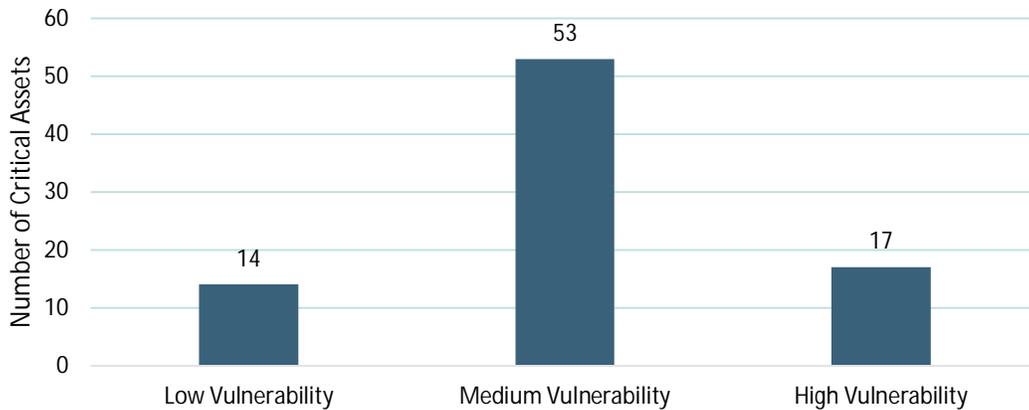
Riverine Flooding

Scoring Metrics

	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>
0	No Exposure	Minimal Impact	No implemented solutions
1	Zone X	Culverts	Implemented solution to reduce sensitivity
2	.2% Flood Hazard	Utility/ Infrastructure Facility or Buildings (raised)	Implemented solution to reduce exposure
3	1% Flood Hazard (AE)	Buildings (not raised)	Implemented solution that reduces both exposure and sensitivity

Results

Vulnerability to Riverine Flooding



Highly Vulnerable Critical Assets:

- Goose Creek Island Firestation
- Mesic Town Hall
- Oriental Sewer Treatment Plant
- Stonewall Cell Tower
- Florence/Whortonsville Firestation
- Horne Road Cell Tower
- Lowland Road Cell Tower
- Pamlico County Middle School
- River Dunes Cell Tower
- Shop Quick
- Stonewall Town Hall
- US Coast Guard Station - Hobucken
- Alliance Town Hall
- Merritt Water Tower
- Southeast Firestation
- Vandemere Firestation
- Goose Creek Island Community Center

Key Findings:

- 83% of the critical assets have high vulnerability or medium vulnerability. 7 of the critical assets fall into the 100-year flood plain and 13 of the critical assets fall into the 200-year floodplain.
- Almost all Hobucken and Goose Creek are within the 100-year floodplain.
- Few assets have adaptive capacity to reduce their vulnerability to riverine flooding.
- Identified hot spot roads for flooding were reviewed in comparison to the flood plain maps. Roads within the 100-year flood plain include: Florence Road, Trent Road, Whortonsville Road, Orchard Creek Road, 500 feet of Callison Road, Courtland Drive, Main Street, West Lane, NC-304 near Hobucken, and Lowland Road. This is shown in **Appendix D**.

Scores:

<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Bayboro Sewer Treatment Plant	1	1	0	2
Bayboro Water Tower 1	1	1	0	2
Bayboro Water Tower 2	1	1	0	2
Vandemere Water Tower	1	1	0	2
Duke Energy + Natural Gas Distribution Station	1	1	0	2
Lee Landing Road Cell Tower	1	1	0	2
New Bern Water Tower	1	1	0	2
Oriental Water Tower	1	1	0	2
Oriental Water Treatment Plant	1	1	0	2
Sewer Sprayfield	1	1	0	2
Grantsboro Water Tower	1	1	0	2
FPI Carolinas Solar Farm	1	1	0	2
NCDOT Ferry - Minnesott Beach to Cherry Branch	1	1	0	2
Tideland Distribution Station	1	1	0	2
Family Eye Care	1	2	0	3
Grantsbrook Nursing Home	1	2	0	3
Minnesott Beach Town Hall	1	2	0	3
Oriental Medical Center	1	2	0	3
Oriental Police Department	1	2	0	3
Pamlico Community College	1	2	0	3
Social Services/ Senior Services	1	2	0	3
Ag Cooperative Extension Office	1	2	0	3
Arapahoe Charter School k-12	1	2	0	3
Arapahoe Firestation	1	2	0	3
Arapahoe Town Hall	1	2	0	3
Bay River Metropolitan Sewer Office	1	2	0	3
Bayboro Pharmacy	1	2	0	3
Bayboro Town Hall	1	2	0	3
Bryant Funeral Home	1	2	0	3
Carolina Telephone / Century Link	1	2	0	3
County Manager / Finance	1	2	0	3
CVS Pharmacy	1	2	0	3
Dollar General - Grantsboro	1	2	0	3
Dollar General - Oriental	1	2	0	3
Family Dollar	1	2	0	3
Food Lion	1	2	0	3
Gardens of Pamlico	1	2	0	3
Grantsboro/Silverhill Firestation	1	2	0	3
Group Home	1	2	0	3
Handy Mart	1	2	0	3
HeadStart	1	2	0	3
Heartworks	1	2	0	3

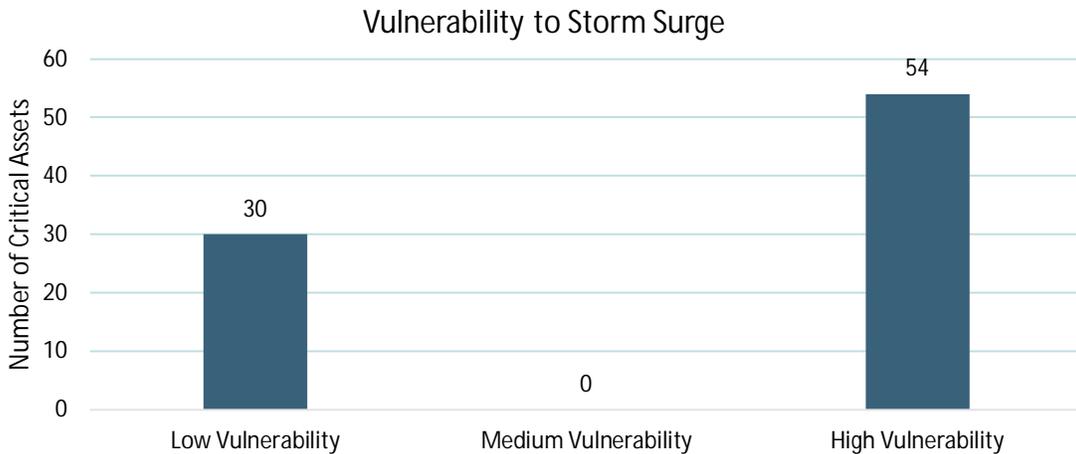
<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Learn As We Grow	1	2	0	3
Max Mini Mart	1	2	0	3
Oriental Town Hall	1	2	0	3
Pamlico Coastal Carolina Health Center	1	2	0	3
Pamlico County Courthouse	1	2	0	3
Pamlico County Elementary School	1	2	0	3
Pamlico County High School	1	2	0	3
Pamlico County Primary School	1	2	0	3
Pamlico Pharmacy	1	2	0	3
Piggly Wiggly	1	2	0	3
Pinedale Food Mart	1	2	0	3
Reelsboro Firestation	1	2	0	3
Sheriff's Office/ Jail / 911 Center	1	2	0	3
Triangle Firestation	1	2	0	3
Wal Mart	1	2	0	3
Olympia Firestation	1	2	0	3
Pamlico Christian Academy	1	2	0	3
Pamlico Community Health Center	1	2	0	3
Dollar General - Arapahoe	1	2	0	3
NOVA Urgent Care	1	2	0	3
Pamlico Rescue Squad	1	2	0	3
Smilin' Faces	1	2	0	3
Speedway	1	2	0	3
Water Department	1	2	0	3
Grantsboro Town Hall	1	2	0	3
Goose Creek Island Firestation	3	2	1	4
Mesic Town Hall	3	2	1	4
Oriental Sewer Treatment Plant	2	2	0	4
Stonewall Cell Tower	2	2	0	4
Florence/Whortonsville Firestation	2	3	0	5
Horne Road Cell Tower	3	2	0	5
Lowland Road Cell Tower	3	2	0	5
Pamlico County Middle School	2	3	0	5
River Dunes Cell Tower	3	2	0	5
Shop Quick	2	3	0	5
Stonewall Town Hall	2	3	0	5
US Coast Guard Station - Hobucken	2	3	0	5
Alliance Town Hall	2	3	0	5
Merritt Water Tower	3	2	0	5
Southeast Firestation	2	3	0	5
Vandemere Firestation	2	3	0	5
Goose Creek Island Community Center	3	3	0	6

Storm Surge

Scoring Metrics

	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>
<i>Metric</i>	Hurricane Return Period/ CAT 2 Storm Surge	CAT 2 Storm Surge	
<i>0</i>	Not exposed	Not exposed	No implemented solutions
<i>1</i>	In a region with a low Hurricane return period	Less than 3 feet above Ground	Implemented solution to reduce sensitivity
<i>2</i>	-	3 feet or greater above ground	Implemented solution to reduce exposure
<i>3</i>	Exposed to Storm Surge in a Category 2 Storm	6 feet or greater above ground	Implemented solution that reduces both exposure and sensitivity

Results



Critical Assets with Maximum Vulnerability Score:



Stonewall
Cell Tower



Horne Road
Cell Tower



Lowland
Road Cell
Tower



Merritt
Water
Tower

Key Findings:

- Overall, 64% the critical assets ranked highly vulnerable for storm surge. Four critical assets reached a maximum vulnerability score of 6.
- All the assets had a level of exposure given the hurricane return period for Pamlico County.
- Few assets have adaptive capacity to reduce their vulnerability to riverine flooding
- Goose Creek and Hobucken are projected to experience over 5 feet of storm surge during a Category 2 Hurricane.
- Many roads within Pamlico County were reported by residents in the questionnaire to experience storm surge during hurricanes which isolate residents. This was confirmed by the mapping of storm surge shown in **Figure 31**. Roads impacted tend to be low-lying roads within the 100-year floodplain.

Scores:

<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Arapahoe Charter School k-12	1	0	0	1
Arapahoe Firestation	1	0	0	1
Arapahoe Town Hall	1	0	0	1
Dollar General - Grantsboro	1	0	0	1
Gardens of Pamlico	1	0	0	1
Grantsboro/Silverhill Firestation	1	0	0	1
Group Home	1	0	0	1
Minnesott Beach Town Hall	1	0	0	1
Pamlico Community College	1	0	0	1
Reelsboro Firestation	1	0	0	1
CVS Pharmacy	1	0	0	1
Family Dollar	1	0	0	1
Food Lion	1	0	0	1
Grantsboro Water Tower	1	0	0	1
HeadStart	1	0	0	1
New Bern Water Tower	1	0	0	1
Olympia Firestation	1	0	0	1
Pamlico Pharmacy	1	0	0	1
Pinedale Food Mart	1	0	0	1
Sewer Sprayfield	1	0	0	1
Dollar General - Arapahoe	1	0	0	1
Handy Mart	1	0	0	1
Lee Landing Road Cell Tower	1	0	0	1
Pamlico Christian Academy	1	0	0	1
Speedway	1	0	0	1
Tideland Distribution Station	1	0	0	1
Wal Mart	1	0	0	1
Grantsboro Town Hall	1	0	0	1
NCDOT Ferry - Minnesott Beach to Cherry Branch	1	0	0	1
NOVA Urgent Care	1	0	0	1
Goose Creek Island Firestation	3	2	1	4
Heartworks	3	1	0	4
Oriental Medical Center	3	1	0	4
Oriental Sewer Treatment Plant	3	1	0	4
Pamlico County Courthouse	3	1	0	4
Pamlico County Elementary School	3	1	0	4
Ag Cooperative Extension Office	3	1	0	4
Bay River Metropolitan Sewer Office	3	1	0	4
Bayboro Pharmacy	3	1	0	4
Bayboro Sewer Treatment Plant	3	1	0	4
Bayboro Town Hall	3	1	0	4
Bayboro Water Tower 1	3	1	0	4

<i>Critical Asset</i>	<i>Exposure</i>	<i>Sensitivity</i>	<i>Adaptive Capacity</i>	<i>Vulnerability</i>
Bayboro Water Tower 2	3	1	0	4
Carolina Telephone / Century Link	3	1	0	4
County Manager / Finance	3	1	0	4
Oriental Water Tower	3	1	0	4
Pamlico County High School	3	1	0	4
Piggly Wiggly	3	1	0	4
River Dunes Cell Tower	3	1	0	4
Bryant Funeral Home	3	1	0	4
Family Eye Care	3	1	0	4
FPI Carolinas Solar Farm	3	1	0	4
Max Mini Mart	3	1	0	4
Mesic Town Hall	3	2	1	4
Pamlico Coastal Carolina Health Center	3	1	0	4
Pamlico Community Health Center	3	1	0	4
Pamlico County Primary School	3	1	0	4
Pamlico Rescue Squad	3	1	0	4
Smilin' Faces	3	1	0	4
Water Department	3	1	0	4
Dollar General - Oriental	3	2	0	5
Duke Energy + Natural Gas Distribution Station	3	2	0	5
Grantsbrook Nursing Home	3	2	0	5
Learn As We Grow	3	2	0	5
Oriental Police Department	3	2	0	5
Oriental Town Hall	3	2	0	5
Sheriff's Office/ Jail / 911 Center	3	2	0	5
Shop Quick	3	2	0	5
Social Services/ Senior Services	3	2	0	5
Triangle Firestation	3	2	0	5
Vandemere Water Tower	3	2	0	5
Florence/Whortonsville Firestation	3	2	0	5
Pamlico County Middle School	3	2	0	5
Alliance Town Hall	3	2	0	5
Goose Creek Island Community Center	3	2	0	5
Oriental Water Treatment Plant	3	2	0	5
Southeast Firestation	3	2	0	5
Stonewall Town Hall	3	2	0	5
US Coast Guard Station - Hobucken	3	2	0	5
Vandemere Firestation	3	2	0	5
Horne Road Cell Tower	3	3	0	6
Lowland Road Cell Tower	3	3	0	6
Stonewall Cell Tower	3	3	0	6
Merritt Water Tower	3	3	0	6

Appendix G – Risk Results

The quantified value at risk for each critical asset and the defined sector is shown in the figure below.

<i>Critical Asset</i>	<i>Sector</i>	<i>Value</i>
Ag Cooperative Extension Office	Government Facilities	\$ 210,021
Alliance Town Hall	Government Facilities	\$ 92,268
Arapahoe Charter School k-12	Government Facilities	\$ 9,220,006
Arapahoe Firestation	Government Facilities	\$ 300,737
Arapahoe Town Hall	Government Facilities	\$ 35,967
Bay River Metropolitan Sewer Office	Infrastructure/ Utilities	\$ 237,705
Bayboro Pharmacy	Medical	\$ 412,317
Bayboro Sewer Treatment Plant	Infrastructure/ Utilities	\$ 11,989
Bayboro Town Hall	Government Facilities	\$ 49,185
Bayboro Water Tower 1	Infrastructure/ Utilities	\$ 814,892
Bayboro Water Tower 2	Infrastructure/ Utilities	\$ 114,533
Bryant Funeral Home	Medical	\$ 784,275
Carolina Telephone / Century Link	Infrastructure/ Utilities	\$ 58,327
County Manager / Finance	Government Facilities	\$ 140,137
CVS Pharmacy	Medical	\$ 2,223,811
Dollar General - Arapahoe	Local Businesses / Other	\$ 436,290
Dollar General - Grantsboro	Local Businesses / Other	\$ 508,226
Dollar General - Oriental	Local Businesses / Other	\$ 496,476
Duke Energy + Natural Gas Distribution Station	Infrastructure/ Utilities	\$ 11,247
Family Dollar	Local Businesses / Other	\$ 373,410
Family Eye Care	Medical	\$ 777,317
Florence/Whortonsville Firestation	Government Facilities	\$ 266,136
Food Lion	Local Businesses / Other	\$ 2,532,827
FPI Carolinas Solar Farm	Infrastructure/ Utilities	\$ 6,497,400
Gardens of Pamlico	Local Businesses / Other	\$ 2,299,818
Goose Creek Island Community Center	Government Facilities	\$ 702,237
Goose Creek Island Firestation	Government Facilities	\$ 154,364
Grantsboro Town Hall	Government Facilities	\$ 198,141
Grantsboro Water Tower	Infrastructure/ Utilities	\$ 266,402
Grantsboro/Silverhill Firestation	Government Facilities	\$ 62,150
Grantsbrook Nursing Home	Local Businesses / Other	\$ 2,843,859

<i>Critical Asset</i>	<i>Sector</i>	<i>Value</i>
Group Home	Local Businesses / Other	\$ 146,544
Handy Mart	Local Businesses / Other	\$ 287,801
HeadStart	Government Facilities	\$ 813,615
Heartworks	Medical	\$ 929,382
Horne Road Cell Tower	Infrastructure/ Utilities	\$ 54,556
Learn As We Grow	Local Businesses / Other	\$ 83,469
Lee Landing Road Cell Tower	Infrastructure/ Utilities	\$ 100,000
Lowland Road Cell Tower	Infrastructure/ Utilities	\$ 7,027
Max Mini Mart	Local Businesses / Other	\$ 103,018
Merritt Water Tower	Infrastructure/ Utilities	\$ 253,506
Mesic Town Hall	Government Facilities	\$ 158,389
Minnesott Beach Town Hall	Government Facilities	\$ 95,186
NCDOT Ferry - Minnesott Beach to Cherry Branch	Government Facilities	\$ 207,418
New Bern Water Tower	Infrastructure/ Utilities	\$ 299,350
NOVA Urgent Care	Medical	\$ 468,931
Olympia Firestation	Government Facilities	\$ 58,538
Oriental Medical Center	Medical	\$ 168,539
Oriental Police Department	Government Facilities	\$ 114,569
Oriental Sewer Treatment Plant	Infrastructure/ Utilities	\$ 675,804
Oriental Town Hall	Government Facilities	\$ 209,027
Oriental Water Tower	Infrastructure/ Utilities	\$ 1,777,972
Oriental Water Treatment Plant	Infrastructure/ Utilities	\$ 176,168
Pamlico Christian Academy	Local Businesses / Other	\$ 345,049
Pamlico Coastal Carolina Health Center	Medical	\$ 546,789
Pamlico Community College	Government Facilities	\$ 6,534,978
Pamlico Community Health Center	Medical	\$ 1,176,469
Pamlico County Courthouse	Government Facilities	\$ 3,014,456
Pamlico County Elementary School	Government Facilities	*Accounted for in Pamlico County High School
Pamlico County High School	Government Facilities	\$ 21,561,648
Pamlico County Middle School	Government Facilities	\$ 4,352,375
Pamlico County Primary School	Government Facilities	\$ 6,938,756
Pamlico Pharmacy	Medical	\$ 181,762
Pamlico Rescue Squad	Government Facilities	\$ 476,524
Piggly Wiggly	Local Businesses / Other	\$ 608,030
Pinedale Food Mart	Local Businesses / Other	\$ 390,101
Reelsboro Firestation	Government Facilities	\$ 164,607
River Dunes Cell Tower	Infrastructure/ Utilities	\$ 426,079
Sewer Sprayfield	Infrastructure/ Utilities	\$ 372,828

<i>Critical Asset</i>	<i>Sector</i>	<i>Value</i>
Sheriff's Office/ Jail / 911 Center	Government Facilities	\$ 3,452,573
Shop Quick	Local Businesses / Other	\$ 126,942
Smilin' Faces	Local Businesses / Other	\$ 234,361
Social Services/ Senior Services	Government Facilities	\$ 2,444,780
Southeast Firestation	Government Facilities	\$ 417,019
Speedway	Local Businesses / Other	\$ 453,927
Stonewall Cell Tower	Infrastructure/ Utilities	\$ 11,291
Stonewall Town Hall	Government Facilities	\$ 39,365
Tideland Distribution Station	Infrastructure/ Utilities	\$ 12,145
Triangle Firestation	Government Facilities	\$ 111,594
US Coast Guard Station - Hobucken	Government Facilities	\$ 971,264
Vandemere Firestation	Government Facilities	\$ 220,270
Vandemere Water Tower	Infrastructure/ Utilities	\$ 342,750
Wal Mart	Local Businesses / Other	\$ 2,993,251
Water Department	Infrastructure/ Utilities	\$ 75,771
	Total:	\$ 99,319,033