

HISTORIC CONTEXT AT RISK:
PLANNING FOR TROPICAL CYCLONE EVENTS IN HISTORIC CEDAR KEY

By

JENNIFER MARIE WOLFE

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by

Jennifer Marie Wolfe

This thesis is dedicated to my wonderful husband Matt. Your constant love and support has made all of this possible.

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By

Jennifer M. Wolfe

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Chair: Charles L. Hailey
Cochair: Peter E. Prugh
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Tropical cyclone events have historically made an imprint on coastal landscapes. The burgeoning growth of Florida's coastal population has amplified the effects of cyclone damage. In addition to threats posed to life and infrastructure, the loss of historic architectural fabric is a compelling concern because of the potential to lose an important part of history. The historic community of Cedar Key is particularly vulnerable as a result of its location along Florida's Gulf Coast and has been impacted by a few destructive hurricanes and many tropical storms throughout its history. Cedar Key is recognized as a National Register District that retains a historic context beginning in the mid-nineteenth century. The development is associated for its function as one of Florida's first major ports and cross-peninsular railroad destinations that contributes to the historic context of the island.

The historic architectural fabric contributes a tangible element to the historic significance creating a cultural link between the past and present. It is an expression of

the community's identity through a sense of place, which needs to be preserved. This thesis explores the governing principles of historic preservation in conjunction with planning measures to mitigate the impacts of a tropical cyclone event using Cedar Key as a case study. These impacts have a direct effect on the building fabric and are indirectly affected through building regulations and historic preservation concepts.

The problems facing Cedar Key are particular to its identity and historic resources and at the same time reflect the broader concerns of disaster-prone historic districts. This study advocates the following measures to address these problems: planning objectives that integrate a historic preservation element into the local emergency management plan, the use of tools to identify and assess risk to historic resources, mitigation methods for building materials in the context of the effects of a tropical cyclone event, enactment of the responsibilities of a historic preservation coordinator, and the application of design criteria to evaluate the compatibility of new development in the historic district. The combination of the planning initiatives results in an interdisciplinary program of disaster management that expands the scope of traditional disaster planning methods.

Insufficient planning for a tropical cyclone event can lead to avoidable loss of historic fabric. These disasters are predictable in terms of their nature and ability to have a devastatingly widespread impact, which previous hurricane seasons have exhibited. This study concludes that adopting planning initiatives to reconcile historic preservation with diverse mitigation opportunities for a tropical cyclone event will benefit preservation of the historic context in Cedar Key, Florida. The initiatives recommended in this study can serve as a template for other similarly vulnerable areas by recognizing a method to integrate historic preservation and local emergency management procedures.

CHAPTER 1 PURPOSE OF RESEARCH

The foundation for this research was guided by a project that began in the fall of 2004 to design a long term storage method for the historical building surveys of Cedar Key in the event of a disaster. This project was a cooperation between the City of Cedar Key, the Cedar Key Historical Society, and the College of Design, Construction, and Planning at the University of Florida. Records from the historical society were obtained that included photographs and Florida Master Site File (FMSF) forms from a 1986 survey. Verifying the field location and addresses of the historic structures was the first task of the project. A brief site inspection, along with digital photographs and videos, was completed to reconcile the existing survey and obtain current images. The FMSF forms were converted to digital format using the Smartform II program developed by the Florida Office of Cultural and Historical Programs. The resulting product was a digital inventory of historic resources that is stored on a compact disc with partial information on a website.¹ A Geographic Information Systems (GIS) student configured the database and website using this program to organize the data so that it can be accessed and manipulated. Cedar Key uses this product to manage its historic resources in accordance with their comprehensive planning policies.

Through the course of my involvement in this project, I was asked to give a presentation to the community on behalf of the historical society at one of its meetings.

¹ The web address for this product is: http://www.floridabred.com/cedar_key/html/

While this presentation touched on the results of this project, it focused on the development of a contemporary historic preservation approach in the U.S. using examples from Cedar Key. This process identified the significance of the island and the need to preserve its historic features.

The confluence of these events identified a loophole in Cedar Key's preservation efforts. During the inventory project, it became apparent that Cedar Key does not have a unique method to plan for a tropical cyclone event for its historic resources. City emergency planning documents outline the authorities and objectives that are in place in an emergency situation without reference to historic resources. Cedar Key's National Register District contributes to the sense of place and local economy, making it a worthy asset to protect. Modern technology has advanced the predictability of the location and effects of a tropical cyclone which merits effective planning and building mitigation activities. Historic resources should be afforded this investment. Existing preservation policies will be evaluated to identify opportunities to improve local preservation practices and to integrate historic resource management into local emergency planning strategies. Following this effort, known weaknesses and aftereffects from a tropical cyclone on historic buildings can be mitigated before an event occurs or during the repair process. However, national preservation guidelines need to be accommodated when altering the historic fabric. The final trial for historic preservation in relation to a tropical cyclone event is the need to interfuse design conditions with building criteria in a historic district that is located in a flood zone. The ultimate purpose of this study is to reduce the loss of historic architectural resources to a tropical cyclone event in Cedar Key, Florida.

CHAPTER 2 INTRODUCTION

A tidal wave, two disastrous fires, hurricanes and depression did their worst, yet failed to make it a ghost town.¹

The resiliency of Cedar Key is described in this article that depicts its miraculous survival and potential for economic resurgence. The Cedar Keys area, including the first settlement on the island of Atsena Otie, has existed through various stages of development and survived these disasters for over one hundred and fifty years. Before the city was incorporated, an account of a hurricane in 1842 describes a 27 foot surge and structural devastation to the few buildings that were present, scattering debris five miles inland.² Since then, nine hurricanes and many tropical storms have struck the immediate Cedar Key area, which was most recently threatened by Tropical Storm Alberto in June 2006.³ Tropical cyclone events are not uncommon to the island, although the last major impact was Hurricane Easy in 1950, leaving only faint memories for current residents.⁴ Coastal development in recent years has increased the scale of disaster and changed how communities respond:

¹ Neil S. Meffert, "Oft Hit by Disaster, Former Queen City of Florida's Gulf Coast Refused to Die," *The Florida Times-Union* 21 Aug. 1955: 71.

² Charles Carroll Fishburne, Jr., *The Cedar Keys in the 19th Century* (1993 Kearney: Morris, 2004) 30.

³ *Hurricane City*, ed. Jim Williams, 2006, 28 July 2006, <http://www.hurricanecity.com/>

⁴ Tropical cyclones include tropical depressions, tropical storms, and hurricanes.

In fact, the term natural disaster is a misnomer, disasters do not just happen they are created when people are allowed or encouraged to put themselves in harm's way.⁵

Traditional building patterns have changed over time in response to coastal hazards, and are now regulated by local, national, and state codes. Disaster planning for a tropical cyclone needs to be reevaluated in order to accommodate the regulatory effects on Cedar Key's historic resources.

The historic context of Cedar Key includes the period of significance from the installation of a military depot on Atsena Otie in 1839 to the abandonment of the railroad after 1932.⁶ The location of Cedar Key and relative access to the interior of the state provided a unique opportunity to become engaged in the settlement patterns similar to Florida's other coastal communities, representing an epoch of the state's history. Cedar Key is distinguished from other coastal communities because of the importance of the island as an early port and terminus of the first trans-peninsular railroad. Much of the historic context associated with this development has endured while other coastal communities in the state have lost their identity to deleterious effects of development.

The Cedar Keys Historic and Archaeological District was nominated to the National Register of Historic Places in 1989.⁷ This recognition is a function of the preservation instruments created under the Historic Preservation Act of 1966. Passage of this Act was an epic moment for the preservation movement, extending federal

⁵ David Salvesen, "Hard Hit: Communities Need to be Able to Roll With Nature's Punches," *Urban Land*, 59.6 (2000): 36.

⁶ National Register of Historic Places Registration Form for the Cedar Keys Historic and Archaeological District Section 8 (1989): 1.

⁷ "A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development." United States, Department of the Interior, National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, 1990 (Washington: GPO, 1997) 5.

recognition to significant state and local resources.⁸ When a property is listed on the National Register, it is eligible for tax credits and federal rehabilitation funding. Additionally, federal projects that involve eligible or listed properties must be evaluated for their effect on the historic resource.

Historic preservation as codified by the Act is executed with the coordination of federal and state governments. The federal jurisdiction of this authority is the National Parks Service under the branch of the Secretary of the Interior. Federal oversight is conducted by an independent federal agency within the Advisory Council on Historic Preservation (ACHP) that advocates preservation policy to the President and Congress.⁹ Disseminating historic preservation policy to individual states is under the auspice of the State Historic Preservation Official (SHPO) that each state is required to have in place. Responsibilities of this office are disbursing federal funds for preservation projects, facilitating the National Register nomination process, and engaging in compliance review, among other preservation programs. Guidance for nomination and review is directed by the Secretary of the Interior's Standards for the Treatment of Historic Properties.¹⁰ There are four treatments that the Standards define: preservation, rehabilitation, restoration, and reconstruction. Historic property management became a systemic approach under the Historic Preservation Act.

⁸ William J. Murtagh, *Keeping Time: The History and Theory of Preservation in America*, Rev. ed. (New York: Preservation Press, 1997) 66.

⁹ United States, Advisory Council on Historic Preservation, "About ACHP: General Information," Apr. 2006, 22 June 2006, <http://www.achp.gov/aboutachp.html>.

¹⁰ The Secretary of the Interior's Standards for the Treatment of Historic Properties is abbreviated as 'Standards' when referenced in this study.

States have also empowered local municipalities to implement their own historic preservation ordinances and recognition programs. The strongest tool to convey historic property management at the local scale is a preservation ordinance. There are ten elements an ordinance should include to produce a thorough design review program in historic districts: statement of purpose, definitions, creation of a preservation commission, commission duties and powers, criteria for designating historic properties, process for designating historic landmarks and districts, procedures and standards for reviewing proposals for alteration, addressing claims of economic hardship, penalties, and appeals.¹¹ The City of Cedar Key fulfills these components using an Historical Commission and planning procedures expressed in the city's comprehensive plan and land development regulations. As will be pointed out, opportunities to strengthen the implementation of the components remain. A couple of improvements are lodged in the authority of the commission and the design criteria used to evaluate sensitive alterations and new development in the historic district. Cultivating an influential presence to advocate historic preservation in the city is essential to promote the endurance of the historic context particularly in disaster planning:

There is much emphasis on protecting historic preservation from the hand of man, there has not been the same thought and attention given to protecting these resources from disasters such as earthquakes and floods.¹²

The historical precedence of high profile natural disasters over this century has yielded increasing impetus to include historic property management principles in disaster

¹¹ Rachel Cox, *Design Review in Historic Districts* (Washington: National Trust for Historic Preservation, 2003) 3-4.

¹² Robert R. Garvey, Jr., and Peter H. Smith, "Disaster Preparedness and Response Policy," *Protecting Historic Architecture and Museum Collections from Natural Disasters*, ed. Barclay G. Jones (Stoneham: Butterworth, 1986) 79.

management plans. Before modern predictive technology, the island of Galveston, Texas was struck with a devastating hurricane in 1900 washing away half of the buildings and killing nearly 8,000 people, prompting officials to build an 18 foot sea wall.¹³ This serves as a reminder to current residents living on this historic island and prompts the consideration of its efficacy to prevent or reduce the effect of a disaster. As a result of the 1989 natural disasters from the Loma Prieta earthquake in California and Hurricane Hugo that struck Charleston, South Carolina, preservation professionals spoke out for the need to develop building mitigation programs and to adopt planning strategies for individual resources. The strongest aftereffect from these disasters was the unnecessary demolition of historic resources.¹⁴ The outcome of Hurricane Katrina that struck the Gulf Coast in August 2005 is still being evaluated to determine the effects and lessons for the future. Four states were impacted with storm effects but none as severe as Louisiana and Mississippi. Wind speeds exceeded 140 miles per hour at times, and tropical storm force winds extended 440 miles from the center at varying intensity that combined with a 30 foot storm surge, decimating many parts of the levee system in New Orleans.¹⁵ Massive flooding filled the city of New Orleans that has 18 distinct National Register Historic Districts. Countless historic resources along the entire Gulf Coast suffered as a result of the 2005 hurricane season. Recovery efforts are challenged to mediate preservation guidelines with a rebuilding plan that plagues many of the agencies involved. Richard

¹³ “The Galveston Storm of 1900 – The Deadliest Disaster in American History,” NOAA, Apr. 2006, 25 June 2006, <http://www.noaa.gov/galveston1900/>.

¹⁴ Carl L. Nelson, *Protecting the Past from Natural Disasters* (Washington: National Trust for Historic Preservation, 1991) 120.

¹⁵ United States, Department of Homeland Security, Federal Emergency Management Agency, “About Hurricane Katrina,” May 2006, 26 June 2006, http://www.fema.gov/hazard/flood/recoverydata/katrina/katrina_about.shtm.

Moe, president of the National Trust for Historic Preservation recognizes that “[r]ebuilding is essential, but it must acknowledge the historic character of one of the nation’s most distinctive regions.”¹⁶ Advocacy planning for historic resources within the framework of disaster management is an integral component for the recovery of the Gulf Coast region.

The Federal Emergency Management Agency (FEMA) falls under the auspice of the ACHP, under Section 106 of the National Historic Preservation Act, that requires the effects of its actions to be evaluated with respect to historic resources listed on or eligible for listing on the NRHP. Financial aid and recovery efforts are some of the activities that must be monitored by state and local officials. To compromise between the need for a swift response and federal regulation, an agreement has been established to streamline the review process. This programmatic agreement authorizes alternative procedures that are resolved between the SHPO and federal agency.¹⁷ Within FEMA, the National Flood Insurance Program (NFIP) allows property owners to purchase flood insurance using flood data to calculate insurance premiums and regulating building codes in participating communities. Variances are allowed for historic resources in order to ameliorate preservation guidelines. Historic buildings are not required to be elevated to the base flood elevation during a rehabilitation project as long as the rehabilitation does not

¹⁶ National Trust for Historic Preservation, “Press Release: National Trust for Historic Preservation Announces Major Campaign to Preserve Historic and Cultural Resources Affected by Hurricane Katrina,” Sept. 2005, 28 Sept. 2005, http://www.nationaltrust.org/news/docs/20050915_katrina.html. The National Trust for Historic Preservation is a non-profit organization that advocates preservation policy and stewardship.

¹⁷ United States, Advisory Council on Historic Preservation, “Federal Emergency Management Agency Model Statewide Programmatic Agreement,” April 2002, 22 June 2006 <http://www.achp.gov/fema-pa.html>.

impact the significance of the building.¹⁸ However, new development in a historic district is required to comply resulting in undesirable effects that inhibits compatibility with the historic district.

The focus of this thesis is to analyze planning and physical hazard reduction methods for a tropical cyclone event using Cedar Key as the case study. Examination of the city's emergency planning strategies alluded to the absence of a historic preservation component. Cedar Key first tested its new emergency management plan as a result of the first named storm of the 2006 hurricane season.¹⁹ Tropical Storm Alberto prompted hurricane warnings for the Big Bend and Nature Coast areas while Cedar Key was in the center of the predicted path. The community braced for a hurricane impact from Alberto in the media spotlight. Fortunately for the island, the storm made landfall further north maintaining a tropical storm organization. Street flooding was incidental and no physical damage was reported in the city. Normal operations were restored just two days after the storm passed with residents mingling about.

This brush with a tropical storm should reinvigorate the need to review emergency planning strategies and take advantage of the gift of time to include historic resources in their plans. Questions that remain include the following: Are there reasonable mitigation measures to strengthen historic buildings against a tropical storm and how do historic materials react to storm effects? What can the city do to manage historic resources in the wake of a hurricane? How would Cedar Key react to a Hurricane Katrina-type disaster?

¹⁸ Title 44 Emergency Management and Assistance, Code of Federal Regulations, Chapter 1 Federal Emergency Management Agency, Department Of Homeland Security, Oct. 2003, Part 60 Criteria For Land Management And Use, Variances and Exceptions. 12 Jun. 2006, http://a257.g.akamaitech.net/7/257/2422/04nov20031500/edocket.access.gpo.gov/cfr_2003/octqtr/pdf/44cfr60.6.pdf

¹⁹ The City of Cedar Key emergency plan was written in December 2005.

These are all questions that the city needs to be able to answer to understand why it is important to plan for a tropical cyclone event with regard to their historic fabric. This study investigates facets of historic preservation and disaster mitigation with their application to Cedar Key using the following program:

- Planning objectives that integrate a historic preservation element into the local emergency management plan.
- Development of tools to identify and assess risk to historic resources.
- Mitigation methods in the context of preparing for and dealing with the effects of a tropical cyclone event.
- Responsibilities of the historic preservation coordinator to enact the planning objectives.
- Application of design criteria to evaluate the compatibility of new development in the historic district.

Preceding this evaluation, a review of the historic context will be achieved through a historical and architectural compendium. The concentration of the historic architectural features is a valuable cultural and economic resource. Furthermore, the sense of place in Cedar Key depends on the integrity of these features.

The field of research relating to this subject matter is divided between two major areas of focus inclusive of historic preservation: federal roles and guidelines and disaster management and mitigation for building materials. Professionals in the public and private sector at all levels have contributed to this body of knowledge. Cedar Key can benefit from a study that applies these principles because this area has not yet been developed.

Recommendations to strengthen the city's preservation guidelines and interject these goals into the Comprehensive Emergency Management Protocol (CEMP) are made in Chapter 6. A designated historic preservation official should be appointed to oversee the building assessment, permitting, and rebuilding phase for historic resources and the

historic district. Risk assessment tools and Geographic Information Systems (GIS) will help the preservation official design a planning methodology that contributes some elements to the CEMP but more specifically a unique plan for historic resources. Chapter 7 applies the Secretary of the Interior's Rehabilitation Standards to building interventions to mitigate storm effects and Chapter 8 executes the responsibilities of the Historic Preservation Coordinator in the context of a tropical cyclone event. Historic building materials are investigated with respect to maintenance and building intervention activities. The duties of the preservation official include responsibilities derived from the CEMP that includes four stages: planning, preparation, recovery, and rebuilding. The consequences of new development in the historic district are probed in Chapter 9 as a result of building criteria for flood plain management that can have detrimental effects on the historic context. Compatibility criteria help to formulate an approach to this juxtaposition. Applying this research to Cedar Key generates a framework to reduce the risk of a tropical cyclone event upon the city's historic context to preserve its overall sense of place.

CHAPTER 3 EVOLUTION OF THE HISTORIC CONTEXT IN CEDAR KEY

The history and related architectural features of Cedar Key relate to its physical identity. Several events along the way have shaped the settlement and building traditions that portray its modern image that is a result of the American occupation of the area. This conveyance through time encountered military activities until about the time that Florida became a state. It was long associated with a transitory society of military occupants; and as it grew into a major port, travelers and mariners used Cedar Key as a resting spot. Two of the islands in the Cedar Keys were the principle islands for settlement, later known as Cedar Key and Atsena Otie. An area map depicts the relative location of these islands to the state in Figure 3-1. Prominent individuals motivated by personal gain effectively pursued these islands for private settlement, envisioning the same potential sought after by army officials for the advantageous geographical nature of the islands. Development of the islands was confronted with nature's assaults and limitations; as well as those of mankind. This chapter will explore this historic context¹ as an evolution to discover the basis for the architectural features that relate to Cedar Key's sense of place.

¹ The National Parks Service defines historic context as "an organizing structure for interpreting history that groups information about historic properties which share a common theme, common geographical location, and common time period," United States, Department of the Interior, National Park Service, *National Register Bulletin: How to Complete the National Register Registration Form*, 1977 (Washington: GPO, 1986) Appendix IV: 2.

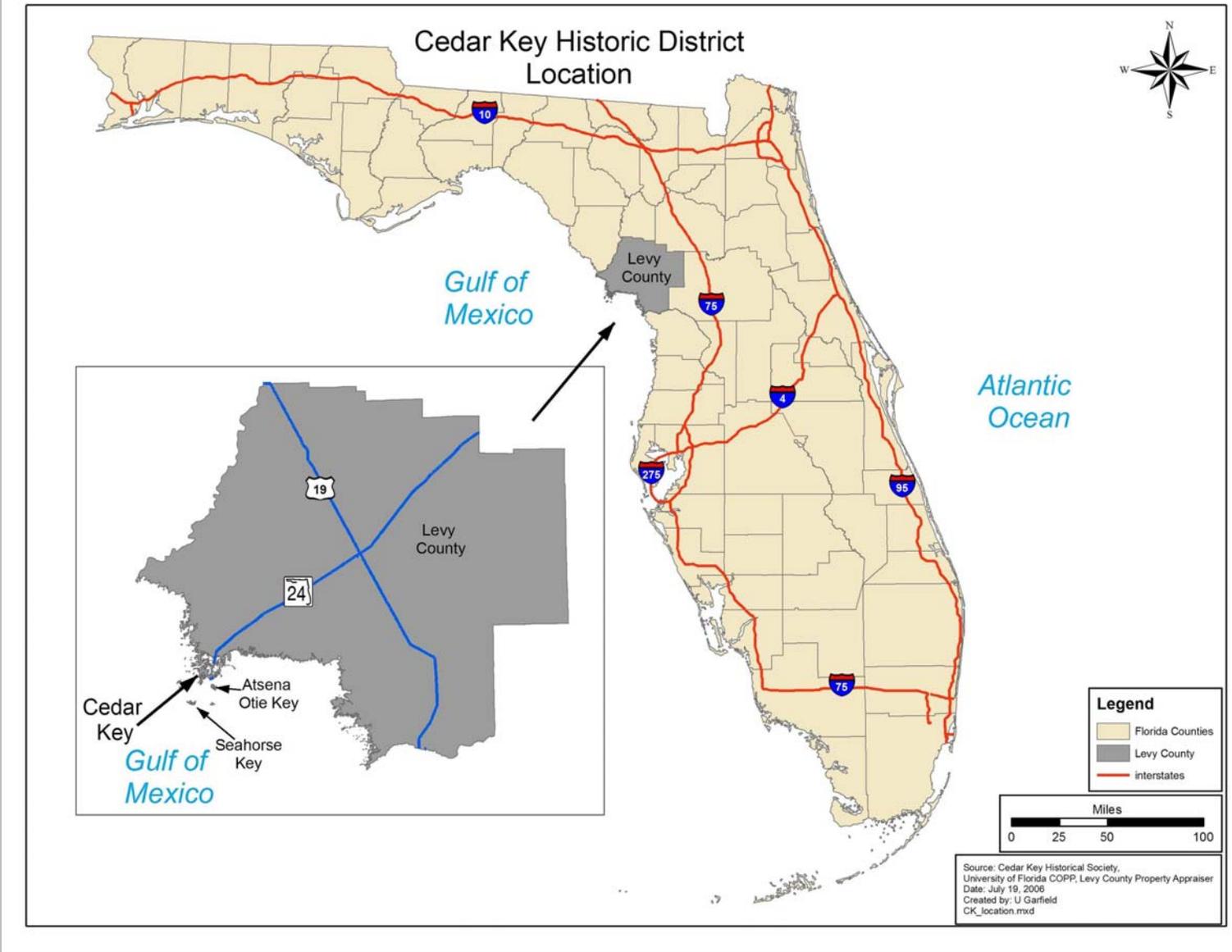


Figure 3-1 Location of Cedar Key, Florida, Ursula Garfield.

Historical Sketch

Cedar Key is nestled along the area of Florida's Gulf Coast referred to as the Nature Coast, which includes many islands in its vicinity giving it the name Cedar Keys. The period of significance for the Cedar Key Historic District is between 1839 and 1932, corresponding to the American occupation of the collective islands known as the Cedar Keys to the cessation of service of the cross-peninsular railroad.² Another period of significance applies to the islands' prehistory, however, an archaeological evaluation of these resources will not be addressed for the purposes of this research. Of the Cedar Keys, the first inhabited island was called Depot Key during its occupation by the U.S. Army at the time of the Second Seminole War, although it was later renamed Atsena Otie Key and incorporated in 1859.³ During the military period, Cedar Key was referred to as Way Key and was platted as a company town this same year but not recognized with legal authority until 1869.⁴ The lighthouse on Seahorse Key, another of the Cedar Keys, functioned as the navigational outpost during the historical period.

The history of Cedar Key can be traced through three categories describing distinct patterns of events that shape the historic context of Cedar Key. During the first period of historical reference, the American settlement of the Cedar Keys began as military installations and a trading center leading up to permanent settlement of two of the islands. While pursuing statehood, the tracks were laid for the first trans-peninsular railroad that

² Florida Department of State, Division of Historical Resources, Florida Master Site File, National Register of Historic Places Registration Form for the Cedar Keys Historic and Archaeological District Section 8 (1989) 1.

³ Fishburne 33.

⁴ Fishburne 78. The Florida Town Improvement Company continued to own vacant parcels and also leased property so it would not relinquish its hold on the island for the cause of the Florida Railroad, 90.

would later be rebuilt during Civil War reconstruction. Finally, economic decline and destruction gave way to new manufacturing opportunities before Cedar Key developed as the fishing and leisure destination it is known for today. The role of Cedar Key as one of Florida's first Gulf Coast communities is identified through these historical references.⁵

1839-1861: Before the Tracks

Geographically poised, the islands were noted for their proximity to rivers that could transport goods and military supplies advantageous to the United States during in the Second Seminole Wars. General Zachary Taylor was credited with realizing the potential that lie in the Cedar Keys as a military outpost that could be connected to inner posts along the Suwannee River using land across the state that was divided into a grid system.⁶ Dissolving the power of the Indians in this Florida territory was a necessary accomplishment to achieve statehood. A defense post on Depot Key (Atsena Otie) was constructed with military infrastructure including commander's quarters, a general hospital, doctor's quarters, quartermaster storehouse and office, as well as a couple small houses.⁷ Sea Horse Key was similarly occupied and used as a holding station for captive Indians and a base for Cantonment Morgan.⁸

Settlement of the territory of Florida was permitted following the close of the war. Two men by the name of Augustus Steele and David Levy Yulee partnered to promote Depot Key (Atsena Otie) and Way Key (Cedar Key), respectively.⁹ A hurricane in 1842

⁵ Historical periods are loosely based on the format used by Fishburne.

⁶ Fishburne 12-14.

⁷ Fishburne 36.

⁸ Fishburne 22-23.

⁹ Fishburne 39-40.

struck the keys and damaged the military facilities; but it did not deter Steele who purchased the surviving buildings and sought to develop the island.¹⁰ Commercial industry began to replace military operations; but the keys were still being taken advantage of for their waterway transportation link to the interior of the territory and through the open seas. By the late 1850s shipping industries included Cedar Key in its transit network alongside New England, New Orleans, and Havana.¹¹ Working toward a new transportation industry, Yulee invested many years planning a railroad network connecting the east and west coast of Florida using the Florida Town Improvement Company to acquire much of the land on Cedar Key that resulted in the first official survey of the island in 1859.¹² The next year the culmination of this effort was the arrival of Florida's first transpeninsular railway that "furnished transportation for thousands along the line and many to the then small village of Cedar Key."¹³ Meanwhile, cedar mills exploited this lumber resource on these two islands between the factories of

Eberhardt Faber (see Figure 3-2), Eagle Pencil, and F.A. Wolfe and Company providing employment for over 500 people lasting three decades as a strong economic base.¹⁴ A growing economy provided the foundation for the future of the Cedar Keys.

¹⁰ Ron MacIntyre, *Cedar Key...A Way of Life* (Gainesville: Wayside, 1950) 2.

¹¹ Fishburne 41.

¹² Fred Cubberly, "Cedar Keys," Manuscript Collection, University of Florida Special Collections, 10.

¹³ Captain T.R. Hodges, "Early Cedar Key Days Described by Descendent of One of First Settlers in that Historic Area," *Tampa Sunday Tribune* 21 Feb. 1954: 12-C.

¹⁴ Hodges 12-C.



Figure 3-2 Mill workers gathered outside E. Faber's Cedar Mill, January 1896. State Library and Archives of Florida, Call Number RC03279, *Florida Memory Project*, 29 July 2006, <http://fpc.dos.state.fl.us/reference/rc03279.jpg>.

1862-1884: Railroad and Reconstruction

Economic growth was forestalled as a result of destruction from the Civil War that threatened the viability of Cedar Key and its transportation network; having damaged the Sea Horse Key battery, railroad depot and wharf, telegraph office, turpentine warehouse, salt factory, and a ferry boat.¹⁵ Fort Number Four that was constructed under the Seminole War was the site of an engagement between Union and Confederate forces.¹⁶

Cedar Key was quick to rise to a recovery that catapulted it into a peak economic period. Rebuilding efforts took the opportunity to upgrade accommodations that attracted more tourists when the railroad was restored. One account cites that during the railroad boom the transportation of cargo as well as passengers supported six hotels such as the Suwannee with 200 rooms.¹⁷ Population began at 100 at the outset of the war, grew to

¹⁵ MacIntyre 3.

¹⁶ W.S. Yearty, "Yearty Family Papers," Manuscript Collection University of Florida Special Collections, 2. Cedar Key came under control of Union forces blockading the port. Fishburne presents the notion that it was an attack on the salt works as a much needed resource during the war that may coincide with the location of Fort Number Four, 67.

¹⁷ Meffert 71.

700 in 1870, and then increased to 1,887 in 1885 at its peak.¹⁸ A shift in population from Atsena Otie to Cedar Key was most likely the result of continued job growth due to the resurgence of the railroad and industrial growth:

Everything shipped south passed through Cedar Key because no railroads did.¹⁹

Investments were also being made for the infrastructure on Cedar Key to maintain the viability of the community in support of the rail road. The Town of Cedar Keys was incorporated in 1869 (later City of Cedar Key) as new homes were on the rise, port activities returned, sawmills and boatyards were in full swing, as well as community services such as religious fellowships, schools, sidewalks and talk of a roadway connection to the mainland.²⁰

1885-1932: Decline and Destruction

A turn of events brought development and industry to a halt. One of the events was the aftereffects of the new railroad connecting Waldo and Tampa that was orchestrated by railroad magnate Henry B. Plant in 1884.²¹ Tampa became a powerful competitor for commercial trade and would steal Cedar Key's monopoly in this Gulf Coast region. Additionally, a consistent hindrance to growth on Cedar Key was the Florida Town Improvement Company's hold on property that was not freed up until now.²² Natural resources were depleted because of the lack of conservation planning resulting in a

¹⁸ Fishburne 60, 70, 96.

¹⁹ St. Clair Whitman, Letter, Manuscript Collection University of Florida Special Collections.

²⁰ Fishburne 77-78, 81, 84-85, 90.

²¹ Fishburne 117.

²² Cubberly 10.

decline of the cedar and fishing industries by 1889.²³ A hurricane devastated the Faber Factory on Atsena Otie Key in 1896.²⁴ This hurricane was devastating to most residents on Atsena Otie and marked the decline of human occupation of the island. Some of the thirty-five surviving structures were transported to Cedar Key and can today be found sporadically throughout the historic district.²⁵ Damage was also significant in Cedar Key as evidenced in Figure 3-3. Their exact location is not known, but the adjacency of the buildings suggests they were located along Second Street.



Figure 3-3 Cedar Key buildings before and after the 1896 hurricane. State Library and Archives of Florida, Call Numbers RC03836 and RC03841, *Florida Memory Project*, 29 July 2006, <http://fpc.dos.state.fl.us/reference/rc03836.jpg>, <http://fpc.dos.state.fl.us/reference/rc03841.jpg>.

Cedar Key, in an effort to revitalize the economy, leased space in state newspapers to attract new business and visitors on behalf of the city council and board of trade. Various coastal Florida communities boasted a healing environment with leisure activities proclaiming Cedar Key as a “great family resort during all parts of the year for a lower cost but with the same pleasures of other coastal Florida vacation spots.”²⁶

²³ MacIntyre 4.

²⁴ Fishburne 164.

²⁵ Dr. John Andrews, personal communication.

²⁶ *Cedar Key, Florida* (Cedar Key: A Pepper Production), n.d.

Sponging along many Gulf Coast communities was also a popular new resource for industry. One of the vacated cedar mills was rehabilitated into an oyster canning plant, until oyster beds were exhausted by 1909, then Standard Manufacturing Company and Brush Factory took it over producing palmetto fiber brushes.²⁷ This factory offered stable employment for 130 people and had factories in Jacksonville and Sanford as well.²⁸

A major turning point in the history of the development of Florida was the collapse of the real estate boom in 1926. This event left many employees in construction searching for new work, leading some to migrate to Cedar Key and resulted in a slight population increase.²⁹ However, Cedar Key was experiencing a decline similar to the rest of the nation, with the onset of the Great Depression and followed by the final closure of the Florida Railroad in 1932.

The years since the 1930s have been marked with little activity on Cedar Key. No new manufacturing industries settled on the island. Enactment of the Net Ban in 1994 dealt a blow to the fishing industry in Cedar Key but turned working residents to clam farming as an alternative economic resource.³⁰ However, the area continued to be known for its tranquility and leisure fishing opportunities along what is today referred to as the Nature Coast. The island faces challenges to determine where it will go next as it reconciles new development with the desire of the community:

²⁷ Cubberly 10.

²⁸ Hodges 12-C.

²⁹ Peter Edward Burtchaell, "Economic Change and Population at Cedar Key," thesis, University of Florida, 1949, 55.

³⁰ Jenna McKenna, "Cedar Key Marks Net Ban Anniversary," *Chiefland Citizen* July 2006, 27 July 2006 http://www.chieflandcitizen.com/articles/2005/11/10/news/local_news/news02.txt.

Perhaps through all the years of turmoil and struggle...Cedar Key may revert back to what she was originally founded for back in 1842 when Augustus Steele said, "This climate...this beauty was meant for people to enjoy." Yes, of course Cedar Key in completing her cycle...returning to being a resort town, which, for the town will solve its economic problem, and to the visitor it will supply a vacation land with historical background.³¹

Figure 3-4 reveals the current ratios of existing historic buildings that fall within the historical time periods. Their existence, or lack thereof, is a combination of historical events and modern development.

³¹ MacIntyre 6.

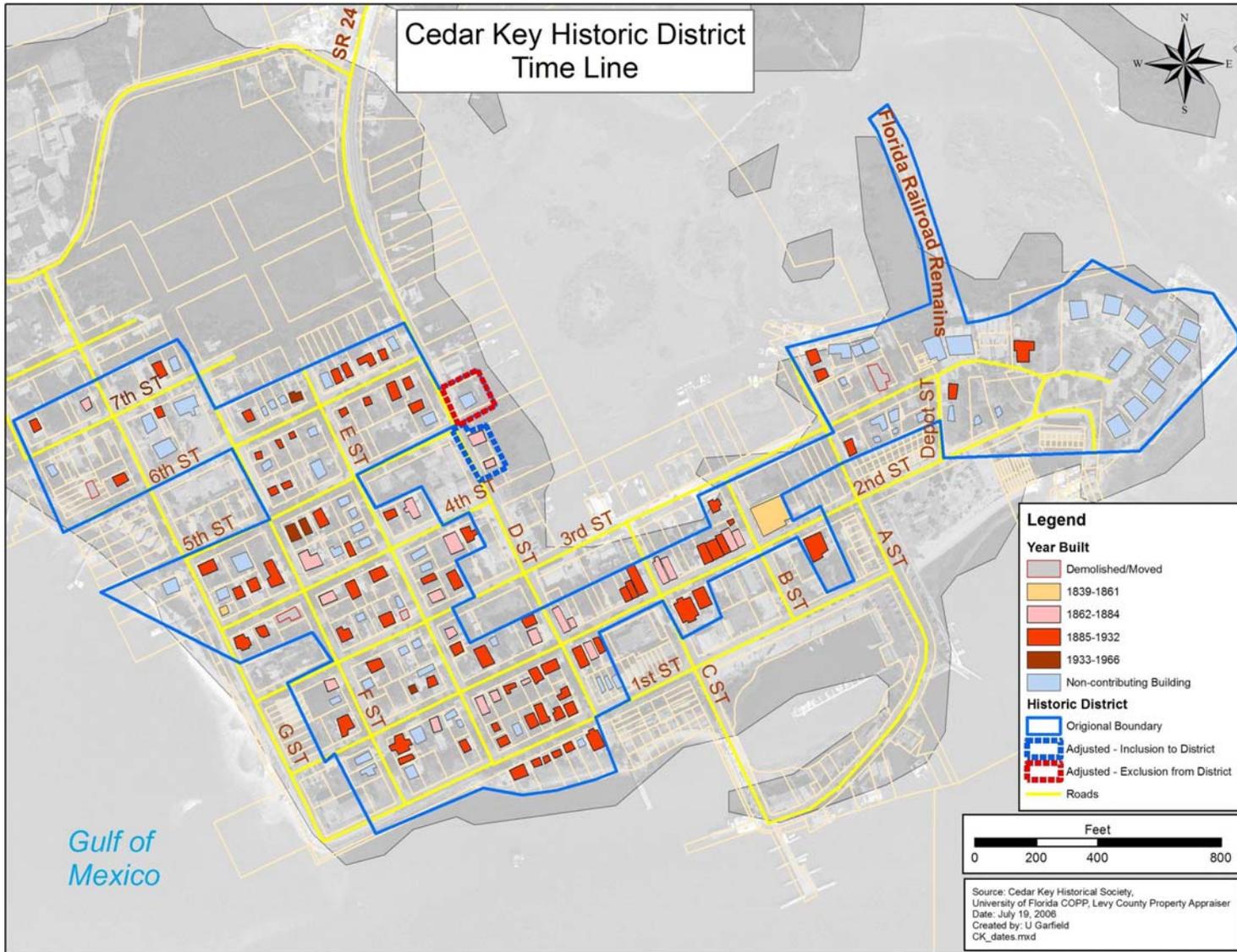


Figure 3-4 Disbursement of existing historic resources in the historic context, Ursula Garfield.

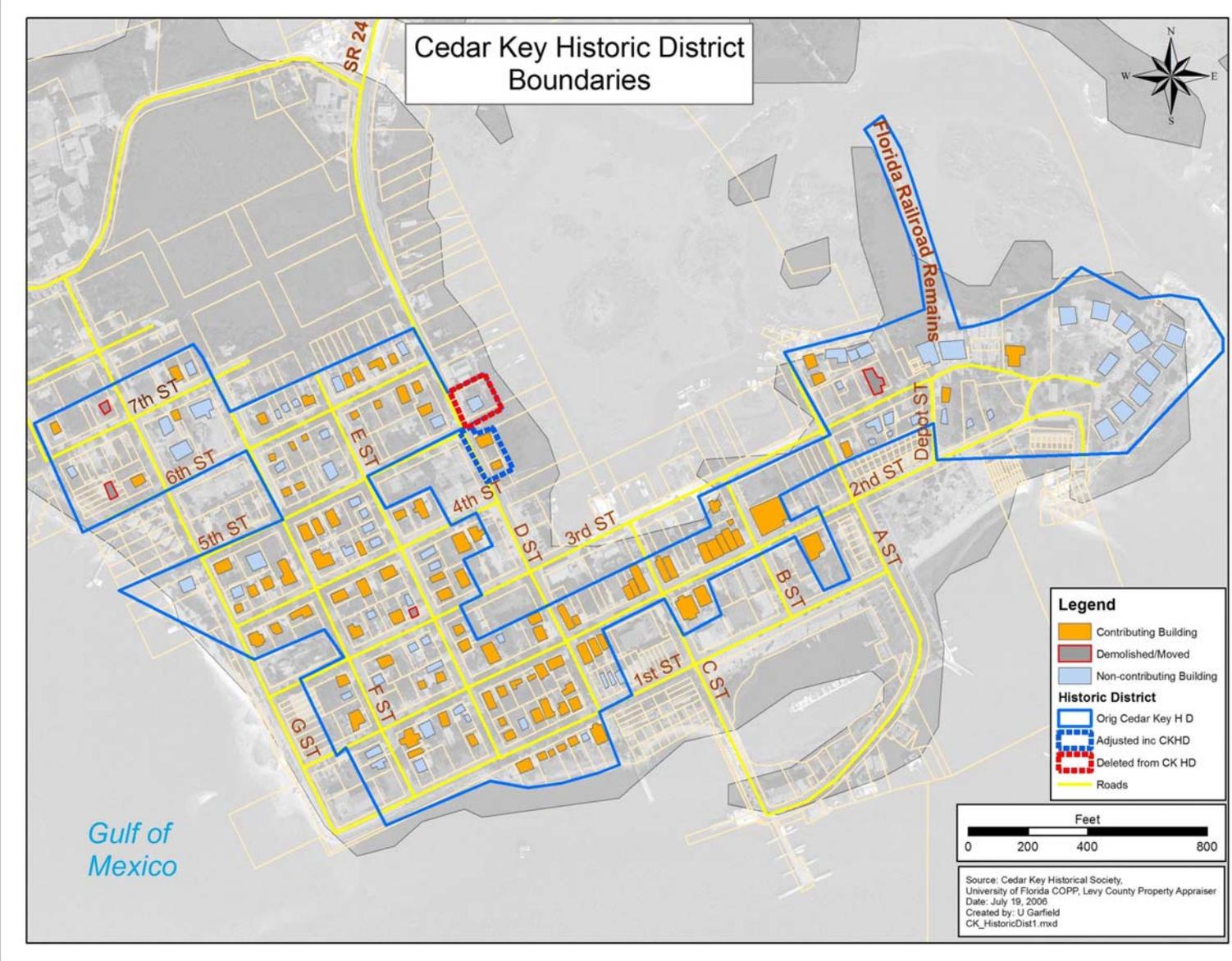


Figure 3-5 Cedar Key Historic Architectural District, Ursula Garfield.

Architectural Sketch

The Cedar Keys Historic and Archaeological District was listed on the National Register of Historic Places in October 1989 with 119 contributing structures and 36 contributing sites.³² An architectural boundary was delineated within the overall district to encompass the original town settlement and serves as the boundary for this study. Figure 3-5 illustrates this boundary and the prominence of contributing buildings. Along Second Street, historic commercial buildings comprise a majority of the main street buildings. Gaps in this area are a result of vacant lots and modern development. The remaining majority of historic structures in the district serve a residential use, either permanent or seasonal. Figure 3-6 reveals the organizational pattern of the historic resources within the district boundaries. Historic resources categorized as “sites” within this district will not be included for this analysis. Archaeological remains require a unique set of guidelines from those that apply to buildings and suggest the need for future research to address the relationship between disaster mitigation and historic preservation.

Historic resources are evaluated for significance in accordance with the four criteria established by the NR to warrant its national recognition. The historical events during this time period support the nomination of the district under NR criteria A for the broad patterns of events characterizing the development of the islands as well as NR criteria D for the potential to reveal yet more information regarding this history. Finally, criteria C refers to the significance of tabby construction materials for a few of the buildings and

³² Florida Department of State, Division of Historical Resources, Florida Master Site File, National Register of Historic Places Registration Form for the Cedar Keys Historic and Archaeological District Section 3 (1989).

is supplemented by the concentration of historic buildings present in the district that share a common history.

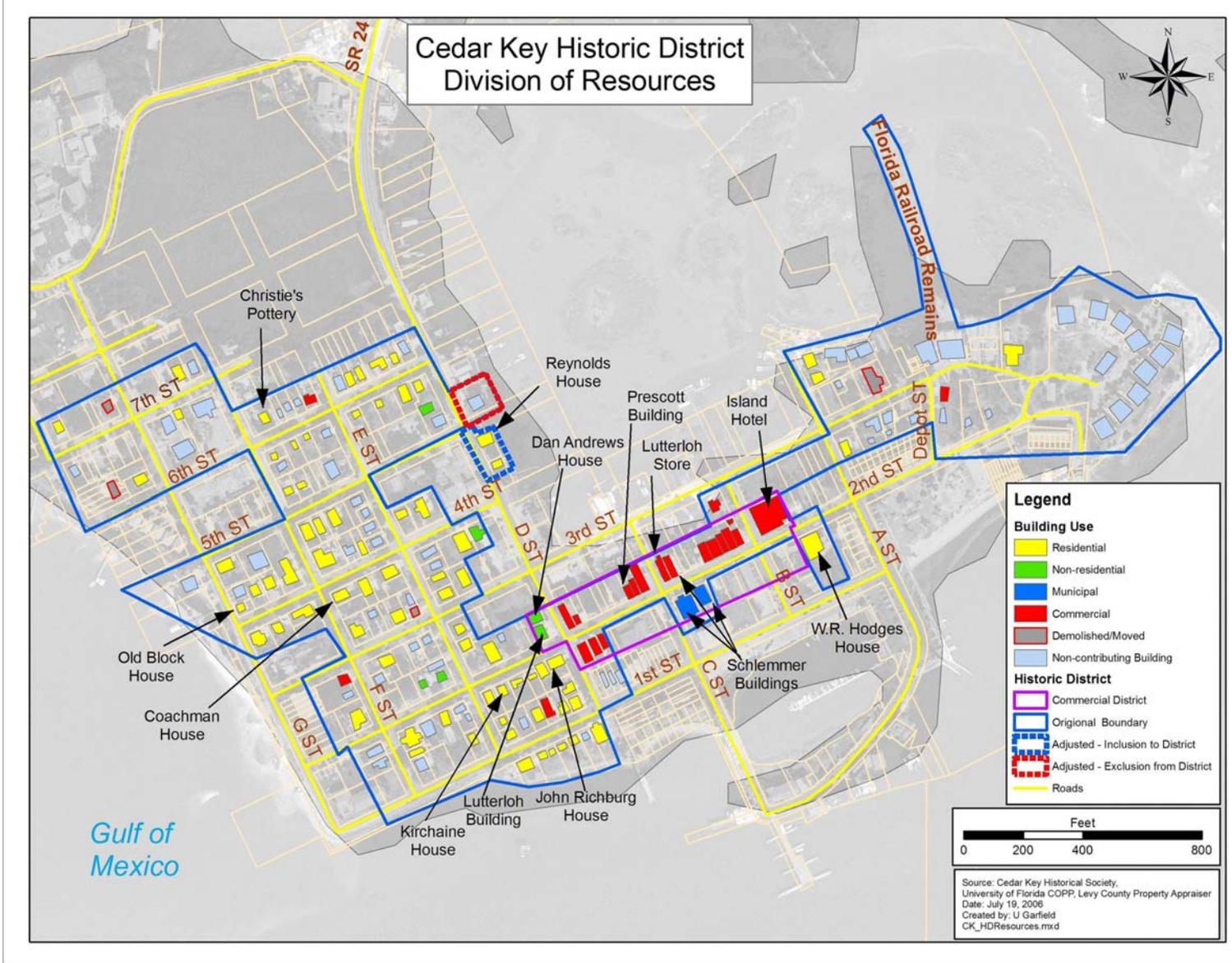


Figure 3-6 Disbursement of existing historic resources by sector and use, Ursula Garfield.

The built environment of Cedar Key is significant for its association with a unique period of Florida history as an example of an early Gulf Coast community. This community, when inhabited by the Americans, was used as a military outpost, a port community, and terminus to the first Gulf to Atlantic railroad. The building stock has adapted over time as the island outgrew these historical uses but represent the endurance of historic structures. A selection of the unique and common historic architectural elements of the district will be presented within either the commercial or residential sector as a sampling. Building traditions for Cedar Key are identifiable within either category and serve as the basis to promote their preservation during the mitigation and planning approach for a tropical cyclone event.

Historic Commercial Sector

For the purposes of this study, the commercial sector is located along Second Street bound by D and A streets, outlined in Figure 3-6. D Street is the local roadway transportation artery in and out of the island, which is the terminus of Highway 24. This roadway was not the historic arrival and departure method so it does not represent a historical boundary; however, it is a logical boundary that follows the modern development of the commercial sector. Second Street is the historic and modern main street corridor that provides commercial services now including retail, restaurant, lodging, traveler resources, and the local government center. Although buildings have been rehabilitated into different uses, these services were similar to those provided for historically when the island was a thriving port and railroad destination. The commercial sector is the epicenter of the community where residents and visitors alike congregate.

Along these three blocks of Second Street, with an extension to the southwest corner of Second and D Streets, are 19 historic buildings representing commercial or

community purposes.³³ The historic buildings along this street are generally characterized as having vernacular design, rectangular plans, and two stories. Several of the prominent two story buildings feature two-tiered wrap-around porches with most other buildings in the interior of the block featuring a second story porch. Tabby is one of the unique building materials utilized in a couple of these buildings and is usually only found in Florida's historic buildings in St. Augustine, Florida.

The scale and organization of the buildings relates to a pedestrian scale since the facades are placed up to the sidewalk, with the sidewalk being mostly covered from the individual porches and awnings. Another contributing factor that identifies the pedestrian scale is the entry and fenestration pattern that, in combination with their physical dimension, regulates the space with repetition. Except for a vacant lot and a vehicular-oriented parcel, the buildings are placed in close proximity to one another establishing a sense of continuity. Redevelopment recommendations to mediate the lack of continuity created by these parcels are suggested later in this study. The identifiable attributes that are common to the commercial sector should be maintained in variations of design when considering future infill development. Landmark buildings in the commercial sector are recognized in the following section and their location is depicted on Figure 3-6.

Island Hotel

Located on the northeast corner of B and Second streets, this landmark icon of the island was built in the early 1860s during the early settlement period of the island. This masonry vernacular building was constructed in anticipation of the success that the

³³ These buildings are listed in Appendix A.

Florida Railroad would bring and as such is represents an early commercial structure.³⁴ The construction method employed tabby material that is sealed with stucco. Using the space it occupies on a corner parcel, it features a two story wrap-around porch recognizable from Figure 3-7. Pairs of French doors and large multi-lighted windows are regulated between the six bays of the porch support posts. Originally operating as the Parson's and Hale General Store, in 1915 it was rehabilitated as a hotel – the same use it serves today. The Island Hotel is a contributing structure to the historic district, but it was individually listed on the National Register in 1984, significant for its historical representation of the island's history and unique architectural features.



Figure 3-7 Island Hotel, Cedar Key. Personal photograph by author. 14 Jun. 2006.

³⁴ Florida Department of State, Division of Historical Resources, Florida Master Site File, National Register of Historic Places Registration Form for the Island Hotel Section 8 (1984).

F.E. Hale Building

A partner with Parson, Hale is associated with another tabby building constructed near 1880 during the decades of ebb and flow in the economy.³⁵ It is a two story masonry vernacular building rectangular in plan and about one-fourth the massing of the Island Hotel (Figure 3-8). The rhythm of the three-bay, two-tiered porch is repeated in the symmetrical orientation of the entry and fenestration on the ground level. The posts feature delicate corner brackets and a turned-post balustrade on the gallery level. This building has served several functions from its origins in retail to its current use as a restaurant.



Figure 3-8 F.E. Hale Building, Cedar Key. Personal photograph by author. 22 Oct. 2004.

Schlemmer buildings

Another significant name in the historic context of the commercial development of Cedar Key is the Schlemmer family. Three buildings comprising a small compound

³⁵ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00207.

facility with a grocery, bakery, and hotel carry this name.³⁶ The grocery and bakery building is a brick masonry vernacular design built contemporary to the F.E. Hale Building and now stands vacant.³⁷ The two story building features a two bay porch on both levels and a series of three identical lighted entry doors and transoms (Figure 3-9). Scrollwork and turned posts embellish the porch as rounded moldings and raised paneling adorn the façade. Across the street, the other two buildings from this family compound exist in rehabilitated functions as a library and city hall. Both are of a frame vernacular design; however, the library repeats the two story, two-tier porch built to the sidewalk and was originally connected with the bakery by a second level frame deck.³⁸



Figure 3-9 Schlemmer Grocery and Bakery, Cedar Key. Personal photograph by author. 22 Oct. 2004

³⁶ The latter of these was destroyed by a hurricane and later rebuilt but is still historic.

³⁷ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00162.

³⁸ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00169, and LV00170.

Prescott Building

The Prescott building is noteworthy as a surviving example of building patterns on the island of Atsena Otie, which was settled before Cedar Key. It was moved from the island after the devastating hurricane just prior to the turn of the twentieth century.³⁹ In Figure 3-10, similar design features between the two islands are evident with the frame vernacular design and a two story, two-tier porch; although the original porch fabric has been replaced. A distinguishing feature in this building is the recessed double entry.



Figure 3-10 Prescott Building, Cedar Key. Personal photograph by author. 11 Aug. 2004.

Lutterloh Building and Lutterloh Store

In the 1870s, these two buildings were constructed for two different members of the Lutterloh family. The first building constructed was the Lutterloh Building (Figure 3-11), built in a frame vernacular design as a residence and featuring the commercial design of the two story, two tier porch now housing the Cedar Key Historical Museum.⁴⁰ It

³⁹ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00159.

⁴⁰ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00152.

displays a four bay porch system and asymmetrical entry and fenestration pattern that may have been the distinguishing factor to define it as residential at the time. It has simple square porch posts and turned post balustrade while the building envelope is covered with stucco. The other Lutterloh building (Figure 3-12) is also constructed of tabby – taking advantage of the setting’s corner lot with an L-shaped wrap-around porch. The Second Street façade is divided into a symmetrical and simple fenestration pattern with a double door entry. While the building is now vacant, it housed grocery and retail stores and most recently a real estate office.⁴¹ The Lutterloh Building is located on the southwest corner of D and Second streets while the Lutterloh Store is located on the northeast corner of C and Second streets.



Figure 3-11 Lutterloh Building, Cedar Key. Personal photograph by author. 22 Oct. 2004.

⁴¹ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00145.



Figure 3-12 Lutterloh Store, Cedar Key. Personal photograph by author. 22 Oct. 2004.

The historic commercial buildings represent a majority of the buildings located in the boundary identified as the commercial sector. Within this majority, only eight of the buildings were constructed after the turn of the century speaking to the endurance through the climate and economic conditions the island has been subjected to. The materials, scale, and spatial rhythm of this corridor function toward the pedestrian environment that contributes to the social identity and economic vitality of the downtown.

Historic Residential Sector

The highest concentration of historic residential structures is located in the old town area of the island and there is only a sporadic few located outside of the architectural district. Geographically, the area is bound by the Gulf of Mexico at First Street northwest to the high school at Widdon Avenue incorporating the remainder of the island west to east that is H Street through Depot Street. The varied arrangement of the buildings on the parcels and the lack of sidewalks distinguish the design of the residential sector from the commercial, although they share a similar scale.

The residential structures in the old town amount to about seventy buildings varied in design filling in the immediate area of the commercial sector and expanding outward. This concentration of historic residential buildings and the proximity to the commercial sector make a significant contribution to the composition of the historic district. During the settlement of the island, it was important to maintain the connectivity to the commercial sector due to early transportation methods. A grid network facilitated this connectivity as well as the proportions of the building to the parcel that establishes the rhythm of the residential sector.

The residential architecture identified with Cedar Key can be generally referred to as a vernacular design:

There are no well-developed examples in Cedar Key of the Revival and Romantic styles of architecture that were popular in [the] second half of the 19th century and early 20th century.⁴²

Influential details from established styles do appear as a secondary consequence from these styles. The architectural diversity of these influences are likely a result from the island's port history that connected New Orleans, Key West, and Cuba, and later railroad line that connected the Gulf and Atlantic oceans across the state of Florida.

Representative examples of historic architectural residences will be addressed that highlight these influences and their location is depicted on Figure 3-6.⁴³

⁴² Florida Department of State, Division of Historical Resources, Florida Master Site File, National Register of Historic Places Registration Form for the Cedar Keys Historic and Archaeological District Section 8 (1989).

⁴³ These buildings are listed in Appendix A.

Coachman House

The Coachman House is an 1882, two story townhouse form featuring asymmetrical fenestration on the lower level constructed with tabby.⁴⁴ This building sets on a corner lot two blocks north of the commercial sector set back from the street just enough for a small buffer. Greek Revival-inspired features include the wood six-pane glazed windows with horizontal transom on the entry and while this building lacks the signature classical columns and capitals, in a vernacular setting square columns are typical.⁴⁵ In Figure 3-13, the main elevation features a two tier porch regulated by a three bay system that is replicated in the fenestration. Along with the Old Block House, these may be the only examples of a residential use of tabby in Cedar Key.



Figure 3-13 Coachman House, Cedar Key. Personal photograph by author. 18 Sept. 2004.

⁴⁴ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00183.

⁴⁵ Virginia and Lee McAlester, *A Field Guide to American Houses*, 1984 (New York: Alfred A. Knopf 2002) 182.



Figure 3-14 Old Block House, Cedar Key. Personal photograph by author. 18 Sept. 2004.

Old Block House

This tabby, masonry vernacular building has been dated to before 1870, occupying a corner lot at the intersection of Sixth and G streets with a side view of the Gulf.⁴⁶ It stands rectangular in plan with the most prominent feature being the covered porch and second story balcony (Figure 3-14). Older photographs depict bracket embellishments on the under side of the balcony that do not remain. While the hip roof has a gradual pitch with extended eaves, there are no cornice brackets or exposed rafter tails. This house is within walking distance to the commercial sector but lacks a sidewalk and retains the average setback exhibited in other residential buildings.

Reynolds' House

Set along the gateway into the old town on D Street is the Reynolds House that was constructed in approximately 1875.⁴⁷ Its features are diluted details of the Gothic Revival

⁴⁶ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00178.

⁴⁷ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00205.

with the emphasis on the central gable in addition to lacy bargeboards, bay window, and veranda with carved posts (Figure 3-15). More common for a wood frame structure in this style would have been a vertical board and batten sheathing that stressed verticality and a pointed rather than rounded arch.⁴⁸ The simple pedimented windows on this building are typical of the Greek Revival tradition. This one-story home is set back about ten feet from the sidewalk and features side porches resulting in a combination that creates an appropriate harmony of public and private space.



Figure 3-15 Reynolds' House, Cedar Key. Personal photograph by author. 24 Sept. 2004.

⁴⁸ John C. Poppeliers, *What Style is It? A Guide to American Architecture*, Rev. ed. (Hoboken: John Wiley and Sons, 2003) 48-50.



Figure 3-16 Kirchaine House, Cedar Key. Personal photographs by author. 18 Sept. 2004.

Kirchaine House

The Kirchaine House was built in 1884 and is situated just beyond the commercial sector of Second Street. An unimposing streetscape from this two story building featured in above is the result of an appropriate setback from the sidewalk proportioned with its height (Figure 3-16).⁴⁹ Fenestrations feature simple molding patterns and is complemented with a contrasting color scheme to balance the front elevation. Variations of spindlework along porch detailing, scrollwork appliqué, and cornice brackets are associated with the Folk Victorian style while this example features the two tiered porch as a southern adaptation.⁵⁰

⁴⁹ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00153.

⁵⁰ McAlester 314.

W.R. Hodges House

In another prominent location is the 1910 W.R. Hodges House, located at the eastern terminus of the historic commercial sector.⁵¹ While it features contrasting materials with the pattern shingles in the gable fronts typical of the Queen Anne design, it presents a symmetrical façade with the double wrap-around porch and double gable.⁵² Figure 3-17 illustrates a wider footprint, relative to other residential buildings, with a five-bay façade and is one and one-half stories in height. The wrap-around porch provides an inviting appearance but is afforded semi-privacy with the steeply pitched hip roof and is also set back from the public space in a proportionate manner.



Figure 3-17 W.R. Hodges House, Cedar Key. Personal photograph by author. 11 Aug. 2004.

⁵¹ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00171.

⁵² Poppeliers 73.



Figure 3-19 John Richburg House, Cedar Key. Personal photograph by author. 22 Oct. 2004.

John Richburg House

This 1904 residence features an overlapping front gable and a full width porch that dominates the front elevation.⁵³ Exposed rafter details and simple square porch posts along with a lower pitched gable emulate the Bungalow design (Figure 3-18). A subset of the Craftsman, this style describes the single story vernacular use.⁵⁴ The fenestration repeats the three bay program of the porch that is symmetrically balanced. On a corner lot, a limited front setback is offset with the ample side yard. This residence is located on the southwest corner of the Second and D Street intersection, however; it has recently been rehabilitated to house the Cedar Key Chamber of Commerce.

Christie's Pottery

Located on Sixth Street near the area referred to locally as the African American neighborhood, this is a pre-1900 simple frame structure with a gable front orientation and

⁵³ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00209.

⁵⁴ McAlester 454.

three bay hip-roofed porch covering its full width.⁵⁵ This narrow, one-room wide arrangement is attributed with a New Orleans freedmen influence in the Shotgun style, alternatively a logical solution for a narrow lot (Figure 3-20).⁵⁶ The façade presents an asymmetrical fenestration pattern and is located relatively close to the street with no sidewalk.



Figure 3-20 Christie's Pottery, Cedar Key. Personal photograph by author. 24 Sept. 2004.

The historic residential buildings of Cedar Key represent various periods of development from its initial settlement before the arrival of the railroad to the time of the Great Depression. Architectural designs have been influenced from railroad transportation as a result of varied materials and transient experiences.⁵⁷ This may explain how varied details borrowed from mainstream styles accrued on buildings that did not otherwise depict an individual strength. In Key West, the Conch Style resembles

⁵⁵ Florida Department of State, Division of Historical Resources, Florida Master Site File Form LV00195.

⁵⁶ McAlester 90.

⁵⁷ McAlester 89.

Cedar Key vernacular with the front gable orientation, two-tiered porch, with simple columns and balustrades that were later embellished with decorative brackets and cornices as a result of transitory residents.⁵⁸ One pattern has remained the same over time and that is the scale and proportion and the feature most important in warm southern climates: the porch. Buildings are varied in design and color but establish a common sequence of public and private space.

Sense of Place

It is place, permanent position in both the social and topographical sense, that gives us our identity.⁵⁹

Expressing the sense of place that Cedar Key exudes is achieved by the composition of the historic context that identifies the cultural landscape. Identity, being the descriptive language by which ‘sense’ of place is qualified, is rooted in the cultural landscape of a community where the landscape is a collection of thematic expressions. The social sense as it relates to identity is not tangible but defined by the cultural features, one of which is a conveyance of history through the evolution of time. A community’s cultural influence is a dialogue with the landscape; being an artful interplay between the new and the old, rendering a framework by which to value each contribution.⁶⁰ Topographic features can be interpreted as the designed interventions that provide a physical representation of space. The exploration of the historic context in Cedar Key is the built environment that is thematically associated with time. The

⁵⁸ Ronald W. Haase, “The Florida Vernacular,” University of Florida College of Architecture [College of Design, Construction, and Planning] Design Studio, January, 1984, 36.

⁵⁹ John Brinckerhoff Jackson, *Discovering the Vernacular Landscape* (New Haven: Yale University Press, 1984) 152.

⁶⁰ Christian Norberg-Schulz, *Architecture: Presence, Language, Place*, ed. Claudio Nasso and Serena Parini, trans. Antony Shugaar (Milano: Skira editore, 2000) 221.

principal contribution of the historic context is that it establishes the identity of the sense of place generated in Cedar Key through the inventory of historic resources.

The historic architectural fabric in Cedar Key is paralleled with the topographic features of the cultural landscape. It also provides the physical context for the way in which a person interacts with the environment most notably as a pedestrian which relates to the historic settlement patterns of the island. The settlement patterns on the island were a reflection of the transportation facilities that set a hierarchy of functional centers. The port was essential to the livelihood of the island for a long period, especially when the railroad was built that could transport goods more efficiently to the interior of the state. The original town was platted on a grid, then, oriented out of convenience with the shape of the island parallel to water's edge. The residential sector fills in the areas surrounding the commercial sector, mostly concentrated toward the northwest of the commercial sector. Less emphasis was placed on the immediate proximity of the residential sector to the port. Cedar and miscellaneous manufacturing mills were located at the extremities of the island in the westerly and easterly direction, not including the factories on Atsena Otie. It was practical for these operations to be placed within a reasonable proximity to the port. The locations of these sectors establish their hierarchical relationship in the historic context that was a result of pragmatic and functional design. Finally, Cedar Key's historic district is a walkable community in terms of distance and the occupational experience. Building setbacks, sidewalks, and human scale design an intimate relationship in the public spaces.



Figure 3-20 Residential design features. Personal photographs by author. 5 Aug. 2006.

The architectural components of the landscape create a contextual relationship for the setting of the identity of place in Cedar Key. In the architectural study of this chapter, common features are the residential porch (Figure 3-20), orientation of the residential building toward the street as to interact with the public space, in conjunction with the commercial space that is characterized by two-tiered porches that envelop the public space of the sidewalk, shown in a series in Figure 3-21. The scale from these features engages the proportion of the human body by providing a space that creates an intermediate room within the public space, refer to Figure 3-22. Materials on most of the historic buildings are an honest representation of a natural resource that is manipulated in form as a construction material while also serving the function it appears to be designated for. Decorative features compliment the structural mass and again contribute to the human scale of the visual and occupational spaces when used to filter spatial connections.



Figure 3-21 2nd Street from Island Hotel facing northwest, Cedar Key. Personal photograph by author. 14 June 2006



Figure 3-22 2nd Street Intermediate Rooms of Public Spaces, Cedar Key. Personal photographs by author. 15 June 2006.

The identity of place requires an emphasis on characteristics that promote distinction between one place and another that must extend beyond a geographical location. The evolution of the culture of a community is driven by the inherent diversity

of the people and the environment that comprise a place which should persevere in future development. Preserving the historic context is challenged in Cedar Key because of the contrasting principles of preservation guidelines and new construction requirements strictly regulated by flood plain management criteria. Building materials must sustain designed wind loads regulated by the Florida Building Code. The effects of compliance are not as holistic and detrimental to the historic context. Mitigating the effects of a tropical cyclone involves planning initiatives that deal with emergency management as well as redevelopment practices that can compromise between the effects of infill development and structural mitigation. This should be treated as an opportunity to contribute to the historic context while fostering the genuine sense of place for Cedar Key.

In times of high social mobility and in a market place which produces homogenous cookie-cutter sprawl irrelevant to local history, real places are important in defining ourselves. Connections to historic places tie us to our culture and make us and it relevant; these connections nourish our civic culture.⁶¹

⁶¹ F. Lawrence Oaks, "The National Register: A Road Map to Preserving a Sense of Place," *Cultural Resource Management*, 25.1 (2002): 18.

CHAPTER 4 LITERATURE REVIEW

Framework to Engage Historic Preservation with Disaster Management Planning

The state of Florida has made individual progress in the area of disaster management and historic preservation with the 2003 publication *Disaster Planning for Florida's Historic Resources*. This resource has provided the most thorough identification of the fundamental components to incorporate consideration for historic resources into the local disaster plan. Historic preservation legislation, authorities within the federal, state, and local governments/communities, and the authorities within the emergency management arena are recognized as influential decision makers in this study area.¹ In doing so, this publication presents useful tools that educate communities on the importance of their historic resources and recommendations on how to protect them. The components that were applied to the Cedar Key case study can be divided into two applications – local policy procedures the city can adopt and tools the local preservation official can use to carry out the procedures.

In the first application, recommendations were made to the Cedar Key emergency management framework to account for historic property management. These improvements include the provision of a historic preservation coordinator for the damage assessment process, analysis of debris and staging areas for their potential to affect

¹ 1000 Friends of Florida, Florida Department of State Division of Historical Resources, Division of Emergency Management Florida Department of Community Affairs, *Disaster Planning for Florida's Historic Resources*, September 2003.

historic resources, and education of local emergency officials on their historic resources.² In the second half, the historic preservation coordinator will facilitate these procedures with the emergency planning officials, create a historic preservation response network, maintain a historic resource inventory, develop an expedited architectural review process, and participate in the local mitigation strategy.³ The Florida publication provides a useful foundation to suggest an infrastructure that can be applied to the overall disaster planning program in Cedar Key.

Carl Nelson's *Protecting the Past from Natural Disasters* was written in response to two major disasters in 1989, the Loma Prieta earthquake and Hurricane Hugo that struck Charleston, South Carolina. In the foreword, the former California Governor Pete Wilson makes the remarkable observation:

There is an unreported toll from natural disasters, one that may not be as immediately recognized as the tragic loss of life, limb, or vital infrastructure. Yet this loss – of historic places – goes to the heart of America's towns and neighborhoods.⁴

This observation is a simple statement that underscores the purpose behind Nelson's book. He addresses the need to enact a thorough plan to mitigate disastrous threats in a rational format using community and national resources to reduce the degree of destruction a disaster can present. The subject matter is divided to follow the analysis of disaster planning and mitigation tactics before, during, and after, that have been practiced or are recommended. Nelson asserts that communities facing different threats each require unique plans because "the degree of predictability in many ways mandates

² 1000 Friends of Florida 21, 39.

³ 1000 Friends of Florida 17.

⁴ Pete Wilson, Foreword (Foreword) by Carl L. Nelson, *Protecting the Past from Natural Disasters* (Washington: National Trust for Historic Preservation, 1991) 4.

disaster policy, because those historic places where the potential threats are known can adopt a systematic approach to undertaking preventive measures as well as preparing responses.”⁵ The sequential framework will contribute to the program that is studied in this thesis, tailored for the unique circumstances and characteristics in Cedar Key that focus on a tropical cyclone event.

In the process of studying the structure of disaster management, Nelson provides important guidelines that are incorporated as responsibilities of the historic preservation coordinator in Cedar Key. Damage recovery requires detailed damage assessments, procedures to regulate demolition, and communication of the appropriate treatment of historic properties – all to promote an overall preservation ethic.⁶ While Nelson makes a generalized proposition for preservation agencies to work with government agencies in the disaster planning process, disaster planning is systematically addressed to historic property owners rather than to the local government.⁷ The responsibility of disaster management ultimately belongs to the local government because of the ability to be the first responder. Building upon the overall framework and preservation principles that Nelson established, this study emphasizes how historic preservation can become a component of the existing local emergency planning process. The proposals generated from this thesis will also draw from *Disaster Planning for Florida’s Historic Resources* to generate a specific program for Cedar Key.

⁵ Carl L. Nelson, *Protecting the Past from Natural Disasters* (Washington: National Trust for Historic Preservation, 1991) 68.

⁶ Nelson 97, 112-113, 121-122.

⁷ Nelson 66-67.

Another resource of particular influence on this study formulated immediate response objectives after a disaster that contributed to the recovery phase recommendations for the historic preservation coordinator. *The First Ten Days: Emergency Response and Protection Strategies for the Preservation of Historic Structures* by Milford Wayne Donaldson postulates ten procedures that educate emergency personnel and provide a structure that can be followed during times of crisis management.⁸ These response measures supplement the important points that will be recommended for Cedar Key, with adjustments made to account for the availability of technical and financial resources.

Historic Preservation Principles

The formal historic preservation movement began in this country in the 1960s with the landmark legislation being the Historic Preservation Act of 1966. This Act set forth the federal authority to carry out historic preservation regulations, to recognize historic resources, and the dispersal of this authority to the state governments. In the federal branch, this policy is carried out under the Secretary of the Interior within the National Parks Service. The National Register of Historic Places and the State Historic Preservation Official (SHPO) were established from this act. Federal tax credits provide incentive for the respectful management of historic buildings using the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards). These standards were adopted in Cedar Key's Comprehensive Plan and Land Development Regulations and are nationally recognized as the authority for determining the

⁸ Milford Wayne Donaldson, "The First Ten Days: Emergency Response and Protection Strategies for the Preservation of Historic Resources," in *Disaster Management Programs for Historic Sites*, eds. Dirk H.R. Spenneman and David W. Look, (San Francisco and Albany: Association for Preservation Technology (Western Chapter) and The Johnstone Centre, Charles Sturt University June 1997) 28.

appropriate decisions during the process of four treatments. The four treatments are preservation, rehabilitation, restoration, and reconstruction, in order of the degree of intervention with the existing building fabric. Building features, site, setting, and special requirements are evaluated with respect to each treatment.⁹ Mitigation and recovery activities relating to a tropical cyclone event, and new development in the historic district, will be evaluated according to the Standards by the architectural review board in Cedar Key. Interpreting the Standards for recovery and redevelopment can also encourage preservation agencies, state and federal agencies, and private entities to contribute technical and financial assistance. Because these resources are limited in Cedar Key, complying with the Standards is an opportunity to obtain much needed support.

The Act also requires federal governments to consider the effects of their actions on resources that are listed on or eligible for listing on the National Register. The Federal Emergency Management Agency (FEMA) is the primary federal agency that provides disaster relief. This agency is subject to Section 106 review, the process by which the potential to effect historic resources is evaluated, even during disaster recovery. Within disaster recovery circumstances, alternative procedures to complete this review have been devised with a Programmatic Agreement between FEMA, the Advisory Council on Historic Preservation (ACHP), and the SHPO to streamline the procedures and parties

⁹ Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties: With Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*, United States, Department of the Interior, National Park Service, Preservation Assistance Division, (1995) 2.

involved.¹⁰ The Cedar Key historic preservation coordinator can facilitate this process by supporting FEMA officials to complete the review efficiently and effectively.

The National Trust for Historic Preservation (NTHP) is a non-profit agency that advocates historic preservation and has published many technical reference documents to assist preservation efforts. Two publications relate specifically to promoting historic preservation principles in historic districts. Ellen Beasley's *Design and Development: Infill Housing Compatible with Historic Neighborhoods* provided rational proposals to reconcile compatible design. Beasley asserts that the context of historic resources guides infill projects and that new developments should be measured by sensitivity to the context rather than to a prescribed design.¹¹ The second publication relating to compatibility titled *Design Review in Historic Districts* describes qualities of a successful preservation ordinance and design review procedures.¹² These publications contribute to the evaluation of Cedar Key's existing preservation principles while addressing the nature of compatible design in the historic district. Because Cedar Key is located in a coastal environment, it is subject to unique conditions with distinct building codes that address flood and hurricane resistant construction methods and materials. These guidelines do not address recommendations that compromise between building regulations and preservation guidelines. Research relating to designing compatible

¹⁰ United States, Department of Homeland Security, Federal Emergency Management Agency, *Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation Planning*, May 2005. 22 June 2006 http://www.fema.gov/pdf/fima/386-6_Book.pdf, a-10.

¹¹ Ellen Beasley, *Design and Development: Infill Housing Compatible with Historic Neighborhoods* (Washington: National Trust for Historic Preservation, 1998) 2, 5.

¹² Rachel S. Cox, *Design Review in Historic Districts* (Washington: National Trust for Historic Preservation, 2003) 3-11.

solutions is limited but is expected to become available in the near future as a result of the 2005 devastation from Hurricanes Katrina and Rita in the Gulf Coast.

The historic resources in Cedar Key are a contributing factor to the sense of place that is a result of the historic architectural fabric. Historic preservation guidelines can support the recognition of the significance of these resources. Principles derived from this thesis research provided the supporting foundation of the recommendations in this study.

Mitigation for Historic Resources

The most recent publication that addresses hazard mitigation for historic resources is *Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning*. While this FEMA publication develops an intensive process to develop mitigation planning measures for a local community, mitigation activities and examples that recommend ideas to resolve historic preservation principles and building codes resulting from the National Flood Insurance Program (NFIP) were emphasized in this thesis. Five degrees of mitigation are identified (in ascending order) and equated with the following mitigation options: basic property improvements, retrofitting, elevation, relocation, and demolition.¹³ The mitigation analysis of this study uses this structure to identify mitigation options and their applicability relating to historic materials and building conditions distinctive to Cedar Key. The process of assigning value to the historic resources that the FEMA publication uses requires a separate analysis to determine its accuracy and effectiveness and was not used during this study.

¹³ FEMA 386-6 3-10, 3-17.

Several articles contributed to mitigation methods for historic building materials related to the wind, water, and mold hazards of a tropical cyclone event. *Disaster Management for Cultural Properties* emphasizes the benefits of mitigation and recommendations for sensitive interventions that encouraged historic preservation principles during the mitigation recommendations for Cedar Key. Another set of NTHP publications offered invaluable wisdom to this study. A concise guide for hurricane mitigation, *Hurricane Readiness Guide for Owners and Managers of Historic Resources* instructed mitigation recommendations for roofs and windows in Cedar Key. Historic materials and building conditions subjected to water present a unique set of responses that is the subject of *Treatment of Flood-Damaged Older and Historic Buildings*. Specific applications to Cedar Key relate to the traditional use of brick foundations, interior wood and plaster, and porches.

The combination of this literature led to the initial question of how to negotiate planning and building mitigation measures against the effects of a tropical cyclone event and has also informed the development of methods employed to reach a conclusion. Cedar Key is faced with challenges to the historic context as a result of a tropical cyclone hazard. There is a limited body of literature dedicated to the development of disaster management programs that focus on how the local government can adopt historic preservation guidelines within their emergency management process. However, planning initiatives and building mitigation opportunities for individual sites have been identified that can be combined to make the connection between local government and historic preservation. In order to create a program that is specific to Cedar Key, the historic context has been analyzed to assess building traditions that are important to preserve and

promote through sensitive new development. Specific methods to mitigate the existing regulatory framework and storm effects can then relate to the building materials and conditions unique to Cedar Key as part of an overall planning program.

CHAPTER 5 RESEARCH METHODS

The field of research relating to historic preservation and planning for tropical cyclone events exists as a component of the overall disaster management programs. Recent literature is beginning to address the need for local emergency management agencies to integrate historic preservation principles into their plans. The predominant body of research has focused on the roles of property owners/managers for mitigation and the response of the government after the disaster. Planning considerations addressed as a component of the local disaster mitigation process can reduce the short-term and long-term loss of historic resources. The accompanying research from this study to reduce the vulnerability of the historic context in Cedar Key to the hazards of a tropical cyclone event will help bridge the connection between historic preservation and local disaster management officials.

Research methods of this study confronted the following question: what planning methods can be adopted in Cedar Key to preserve the historic context from the effects of a tropical cyclone event? The focus on Cedar Key as a single-case study is a result of the unique opportunity to cast the existing body of research into the specific framework of the local government. It represents a “critical case” with a “clear set of propositions as well as the circumstances within which the propositions are believed to be true.”¹

¹ Robert K. Yin, *Case Study Research*, 1984 (Newbury Park: SAGE, 1989) 47.

An explanatory approach for the case study used suggestions from different components of *Disaster Planning for Florida's Historic Resources, Protecting the Past from Natural Disasters*, and *The First Ten Days: Emergency Response and Protection Strategies for the Preservation of Historic Structures* to formulate components necessary to integrate preservation considerations into Cedar Key's existing emergency management program. Based on these recommendations, strategies to preserve historic resources are different from the general field of disaster management.

The field of historic preservation is the circumstantial environment to support the propositions. Historic materials require unique mitigation treatments and are subjected to preservation guidelines. Furthermore, studies of the effects from tropical cyclones on historic materials have proven that mitigation can strengthen the building against this disaster.² Communities can suffer an economic and social loss if the historic resources are extensively damaged. Resources supporting historic preservation were used to engender a preservation ethic within the local community to promote a mitigation program.

The process of building a preservation ethic in concert with the planning program of this research occurred through an explanation-building process. This manner of research can lead to policy recommendations based on significant propositions.³ One discovery was that the local emergency plan does not provide a thorough platform to integrate a preservation-oriented process of disaster management. To accommodate the remaining

² Dr. Bernard M. Feilden, "Protection of our Cultural Heritage Against Natural Disaster," *Protecting Historic Architecture and Museum Collections from Natural Disasters*, ed. Barclay G. Jones (Stoneham: Butterworth, 1986) 24.

³ Yin 113.

propositions, a new unit of the government was recommended to facilitate these measures; along with other preservation guidelines under the authority of the local government.

The analytical structure of this study was supplemented with subordinate elements with results that contribute to the overall program. Using an embedded design can be a useful tool to focus a case study.⁴ Each unit of this study builds a component that will function to create a multi-faceted mitigation process to address the challenges to historic preservation and tropical cyclones in Cedar Key. In summary, the products include provisions for historic resources in the Comprehensive Emergency Management Plan (CEMP), the establishment of a Historic Preservation Department/Coordinator, identification of the responsibilities of this department related to the context of a tropical cyclone event, and considerations for evaluating new development in the historic district.

Synthesizing references into a program designed for Cedar Key required various procedures to obtain information. Documentary evidence confirmed the historical significance of Cedar Key that lies in its territorial settlement, the railroad, and the economic trends of industry reported in published and non-published historical accounts. Archival records accounted for information that was deduced from the University of Florida Special and Area Collections that yielded personal accounts of the historical settlement. In addition, the Florida Master Site File of the Division of Historical Resources provided the National Register nomination package and individual forms for each of the contributing historic resources. Other forms of evidence collected for this research are informal interviews and direct observations. Field visits to Cedar Key

⁴ Yin 50.

supplied the physical contextual study that was necessary to understand the spatial relationships in the historic district. During some visits, informal interviews with local officials and preservation community leaders helped to formulate the current nature of historic preservation management, local regulations, and anecdotal historical references. After Hurricane Ivan, Pensacola was observed for the effects of the hurricane on the local historic resources that identified how building materials react and how building maintenance can correspond with the damage.

The explanatory research method investigated how to combine historic preservation and disaster management using the single-case study in Cedar Key. Comparatively less information has been published to solve these matters at the local level of government where mitigation and planning measures can have the most impact. Furthermore, Cedar Key does not have a defined strategy to deal with the effects of a tropical cyclone event on the historic context that could prove detrimental. This study makes explicit recommendations that will help drive this discourse locally and inform other communities threatened from tropical cyclones on the methods and considerations to adopt historic preservation into local disaster planning programs.

CHAPTER 6
DISASTER PLANNING FOR HISTORIC RESOURCES IN CEDAR KEY

Currently, most interactions between emergency management and historic resource personnel occur after a disaster.¹

This statement on behalf of the Florida Division of Historic Resources identifies the lack of preparation before a disaster occurs, a key opportunity for improvement in the disaster management planning arena across the state including Cedar Key. Federal and state agencies have begun to recognize the relationship between historic resources and community viability and in many cases now recommend they be considered in local disaster planning strategies. The current infrastructure of the City of Cedar Key provides an emergency management plan to activate the necessary functions of government to protect the community from any given emergency. But this plan does not address unique principles relating to the management of the city's historic resources that contribute to the sense of place unique to Cedar Key. Also, there is not a mitigation plan in place to actively reduce the damage potential from the onset of any disaster. The island of Cedar Key has a high risk that it will succumb to a tropical storm event with the potential to destroy the historic context it has built up over the last 150 years. Vulnerabilities are due to its inherent state as a barrier island on the Gulf Coast and its depressed topography that increases its exposure. This chapter focuses on the tropical cyclone risk – one that has the greatest potential impact on the widest range of resources.

¹ 1000 Friends of Florida 12.

The goal of this study is to identify important planning components and tools that Cedar Key can incorporate into the emergency plan in response to the specific hazard of tropical cyclones for historic resources. To this end, this chapter begins by identifying the existing framework that guides historic property management in Cedar Key known as the ‘Comprehensive Plan’ and ‘Land Development Regulations.’

Current Preservation Policies: Comprehensive Plan and Land Development Regulations

The Comprehensive Plan of the City of Cedar Key provides goals, objectives, and policies that are carried out in the mandates of the Land Development Regulations (LDR). Historic properties are managed through various components of these regulations with the expressed integration of historic preservation tenets into the operational activities of the city as applicable. The Comprehensive Plan (Plan) calls for the consideration of historic resources within the Future Land Use, Conservation, Housing, and Coastal Management Elements, as well as the protection of historic resources prescribed in the Historic Preservation Element.

The Future Land Use Element defines the city’s goals regarding redevelopment in the historic district and the protection of historic resources, with the provision that the historic character is maintained and coastal management principles are met. In order to facilitate some components of these tasks, the Historic Preservation/Architectural Review Board (ARB) was created under this authority.² This board acts as a clearinghouse to make judgments and recommendations on the compatibility of new development and to monitor alterations to historic buildings through requests for a Certificate of

² “Comprehensive Plan: Goals, Objectives, and Policies: Future Land Use Element 1-4A.8,” *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005).

Appropriateness (COA). The five member board is comprised of citizens appointed by the city commission and currently are meeting on an as needed basis. In Article III of the LDRs, details of COA requirements are addressed within the context of the creation of the local register of historic resources. In this segment, design and demolition criteria by which the COA is evaluated as well as factors to be considered with infill development are presented. The density values for redevelopment projects in the historic district are to be consistent with the existing development or as historically documented.³ The Board then presents its comments and proposals to the City Commission for their final recommendation.

The Conservation and Historic Preservation Elements are dedicated to the responsible management of the city's historic and cultural resources. The first article of the LDR recognizes the inventory of historic resources (equivalent to the architectural district) catalogued on site locally and recorded with the state.⁴ This cataloguing process contributes toward the goal of creating an accessible inventory of historic and archaeological data. Using the Standards, the Historic Preservation Element promotes historic property rehabilitation; suggesting in some instances that a public acquisition process be used to rehabilitate a building into public service. Grants and other economic incentives have assisted private rehabilitation projects and other projects to achieve the goals of the Plan with regard to historic preservation. Another objective is for the city to apply for the Florida Certified Local Government (CLG) program. Linking the three

³ "Comprehensive Plan: Goals, Objectives, and Policies: Future Land Use Element 1-1.2," *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005). Also, redevelopment in the district must conform to FEMA and Coastal Management construction standards.

⁴ "Land Development Regulations 1.03.10 C," *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005).

levels of government, CLG communities can obtain funding to assist identification, evaluation, and protection assistance for historic property management.⁵

Opportunities for redevelopment are also considered within the Housing Element. The prioritization of the inventory of historic properties, along with a conceptualized plan, determines those resources that would be appropriate for rehabilitation or demolition in favor of development that promotes the character of the city.⁶ Economic incentives would be allotted to private developers to this end.

The Coastal Management Element includes design and construction features that are regulated by FEMA policies in order to participate in the NFIP, supplemented by other local regulations as a result of the geography and topography of the city. Areas categorized by FEMA as a V-zone are labeled by the city as a coastal high hazard area – further limiting and strictly regulating development in these zones. These areas are subject to flooding with wave action measured by a velocity factor. Article V and portions of Article VI of the LDRs address regulations regarding development within this area and the building construction methods required in the city as a whole. The Comprehensive Plan adopts FEMA policies addressed in the U.S. Code of Federal Regulations allowing a variance for the repair or rehabilitation of historic buildings to be eligible for the NFIP.⁷

⁵ Florida Department of State, Division of Historical Resources, *Planning for the Past: Preserving Florida's Heritage* (March 2002), 9.

⁶ “Comprehensive Plan: Goals, Objectives, and Policies: Housing Element 6.2,” *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005).

⁷ Title 44 Emergency Management and Assistance, Code of Federal Regulations, Chapter 1 Federal Emergency Management Agency, Department Of Homeland Security, Oct. 2003. Part 9 Floodplain Management And Protection Of Wetlands, Mitigation. 12 Jun. 2006, http://a257.g.akamaitech.net/7/257/2422/04nov20031500/edocket.access.gpo.gov/cfr_2003/octqtr/pdf/44cfr9.9.pdf

Additionally, the city has made the allowance for a historic building to be moved into a coastal high hazard area as long as it maintains its pre-existing elevation above the Base Flood Elevation (BFE).⁸ Newly constructed buildings, or existing buildings that undergo substantial improvements must be elevated at or above the BFE and limiting the ground space to non-habitable use.⁹ In the historic district, this condition could account for an elevation above the ground plane an estimated 10-16 feet. The specific elevation required is calculated by a surveyor or engineer in accordance with the existing elevation subtracted from the elevation factor of the V-zone as indicated on the Flood Insurance Rate Map (FIRM). One drawback to applying the variance is that it may result in higher premiums to account for the additional risk to life and infrastructure. The city has adopted the Coastal Construction Manual, Florida Building Code, and considerations for historic properties therein, as supporting construction requirements for new buildings and those being substantially altered.

In sum, since the “alteration of an historic property” is defined as a “development or development activity,” special consideration is required under the authority of the city to manage historic properties.¹⁰ Furthermore, the goals, objectives, and policies related to historic preservation are issued in compliance with state objectives to ensure that historic resources are taken into account and that the “quality of life, economy, and cultural

⁸ Personal Communication, Building and Zoning Department, Cedar Key.

⁹ “Substantial improvements” are improvements that exceed 50% of the market value. The variance allows historic buildings to be exempt, an important compromise that is favorable for rehabilitation projects.

¹⁰ “Land Development Regulations 12.00.03 F,” *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005).

environment” is preserved.¹¹ The laws of the National Historic Preservation Act are thereby dispersed to state and local programs by the enactment of these policies.

Evaluation

The goals and codes for historic preservation are an important tool when considering the necessary response to a natural disaster such as a tropical cyclone event. This tool has the power to regulate mitigation approaches that can affect the integrity of a historic building in its physical appearance and structural performance. In the unfortunate event of a disaster, these policies have the power to manage the rebuilding activities that affect the entire historic district. It is essential for Cedar Key to maintain the integration of historic preservation goals and municipal codes to preserve the buildings that contribute to the historic context, especially in the event of a disaster.

Within this existing framework of historic preservation policy, there are opportunities for improvement to strengthen the management capabilities of Cedar Key’s historic properties. Urban landmarks conservationist Anthony Tung has noted communities must achieve binding laws absent of loopholes such as owner consent and obligatory grace periods for demolition permits.¹² These provisions would be delineated in local preservation ordinances. However, across the country it is difficult for authorities to distinguish between the fine line of preservation and property rights. Cedar Key policy does not require owner consent for listing historic properties but does review written objections during the evaluation proceedings.

¹¹ Florida Statutes, 2006. Chapter 267 Historical Resources, Stat. 267.061, 10 Jun. 2006, http://www.flsenate.gov/Statutes/index.cfm?App_mode=Display_Statute&URL=Ch0267/ch0267.htm

¹² Anthony Tung, “Tourism, Development, and the Historic City,” Florida Trust for Historic Preservation Annual Statewide Conference, The Biltmore Hotel, Florida, 19 May 2005.

The preservation policies in Cedar Key fall in line with the basic elements of a historic preservation ordinance including the statement of purpose, definitions, creation and authority of a review board, and identifying designation criteria and procedures.¹³ However, the authority of the ARB could be enhanced to resolve the lack of stability and potential for communication conflicts that exist within the current practice. The all-citizen panel could be supplemented with a city official whose terms of service and community interests will be sustained.

Currently, the design criteria used by the board relies upon the Standards to regulate new development and historic building alterations.¹⁴ To increase the efficacy of the goals of the Comprehensive Plan, preservation guidelines can expand on the foundation of the Plan. These policies can articulate specific guidelines to promote design that is within the character of the historic district. This is a project that the city is taking under consideration for the near future.

There are many goals outlined in the Plan that are yet to be realized that directly relate to historic preservation. Some of these objectives include the '5 and 10 Plan' to identify buildings or areas that could benefit from rehabilitation using an inventory that prioritizes these areas, a wider use of the Tourist Tax and proposed Enterprise Fund to promote historic preservation both in education and practice, and application for the Florida CLG program.

It is challenging for small communities to find the human and financial resources to carry out thorough preservation policies. Part of the problem is that the discourse of

¹³ Cox 3-4.

¹⁴ 'Standards' refers to the Secretary of the Interior's Standards for Rehabilitation of Historic Properties

preservation is not always objective, rather, there are ethical interpretations that vary by individual. Examples include the extent of the power that a preservation ordinance can wield against a property owner's rights to make alterations to their property that requires a determination of an appropriate treatment. Subjective evaluations extend into material selection, design of the alteration, and maintenance. Planning and preservation officials must consider how one project affects the larger context while operating under different programs that can lead to inter-agency conflict. This conflict is the basis of the argument that this study examined. To resolve the conflict between preservation representatives, local officials, and the general public, the ethics and advantages of historic preservation need to be promoted through educational initiatives to have an effective impact:

the greatest power to preserve our cultural resources lies at the local level.¹⁵

Achieving certified local government status can help to support this effort. It would provide policy and technical support as well as the eligibility to apply for matching grants to enact the city's preservation goals and educate the public on preservation principles.

Planning Methodology

Mitigating the effects of a tropical cyclone event requires the umbrella activities of planning, followed by the enactment of the plans with the intention to lessen the impact of this disaster. Planning initiatives are a result of a risk assessment that determines the hazards and vulnerabilities of a given disaster.¹⁶ Cedar Key is at risk for a tropical cyclone hazard, which has been established due to its geographical characteristics and historical precedence. The following four segments are recommendations that include

¹⁵ Florida Department of State, Division of Historic Resources, *Planning for the Past: Preserving Florida's Heritage* (March 2002) 9.

¹⁶ Barclay G. Jones, "Assessing Dangers," *Protecting Historic Architecture and Museum Collections from Natural Disasters*, ed. Barclay G. Jones (Stoneham: Butterworth, 1986) 91.

planning measures and tools based upon the need for Cedar Key to address vulnerabilities within the city and county level of government: Cedar Key Comprehensive Emergency Management Plan, Levy County Local Mitigation Strategy, Historic Resource Inventory, and Division of Resources.

Cedar Key Comprehensive Emergency Management Plan

A consensus was reached in a workshop of Florida historic preservation experts that historic preservation should be integrated into the local emergency management plan.¹⁷ The 2004 storm season that preceded this discussion pointed to the ill-fated conditions that Arcadia and Charlotte County encountered as a call to action. Using this foresight, the current Cedar Key Comprehensive Emergency Management Plan will be examined for opportunities to intersect emergency management and historic preservation. The emergency planning document for Cedar Key is intended to be used by city officials, and the insertion of historic preservation considerations will be addressed in a fundamental manner. To support these recommendations, responsibilities of a historic preservation position to supplement planning and mitigation measures will be identified later in this study.

In emergency situations, chaos and confusion can overwhelm a stated emergency plan and standard operating procedures. The risk to historic structures is hurried assessments, incompatible repairs, and unnecessary demolitions, in part or in full.¹⁸ The first task is for the city to recognize the authority that will facilitate the historic preservation components of the emergency management plan. The fundamental

¹⁷ Dave Baber, Alex Magee, and Nancy Freeman, "Disaster Preparedness," Florida Trust for Historic Preservation Annual Statewide Conference, The Biltmore Hotel, Florida, 19 May 2005.

¹⁸ 1000 Friends of Florida 3.

foundation is an official designation of historic preservation responsibilities within the context of the organizational chart of the Cedar Key Comprehensive Emergency Management Plan, and referenced throughout the plan. Fulfilling this tenet is a recommendation for the city to staff an official historic preservation position, Historic Preservation Coordinator (HPC), under the umbrella of a Historic Preservation Department (HPD) that also serves as chairman of the ARB to strengthen the existing preservation policies of Cedar Key. The HPD will then be equally represented among the five other city departments. This representation will enhance inter-agency operations making it easier to monitor public and private developments to ensure considerations are made for historic resources. Facilitating a regular schedule for the ARB meetings is another benefit from the HPD. Adopting this plan to establish a permanent position within the city government empowers the enactment of the preservation principles.

One of the requirements for the HPC is to engage the disaster management guidelines. Following recommendations of *Disaster Planning for Florida's Historic Resources*, the HPC should be included in city emergency planning meetings to represent planning principles for historic resources and prepare alternative operation procedures to expedite the response period between the review board and permitting process.¹⁹ This position would enable a productive method to facilitate between the ARB and the Building and Zoning department directly. Other recommended responsibilities include conducting professional evaluations to ensure that the building conditions are properly assessed and distributing information that encourages property owners to take on repairs

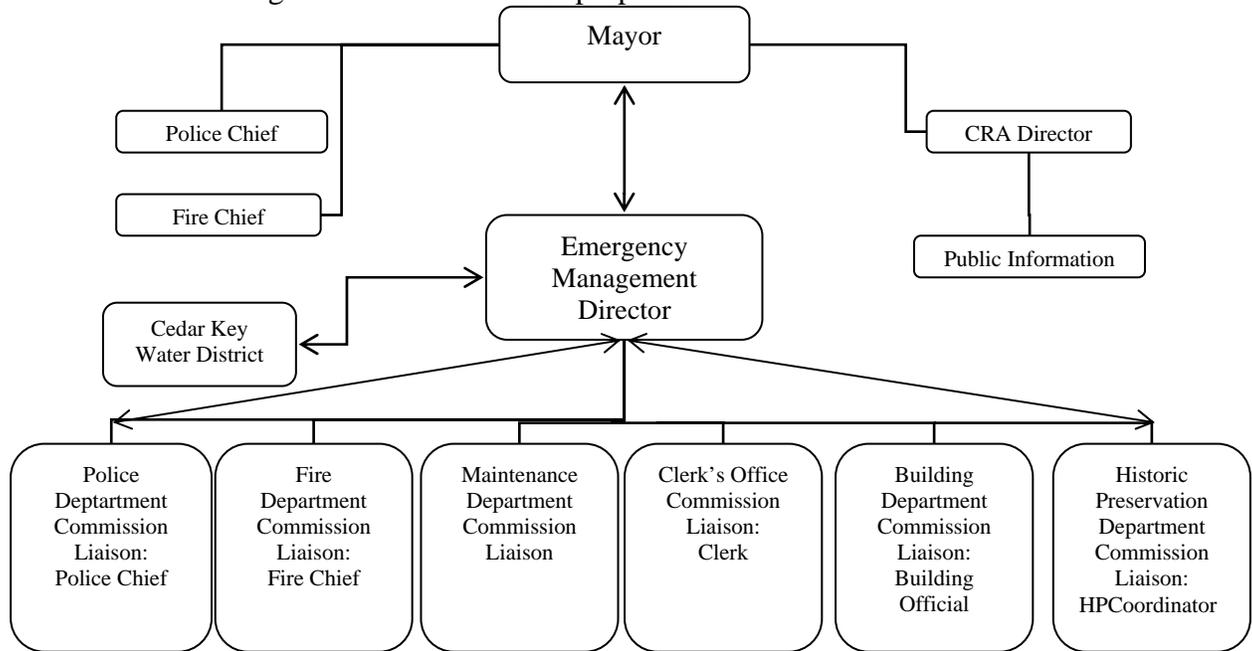
¹⁹ 1000 Friends of Florida 30, 39.

appropriate for their historic buildings.²⁰ ARB members should be supporting constituents of this process.

The advantage of having historic preservation considerations in an emergency situation is to ensure that the decision-making process involves the values of the city's historic resources. The current emergency management plan, existing as a draft document dated December 2005, does not account for the impact of a disaster upon these resources. The historic resources in Cedar Key contribute to the sense of place, which is attributed to the historic context of the island and thereby stimulate the local economy. With a projected impact of a severe tropical storm event, many of these resources could be undermined and potentially lost. The local government can prevent the degree of damage to historic resources by incorporating planning measures into the existing emergency management framework. Following the designation of preservation responsibility, the next step is to examine the emergency planning document to determine where historic preservation and emergency planning intersect.

²⁰ Nelson 111-113, 126.

Table 6-1 CEMP Organizational Chart with proposed HPD



Source: Cedar Key Comprehensive Emergency Management Plan

The organizational flowchart in “Chart No. One” of the emergency plan illustrates the local government infrastructure (Table 6-1).²¹ The HPD should be listed as an entity adjacent to the Building Department. Emergency management duties for the HPD will be referenced in the ‘Recovery Annex,’ the third section of the document. In the fourth section, titled ‘Mitigation Annex,’ the city recognizes that land management and building codes are useful tools to reduce the impacts of hazards upon its community. The third paragraph states the following:

Emergency Management takes the lead on mitigation strategies for the City of Cedar Key, with the Building Department coordinating plans and building codes with the Fire Department and the CRA assisting in the area of fire inspections and educational opportunities for City employees, and Maintenance responsible for storm water management and infrastructure considerations.²²

²¹ Pat O’Neal, “Cedar Key CEMP,” E-mail to the author, 30 May 2006.

²² O’Neal, Cedar Key CEMP.

At this point in the document, compliance with the separate HPD disaster planning document should be referenced. Segregating the duties of historic preservation and emergency management will help facilitate mitigation plans for buildings in the historic district, to be discussed later in this study, without lessening the importance of life safety mitigation measures. The CEMP continues to outline the hazard events that place high emphasis on the hazards of flooding/storms and tropical storms/hurricanes. The mitigation responsibilities of each hazard highlight the department(s) that would be involved in each phase. In response to flooding/storms, the Maintenance Department is the key department to address the debris removal process. In this regard, it would be prudent to acknowledge debris removal concerns for historic properties, again referring to the HPD responsibilities.²³ All departments have active responsibilities in the mitigation response for the tropical storm/hurricane hazard, which would include the Historic Preservation Department.

The last section of the emergency planning document is the Recovery Annex that describes the roles and responsibilities of city officials and their respective departments during the short term and long term recovery period. The departments that the HPD would work closely with are the Building Department and the Maintenance Department, both of which report to the Emergency Management Office. Table 6-2 lists the recommended role and responsibilities of the HPD, shown with the existing responsibilities of the Building and Maintenance departments as listed in the CEMP document:

²³ 1000 Friends of Florida 44.

Table 6-2 Responsibilities of the Building Department, Maintenance Department and (proposed) Historic Preservation Department.

2.2 Building Department (*existing*)

- Participate in Initial Impact Assessments for private property.
- Provide damage assessment information to the Emergency Management Office.
- Develop a list of suitable facilities to be used as recovery centers, etc.
- Provide a list of structures considered substantially damaged. (Greater than 50%).
- Permit and control new development and demolition of old structures
- Oversee revision of building regulations and codes.
- Enforce building codes.
- Conduct building safety inspections and condemnation procedures.
- Assist the Emergency Management Office to identify mitigation opportunities.
- Review land use and zoning variances.
- Provide community data.
- Develop map products for recovery and mitigation activities.
- Redevelopment of existing areas.
- Planning of new redevelopment projects.

2.3 Maintenance Department (*existing*)

- Participate in Initial Impact Assessments for public property and infrastructure.
- Provide damage assessment information to the Emergency Management Office.
- Determine floodwater elevation for impacted areas.
- Make temporary and permanent repairs to roads, waterways, and public infrastructure.
- Assist in responding to infrastructure complaints, e.g., drainage issues, etc.
- Assist the Emergency Management Office in identifying mitigation opportunities.

- Preparation for Storms and Cleanup.

2.4 Historic Preservation Department (*proposed*)

- Participate in Initial Impact Assessments for public and private historic properties.
- Provide damage assessment information to the Emergency Management Office.
- Develop map products for recovery and mitigation activities of historic properties.
- Provide a list of historic structures considered substantially damaged. (Greater than 50%).
- Contribute mitigation opportunities for historic buildings to the Emergency Management Office.
- Develop storm preparation plans for historic buildings.
- Participate in building safety inspections and condemnation procedures for historic properties.
- Monitor debris removal from historic properties to encourage reuse when possible.
- Coordinate (expedited) architectural review procedures for historic buildings and buildings in the historic district with the Building Department including new development and demolition permits.
- Cooperate with the Building Department when planning redevelopment projects in the historic district.
- Cooperate with the Building Department to enforce the historic preservation ordinance.
- Provide technical resources for rehabilitation of damaged historic properties to the public.
- Coordinate with Clerk's Office funding programs for the rehabilitation of historic properties.

Source: Pat O'Neal, Cedar Key CEMP

The next portion of the Recovery Annex discusses general recovery activities, functions, and organization methods preceded by the identification of four phases of an emergency situation. These activities are basic but essential to restore the vital services

of the community. They broadly cover functions that are facilitated by the city, rather than as specific actions to unique departments. The next key opportunity to address historic resources is during ‘Damage Assessment Priorities.’ A ‘Preliminary Damage Assessment’ will have already occurred to determine critical needs and overall condition of the city to promote life safety. However, the HPD should be involved in the assessments conducted during the ‘Windshield Assessment’ and the ‘Walk-Through Assessment’ to evaluate the damage to the city’s historic cultural resources. This information will not only be used to contribute to the evaluation of the condition of the city, but will educate the individual action plan of the HPD. Proceeding through detailed building assessments, the preservation office should coordinate with the Building Department in accordance with the established responsibilities to promote rational decision making. This cooperation will be supplemented by an individual plan focused on the historic resources.

The Economic Injury evaluation portion of this document recognizes the difficulty in assigning a value to the loss business establishments incurred as a result from an emergency event. The CEMP states that “damage assessment teams should record the name and location of businesses in the impact area, and whether physical damage is visible or not.”²⁴ Damage assessments should also document if the business is located in the historic district, and if the building is a registered historic building. The HPD can produce this information firsthand or provide map products that can answer these questions.

²⁴ O’Neal, Cedar Key CEMP.

Section 3.6.4 of the CEMP identifies various state and federal programs that can offer financial, legal, and housing services. Preservation resources are also available for disaster management. The HPD can assist the coordination process to obtain funding to help property owners repair their historic structures, but the SHPO should be referenced directly in this component of the CEMP for preservation guidance.²⁵ Large financial packages were developed to aid the victims of the 2005 Gulf Coast hurricanes. This came in the form of tax relief, with specific relief available for the rehabilitation of historic buildings, as well as technical and financial assistance from the National Trust for Historic Preservation.

Another factor of Cedar Key's emergency planning document that impacts historic resources is the debris removal process. Section 4.1 provides that "Construction and Demolition materials have the lowest priority" for removal, which will allow a response time for the HPD to advocate responsible waste management as it relates to historic building materials. Many of these materials are unnecessarily or accidentally discarded without considering the ability to adequately reproduce the feature or whether it could be repaired.²⁶ In today's building environment, the materials and craftsmanship that produced historic buildings are not as widely available as at the time of construction which makes these materials more costly or difficult to replicate authentically.

The next section briefly establishes how redevelopment is quantified for the purposes of permitting and building codes. If the repairs represent less than 50% of the value of the building, new standards and codes do not have to be met. The alternative,

²⁵ 1000 Friends of Florida 52-57.

²⁶ Christopher R. Eck, "Earth, Wind, Fire, and Water: Historic Preservation Disaster Planning in Miami-Dade County, Florida," *Cultural Resource Management*, 23.6 (2000): 11-13.

when the damage exceeds 50%, requires that current codes be met because the building is categorized as ‘destroyed.’²⁷ Historic and non-historic buildings need to be distinguished within this context because flood plain management policies and building codes provide flexibility conditions for historic buildings that seek to reduce the loss of character defining features and significance of the building.

The recommendations presented in this section should be evaluated as precautionary measures to contemplate the impact of a disaster on the city’s historic resources. Responsive actions during the recovery process can cause an unconstructive impact to historic resources in addition to the disaster. Historic structures should not be left out of the equation when the city addresses mitigation and planning. The historic context of Cedar Key necessitates specific consideration in the city’s emergency management plan.

Levy County Local Mitigation Strategy

Within each county in the state, an Emergency Management Office (EMO) is responsible, among other things, to create and maintain a Local Mitigation Strategy. This agenda is an opportunity to extend the cooperative network beyond Cedar Key to the county not only as an advocate but as an educator. The LMS is the instrument to which federal mitigation funds are attached, which can be informed with the assistance of a historic preservation component and representative.²⁸ The LMS for Levy County was updated in 2005 and lists three particular projects that have the potential to impact the historic resources of Cedar Key, refer to Table 6-3. The Cedar Key Historic

²⁷ O’Neal, Cedar Key CEMP.

²⁸ 1000 Friends of Florida 48.

Table 6-3 Selected Local Mitigation Strategies for Levy County

Initiative #	Jurisdiction	Project Name
LEVY0037	Cedar Key	Establish a program for property acquisitions in repetitive loss areas in Cedar Key
LEVY0038	Cedar Key	Publish a Cedar Key hurricane preparedness brochure with local information
LEVY0512	Cedar Key	Elevation of a single-family private residence

Source: Gorman, E-mail to author.²⁹

Preservation Coordinator (HPC) should be coordinating with the LMS planning staff directly or through a historic preservation representative with regard to these measures and future contributions. In the first listed initiative, the acquisition of historic properties can cause a change in the use of a historic property affecting the significance of the resource. This action could be a benefit or a detriment to the historic context of Cedar Key. The next initiative is a great opportunity for hurricane preparedness to reach owners of historic properties in the entire county. One of the recommended objectives of the HPC is to provide public education on mitigation and stabilization measures for historic properties and this intersection is another opportunity for emergency management officials to cooperate toward a common goal. In the last initiative, the concept of elevating structures has been addressed previously. When this mitigation technique is employed for a historic property or in a historic district, it affects the context and spatial relationships. The HPC should seek out a partnership with the LMS Committee to contribute hazard, vulnerability, and mitigation assessment concerns for

²⁹ Jackie E. Gorman, Cedar Key Redevelopment Agency Director, "Levy County Local Mitigation Strategy: 2005 Updated List of Hazard Mitigation Projects and Initiatives," E-mail to author, 19 July 2006.

historic resources so that mitigation activities can be eligible for state funded programs.³⁰

Historic Resource Inventory and GIS

The Historic Preservation Act requires states to identify and maintain an inventory of historic resources through responsibilities of the SHPO. In Florida, this responsibility is carried out through the Florida Master Site File. Individual communities can also maintain an independent inventory of locally significant historic resources as is the case in Cedar Key. In the late 1980's, a professional survey was undertaken by Florida Preservation Services that yielded state, and subsequently national, recognition of the Cedar Keys Archaeological and Historic District. A multitude of information is collected on this three page form including location and identification, mapping, description, history, research methods, evaluation, and the recorder. In addition to this form, supporting visual documentation is required such as photographs and map images. The combination of these documents work in concert to record physical characteristics and detailed location that is essential when considering any disaster planning program. When specific hazards are known, they can each be uniquely analyzed with respect to individual resources.

The digital inventory project created a digital record of the FMSF forms and images that resulted in a database to manage the resources of Cedar Key using GIS. This program is an advanced method to map an array of data sets in geographical and tabular format. Every historic resource can be interfaced with other data, manipulating each field of the historic structure form. However, the data from the inventory is from the twenty year old survey, although building addresses and location information were updated. It is

³⁰ 1000 Friends of Florida 47.

recommended that the survey be updated to account for alterations, new resources, and significance criteria. Because the project includes tax parcel data, it is conceivable that the program can be linked internally to the property appraiser database of Levy County that would reflect changes in ownership, and if linked to other county GIS data would reflect various community data such as parcel configurations and public facilities.³¹

Using this database as a foundation, the inventory can become a powerful tool to assess vulnerabilities, mitigation opportunities, and disaster planning that results in an interdisciplinary platform between historic preservation and disaster management.

³¹ 1000 Friends of Florida 26.

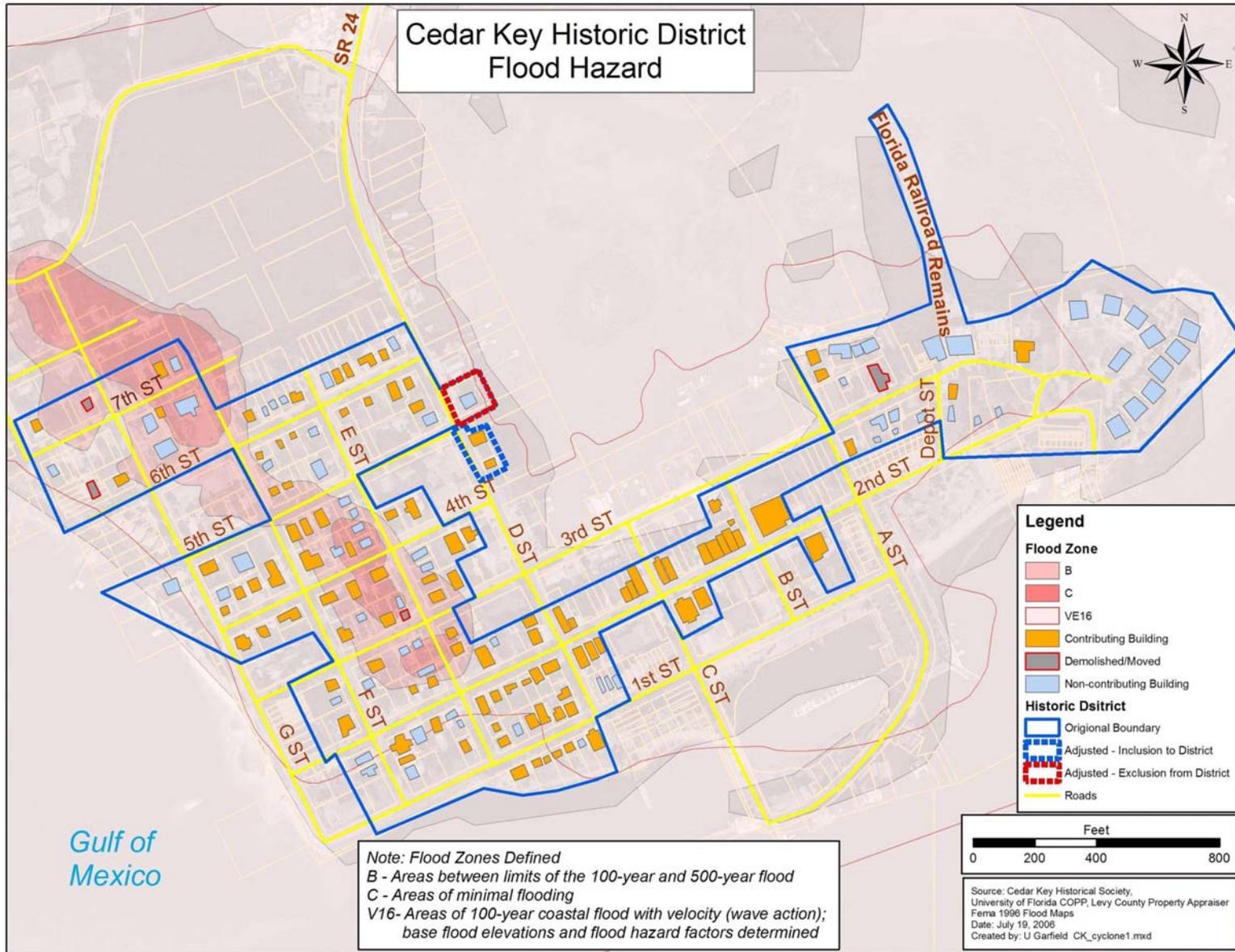


Figure 6-1 Flood Zones in Cedar Key, Ursula Garfield.

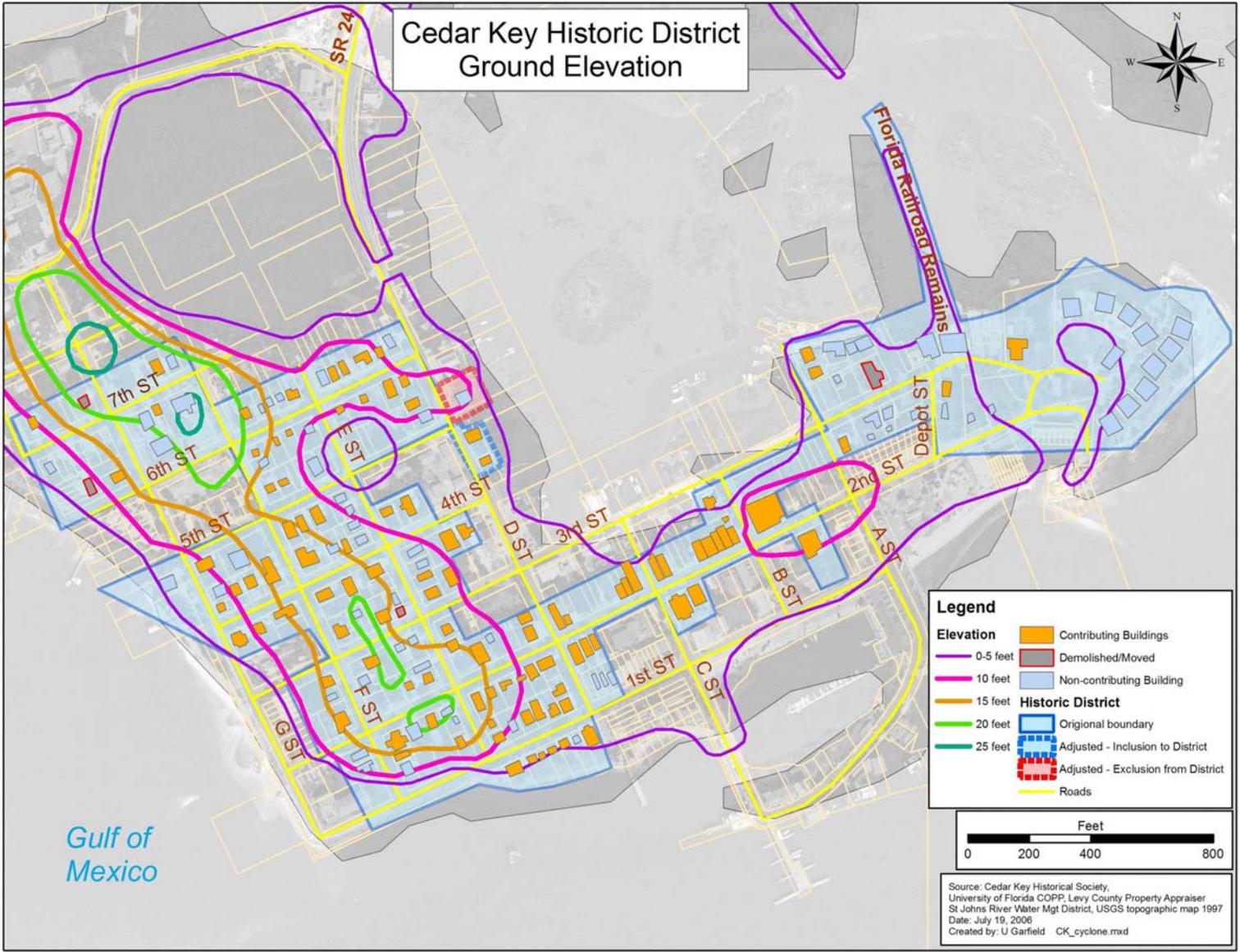


Figure 6-2 Topography of Cedar Key, Ursula Garfield.

Using GIS, the historic resources can first be compared with a hazards analysis map to identify which properties are most susceptible to tropical cyclone hazards. Flooding and storm surge are two of the predictable hazards that vary within the city due to the nature of the topography on the island. Approximately 80% of the historic buildings in the district are located in the velocity flood zone indicated in Figure 6-1, including all of the commercial buildings. Topography of the island, approximated in Figure 6-2, illustrates the expanded vulnerability to storm surge particularly in the commercial sector because it is relatively flat until the eastern terminus at the Island Hotel. These distinctions can deduce unique areas within the island to analyze how different resources would be impacted. In addition to these hazards, GIS modeling depicts a wind speed hazard of 120 mph and a wind borne debris hazard of 130 mph for the Cedar Key area.³² Wind impact on a building varies with height and mass proportions, roof design and pitch, and is not equally distributed across building surfaces.³³ Therefore, GIS does not clearly illustrate distinct planning measures for hazards from wind exposure across the island.

Experts recommend using the inventory to not only assess risks but to assess value and priority. A FEMA publication on hazard mitigation and historic resources offers a thorough method to create a hazard mitigation plan founded on these components. This plan uses a process that generates input through worksheets that are staged through the analysis which then identifies a hierarchy that can be implemented into a GIS program. Information tabulated generates dollar value for each resource and specific hazards to

³² Florida Department of State, Department of Community Affairs, "Levy County Wind Speed Lines," n.d. 1 Aug. 2006, http://www.dca.state.fl.us/fbc/index_page/maps/county_maps/levy2.pdf, "State of Florida Wind-Borne Debris Region," n.d. 1 Aug. 2006 http://www.dca.state.fl.us/fbc/maps/wind_borne0502.pdf

³³ McDonald 79-80.

each when considering building style, construction method, materials, and various features including the context.³⁴ These efforts help to identify mitigation priorities, but the *Disaster Planning for Florida's Historic Resources* publication differs on the hierarchical organization. The method used in the Florida publication is to categorize resources within the following means: resources listed or eligible for listing on the NRHP, resources identified as locally significant, followed by resources recently achieving historical status or those that are not yet historic but recognized as significant.³⁵ The latter method requires a less intensive process more appropriate for Cedar Key that can be easily conducted within the framework of the digital inventory project combined with an updated survey. A subsequent division of resources is recommended below that will be mapped in concert with this idea.

Using the historic resource inventory with the GIS application also enhances the capabilities of emergency personnel to include when considering for historic resources when responding to a disaster. Some of these recommendations will be addressed within the planning resolutions of the HPC. Before a tropical cyclone is even predicted to make landfall, a disaster management layer specific to this threat could be created within the historic resource inventory database to manage preparatory and recovery activities. The damage assessment forms and building permits can be linked with this inventory in GIS to help manage the rebuilding process related to historic resources.

³⁴ FEMA 386-6.

³⁵ 1000 Friends of Florida 24.

Division of Resources

In considering a plan for the historic resources of Cedar Key, there are distinctive associations within the historic district to group various resources together. This will serve as a guide when considering a plan of action both for mitigation and storm preparation activities to segregate duties that maximizes the response effort. These associations are determined by their role within the community fabric as an interpretation of the historic context. They will be referred to by the following nomenclature throughout the remainder of the study: commercial and residential, as mentioned in earlier chapters, and also local landmarks.

The commercial and residential sectors are geographically illustrated in Figure 3-6. The commercial sector is the historic main street of Cedar Key; along this corridor are municipal offices and services, various retail outlets, restaurants, between the Historical Society on one end and the Island Hotel at the other. The commercial sector is a direct link to the Dock Street shops, restaurant, and marina as well as a modern condominium complex located at the point of the old rail road trestle terminus. Filling in the western edge of the city expanding to the northwest is the residential sector of the historic district. Homes in this area are associated with the prominent figures and that contributed to the development of the island during its various phases of history maintaining a composition of architectural influences. Because the commercial sector is a community center, it represents a plural ownership. It serves as a gathering place for sharing conversation, meals, and in a disaster it can serve as an information resource center. In a historic district, the cultural values of the commercial sector are even more important towards setting an example because of this greater volume of human exposure. Appropriate rehabilitations can inform the public and can reestablish the familiarity and positive

disposition of the community. In turn, as a source of economic stability, “[t]he sooner a community recovers from the effects of a disaster, mitigates the damage, and rehabilitates its historic infrastructure, the more quickly its local economy can rebound.”³⁶ Owners of commercial properties also have double responsibilities if they live on the island because they will need to address personal property damage in conjunction with their commercial property. Setting a priority towards rehabilitation of the commercial sector will have a trickle down effect into the residential sector.

Local landmarks are the final division that relates to historic properties that carry independently unique cultural significance to the historic context. It is recommended that these buildings establish thorough disaster management programs to be facilitated by the owner with technical support from the Historic Preservation Department. With regard to community planning efforts, these buildings will be considered with priority depending where it falls within the commercial and residential sector. The first of these buildings is the Island Hotel, as the only building that has independent National Register status. Another of the local landmarks is the Cedar Key Historical Society Museum compound. These buildings are significant for the use of the building as an interpretational museum of the historic context while it also is a repository for artifacts and archival documents.

This chapter focused on planning components that Cedar Key can incorporate into a disaster management program for historic resources. The initial recommendation formulated improvements within the existing preservation framework and added a human resource to the city staff to oversee resource management for the island. Most importantly, the CEMP and LMS were analyzed to identify procedures that need to

³⁶ 1000 Friends of Florida 3.

consider historic resource management. The motivation to support investments of this planning methodology lies in the risk that Cedar Key could suffer a broad impact from a tropical cyclone event. Vulnerabilities to historic resources can be assessed using GIS which can also be used to organize the resources for an interdisciplinary use. Tropical cyclones are a threat to the historic context with known hazards that local officials should bear some responsibility to care for the resources by integrating these recommendations into the disaster management program.

CHAPTER 7 MITIGATION COORDINATED WITH REHABILITATION STANDARDS

Seventy-five percent of the country is at risk for one or more disasters which places an impetus on planning and mitigation to reduce an economic impact to business, tourism, and industry.¹ When vulnerabilities within the local disaster planning framework have been resolved, planners, architects, and officials will need to perform mitigation interventions and carry out the planning resolutions set forth in the local emergency plan. This segment looks at specific mitigation activities that respond to various building materials and features, and addresses the principal function of mitigation that varies between historic and non-historic buildings.

The Federal Emergency Management Agency (FEMA) defines mitigation as “the process of preventing or minimizing the losses and damages that emergencies can cause.”² Referring to buildings, mitigation includes activities that counteract the vulnerability of the building to a disaster.³ Specific mitigation activities will vary, depending on the type of disaster. Some of the mitigation options to strengthen a building for the impact of a tropical cyclone include pinning foundations, the roof, and floor structures; reinforcing walls and corners; and installing shutters. These activities respond to the impact of strong winds and powerful flooding associated with tropical

¹ David W. Look and Dirk H.R. Spennemann, “Disaster Management for Cultural Properties,” *Cultural Resource Management*, 23.6 (2000): 3-5.

² United States, Department of Homeland Security, Federal Emergency Management Agency, *Before and After Disasters: Federal Funding for Cultural Institutions*, FEMA 533 (Sept. 2005) 3.

³ Look and Spenneman 3-4.

cyclones. The main idea behind mitigation is prevention, however, building repairs that are carried out after the passing of a tropical storm can also be categorized as mitigation activities. Rebuilding efforts can offer opportunities to carry out prevention measures for the future. During the process of rebuilding, it is also necessary to bear in mind the impact of construction quality to the building's ability to stand up to storm impacts.

Characteristics of historic buildings necessitate specific mitigation activities that are carefully planned with this consideration. As mentioned, historic buildings are regulated in Cedar Key by local guidelines derived from the Secretary of the Interior's Standards for Rehabilitation (Standards). The Rehabilitation treatment is applied liberally to the large scale repair and recovery efforts that will be inflicted as a result of a tropical cyclone event. The tenet of Rehabilitation recognizes that:

...existing historic fabric has become damaged or deteriorated over time and, as a result, more repair and replacement will be required. Thus, latitude is given in the Standards for Rehabilitation and Guidelines for Rehabilitation to replace extensively deteriorated, damaged, or missing features using either traditional or substitute materials. Of the four treatments, only Rehabilitation includes an opportunity to make possible an efficient contemporary use through alterations and additions.⁴

The guidelines of rehabilitation aim to preserve the character of the building's features, spatial relationships, craftsmanship, and context – providing recommendations on how to interact with the historic fabric when alterations are made. Mitigation will have repercussions to the character and fabric of a historic building.⁵ However, by choosing the placement of the intervention and evaluating the guidelines accordingly, a compromise can be cultivated.

⁴ Weeks and Grimmer 63.

⁵ Spenneman and Look 4.

The Standards also recognize that materials and craftsmanship are not as widely available now as in the case of the historic building. Common materials are used for historic and non-historic buildings, but the way in which they are used varies. For instance, whereas wood siding is a reflection of the construction method for Cedar Key's historic frame vernacular buildings, modern buildings use composite wood siding as sheathing over concrete block construction. Evaluation of the success of modern materials to withstand tropical cyclone force impacts is not a part of this study, but rather is evaluated with the implications it has to the integrity of a historic district. Recreating or imitating a historical reference with materials that are visually distinguishable from the historic precedent can dilute the character of a historic district. This interpretation requires a subjective decision making process that can be limited or prevented if the historic buildings are preserved. Tabby is one of the unique building materials in Cedar Key that was only used historically. This material was phased out nationally when Portland cements were introduced.⁶ It only appears on a handful of buildings in the historic district.

Cedar Key's survival over time and cyclonic impacts can be partially attributed to these unique construction materials and methods. The use of stronger materials, skilled craftsmanship, care in construction, tongue-and-groove roof sheathing, heavier wood members, and hammered nail connections contribute to the strength of these historic buildings when resisting storm effects.⁷ Traditional frame construction methods allow

⁶ Jane Powers Weldon, ed., *The Conservation and Preservation of Tabby: A Symposium on Historic Building Material in the Coastal Southeast February 25-27, 1998*, Georgia Department of Natural Resources Historic Preservation Division, (1998) 17 March 2003. http://hpd.dnr.state.ga.us/assets/documents/tabby_scanned.pdf.

⁷ Ellen Ugucconi and Joseph Herndon, *Hurricane Readiness Guide for Owners and Managers of Historic Resources* (Washington: National Trust for Historic Preservation, 1997) 2-3.

for the building to breathe by expanding and contracting – naturally accommodating a range of pressures as the building moves as a unit rather than as a series of pieces that resist pressure at different locations and rates. When assessing the impacts from Hurricane Hugo in 1989, the National Parks Service found that buildings that possessed their original roofing materials provided superior protection of the building over those with new or modern systems – a function of the mechanical connection as well as the fastener.⁸ Conversely, while these buildings have survived, it is likely that many exterior features have required repair or reconstruction since historic structures exhibit more elaborate features and overhanging or projecting elements that do not sustain tropical wind forces well. These features include dormers, extended eaves and rafters, porch railings and columns, and exterior chimneys. Some of the Victorian details present in many of Cedar Key’s historic residential sector may have been accretions to the original structure and are not sufficiently connected to or integrated with into the primary support structure. These unique considerations that must be made for historic buildings will be addressed with respect to specific mitigation activities.

Maintenance

Although building maintenance applies to the general care of any property, it is especially important when a property lies in a hazard zone. Dr. Bernard M. Feilden, former director of the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), points out that “the best insurance is a policy of regular inspection with formal reporting and strategic maintenance programs for

⁸ Thomas A. Vitanza, “NPS Surveys Yield Data on the Effects of Hurricane Hugo,” *Cultural Resource Management*, 13.1 (1990): 12-14.

buildings.”⁹ An even bolder postulation is that effective building maintenance directly correlates to damage sustained from a hurricane as evidenced from Hurricane Hugo along South Carolina citing the importance of shutters, roof sheathings, and drainage systems.¹⁰ Along Hugo’s path, it was found that older, well-maintained structures tolerated storm forces with limited destruction to windowpanes, steeples and towers, and minor decorative details.¹¹ In response to Hugo, Charleston’s former mayor offered an optimistic viewpoint by recognizing that repair and rehabilitation from the storm would strengthen the city’s resources.¹² When assessing the damage from Hurricane Ivan that crossed over Pensacola in 2004, buildings that had been maintained were more secure after the storm because significant building materials remained in place. In the Barkley House (Figure 7-1) a particular structure that lies along the Pensacola Bay, the cedar shingles had been replaced just months before the hurricane struck; and they remained intact after the storm. Scattered structures in the nearby Seville Quarter historic district (Figure 7-2), and particularly in East Hill, suffered a great deal more; but they exhibited a lack of maintenance that would have been apparent prior to the storm. In contrast to the East Hill district, the more affluent North Hill area sustained less damage, most of which affected particular features and components of the buildings. Additional photographs documenting the damage to historic structures in Pensacola are exhibited in Appendix B.

⁹ Feilden 24.

¹⁰ Vitanza 1.

¹¹ Arnold Berke, “Nature’s Wrecking Ball: Hurricane Hugo Batters Landmarks and Landscapes,” *Preservation News*, 29.7, (Nov. 1989): 8.

¹² Mimi Handler, “A Gathering of Artisans.” *House Beautiful*, 133.9 (Sept. 1991): 66.



Figure 7-1 Barkley House, Pensacola. Personal photograph by author. 15 Oct. 2004



Figure 7-2 Seville Quarter Historic District, Personal photograph by author. 15 Oct 2004.

The Standards have fifty-eight occurrences where maintenance is stressed to properly monitor and repair historic buildings for material effectiveness and problem areas. A growing recommendation to historic property managers is to engage in a routine maintenance program to not only offset costs when problems inflate or are the result of an emergency, but to enable the procurement of a qualified professional trained in

historic building materials and methods.¹³ A cyclical maintenance program for historic resources promotes regular monitoring and repair work on an annual or other regularized schedule. Planned maintenance offers the site manager the opportunity to make calculations to preserve the architectural significance of the historic building.

A cyclical maintenance program is recommended for all historic property owners in the historic district of Cedar Key. This inspection should be organized with the following items: roof systems, water discharge systems (gutters, downspouts, valleys), wall openings, interior walls, exterior walls, floors and staircases, and finishes.¹⁴ A future resource to guide this process is a project being undertaken by the College of Design, Construction, and Planning along with the Florida State Parks system that seeks to accomplish the following:

...to establish a cyclical maintenance system that will use an objective, repeatable condition assessment to help facility managers assess current conditions, predict future conditions, establish deterioration rates, determine and prioritize current and long range maintenance, repair, (and eventually restoration) needs, formulate budgets, and measure the effectiveness of the maintenance.¹⁵

In the meantime, visual inspection is the best method to identify potential system failures and needed repairs to ensure that the building envelope is secure. When the building envelope is compromised during a storm, a greater degree of damage can be expected to the roof, wall openings, and exterior walls. Once the thorough inspection is completed for each of the listed items (related to the building envelope and the entire structure)

¹³ Jacob Arndt, "Planning for Problems: How to Set Up a Routine Inspection System for Periodic Maintenance," *Old-House Journal*, 2006, 11 July 2006
<http://www.oldhousejournal.com/magazine/2002/november/planning.shtml>.

¹⁴ Arndt.

¹⁵ University of Florida College of Design, Construction, and Planning, "College Faculty, Research Interests," Aug. 2006, 18 Jul 2006,
<http://www.dcp.ufl.edu/contact/sketch.aspx?id=35&unit=ARCH>

problem areas can be prioritized and scheduled for repairs in a timely manner. With hurricane season during the months of June through November, a good time to engage in an inspection for Cedar Key properties would be in the month of March. This period occurs after a busy winter season and any recovery required from the previous year's hurricane season but well in advance of the next. Any items related to the building envelope should be set as priority during this inspection, whether it is an annual or semi-annual schedule.

Building Interventions

Following routine maintenance practices, physical intervention opportunities of mitigation can go a long way to strengthen a historic building against the threats of a tropical cyclone event. A few general principles apply when considering mitigation as an option to disaster prevention. As with maintenance, new installations within a historic building require careful thought to prevent irreversible damage to the character and features of the building. This consideration applies to alterations before the onset of a disaster and stabilization and recovery measures taken after contact. During the mitigation process, it is likely that opportunities to investigate portions of the building not previously exposed will arise or that previous repairs/rehabilitations will generate a discovery of incompatible construction: "A major hurricane has the uncanny ability to discover and exploit any weakness."¹⁶ Experts agree that where it is appropriate, such conditions warrant that unsuitable designs, repairs, or craftsmanship be remedied.¹⁷ A commercial building in Pensacola that was damaged from Hurricane Ivan revealed the

¹⁶ Holmes 324.

¹⁷ Holmes 324 and Handler 68.

original masonry construction underneath metal siding (Figure 7-3). To reconcile with the Standards, any new installations considered as rehabilitation should be easily distinguished from the original, unless it constitutes as a reconstructed component that is documented to have existed. Where historic materials must be changed in a highly visible location, great care should be taken to relegate the intervention in areas that are less significant to the character of the building.¹⁸



Figure 7-3 Garden Street, Pensacola. Personal photograph by author. 15 Oct. 2004.

Before any alterations are undertaken, the historic building, especially the affected area, should be documented. There are three documentation methods that can be employed: written or oral recordings, illustrations through photography or artistry, and a scientific approach in photogrammetry.¹⁹ Documentation contributes to recovery efforts when applying for aid or insurance as well as to enable an effective restoration of the

¹⁸ Spenneman and Look 4.

¹⁹ Dr. John C. Poppeliers, "The Use and History of Traditional Recording Techniques for the Documentation of Sites and Monuments in Disaster-Prone Areas," *Protecting Historic Architecture and Museum Collections from Natural Disasters*, ed. Barclay G. Jones (Stoneham: Butterworth, 1986) 231.

building's physical appearance.²⁰ It would be a good idea for the city should to pursue full documentation of the local landmark buildings before they are significantly damaged from a disaster. In Cedar Key, resources may not be available to complete thorough, as-built drawings to meet the Historic American Building Survey (HABS) standards on a series of buildings.²¹ However, the streetscape of Second Street could be documented with measured drawings to study the relationships of building patterns and spatial characteristics. This relationship can promote future development and rehabilitation efforts. Drawings and photogrammetry methods of documentation are the most effective tools portray actual proportions, dimensions, and materials. Currently, the only existing documentation for Cedar Key is photographic records and written histories that are accessible to the local officials. A digital photographic inventory conjoined the electronic database as of 2004; however, these are exterior single image representations and brief digital videos. To improve the existing documentation, private owners are encouraged to document their structure using additional photography to capture detailed exterior and interior images. This documentation can be safely stored individually, or in cooperation with city officials it can be donated to the city for a complete repository. National Parks Service official Jean Parks recommends a format for these materials as a "building notebook" that also contains descriptions, drawings, photographs, site and floor

²⁰ National Trust for Historic for Historic Preservation, *Treatment of Flood-Damage Older and Historic Buildings*, Information Booklet No. 82, (Washington: National Trust for Historic Preservation, 1993) 3.

²¹ HABS is a component of the National Park Service that promotes historic preservation through documentation. HABS standards include large format photography, measured drawings, and a historical segment.

plans, collections inventory, maintenance log, and contact sheet.²² Maintained for each building, this should also include a disaster management plan that along with the other materials is evacuated or stored safely in an easily accessible off-site location.

The most devastating effects of a tropical cyclone are powerful winds and the inundation of water through rain and or flood. These effects produce pressures sustained to all buildings, historic or not, but it is the way in which the forces are absorbed and the value of the buildings that distinguish the two. The strongest initial impact from a storm will be powerful winds, which is devastating to buildings when the energy is not absorbed into the ground, especially to roof systems and of those gable designs are more vulnerable than hip roofs.²³ This roof pattern makes up a majority of the historic buildings in the historic district of Cedar Key. Wind pressure bearing on the roof, wall, and foundation system creates suction in addition to the lateral forces; however the force will vary over different building conditions and surfaces.²⁴ Analysis of the roof, windows, and doors can suggest ways to mitigate the storm's forces on these vital components of the building envelope. Also, the direction of storm winds can be predicted, indicating the building facades' impact from forward and reverse forces. When the wind blows toward the south elevation, the north elevation will be experiencing suction.²⁵

²² Jean Parks, "Never in my Wildest Dreams: Emergency Action Planning and Preparedness," Lecture, University of Florida, 20 Jan. 2005.

²³ United States, Department of Homeland Security, Federal Emergency Management Agency, *Against the Wind: Protecting Your Home from Hurricane Wind Damage*, FEMA 247 (Dec. 1993) 16 Apr. 2005, www.fema.org/pdf/hazards/agstwnd.pdf.

²⁴ McDonald 79-80.

²⁵ Holmes 325.

After wind, “no other element is as destructive to buildings as water with effects such as rust, rot, and spalling.”²⁶ Flooding has a three-prong effect from standing water, flowing water, and water seepage that all present dangers potentially worsening the effects of the other with possible mold growth, soil erosion, and the separation of a building and its foundation.²⁷ An indirect effect is the loss of historic materials washed away in the flood waters signifying the importance to retain and record any items recovered on a property even if they do not belong, they may be important features of a neighboring historic property.²⁸ General principles, when experiencing the after effects of a flood, are to observe general safety precautions and understand that proper drying and cleaning are the next priority to restoring functionality to a building. Unfortunately, many buildings subjected to the flooding from Hurricane Katrina endured severe mold damage, which cannot be prevented, but can be properly mitigated when it is safe to return.²⁹ Historic buildings within the flood zones of Cedar Key should regard flood impact as a high priority. These buildings will receive a longer duration of water infiltration because the landscape lacks adequate drainage facilities.

²⁶ National Trust for Historic for Historic Preservation Information Booklet No. 82 2.

²⁷ Stephen J. Kelley, “Curriculum on Flood Damage Assessment of Cultural Heritage Properties, Relative to the Mississippi River Floods of 1993,” National Trust for Historic Preservation, National Center for Preservation Technology and Training, 15 Dec. 1994, 16 July 2006, www.ncptt.nps.gov/pdf/flood_damage_assessment.pdf. 6.

²⁸ National Trust for Historic for Historic Preservation Information Booklet No. 82 3.

²⁹ Over 8,000 homes in New Orleans National Register districts were flooded, followed by mold infestation because of a delayed response. The National Trust is working with the Preservation Resource Center of New Orleans among other agencies to communicate effective treatment for mold remediation in historic buildings. Patricia H. Gay, “Policy Hearing on Historic Preservation vs. Katrina: What Roles Should Federal, State, and Local Governments Play in Preserving Historic Properties?” Preservation Resource Center of New Orleans, Executive Director Written Testimony to House Committee on Government Reform Subcommittee on Federalism and the Census, Oct. 2005, 13 Jul 2006 <http://reform.house.gov/UploadedFiles/gayweb.pdf#search='katrina%2C%20mold%20and%20historic%20preservation'>

Building Interventions – Evaluating Five Degrees of Mitigation

Mitigation is evaluated by the degree of interference with the character of the building. FEMA defines these levels of mitigation in ascending order: basic property improvements, retrofitting, elevation, relocation, and demolition under the overall category of ‘Property and Resource Protection.’ All of these pertain to actions undertaken by the property owner.

Basic Property Improvements

In the first category, a general recommendation is made to anchor or relocate building contents, design a safe room, and finally to waterproof utility systems.³⁰ These measures are simple actions to protect building contents. It is likely that Cedar Key residents will be required to evacuate because of their direct coastal location if the onset of a hurricane is imminent; precluding the need for a safe room. Utility systems such as heating and air conditioning are the result of modernization for historic structures already, so their placement has hopefully been selected at the least intrusive location.³¹

Retrofitting

Repairs will be included in the following assessment of retrofitting options for historic buildings with respect to the impact or threat of a tropical cyclone event. The Standards favor repair over replacement, but if necessary, documented features can be

³⁰ FEMA 386-6 3-10.

³¹ NPS recommends disguising new systems within existing wall cavities or closets, and consider placing exposed mechanical components in creative locations that blend in with the surrounding architectural features. Also, gauge the prominence of the space in accordance with the degree of visibility. Sharon C. Park, “Preservation Briefs 24: Heating, Ventilating, and Cooling Historic Buildings, Problems and Recommended Approaches,” (Washington, D.C.: United States Department of the Interior, 1991) 15 Jul 2006 <http://www.cr.nps.gov/hps/tps/briefs/brief24.htm>

reproduced using a similar design, color, texture, and materials.³² Historic materials are not as easily replicated in comparison to modern materials that have been mass produced. More importantly, the loss of historic materials reduces the integrity of the resource. The National Register defines material as an aspect of integrity for a listed or eligible resource. “A property must retain the key exterior materials dating from the period of its historic significance.”³³ In Cedar Key, it might be impossible to meet the absolute recommendation of this definition because of the susceptibility to repeated tropical cyclone events could eventually create a condition where exterior features have been reconstructed, which is another treatment of historic properties defined by the Standards. Repairing historic materials will be analyzed alongside retrofitting methods.

As stated earlier, a thorough drying and cleaning process is necessary to return the building to functionality. Natural methods are best employed in the first phase of this process by opening the doors and windows supplemented with the use of standard fans, provided that electricity is available. Materials like wood and plaster features/components can be permanently damaged if industrial drying or dehumidifying equipment is used before some drying has occurred.³⁴ The objective is to equalize the moisture levels between the interior and exterior of the building. Experts in New Orleans indicate that mechanical systems can be introduced when the affect of natural ventilation

³² Weeks and Grimmer 62.

³³ United States, Department of the Interior, National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, 1990 (Washington: GPO, 1997) 45.

³⁴ Trust for Historic for Historic Preservation Information Booklet No. 82 2.

is noticeably reduced.³⁵ With more severe cases, wall sections need to be removed to allow for ventilation in between building elements as well as removal of waterlogged insulation. Insulation was not commonly used in historic buildings but it may have been added at a later time. Select penetration points that can be easily repaired or even masked with floor moldings to reduce the visible impact. By drying the building, conditions ripe for mold growth will diminish. Remove existing mold from the surface with non-phosphate cleaners.³⁶

The connections within the roofing system and foundation are one of the most efficient uses of resources to retrofit. During a conveniently scheduled re-roofing task, install hurricane straps and diagonal and horizontal bracing members to reinforce mechanical connections of the roof to wall framing as well as to reinforce individual members.³⁷ This can be done from the interior of the roof framing in attic spaces that will not impede the building's visual character. Gable roofs are at a higher risk than other formations for damage because of the broad surface area exposed on gable ends; likewise, low-pitched roofs will endure stronger uplift forces.³⁸ Additionally, walls should be secured to the foundation to prevent its dislocation. One of the advantages with a foundation built on masonry piers, like many historic buildings in Cedar Key are,

³⁵ National Trust for Historic Preservation, "Saving Your Flood Damaged Older and Historic Buildings: A Guide for Returning Property Owners Returning to New Orleans," Oct. 2005, 16 Jul. 2006, <http://nthp.org/hurricane/files/PRCNOhandoutOct05.pdf>.

³⁶ Louisiana State Agriculture Center, "Avoiding Mold Hazards in Your Flooded Home" (2006) 16 Jul 2006, http://www.lsuagcenter.com/en/family_home/hazards_and_threats/recovery_assistance/cleaning_up/mold_decay/Avoiding+Mold+Hazards+in+Your+Flooded+Home.htm

³⁷ FEMA 247.

³⁸ Uguccioni and Herndon 10.

is that air and water have space to continue their forward movement. However, if the water levels supersede the foundation height it will be problematic if the connections are not secure or cannot withstand the force of the water. Buildings in the commercial sector, however, are built on grade and with any flooding will be under lateral forces from the water. The walls of these buildings can be cross-braced to help them withstand the storm. Soil erosion can weaken the foundation, an indirect effect from flooding, evidenced by cracks in the foundation and in the plaster or drywall.³⁹ Once an assessment confirms that this is a permanent condition, the building should be re-stabilized during repairs and soil should be regraded to prevent the flow of water toward the building.⁴⁰ In Cedar Key many residential buildings lie at a lower plane than the public right of way creating collection areas for water, examples are shown in Figure 7-4. Fill is not allowed in accordance with FEMA guidelines that are rightly adopted by the city. Many historic foundation materials in the historic district use brick that is a disadvantage because water leaches out the salts of the mortar, weakening the joints.⁴¹ Water-repellent and water-proof coatings are generally discouraged because they can discolor the masonry, exacerbate the problem, and most importantly block the passage of the salts when water does penetrate the masonry to produce spalling.⁴² These foundations can endure some degree of water infiltration, but thorough analysis is recommended as part of a maintenance program or during the repair assessment period.

³⁹ National Trust for Historic for Historic Preservation, Information Booklet No. 82 5.

⁴⁰ National Trust for Historic for Historic Preservation, Information Booklet No. 82 5.

⁴¹ National Trust for Historic for Historic Preservation, Information Booklet No. 82 6.

⁴² Mack and Grimmer.



Figure 7-4 Street plane to foundation plane, Cedar Key. Personal photograph by author. 5 Aug 2006.

Building openings need to be secured in their framing system to provide protection to the building envelope as it endures storm force winds, wind driven rains, and debris. Windows and doors can be retrofitted with shutters or other protective coverings. Studies from Hurricane Andrew that struck south Florida in 1992 proved that storm shutters reduced damages by an astounding 30-50%.⁴³ Permanent shutters are only exhibited on a few of the historic buildings on this island. These were an early mitigation measure to protect the thin fragile glass as well as to provide the practical solution of controlling light penetration and allowing air ventilation during periods of rain.⁴⁴ Cedar Key is not in the hurricane high hazard zone that requires the permanent installation of impact resistant shutters. The first decision when choosing shutters is to consider permanent or temporary. Temporary shutters will not have a permanent impact on the visual characteristics of the building, but if not cautiously installed can negatively affect historic building materials. Permanent shutters will have a lasting visual impact on historic buildings in both of these considerations. If shutters were not used historically on the

⁴³ “Impact-Resistant Systems: Security in a Tiffany Setting,” *Architectural Record*, 190 (2002): 207.

⁴⁴ Holmes 330.

building, an ethical compromise will be made if opting to install them as an alteration, and their design should complement the building tradition that is exuded. Shutters were an original solution against intemperate weather, to add privacy, and screen light.⁴⁵

Windows are an important feature to protect historic buildings that allowing a compromise for the non-historic use of shutters is acceptable, but will require approval through the ARB.



Figure 7-5 Permanent shutter designs in Cedar Key, Cedar Key. Personal photographs by author. 5 Aug 2006.

Wood materials exposed to flooding, especially wood trim and doors, have a resilient quality to return to a normal state when dried out, although the joinery should be

⁴⁵ Paul Kelsey Williams, "Shutter Do's and Don'ts," *Old-House Journal* (2006) 11 Jul 2006, www.oldhousejournal.com/magazine/2002/august/shutters_dos_donts_shtml.

inspected for defects.⁴⁶ Conflicting evidence suggests that wood floors will either be salvageable upon drying and refinishing or that the system will need replacement particularly with the tongue and groove method of installation.⁴⁷ The consensus is that wood materials should be properly dried, even if deconstruction is required, to better evaluate its condition.

Various interior features respond differently to water infiltration, although mold is the most invasive after-effect. Therefore, any porous materials need to be removed that can harbor moisture beyond control.⁴⁸ Likely not original to a historic building are carpets and vinyl or sheet flooring, unless it is historic linoleum, which can easily be discarded.⁴⁹ Wall finishes, including paint and wallpaper, typically need to be refreshed.⁵⁰ Here, documentation will aid in the reproduction of the color and pattern of wallpaper although efforts to save historic wall paper should be attempted through removal and reinstallation. Plaster can survive water but it will be a race to dry it out before uncontrollable mold develops.⁵¹ It will be necessary to ventilate plaster wall and ceiling systems, even draining the ceiling with small holes if it is retaining a pool of water. Evaluation techniques indicate whether the plaster has retained integrity. The integrity of plaster can be measured by the condition of the connection to the

⁴⁶ National Trust for Historic for Historic Preservation, Information Booklet No. 82 11.

⁴⁷ Kelley 7.

⁴⁸ Federal Emergency Management Agency, United States Department of Homeland Security, *Mold...A Growing Threat*, n.d. 16 Apr. 2005, www.fema.org/pdf/hazards/mold_clean_up_en.pdf.

⁴⁹ National Trust for Historic for Historic Preservation, Information Booklet No. 82 12.

⁵⁰ National Trust for Historic for Historic Preservation, Information Booklet No. 82 12.

⁵¹ Kelley 7.

substructure. Plaster is spread over a lath, and when it dries ‘keys’ form the interlock between the two materials. Wood lath is better able to withstand water than metal, and the lack of a preponderance of keys indicates weakness.⁵² Decorative plaster in coffered ceilings, medallions, and cornices are one of the defining interior features that should be preserved at all expense.

Miscellaneous exterior features of a historic building such as dormers, columns, and projecting eaves, all commonplace in traditional buildings of Cedar Key, can be reinforced with mechanical interventions rather inconspicuously. For example, tension rods, with the addition of turnbuckles, act to relieve thrust action on columns while double-steel angles reinforce corners of projecting eaves and steel plates and anchors secure roof projections such as dormers.⁵³ Porches are prevalent features for residential and commercial buildings on the island, but they are often not properly secured to the main building - something that a proper maintenance program can monitor. Nails are not a successful method to connect a porch to the building because of the nature of the smooth shank.⁵⁴

In Cedar Key, two historic commercial buildings and residential buildings employ tabby material as a foundation and wall system. This material is a part of a historically used building system – a predecessor to Portland cement, which was normally encased in stucco. To make tabby with locally available shells for the lime base, a combination of sand, lime, and water was tamped into a formwork without any structural

⁵² National Trust for Historic for Historic Preservation, Information Booklet No. 82 10-11.

⁵³ Holmes 325, 334.

⁵⁴ National Trust for Historic for Historic Preservation, Information Booklet No. 82 9.

reinforcement.⁵⁵ The demise of this material is usually the result of the failure of the roof system that provides lateral bracing for the heavy walls.⁵⁶ These structures need to maintain a secure roof using aforementioned techniques to enhance its survival during a high wind impact. Maintenance of the plaster or stucco application and mitigation with stainless steel lath are other opportunities to strengthen the building while even further yet the building can be reinforced to resist longitudinal stresses.⁵⁷ There is a greater risk for collapse in tabby components associated with tall walls and chimneys.⁵⁸ An analysis of the strength of the tabby buildings is recommended for these three buildings to assess its endurance against storm force wind. This is a unique material that is uncommon to the state and the southeastern U.S.

Retrofitting and repairs require discerning application of the Standards because of the multi-faceted impact whereas the remaining mitigation activities of elevation, relocation, and demolition are specific actions that are blanketed under the Standards for Rehabilitation:

The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.⁵⁹

Elevation

The State of Florida disaster-planning document for historic resources is at odds with the federal publication on the subject of elevating historic structures. Federal

⁵⁵ Weldon.

⁵⁶ Weldon.

⁵⁷ Weldon.

⁵⁸ Weldon.

⁵⁹ Weeks and Grimmer 62.

guidelines are generally set at as a baseline, allowing states and communities to adopt regulations that are more rigorous. New construction requires buildings to be designed at or above the BFE, already recognized in Cedar Key to be 10-16 feet above the existing ground plane on some parts of the island. While this procedure is proven to be a cost effective mitigation option for existing buildings, it tampers with the spatial relationship of the building to its context. The edict from the state is against elevating historic buildings. Considering these facts, the landscape of the island is such that there are occasions when the base level of a historic building is below the adjacent right of way, separated by a sloped embankment. In these situations, there is an opportunity for a compromise between the BFE and the grade of the street. Careful analysis would be required by the ARB before such an activity could be approved, however, when considering the prominent façade it may be appropriate to consider an elevation to street grade or two feet above; to account for typical pier foundation heights of the historic district. The federal document for hazard mitigation of historic properties also recognizes that a compromise between building elevation(s) can be reached if supplemented by other flood proofing applications to lessen the offense to the building context illustrated by 113 Calhoun Street, in Charleston, South Carolina.⁶⁰ This project received accolades from the National Trust for Historic Preservation as well as the Association of State Floodplain Managers for its compatible incorporation of storm mitigation techniques.⁶¹ A historic residential building in Cedar Key underwent major interior renovations that also included exterior elevation of the building to the BFE, as shown in the before and after images

⁶⁰ FEMA 386-6 3-13.

⁶¹ FEMA 386-6 3-14.

below (Figures 7-6 and 7-7). This building lies on a corner lot in the southwest extremity of the island where only a paved road separates the building from the shoreline. From the public right of way along the primary façade the building is approximately five feet above the pavement, while the secondary façade is about double that because the ground plane is nearly level with right of way. Evaluated individually, this is an exaggeration to the setting of the building. It is exceedingly problematic because the building has lost the spatial relationship to the neighboring historic building.



Figure 7-6 Elevated Residence Before, Cedar Key. Personal photograph by author. 9 Nov. 2004.



Figure 7-7 Elevated Residence After, Cedar Key. Personal photographs by author. 5 Aug 2006

Relocation

Beyond elevating the building, relocating a historic structure completely negates the original spatial relationship and exterior features of the natural setting. This is also frowned upon by the state disaster guidelines for historic properties. However, in the professional field this is acceptable as a last resort before an impending demolition. Buildings in Cedar Key have historically been moved, such as those moved from Atsena Otie after its decline resulting from a devastating hurricane in 1896. The ARB prefers, and generally mandates, that historic buildings be relocated to another location in the historic district to preserve the integrity of the district and the original setting of the building. As a mitigation tactic it is not practical, feasible, or appropriate to relocate historic buildings located in storm zones of the island. The predominance of historic buildings located in the hazard area is contrasted with the availability of land that is both in the historic district and out of a hazard zone. If buildings were allowed to be moved

out of the district incrementally, the district would likely lose integrity and be deprived of its National Register recognition.

Demolition

In a similar fashion, widespread demolition of historic structures is not an option to mitigate in a pre-disaster situation as it shares the same result in compromising the integrity of the district. There are only a few buildings in the historic district that may endure demolition by neglect or otherwise demolition approval of the ARB due to structural decay. Looming threats of large-scale demolitions are prominent during disaster recovery, most recently with the aftermath of Hurricane Katrina. Preservation advocates acted quickly to intervene to prevent the perception that damaged historic buildings were not worth repairing. Cedar Key can be projected as a microcosm of New Orleans in that such large losses of the architectural fabric would reduce the cultural viability of the community. Richard Moe, president of the National Trust for Historic Preservation, states it succinctly:

...if the people of New Orleans and other historic communities on the Gulf Coast are to have meaningful places to come back to, as many as possible of the significant structures in those communities need to be preserved and restored.⁶²

He continues in a letter to governing officials for New Orleans and the state of Louisiana:

...wholesale demolition without professional on-the-ground surveys to determine which structures can be save, and which cannot, would constitute a huge debit against our shared commitment to preserve the nation's significant cultural heritage...(with) improved technology and building practices, many more damaged buildings can be saved than was the case just a few years ago.

⁶² Richard Moe, Letter to The Honorable Kathleen Blanco, Governor State of Louisiana, 14 Sept. 2005.

In summary, trained preservation professionals should closely authorize demolitions as last resorts with final approval of the ARB. Suggestions to mandate this process will be addressed in the planning resolutions of the HPC.

Mitigation strategies for historic buildings are guided by the Standards to maintain the integrity of the resource through location, design, setting, materials, workmanship, feeling, and association. Maintenance of historic buildings is a fundamental component that is not as likely to negatively affect the integrity of a building, but rather improve the ability for the building to endure over time in all conditions. Other mitigation activities require an intervention with the architectural fabric where evaluating significant features can inform an appropriate compromise. Elevation, relocation, and demolition activities in Cedar Key present the largest threat to the integrity of the historic context as a result of mitigating the effects of a tropical cyclone event.

CHAPTER 8
MITIGATION RESPONSIBILITIES OF THE HISTORIC PRESERVATION
COORDINATOR

Planning Resolutions

When the Historic Preservation Coordinator (HPC) has been delegated the authority to intervene in city emergency planning initiatives on behalf of the historic resources, many responsibilities will be established. It will be essential for this person to have multifunctional capabilities to engender support within the community as well as reaching beyond in order to carry out this tall order. Various roles as an educator, planner, facilitator, and advocate of historic resources will occur as a participant in the city emergency management planning process. These roles will extend into an individual function during the three phases of a tropical cyclone event. Because tropical cyclones are predictable, the response to such an event can be addressed systemically in preparatory, response, and recovery phases.¹

One of the tasks the HPC must take on as advocate for historic resources is to garner close relationships with the police and fire officials, and the building inspector, recommended by Vicki Jo Sandstead, historian for the National Parks Service and experienced professional in disaster management for historic resources.² This relationship is established in the recommendations for the HPC to be recognized within

¹ Robert R. Garvey, Jr., and Peter H. Smith, "Disaster Preparedness and Response Policy," *Protecting Historic Architecture and Museum Collections from Natural Disasters*, ed. Barclay G. Jones (Stoneham: Butterworth, 1986) 81.

² Vicki Jo Sandstead, personal interview, 15 Nov. 2004.

the Cedar Key CEMP as defined earlier. Cooperation among emergency management officials and the HPC is fundamental for effective involvement in mitigation, building assessments, and debris management components of the city's plan.

Other recommended responsibilities of the HPC that fall under the CEMP relate to suggestions from the *Disaster Planning for Florida's Historic Resources* publication to promote historic preservation with emergency planning and personnel. Officials involved in emergency management should be aware of basic principles of historic preservation, specifically where they are involved in the short and long term phases of disaster recovery. The historic resource inventory should be accessible to the personnel and applied as a GIS mapping tool during damage assessment and recovery efforts.³ An annual presentation by the HPC can communicate the function of the database and how it can be utilized as a management tool for disaster planning. To demonstrate the impact to historic resources, the HAZUS-MH⁴ tool can be used to estimate potential physical and economic loss of properties, and can be tailored to historic properties using the GIS database. This modeling tool is a FEMA hazard mitigation program that generates damage estimates using data from the Hurricane Model, for example, to predict the impacts to the local economy from loss of income, as well as potential debris volume from building and landscape, and also shelter needs.⁵

Areas of the island that will be used for temporary disaster management recovery functions including housing, debris, and staging need to be analyzed for their potential to

³ 1000 Friends of Florida 21.

⁴ The abbreviation stands for Hazards-US-Multihazard.

⁵ Deepa Srinivasan, "Battling Hazards With a Brand New Tool," *Planning* (Feb. 2003) 16 July 2006, http://www.fema.gov/pdf/plan/prevent/hazus/dl_newtool.pdf 11.

impact historic resources.⁶ These locations can be mapped in the GIS program as a layer along with the historic resources to quickly identify geographical impact. Debris collection areas, although intended to be temporary, can impact the economic viability of the historic commercial sector along Second Street if it prolongs into ‘business as usual’ activities. Public relations can be improved if the city appears to have recovered in broadcasted images relaying to visitors that the city welcomes their return. In some areas along the commercial sector, debris could be collected in the rear along First and Third Streets. By integrating these instructional initiatives, the emergency planning and preservation officials can recognize that their efforts contribute to the same desired effect of protecting the community from preventable aftereffects of a tropical cyclone event.

As an independent entity, the HPC must facilitate an extended cooperative effort of preservation professionals in a response network, defining their individual responsibilities and creating a framework for recovery activities. This network will focus on the recovery of historic properties on the island and will have the long-term effect of enhancing the existing preservation program.⁷ The Florida Trust for Historic Preservation publishes *Heritage Resource Directory* with contacts divided across county, state, national, and local boundaries that provide a good starting point to establish a network that builds upon resources available in the city.⁸ Disaster management can be a platform to collaborate with other preservation organizations to establish a partnership beyond this purpose. It is prudent to involve communities beyond bordering counties in

⁶ 1000 Friends of Florida 44.

⁷ 1000 Friends of Florida 17.

⁸ Florida Trust for Historic Preservation, *Heritage Resource Directory* (2006).

the event that all communities are impacted from a single event, such as characteristic of a tropical cyclone.⁹ Another support strategy is to seek an alliance with the University of Florida because of the potential to create a shared objective; disaster recovery and education for the students. The university already has a presence in the area with the University of Florida's Seahorse Key Marine Laboratory and the Shellfish Aquaculture Extension Program Cooperative Extension Service, as well as the relationship that was established with the aforementioned GIS database project. Contact information for this network should be stored in an accessible database that is methodically updated and sorted according to location so that the need for housing arrangements can be avoided if possible, or otherwise addressed.¹⁰ In accordance with area of expertise, the network can be organized into teams covering assigned areas during a damage assessment inventory as well as activities involving public relations, rehabilitation advice, and other operational assignments as needed.

Practice runs of the city's emergency management plan will include the response network so that all parties can become familiar with the process, roles, and identifying areas for improvement. It is important that this network be legitimized by the city emergency response personnel so they are allowed access to the island for these activities during the recovery and long term rebuilding phases. The HPC will be the liaison between the two factions and will maintain in constant contact with each using the same methods employed by the city. As such, these activities should be accommodated within

⁹ 1000 Friends of Florida 27.

¹⁰ 1000 Friends of Florida 28.

the predefined staging areas for at least the initial set up. Further details of the response network activities will be addressed separately.

As a planner, the HPC also needs to assess alternative review procedures, a damage assessment form and identification placards for historic resources. To carry out a meaningful review process in an expedited manner, communications between the planning department and the ARB are essential. As indicated earlier, if the city could link the building permit process to the historic resources inventory, a flagging mechanism can distinguish those properties requiring a COA. The volume of reviews necessary could be overwhelming for the small panel if the island is struck by a tropical storm event. To overcome the challenge, the board could be divided in half with a rotating member and meet once a week on alternating schedules. Because the rotating member would also alternate the group would consistently be intermixed; allowing for an effective exchange of information on the successes and failures of the recovery process as it relates to the historic context.

In order to expedite the review process, the HPC needs to communicate emergency stabilization and minor repair measures that do not require a COA, and be delegated the full decision making authority to approve various repairs; using Section 106 reviews in lieu of the review when applicable.¹¹ The key to design review during a recovery situation is to keep in mind the long-term impacts to the historic resources, rather than short term fixes that can have a negative effect on the building and its contribution to the historic district.

¹¹ 1000 Friends of Florida 30.

During the damage assessment program of disaster recovery, the assessment forms need to be tailored to include information relating to the identification of historic resources or the use of unique forms can replace standard forms for this purpose. Using separate forms would enable the HPC to prepare them during the preparatory phase of an impending tropical storm event with pre-coded data for the individual structure and task force team assignment. Nelson includes a template in his 1993 study of natural disasters and cultural resources.¹² This document could be developed electronically as a database program to be used on a laptop combined with a GPS unit that feeds directly into a GIS layer to be cross-referenced with the historic resources inventory. The format of this assessment form combines basic identification information, descriptive and hazard information formatted with listed options, and damage observations. Integrating this form for use in Cedar Key would include pre-filled information for resources that have been previously recorded along with the state identification number attached with a street scale map and photograph. New resources or those that are not identifiable will be entered on a blank form. The rating scale on this form will also need to be correlated to the rating used on the assessment placard that gets posted on the building. A rating system recommended by the *Disaster Planning for Florida's Historic Resources* ranks the condition of the building on a 0-5 scale with 0 being completely destroyed.¹³ Nelson's rating scale operates in the reverse and is used to rate individual damage observations.¹⁴ An effective rating system for Cedar Key to combine these evaluation

¹² The sample damage assessment form is reproduced in Appendix C.

¹³ 1000 Friends of Florida 63.

¹⁴ Nelson 115.

methods would be to highlight the building features (from Nelson's 'Damage Observations') that correlate to structural members and elements of the building envelope. Nelson's 'Overall Assessment' would be replaced with the *Disaster Planning for Florida's Historic Resources* rating program. After the assessment is complete, a placard is posted on the building with the results. To improve this process for historic resources, it should be supplemented with general preservation recommendations and the principal review procedures with contact information for the HPC and ARB.

During this assessment period the HPC has the opportunity to educate the public regarding historic preservation principles.¹⁵ It would be prudent to have a publication ready to distribute at the onset of a disaster, similar to the publication produced by the City of Delray Beach, one of the pilot communities using the *Disaster Planning for Florida's Historic Resources* recommendations. It covers mitigations activities that require board approval, specifically describing various shuttering systems and how they are or are not compatible for the community's historic resources, and recommendations during storm phases, as well as justifying the cause of the board and review process.¹⁶ Following the 2004 storm impact on the state of Florida, the Division of Historical Resources issued a statement to advocate appropriate treatments for historic properties during the recovery phase. This communication emphasizes emergency stabilization measures for historic resources and contributes to a preservation ethic in these communities by summarizing rehabilitation principles of the Standards. These principles

¹⁵ Nelson 128-129.

¹⁶ City of Delray Beach Planning and Zoning Department, "Storm Protection for Historic Resources," n.d. 16 July 2006, <http://mydelraybeach.com/NR/rdonlyres/emlrvcuaf2ntrd3cdbfzytzbgyembayjr4wdd5advvxfvtqliokljuafejmeseajhiu3blo2gfefpy7cfydt6libb/storm+brochure.pdf>

guide property owners to the three R's of rehabilitation: repair rather than replace, replace in kind, and retain historic character.¹⁷ Consequently, after the devastating flooding from Hurricane Katrina in 2005, the National Trust in alliance with the Preservation Resource Center of New Orleans recapitulates important recovery principles of a National Trust publication dealing with flooded historic properties. A publication for Cedar Key could include equivalent preventive measures unique to tropical cyclone events and address mitigation measures appropriate to the historic context, detailing materials conservation identified under a previous heading.

All of the principal actions as educator, planner, facilitator, and advocate of the HPC help prepare the scene for the real challenge during the implementation of a disaster plan for a tropical cyclone event. This plan is a function of the responsibilities of the HPD derived from the integrated function of the Cedar Key CEMP. A basic element of disaster planning after analyzing potential risk and the existing procedures is devising procedures to respond and to recover.¹⁸ The predictability of a tropical cyclone event qualifies three distinct phases that can be responded to with activities phased in a similar pattern. The preparatory phase is executed with the formation of a tropical cyclone that has the potential to impact the area, followed by a recovery phase that begins when access to the island has been secured after the storm, with the final phase of rebuilding that speaks to long term effects.

¹⁷ Florida Department of State, Division of Historical Resources, "General Guidelines for Historic Properties in Recovery," n.d. 23 Jan 2005, <http://dhr.dos.state.fl.us/preservation/hurricane.pdf>.

¹⁸ Dr. Jan Lyall, "Disaster Planning for Libraries and Archives: Understanding the Essential Issues," National Library of Australia (June 1993) 5 July 2006 www.nla.gov.au/nla/staffpaper/lyall1.html

Preparatory Phase

Preparation plans for an impending storm event need to be engaged in concert with the activation of the Cedar Key CEMP, usually as a result of a governmental declaration of an emergency. When Tropical Storm Alberto developed in the Gulf of Mexico as the first named storm of the 2005 season, the governor executed an executive order to delegate authorities and responsibilities for an emergency management agenda one day before the storm made landfall.¹⁹ The Cedar Key CEMP instructs ‘Level II’ activities will begin at the issuance of a tropical storm or hurricane watch.²⁰ This timeline is more appropriate to begin the preparatory phase using the position of the HPC as coordinator to facilitate the disaster management plan for historic resources.

At the initial meeting of the city emergency management staff, the HPC should provide officials with the current historic resources inventory and be prepared to submit contact information for the response network that is standing by for this particular event. A calling tree can quickly assemble the historic preservation response network, followed by a meeting to debrief the local community and to communicate the city’s emergency action plan to the team. During this meeting, members should prepare reconnaissance utility packages with a radio transmitter, camera, clipboard, writing utensils, damage assessment forms, maps, and public educational materials related to historic preservation in Cedar Key. The notion of reconnaissance boxes was described as a method used in Coral Gables, Florida, however they were applied to city emergency management

¹⁹ State of Florida Office of the Governor, “Executive Order Number 06-130,” (June 2006) 16 July 2006, http://dep.state.fl.us/mainpage/em/2006/alberto/files/061206_EO_TS_Alberto.pdf

²⁰ Level II Activities are defined by the Cedar Key CEMP as preparatory operations initiated when a storm or hurricane watch has been issued. Conditions are monitored, staff is on call, and early security measures are completed.

officials.²¹ These materials will be disbursed as they are needed during the recovery phase but should be stored in an offsite facility or with the HPC. The staff/team is also assigned responsibilities to cover designated locations or to handle tasks as assigned according to area of expertise. The team should then take caution to secure their own property followed by the publicly managed historic buildings, and as time permits, provide guidance for historic buildings in the commercial sector. Precautions measures will require securing windows, doors, clearing exterior debris, and moving or raising interior furniture and collections as appropriate. Drayton Hall, in South Carolina, installs a back up method along openings in the event that the shutters are compromised. Tarpaulins are weighted and draped from the top down on the interior of the window and tucked in at the bottom covered by interior plywood.²²

A cooperative effort among the Library, Historical Society Museum, and other buildings in the commercial sector where it is likely that historical archives and artifacts are stored, can partner to transport materials to a pre-defined off-site storage facility. In addition to storage facilities, the HPC can secure rental equipment standing on call for use if needed such as fans, dehumidifiers, air cleaners, and generators, for public facilities.²³ Because Cedar Key is a manageable size, HPC should endeavor a windshield survey using prepared maps to verify that obvious protections were made by property owners. The HPC and response team will follow evacuation orders and continue communications with the city's emergency management staff during this time.

²¹ Dave Brown, "Disaster Preparedness," Florida Trust for Historic Preservation Annual Statewide Conference, The Biltmore Hotel, Florida, 19 May 2005.

²² Uguccioni and Herndon 5.

²³ 1000 Friends of Florida 32.

Recovery Phase

City, or otherwise designated, officials will provide clearance for personnel and citizens to return to the island once it has been secured against immediate threats. The HPC will coordinate damage assessments, stabilization review measures, and communications on behalf of the city's historic resources. Donaldson made the following summarized recommendations for emergency response objectives that can be applied to the recovery phase of a tropical cyclone impact²⁴:

- Conduct assessments with a team that includes a preservationist, preservation architect, and structural engineer.
- Assessment team will have access to historic buildings and provide rehabilitation recommendations directly to the property owner.
- Personnel shall have available to distribute informational brochures describing regulations pertaining to historic buildings.
- Qualified second opinions are required when a significant loss of historic fabric occur as a result of demolition, partial demolition, and repair.
- Collaborate with first on the scene personnel to promote compatible emergency stabilization methods while salvaging all materials possible.
- Recommend ownership transfer to a party interested in rehabilitation.
- Unique placards will identify condition and recommendations for historic buildings that are damaged.
- Recognize that mitigation promotes life safety and certain degrees of building failure can be predicted and expected.
- Detail a repair response ordinance that promotes long term mitigation.
- Caution the interaction with hazardous materials such as asbestos and lead.

Recommendations thus far fall loosely within these ten objectives. The first order of business will be to assemble the response network that is on call at the pre-arranged

²⁴ Donaldson 26-28.

meeting place established by city emergency personnel. Following the meeting, the initial damage assessment should be conducted as a member of the city's initial impact assessment team. The HPC should coordinate security concerns with the police department to make them aware of particularly threatened buildings in destabilized condition as well as those buildings that have an inventory of artifacts and archival documents.²⁵ The initial impact assessment will inform the organization of the damage assessment teams and emergency stabilization crew using the response network.

Immediate needs areas identified from the initial impact assessment will be prioritized to receive assistance from the emergency stabilization crew. This crew will focus on historic public buildings and the commercial sector following the pre-established emergency repair standards that are approved by the ARB for use during this emergency condition. Damage assessment teams will be assigned and reconnaissance utility packages will be distributed. At a minimum, there should be two teams comprised of at least two individuals, one member of the ARB who is local and intimately familiar with geography and historic resource inventory, along with an architectural preservationist or structural engineer. One of the members will process written evaluations while the other will take physical recordings using a camera and locator device with both collaborating on the evaluation. The team size is a compromise from the recommendation by Donaldson but variance will be allowed for the size and resources of Cedar Key and will be supplemented with the building inspector's analysis.

Damage assessments can be split between a commercial and residential team with the commercial team surveying the thirteen city blocks south of Third Street and the

²⁵ Nelson 123-126.

residential team surveying the remaining blocks to the northern boundary of the historic district. After this survey is completed, the team will reconvene with the HPC and sort the damage assessment forms while reviewing the findings. These results will be translated into a tabular format identifying urgent needs for individual buildings as well as the overall impact to the historic district in a presentation to the emergency management director. Ideally, the data would be consolidated into the GIS database with the historic resources inventory. Simultaneously, an historic resource condition information can be packaged into a public relations kit narrated with a penchant for financial or technical preservation resources, as the case may be, while highlighting the significance of the loss to the historic integrity of the historic district and economic base.²⁶ Coinciding with a public statement, property owners can be addressed directly and advised to follow the preservation ordinance practicing the rehabilitation guidelines. Concluding the first thirty days of the recovery phase, the HPC and response network can begin to assist property owners to facilitate financial assistance, continue technical advice through restoration workshops, and address larger mitigation projects.

Rebuilding Phase

The lasting impact that the storm will have on the community is its ability to alter the historic context permanently. Preservation ethics encompasses a dichotomous ideology between saving the fabric versus saving the character: "...a philosophical base of decision making...(determines) the degree of consequences of actions...(resulting in) tradeoffs between fabric and character."²⁷ Rebuilding results in new or substitute

²⁶ Nelson 128-129.

²⁷ Vicki Jo Sandstead, personal interview, 15 Nov. 2004.

materials erasing the original craftsmanship of the building, therefore it is essential that materials be salvaged at any reasonable expense.

During storm recovery, the debris removal process can result in the unnecessary loss of historic materials. The HPC can incorporate a public education initiative by emphasizing the financial cost to replace a feature in the manner of the original piece; supplemented by recommending insurance programs, in the future, that provide for replacement in kind. Moreover, the higher degree of alteration the higher degree of review will be required by the ARB. The ethical decision making process of the ARB should focus first on ways that conserve the original materials of the building to the extent that it is feasible. The sense of place in Cedar Key is reinforced by ‘living’ in the historic context so that it will propagate a sustainable historic context. However, in order to preserve the historic context, the use of original materials may need to be compromised so that the rehabilitation is economically feasible. Guidelines for any compromise to the Standards should be related to the individual rehabilitation’s impact to the composition of the district. The ARB will need to support COAs that promote the scale, rhythm, and spatial relationships of the historic district.

Full demolitions result in an immediate loss of historic context because not only is the original craftsmanship lost, but the history symbolized with the building is lost. In this recovery phase, the decision to salvage or demolish should only be granted under supervision of the preservation architect and engineer.²⁸ This process should be initiated from the results of the damage assessment survey in cooperation with the property

²⁸ Garvey and Smith 85.

owner.²⁹ Demolition review procedures that promote caution and oversight can reduce the unnecessary loss of historic buildings. In addition to expert analysis, a community forum should include public opinion and alternatives that help to formulate a decision with respect to demolition.³⁰ FEMA funding for repairs will not be held back on those historic resources damaged in excess of fifty percent of the market value due to the variances that protects them. Demolition and intensive rehabilitation leads into redevelopment planning that is the subject of the following chapter.

The rebuilding process is an opportunity for the HPC to assess building conditions that are repeatedly damaged and engage in large scale mitigation plans with the city. In response to Hurricane Hugo in 1989, the NTHP reported a realistic, long term recovery schedule that includes combinations of stabilization, restoration, conservation, protection, identification, and education that expands upon the relationship of preservation and disaster recovery.³¹ Some of the recovery activities require support of the HPC to cooperate with external agencies on behalf of the local resources. Agencies responding to the disaster along with financial recovery programs will benefit from the HPC's expert knowledge of the local historic resources, community needs, and preservation processes.

The delegation of responsibilities to the historic preservation coordinator ensures that there is an advocate within the local government to represent historic resources. During the course of assessing vulnerabilities of the Cedar Key's historic context to a

²⁹ Craig found that homeowners, were not consulted during demolition of their historic properties in the aftermath of the Loma Prieta earthquake of 1989 in a Santa Cruz historic district. Steade Carigo, "A Helping Hand," in *Disaster Management Programs for Historic Sites*, eds. Dirk H.R. Spenneman and David W. Look, (San Francisco and Albany: Association for Preservation Technology (Western Chapter) and The Johnstone Centre, Charles Sturt University June 1997) 18.

³⁰ Nelson 122.

³¹ Nelson 133-137.

tropical cyclone, many responsibilities were created that overwhelmed the capabilities of the existing city staff. In this chapter, the policies identified in the CEMP were enacted and expanded into the roles of preservation personnel during the three phases of a tropical cyclone.

CHAPTER 9 SEARCHING FOR DESIGN COMPATIBILITY IN CEDAR KEY'S HISTORIC DISTRICT

The principal difficulty with any new development on Second Street will be complying with FEMA regulations for placing new occupied space above the Base Flood Elevation (BFE). For most parts of Second Street, this is about one floor level above the existing grade elevation. Done without a sensitive treatment of the ground floor area, this will be fundamentally incompatible with the existing development.¹

The impact of a tropical cyclone event has the potential to fracture the continuity of the historic fabric when historic resources are damaged beyond repair. Filling in the voids requires a creative interpretation of the historic context that generates a harmonious relationship between old and new construction. There are also existing redevelopment possibilities in vacant, low-density, and non-compatible parcels. Development that is insensitive to the character of Cedar Key threatens the integrity of the historic district by breaking down the dialogue between the past and the present. Compatibility is recognized as the principle determinant of successful infill development.²

Contrasting principles of design criteria for the historic district and coastal building regulations generates a conundrum in the objective to preserve the sense of place in Cedar Key. Interpreting the above citation, existing development along Second Street refers to the historic buildings and their defining characteristics that achieve unique spatial relationships between the built and human environments. Two-tiered porches envelop the sidewalk, rectangular store windows symmetrically placed create a common

¹ "Community Redevelopment Plan," City of Cedar Key (Apr. 2005) IV – 10.

² Eric Smart, "Making Infill Projects Work," *Urban Land* (Sept. 1985): 4.

rhythm, and the size of material members and features along with building proportions contributes to a pedestrian scale. As a composition, the streetscape is vernacular, characterizing the physical construction of the buildings and their proportion to the public space. Emphasis is placed on the commercial sector as the central focus of the island, therefore nowhere else on the island is compatibility a greater concern but it also applies to the residential sector. Here the buildings play a role as more of a landscape texture, regulating the municipal boundaries of parcel, street, and sidewalk surrounded by the natural boundary of this barrier island. Historic residential buildings share massing relationships and design features that are typified by vernacular craftsmanship. In this reference, vernacular is the epitome of the local community as an expression of the “trends of history and settlement.”³



Figure 9-1 Relationship of elevated buildings to the residential setting in the background, Cedar Key. Personal photograph by author. 5 Aug 2006.

³ West Virginia Division of Culture and History, “Just What is Vernacular Architecture?”, *Details*, 9.2 (2002): 1.

These patterns are established within Cedar Key's historic context. New development in a historical setting is guided by the Rehabilitation Standard 9 that promotes the preservation of spatial relationships and qualifying features that new development infuse compatible "materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment" discernable from the historic counterpart.⁴ Cedar Key moderates new development in the historic district that references the Standards and eleven specified "visual compatibility standards" defined in the land development regulations.⁵ Facilitating this guideline is strained by building regulations tied to flood plain management mandated by FEMA in order for Cedar Key to be eligible for the NFIP (Figure 9-1). Building codes designed for wind hazard are not as detrimental to historic buildings. The Florida Building Code has a provision for historic buildings to allow for alternative compliance methods that can combine include a compromise of compliance measures that result in satisfactory protection rating.⁶ These measures affect the choice of materials and features that can be designed to be compatible with the preexisting features when the building is required to comply; resulting from damage that exceeds 50% of its value. The same principles of compatible materials and features can be applied to development in the historic context. Conversely, flood plain management has holistic impacts to the historic context that is not as easily ameliorated. Opportunities for compatibility as well as inherent adversities will be examined using the

⁴ Weeks and Grimmer 62.

⁵ "Land Development Regulations," *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005) 30.

⁶ Florida Building Code, 2004. Chapter 10 Section 1005, 13 Jul. 2006, http://infosolutions.com/icce/gateway.dll?f=templates&fn=default.htm&vid=icc:florida_exbuild

structure and selected language of the city's regulatory framework for selected compatibility standards affected by flood plain building construction requirements.

Visual Compatibility Standards

Height

Height shall be visually compatible with adjacent buildings.⁷

Buildings create an edge condition framing the streetscape, affecting the proportion and scale of its surrounding environment. A majority of the buildings in the historic district are one and a half to two and a half stories in height and are level with the ground plane; with the exception of the need to rest portions of the building on piers to account for localized fluctuations in ground elevation. Along the commercial sector, the ground plane is fairly flat and lies in the V-Zone. This designation signifies the coastal high hazard area affecting how building height is regulated. Thirty-two feet is the maximum height a structure can reach; measured from the ground plane or the BFE if located in the V-Zone.⁸ Because of the height differential between the BFE and ground plane, there could be a one or more story difference between the new and old buildings when new developments build to the maximum from the required FEMA elevation. The result is an irregular pattern of roof lines in the commercial sector, but it is restrained because of the limitation. If a new building is constructed with two occupied stories and an unoccupied ground level, the massing is more compatible in proportion with the existing buildings. However, building to the maximum height compromises the predominance of two story buildings from the ground level (Figure 9-2). To soften the differential in the edge

⁷ "Land Development Regulations," *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005) 30.

⁸ "Land Development Regulations," *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005) 62.

condition when new developments are built up to the maximum, the top level could be recessed a width equivalent to the porch width, in essence altering the form of the story above the height of existing buildings like the residential example in Figure 9-3.⁹ The appearance of continuous two-tiered porches would dominate over the recessed upper level porch. Residential occurrences of this condition do not impact roof line patterns to the degree of the commercial sector because of the reduced concentration and density of building to parcel.



Figure 9-2 Predominance of two story buildings in commercial sector, Cedar Key.
Personal photograph by author. 15 June 2006.



Figure 9-3 Alteration of form on the second story of a residential building, Cedar Key.
Personal photograph by author. 5 Aug 2006.

⁹ Mark Hinshaw, *Design Review*, Planning Advisory Report Number 454 (Chicago: American Planning Association, 1995) 20.

There is a different effect on the residential condition for buildings that do not have a space equivalent to the height of the large building separating the two. The taller building will dwarf the single story residential occupation of space along the ground plane creating a visual wall and blockage of light (Figure 9-4). The result is also a disconnect of the spatial context for the existing residential building. Oftentimes the space below the residence is filled with concrete and used for parking and storage. The development codes restrict the size of the concrete pad to a percentage of the floor area ratio to ensure that proper drainage is maintained. However, the use of this space is discussed under the separate heading on scale. The height restriction of 32 feet should be limited in the residential sector where new development must meet coastal high hazard area construction requirements. Again, an alteration of form above the height of the neighboring buildings could reduce the impedance of the spatial relationship as an alternative to restricting building height further.



Figure 9-4 Elevated buildings on 1st Street, Cedar Key. Personal photograph by author. 21 Oct. 2005.

Rhythm of Solids to Voids in Front Facades

The relationship of solids to voids shall be visually compatible with buildings and places to which it is visually related.¹⁰

The rhythm of solids to voids is a function of the building plane and the fenestration, as well as the patterns of partial enclosures like porch features. Relief from building mass is created in fenestration while serving the function of physical entry, ventilation, and light penetration. In the historic district, fenestration is regulated in either a symmetrical or asymmetrical fashion organized by floor level. Additional challenges facing new construction with regard to flood plain management are the restrictions on developing the space below the BFE. In the V-Zone enclosures must be breakaway walls, treated as an “expendable” material.¹¹ The absence of any enclosure is treated as a distinct condition under the heading of scale. When this area is screened with an enclosure, select materials can assimilate the patterns of solids to voids, but functional windows and doors are not recommended because it engenders a dishonest representation of the function of the building. Residential use of this installation may be acceptable, however, because of the close relationship of the pedestrian to the building in the commercial district a successful interpretation is dubious depending on the function of the ‘interior’ space. The emphasis on using such an enclosure is to employ design and materials that can express an honest functional use so not to imbue artificiality.

¹⁰ “Land Development Regulations,” *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005) 30.

¹¹ United States, Department of Homeland Security, Federal Emergency Management Agency, “Enclosures and Breakaway Walls,” FEMA 499 Fact Sheet No. 27, Homebuilders Guide to Coastal Construction (Aug. 2005) 1.

Rhythm of Entrance and/or Porch Projections

The relationship of entrances and projections to sidewalks shall be visually compatible to the buildings and places to which it is visually related.¹²

An extension of the previous condition, similar concerns are apparent when the ground level space does not function cohesively with the existing context. Porch extensions over the sidewalk divided by bays marked with simple posts and detail are appropriate to continue the rhythm of the commercial sector. In this area, pedestrian access to the new building is complicated because of the disparity between the ground level and entry level. A compatible solution will have to be a prescribed contrast. The point of access could be from the interior of the ground level covered space, from the street level adjacent to the building, or at a common access juncture nearby. Exterior staircases are not discernable from historic photographs but are being employed on at least three buildings in the commercial sector. It is recommended that these features continue to be located in a less visible space than on the front façade and within the sidewalk space. Series of steps are typical for some residential buildings but there is not a predominance of a staircase. Locating stairwells/staircases in secondary spaces should be considered when buildings are elevated or new buildings are built.

Scale of a Building

Size and building mass in relation to open space, windows, door openings, porches and balconies shall be visually compatible with the buildings and places to which it is visually related.¹³

Scale is determined as a proportionate relationship between a human and the environment; for this purpose the man made building environment in the historic district

¹² “Land Development Regulations,” *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005) 30.

¹³ “Land Development Regulations,” *Laws of Cedar Key*, CD-ROM (Cedar Key: Sept. 2005) 30.

of Cedar Key. This relationship is essentially a culmination of conditions that contributes to how a pedestrian relates to the spatial formations that the built environment creates, which is a key achievement to the character and harmony of Cedar Key. Building to meet the BFE is an inherent challenge to compatible scale especially in the historic commercial sector where buildings are concentrated in proximity. With an open and untreated space below a new building the pedestrian does not relate and results in a disengaged continuity. In addition, the building itself is offset from the incongruous massing of building material to space. With an open under-story, the building lacks a grounded and weighted connection with its setting as space is allowed to circulate freely below and above. This presents a stark contrast to existing buildings that have a direct dialogue with the terrestrial grade. Any attempt to ameliorate this condition requires ingenious use of the under-story space and integration of this space with the existing public space. Installing green spaces in this area with shade tolerant materials and rock gardens would be one of these opportunities. Features of this park feature can be extended into the public right of way space to create an exterior visual identification of the function of the space. Cedar Key would benefit from additional recreational spaces interspersed within the community to connect these spaces located at its extremities. Temporary rental facilities are another consideration that could be offered to the community for artist spaces, instructional classes, community meetings. During such uses, display pieces can be set up on the sidewalk; again to signify the use of the space giving it a defined purpose while interacting with the existing public atmosphere. Use of this space for parking should be prohibited if it is visible along Second Street.



Figure 9-5 Contrasting conditions for treatment of the ground level space Personal photographs by author. Tampa (above), Fernandina Beach (below) 2004 and 2005.

If a sufficient concentration of buildings is developed at the elevated condition, the lower-level spaces need to be addressed in a uniform manner to create an appropriate treatment of the ground level (Figure 9-5). The visual compatibility conditions provided in the LDR will help to ensure that the commercial sector retain the compositional features that engenders a sense of place. Currently, there are not any buildings in the commercial sector that have been recently developed or elevated. The first design installation addressing this challenge will contribute to the precedent for new development in the City that will have a significant impact. A systemic approach to this challenge should involve public input to garner support from developers and the community.

Approach to Design Compatibility

The goal of new development should be to promote the sense of place that has made Cedar Key unique among other coastal communities. It is a village that has been settled for over 150 years with descendants from some of the early families still occupying the island with a history rich in military, transportation, and industry dependent on the islands natural resources. The historic context of Cedar Key has been preserved because the way of life on this island occurs in a similar fashion as it did originally. Local businesses and employment opportunities have changed, but the island has not been markedly impacted from exterior forces. Cedar Key will continue to evolve and will need to moderate new development and alternative economic resources with preservation guidelines – to do otherwise would compromise the history and culture that defines Cedar Key’s sense of place. Succinctly stated:

history’s mark on a city should never be erased. The visibility of time is one of a city’s most vital aspects. Change is not only a process but a product and time’s layers should be felt by those walking down a city street.¹⁴

To strengthen the existing preservation ordinance within the city’s LDR and preservation objectives in the comprehensive plan, Cedar Key would benefit from illustrated guidelines for rehabilitation and new construction. “[G]uidelines that emphasize context and design elements, rather than styles, allow the broadest and most flexible interpretation for new construction.¹⁵ These design elements are already identified in the LDR and need to be expanded as a separate reference document that defines and illustrates how these conditions are relate to Cedar Key. An analysis of the

¹⁴ Paul Goldberger, “To Preserve the Visibility of Time,” *Old and New Architecture: Design Relationship* (Washington, D.C.: Preservation Press, 1980) 262.

¹⁵ Beasley 9.

contextual patterns that exist from development periods or architectural trends will provide support for these conditions as they are applied to new development. Within this perspective, challenges faced as a result of flood plain management also need to be addressed in terms of what is appropriate for maintaining the historic context.

This study has focused on distinct relationships between buildings in the commercial and residential sector, and identified local landmarks. A similar model can be used to articulate design recommendations that interfuse challenges from preservation principles and coastal building requirements. The visual compatibility standards identified how different compromises could be made depending on which sector and what conditions the resource is located in. To supplement these categories, redevelopment pockets will also be identified to remediate existing incompatible design.

The product of these divisions is a compilation of new layers as a subset of the existing historic overlay zone described in the LDRs. Within each of these layers, general preservation principles apply – the expanded and illustrated visual compatibility standards – in addition to the desired treatment for the particular condition. The focus of each of these distinct layers is on contextual relationships that repeats the spatial patterns previously described. For the commercial sector, the edge condition of the buildings is an inherent quality that relays its importance of the pedestrian interaction. There are layers of spatial occupations within this zone that need to be cultivated into predominance. Building to the sidewalk and use of the two-tiered porches are necessary elements to continue the rhythm of the spatial patterns. The lower level of new developments that are not developed should incorporate a pedestrian activity, either enclosing a portion of the space in a similar fashion or establishing an interplay of voids.

The residential layer will embrace methods to reduce the verticality of new residential construction, conversely emphasizing horizontal features. Rather than continuous secondary spaces, segmented private spaces communicate with a public facing protrusion of the individual buildings at the ground level. Efforts to graduate the height of elevated buildings through lower level porches can reinforce this condition.



Figure 9-6 A vacant parcel in the commercial sector, Cedar Key. Personal photograph by author. 5 Aug. 2006.



Figure 9-7 Convenience Store/Post Office complex, Cedar Key. Personal photograph by author 15 Jun 2006.

Landmark properties represented by the Island Hotel and the Historical Society Museum compound can inspire redevelopment pockets that are vacant or non-compatible with desired spatial relationships. Two vacant parcels along Second Street (Figure 9-6) and the convenience post office/convenience store (Figure 9-7) are opportunities to resurrect characteristics of the commercial sector. In the manner of the Historical Society, there is a combination of a garden space and street space. The street space is typical of other buildings in this sector with a two-tiered porch, but adjacent to this space is a garden space that transitions into the residential neighborhood. This notion can be carried out as a courtyard system for the post office/convenience store. A building setback from the street in combination with a building that abuts the sidewalk still provides varying degrees of intimacy between public and private. Alternatively, developed in the manner of the Island Hotel a building would feature a predominant element that wraps around the corner; because it is located on a corner lot the emphasis would be justified. If compliance with the flood plain management could be flexible in the historic commercial sector, these buildings could be elevated just a few feet, and have an interior floor elevation similarly elevated, that could add an overall elevation of five feet.¹⁶ At eye level the average pedestrian the interior of the building could still be visible from the street, and the interior elevated floor would be masked with typical building material. A combination of other flood proofing activities could compensate for some of the difference. One of the important features of a redevelopment that involves a historic context is to provide a pedestrian transit space that connects heavily traveled

¹⁶ Interior building elevation is a practice that FEMA identified as an offsetting mitigation activity practiced in a Wisconsin city.

routes taking advantage of scenic vistas.¹⁷ Sanborn maps from 1884 indicate that there were series of wooden pedestrian bridges that were used to travel over topographically depressed and water-logged areas. This may be an opportunity to explore the historical use of this idea and reinvent it to serve the purpose of connecting elevated structures to the ground level.

These enhancements to the preservation ordinance will help to focus redevelopment goals while addressing the challenges of coastal building requirements. The interpreter of these recommendations will be the ARB, administrated by the HPC. The goal of historic preservation does not function independently especially where redevelopment is concerned. Cedar Key recently installed a Community Redevelopment Plan that was developed with extensive community input. One of its areas of focus is the compatibility of coastal design and rehabilitation. This is a good opportunity to synergize the functions of the recommended HPD and existing Community Redevelopment Agency (CRA). Together they can create solutions and enhance the existing framework of the compatibility standards and work toward promoting new design compatibility initiatives.

¹⁷ William J. Tinti, "Design Review from a Legal Point of View," *Old and New Architecture: Design Relationship* (Washington, D.C.: Preservation Press, 1980) 181.

CHAPTER 10 RECOMMENDATIONS AND FUTURE RESEARCH

This study embarked on an exercise to identify what components can be adopted to mitigate the direct and indirect effects of a tropical cyclone event on the historic context that is the substance of the sense of place in Cedar Key. A limited body of existing literature focuses on the specifics of historic preservation and disaster management as a responsibility of the local government. Also, examination of the city's emergency planning strategies called attention to the absence of a historic preservation component putting the historic context at risk. The lack of planning was a key opportunity to develop policy measures focused on preserving Cedar Key's historic resources from the direct effects of a tropical cyclone event. A compounding challenge is the indirect effects of this disaster due to building requirements that result in undesirable qualities for a historic district with regard to new development. The motivation to invest in the recommendations of this thesis lies in the risk that Cedar Key could suffer a broad impact from a tropical cyclone event that threatens the cultural landscape on the island.

Cedar Key evolved from historical events rooted in military occupation, transportation, and industry. Historical events changed the nature of its development that has led it toward a destination place for leisure and maritime activities, harboring a small town village atmosphere. This environment is composed of historic architectural fabric that is a tangible component the sense of place the island exudes. The historic resources of Cedar Key are significant for their association with a historic context unique to Florida history as an example of an early Gulf Coast community.

Recommendations

Effective ways to achieve a synthesis of preservation and disaster policy considered three concepts of historic preservation: materials used historically have established mitigation treatments, interaction with the historic fabric requires a consideration of preservation guidelines, and that the historic context in Cedar Key defines its unique sense of place. Distinguishing materials and guidelines that apply to historic resources accounted for the need to develop a program that is distinctive from general emergency procedures. Historic resources are measured by value that is directly linked to its significance that was federally emphasized with the National Historic Preservation Act. Within the authority established from this act, the Secretary of the Interior's Standards were created and added to this study by recommending how to interact with the historic fabric during mitigation.

To cultivate the guidelines within a meaningful disaster management program, an advocate for historic preservation within the local government was recommended. During the process of expanding Cedar Key's existing emergency management plan, this study identified five primary components that, when combined, achieved the overall goal to develop policy objectives addressing the largest threat from a natural disaster – a tropical cyclone. The components consist of the following: integrate historic preservation into the existing local emergency management plan (CEMP and LMS), use of tools to assess risk and categorize the historic resources, a mitigation analysis for building materials and features common to the conditions in Cedar Key, responsibilities of the Historic Preservation Coordinator within the CEMP and as an independent function relating to the threat of a tropical cyclone event, and the final component is an approach

to design that is compatible in a historic district mitigating the effects of building requirements in a coastal high hazard zone.

In the first recommendation, the existing historic resource management and emergency planning programs were analyzed to determine opportunities to build and enhance the preservation component. A Comprehensive Plan and Land Development Regulations provide the guiding framework to manage historic resources in Cedar Key, constituting the preservation ordinance. While many of the ideals of a historic preservation ordinance are fulfilled between these instruments, suggestions to strengthen their implementation include: enhancing the architectural review board with a city official, articulating illustrated preservation guidelines that promotes character defining attributes of the district, and obtaining resources to fund goals that have not yet been realized; namely, applying for Florida Certified Local Government status. Acquiring additional funding can be used to promote rehabilitation projects and local maintenance strategies for historic property owners.

The Cedar Key Comprehensive Emergency Management Plan (CEMP) comprises disaster planning activities that require special consideration where historic resources are concerned. The appointment of a preservation department, as previously identified, can oversee the mitigation interventions and recovery activities for historic resources and serve the dual purpose of strengthening the current practice. A suggested organizational chart (Figure 6-1) placed the authority of a historic preservation department equal with city departments to participate in the emergency planning process. Recommendations also extended to the county in the Local Mitigation Strategy for Levy County. A member should be appointed to this county mitigation committee to evaluate the impact of their

recommendations on historic resources as well as to propose mitigation strategies focused on the unique condition of historic materials and buildings. Participating in the LMS will qualify mitigation projects for funding allocated by the state that, again, can be used to promote property maintenance.

The city and county planning documents provided the foundation to support an interdisciplinary method of disaster management. Local functions of disaster management are traditionally focused on utility restoration, debris removal, and rebuilding that is generically applicable to all building types – after life safety issues are resolved. An interdisciplinary method that is proposed in this thesis recommends integrating historic preservation concepts into the existing function of disaster management when communities such as Cedar Key are defined through a sense of place characterized by a historic context.

Geographic Information Systems was proposed as an effective tool to manage Cedar Key's historic resources and assess vulnerabilities and patterns related to a tropical cyclone event. The historic resource inventory can be analyzed as a component of a hazard map to identify structures most at risk for flooding and storm surge that can establish a hierarchy to resolve building interventions that are risk prone and in accordance a division of resources between the commercial, residential, and local landmarks. Other identifying factors to assess building interventions were addressed in the next chapter on building mitigation. Using the historic resource inventory with the GIS application enhances the capabilities of emergency personnel when planning and responding to a natural disaster. Locating resources and providing a link to damage assessment forms and building permits reinforces the integration of historic preservation

into the local emergency strategies by creating an assimilated platform that unites the goals and language of disaster planning and recovery with preservation guidelines.

The hazards of a tropical cyclone were identified to have an impact on the historic resources of Cedar Key. Lessening these effects is the third precept of this study that begins with routine maintenance recommendations. Following maintenance, physical mitigation activities were found to vary with the level of intervention on the historic fabric of the building, each having an affect on the integrity of the historic context. Basic property improvements, retrofitting, elevation, relocation, and demolition activities were analyzed using the Secretary of the Interior's Standards for Rehabilitation. The latter of the three mitigation methods proved to be less desirable solutions in Cedar Key because of the diminished value they placed on the setting of the building and the alteration of the spatial relationships. Of these three, the option to elevate a historic building will probably be the most widely used mitigation technique after maintenance and retrofitting. Solutions to mediate between the Base Flood Elevation and an appropriate elevation for the particular historic building will require policy changes. Evaluating significant building features with the Standards is necessary to protect the integrity of the resource during the decision-making process.

Methods to engage the responsibilities of the historic preservation coordinator derived from the CEMP were the fourth planning initiative of this study. Various roles as an educator, planner, facilitator, and advocate of historic resources were applied to the four stages of a tropical cyclone disaster: planning, preparation, recovery, and rebuilding. The outcome included management suggestions for the review board, enlistment of a historic preservation response network, public outreach, and collaboration with

emergency officials. The position of the historic preservation coordinator facilitates inter-agency operations making it easier to monitor public and private developments to ensure considerations are made for historic resources.

In the final component, contrasting principles of design criteria for the historic district and coastal building regulations were identified using selected visual compatibility standards provided for in the city's land development regulations. Height, rhythm of solids to voids, rhythm of entrance and/or porch projections, and scale of a building are the four standards discussed in detail. The maximum height limitation set by the city is 32 feet and when built to the maximum alters the predominance of two-story, or less, buildings because the limit is measured from the BFE. This maximum may need to be reevaluated in dense residential sections and methods to soften the height can include recessing the upper-most story. Large voids are created when a building is elevated to the BFE that alters the rhythm of solids to voids because of the limitations on the use of the under-story space. This condition can be treated with materials and patterns of an enclosure sympathetic to the historic context or an abstract interpretation of the relationship of solid to void. A functional entrance and porch feature at the ground level of an elevated building is dependent on the activity of the under-story space. The use of this space was the focus of the scale consideration. Parking is not a recommended use for the commercial sector condition because it does not engage the pedestrian. Parks, temporary rental facilities, and art installations, can occupy this space providing a transition area between the public space of the sidewalk and alternating conditions of building mass.

The inherent disparity between the city's visual compatibility standards and coastal building requirements is a challenge to the objective of preserving the sense of place in Cedar Key. Development that is insensitive to the character of Cedar Key threatens the integrity of the historic district by breaking down the dialogue between the past and the present. The suggested way to negotiate this challenge is to reevaluate the visual compatibility standards used in the city's land development regulations in the format of design guidelines that illustrate desired conditions for the historic district. Also, the existing historic overlay and floating zones defined by the city could include separate layers for commercial, residential, landmarks and redevelopment pockets. Each subset possesses an approach to design compatibility that mediates coastal building regulations with the desired characteristics for each sector. Using these segregated components of the overlay can provide an opportunity to apply flexible guidelines where it is needed most to maintain the characteristic of that sector.

Inter-agency planning methodologies and mitigation tactics are the ingredients for Cedar Key to maintain and promote its sense of place threatened by a tropical cyclone event. Federal and state agencies have begun to recognize the relationship between historic resources and community viability justifying the need to include them in disaster planning strategies. Implementing the recommendations of this study focuses on a local strategy that initiates the process to integrate specific historic preservation concepts into the emergency planning process. Once the policy infrastructure is in place, the division of resources will inform a hierarchical strategy to recommend building interventions to mitigate the effects of a tropical cyclone event. The commercial sector contributes more to the economic stability of the island and can also set an example for the residential

community and general public that Cedar Key is returning to normal operations. Buildings in this sector should be evaluated according to the risk and structural integrity, followed by its significance to the historic context. At the federal level the existing historic preservation framework informs how the emergency planning process can evaluate the mitigation interventions. Once the foundation of an integrated program is underway, recommendations can be presented to adjust federal guidelines that impact coastal development with regard to their impact on a historic district. This thesis has identified a methodology to reconcile preservation of the historic context with the effects of a tropical cyclone event to promote the endurance of the sense of place; and furthermore the cultural landscape significant to Cedar Key.

Future Research

The unique condition in Cedar Key between the historic context, geographical location, and coastal building requirements were addressed with the policy components founded in this study. While it represents a specific plan for Cedar Key, other small coastal communities can build upon this template. This study promotes a dialogue between preservation leaders and emergency officials on the multiplicity of issues in managing the detrimental effects that disasters, namely tropical cyclones, have on historic resources.

Opportunities to develop this analysis include designing creative solutions to satisfy FEMA requirements for flood plain management. In the historic commercial sector, one proposal used in another community elevated the interior floor plan of the building that is disguised by exterior building fabric; resulting in the exterior appearance of being constructed at ground level. Like the implementation approach of the Florida Building Code with regard to historic resources, flexible compliance methods for FEMA

regulations may include allowing alternative uses for the under-story space and petitions to avoid the requirement in a concentrated historic district altogether. Combinations of various flood-proofing methods can then result in a satisfactory rating. Planning for a compatible interpretation of mitigation methods for new development beyond the regulatory framework will require policy changes at the federal level.

A further analysis could develop a specific case study for a selected building in Cedar Key to implement recommendations of an appropriate mitigation program based on the condition of the building. Like the example at 113 Calhoun Street in Charleston, South Carolina, this could serve as an opportunity to showcase the integration of preservation guidelines and coastal building requirements using a flexible compliance method. This example can also motivate the community to identify mitigation needs for their own historic resource.

Archaeological resources were not evaluated as part of this thesis because their condition requires a distinct approach. These resources are known to exist on Cedar Key and are equally important as a part of the native settlement patterns and potential to yield important pre-historic cultural patterns. Two studies were encountered within the course of the research for this thesis that identified the nature of the threat to archaeological sites from flood and cyclonic activity. Spenneman makes the recommendation that known sites require regular monitoring to document changes both over time that can result from gradual erosion and the immediate potential of a tropical cyclone to expose fragile artifacts.¹ A case study presented the effects from flooding on a large archaeological site

¹ Dirk H.R. Spenneman, "Conservation Management and Mitigation of the Impact of Tropical Cyclones on Archaeological Sites," in *Disaster Management Programs for Historic Sites*, eds Dirk H.R. Spenneman and David W. Look (San Francisco, Albury: Association for Preservation Technology (Western Chapter) and The Johnstone Centre, Charles Sturt University, 1998) 129.

in Nevada whose recovery was hampered by the lack of professional archaeologists familiar with the site, lack of funds, accessibility problems, and site features such as location and description.² Analysis of the hazards to archaeological resources in Cedar Key should be completed to identify how to protect these resources and the information they contain from the effects of a tropical cyclone event.

Achieving CLG status for Cedar Key and participation in the county LMS were recommended to provide financial support for the planning and mitigation measures within this study. However, other financial programs and incentives should be investigated to expand on this foundation. FEMA, Heritage Preservation, the National Endowment for the Arts, and the National Trust for Historic Preservation are some of the organizations that offer financial and technical programs for historic and cultural resources. Also, property insurance programs beyond the NFIP offer insurance programs specifically valued for historic resource needs that can assist in the recovery process. The insurance industry is constantly changing that is a reflection of exposure in disaster prone areas so applicable insurance programs require research of current policies.

² Alice M. Baldrice, "Flood Case Study: Stillwater, Nevada," in *Disaster Management Programs for Historic Sites*, eds Dirk H.R. Spenneman and David W. Look (San Francisco, Albany: Association for Preservation Technology (Western Chapter) and The Johnstone Centre, Charles Sturt University, 1998) 140.

APPENDIX A
GIS PARTIAL DATA SET

PARCEL_NO	FL_ID	LOCAL_ID	FL_SITE_NA	YEARBUILT
3215130858800000	LV00120	8LV120	ISLAND HOTEL	1861
3215130852900200	LV00140	CK014	HODGES COTTAGE	1927
3215130852900000	LV00141	CK015	HODGES RENTAL COTTAGE	1927
3215130853400000	LV00142	CK020	RODGERS, BERTEL HOUSE	1930
3215130852600000	LV00143	CK009	WHIDDEN, HENRIETTA HOUSE	1914
3215130852900100	LV00144	CK073	HODGES RENTAL	1927
3215130858000000	LV00145	CK056	LUTTERLOH BUILDING	1875
3215130857100000	LV00146	CK053	BICKELL'S PHOTO GALLERY	<1884
3215130852000000	LV00147	CK052	ICE CREAM PARLOR	1910
3215130851700000	LV00148	CK041	MASONIC LODGE	1910
3215130852700000	LV00149	CK007	HALE, F E HOUSE	1874
3215130855000000	LV00150	CK003	FIRST BAPTIST CHURCH	1923
3215130855600000	LV00151	CK002	ROGERS, H B HOUSE	1912
3215130855500100	LV00152	CK001	LUTTERLOH BUILDING 1	1871
3215130853000000	LV00153	CK066	KIRCHANE, YULEE HOUSE	1884
3215130853800000	LV00154	CK005	GORE, J IRA HOUSE	1888
3215130853700000	LV00155	CK006	WHITE HOUSE ANNEX	1884
3215130853300000	LV00156	CK088	RICHBURG/BERRY HOUSE	1927
3215130853100000	LV00157	CK010	WADLEY, BOAG C HOUSE	1884
3215130852800000	LV00158	CK072	131 2ND STREET	1920
3215130856500000	LV00159	CK023	PRESCOTT BUILDING	<1896
3215130856100000	LV00160	CK054	KAPOTE BUILDING	1920
3215130856300000	LV00161	CK055	CEDAR KEY STATE BANK SCHLEMMER BAKERY AND	1912
3215130858400100	LV00162	CK057	GROCERIES	1880
3215130857900000	LV00163	CK059	ELLIS BUILDING	1912
3215130857900000	LV00164	CK035	ELLIS BUILDING	1920
3215130857900000	LV00165	CK065	BODIFORD BUILDING ZADOWSKI GENERAL	1890
3215130857900000	LV00166	CK060	MERCHANDISE	1881
3215130857400000	LV00167	CK061	BODIFORD DRUG STORE	1878
3215130851900000	LV00168	CK048	WADLEY'S GROCERY CEDAR KEY CITY HALL / CITY	1884
3215130850800000	LV00169	CK086	HALL	<1920
3215130850800000	LV00170	CK063	SCHLEMMER HOUSE	1908
3215130850200000	LV00171	CK062	HODGES, W R HOUSE	1910
3215130873800000	LV00172	CK068	107 3RD STREET	1910
3215130874700000	LV00173	CK084	TOOKE HOUSE	1922
3215130861300000	LV00175	CK098	LUTTERLOH, E C HOUSE	
3215130862700000	LV00177	CK089	WADLEY, FRANK HOUSE	1906
3215130863300000	LV00178	CK036	OLD BLOCK HOUSE	1855
3215130863400000	LV00179	CK038	HODGES RENTAL	1927

3215130863700100	LV00180	CK008	PARRISH HOUSE	1900
3215130864500000	LV00181	CK026	CLAYWELL, R S HOUSE	<1884
3215130862500000	LV00182	CK018	WADLEY, EDWARD HOUSE	1906
3215130861900000	LV00183	CK028	TEBO HOUSE	1882
3215130861800000	LV00184	CK027	PARSONS RENTAL	1890
3215130861600000	LV00185	CK025	OLD FIRST BAPTIST CHURCH	1891
3215130861200000	LV00186	CK022	OLD PUBLIC SCHOOL	<1884
3215130860900000	LV00187	CK080	CEDAR KEY FIRST M E CHURCH	1889
3215130863200000	LV00188	CK037	HODGES RENTAL	1927
3215130863100000	LV00189	CK042	DELIANO, W P HOUSE	1920
3215130865400000	LV00190	CK076	MCLEODS STORE	<1920
3215130863800000	LV00191	CK039	HODGES RENTAL	1927
3215130866000000	LV00192	CK046	KIRBY/BENSE HOUSE	<1920
3215132061620619	LV00193	CK058	WHITMAN, ST. CLAIRE HOUSE	1884
3215130868690000	LV00195	CK017	209 6TH STREET	<1900
3215130870400000	LV00196	CK019	DEMPS, BOB HOUSE	1907
3215130870300000	LV00197	CK049	DANCY, J D HOUSE	1916
3215130866600000	LV00198	CK071	239 6TH STREET	1919
3215130866300000	LV00199	CK045	241 6TH STREET	<1920
3215130867000000	LV00200	CK044	243 6TH STREET	<1920
3215130865500000	LV00201	CK047	JENKINS,FRANK HOUSE	1920
3215130874000000	LV00202	CK085	1 A STREET	<1920
3215130874000000	LV00203	CK082	3 A STREET	<1920
3215130864700000	LV00204	CK096	OLD FIRST PRESBYTERIAN CHURCH	1880
3215130864600000	LV00205	CK097	REYNOLDS HOUSE	1875
3215130852300000	LV00206	CK013	HODGES RENTAL	1927
3215130857300000	LV00207	CK051	ANDREWS, I O/HALE BUILDING	1880
3215130865800000	LV00208	CK075	EPISCOPAL RECTORY	1920
3215130853200000	LV00209	CK011	RICHBURG, JOHN HOUSE	1904
3215130865800000	LV00210	CK083	EPISCOPAL PARISH HALL	<1920
3215130852500000	LV00211	CK016	CHARPIA, H E HOUSE	1914
3215130855800000	LV00212	CK033	GARDINER HOUSE	1906
3215130855700000	LV00213	CK021	STEPHENS HOUSE	<1884
3215130860800000	LV00214	CK024	REDDICK, SAMUEL C HOUSE	1874
3215130864400200	LV00215	CK087	328 E STREET	<1920
3215130862200000	LV00216	CK012	WHITMAN, FRED HOUSE	1914
3215130854400000	LV00217	CK004	HUGHES, J E HOUSE	1919
3215130854700000	LV00218	CK081	EAGLE CEDAR MILL HOUSE	1880
3215130862600000	LV00219	CK031	WILSON, J J	1902
3215130863500000	LV00220	CK030	WATSON/HODGES HOUSE	1919
3215130855400000	LV00221	CK040	FIRST CHRISTIAN CHURCH	<1891
3215130866100000	LV00222	CK043	WALKER, WILSON HOUSE	1919
3215130864100000	LV00223	CK029	HALE/JOHNSON HOUSE	1880
3215130871900000	LV00224	CK034	CREVASSE, HENRY WINTER HOUSE	1882
3215130855500100	LV00225	CK078	DAN ANDREWS HOUSE	1910
3215130885600100	LV00226	CK095	FOWLER/PUGH HOUSE	1920
2915130883800100	LV00229	CK064	SR 24 - A	1920
2915130883800100	LV00230	CK070	FAYLE RENTAL	1920
2915130882700000	LV00231	CK069	HOLMAN HOUSE	1920

291513088200000	LV00232	CK074	TURNER, DR J W HOUSE	1927
291513088220000	LV00233	CK067	NOEGEL HOUSE	1920
2915130882500100	LV00234	CK050	ZIEGLER'S BAIT HOUSE	1920
2915132149600000		CK079	RAILROAD BAGGAGE BUILDING	
3215130044800100		CK114		1927
3215130044800000		CK115		1927
3215130044800000		CK116		1927
3215130044800000		CK117		1927
3215130044700000		CK118		1927
3215130871800000		CK119		1927
3215130873000000		CK120		1927
3215130871300000		CK121		1930
3215130868400000		CK122		1927
3215130868000000		CK123		1927
3215130865700000		CK124		1927
3215130861000000		CK125		1927
3215130861700000		CK126		1927
3215130860400000		CK127		1927

Source: Cedar Key Historical Society, National Register Nomination Form, University of Florida COPP. Compiled by Ursula Garfield.

APPENDIX B
PHOTOGRAPHIC SURVEY OF PENSACOLA AFTER HURRICANE IVAN



Figure B-1 Damage photographed in the East Hill District, Pensacola. Personal photographs by author. 15 Oct. 2004.



Figure B-2 Seville Quarter and Zarragoza Street. Personal photographs by author. 15 Oct. 2004.



Figure B-3 Damage along Palafox Place in the commercial area of Pensacola. Personal photographs by author. 15 Oct. 2004.

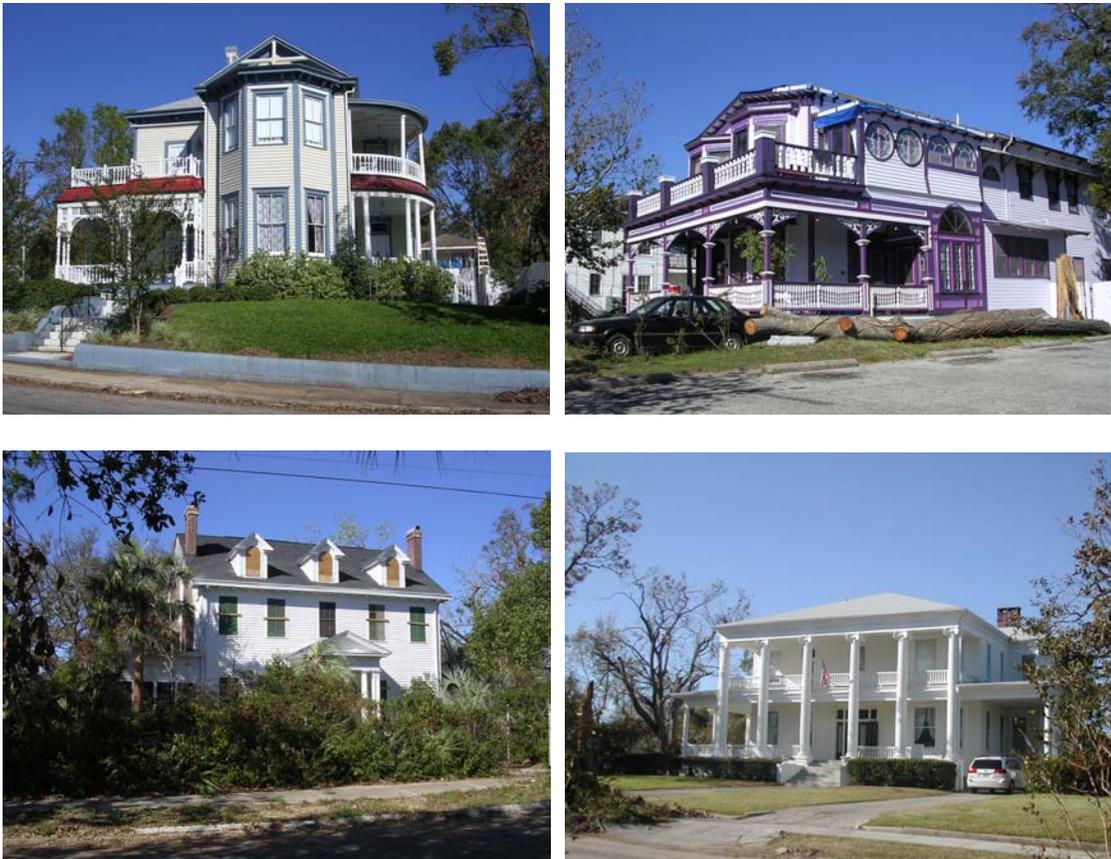


Figure B-4 Condition of North Hill District, Pensacola. Personal photographs by author. 15 Oct. 2004.



Figure B-5 Damage and repairs to T.T. Wentworth Building, Pensacola. Personal photographs by author. 15 Oct. 2004.

**APPENDIX C
DAMAGE ASSESSMENT FORM**

Damage Assessment Form

Building Name _____

Address _____

City (or Vicinity) and County _____

Owner _____

Date of Construction _____ **Tax Map No.** _____

Primary Use

Residential (1-2 units) Residential (3+ units) Office Building School

Commercial Mixed Church Lodge

Industrial/Warehouse Hotel/Motel Bank Other _____

Description

Freestanding Row No. of Stories _____

Basement Attic No. Chimney(s) _____

Construction Type

Masonry Bearing Wall Veneer/Steel Frame Wood Frame Concrete

Veneer/Concrete Frame Concrete Unit Other _____

Surface Covering

Brick Stucco Wood Siding

Stone Other _____ Roof _____

Foundation

Concrete Slab Block Stone/Rubble Other _____ Unknown

Geological Nature of Site

Bedrock Soil/Sand Fill Other _____ Unknown

Historical Designation

National Register National Register District State Local

Survey Rating _____ None Unknown

Falling Hazards

	<i>Hazard</i>	<i>No Apparent Hazard</i>	<i>Unknown</i>	<i>Comments</i>
Parapet/Cornice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Ornamentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chimney(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Floors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Roof Structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Damage Observations	<i>Rating Scale</i>		Severe (41–60%) 5
	None (0%) 0		Total (over 60%) 6
	Slight (1–10%) 1		Not Observed: NO
	Moderate (11–40%) 2-3-4		Not Applicable: NA
	<i>Comments</i>		
Exterior Walls	_____	_____	
Frame (General Condition)	_____	_____	
Frame Members	_____	_____	
Frame Connections	_____	_____	
Roof Framing	_____	_____	
Roof Covering	_____	_____	
Chimney(s)	_____	_____	
Doors	_____	_____	
Windows and Shutters	_____	_____	
Porch	_____	_____	
Downspouts and Gutters	_____	_____	
Interior Bearing/Shear Walls	_____	_____	
Partitions (Nonbearing)	_____	_____	
Floor(s)	_____	_____	
Stair(s)	_____	_____	
Glass	_____	_____	
Mechanical Equipment	_____	_____	
Electrical Equipment	_____	_____	
Garden and Trees	_____	_____	
Fences and Garden Walls	_____	_____	
Walkways and Sidewalks	_____	_____	
Other:	_____	_____	
Total Damage	_____	_____	
Overall Assessment			
<input type="checkbox"/> No Damage or Easily Repairable			
<input type="checkbox"/> Damage Repairable			
<input type="checkbox"/> Damage Will Require Massive Repair/Reconstruction			
Recommendations for Further Inspection _____			
Recommendations for Immediate Actions _____			
Recommendations for Future Repair Work _____			

Inspector(s) _____ Agency _____ Date _____			
Photographs or Video (Roll and Numbers) _____			

Source: Carl L. Nelson, *Protecting the Past from Natural Disasters*, Washington: National Trust for Historic Preservation, 1991. 114-115.

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BIOGRAPHICAL SKETCH

Jennifer M. Wolfe was raised in Iowa and moved to Gainesville, Florida, to attend the University of Florida where she earned a Bachelor of Arts degree in political science in 2001. Two years of her undergraduate studies were dedicated to the field of architecture. Florida became her home and while traveling, she developed an appreciation for the state's small coastal communities.

After marrying husband Matthew Wolfe, Jennifer returned to the University of Florida to study architectural preservation in the College of Design, Construction, and Planning where she earned a Master of Science in Architectural Studies in 2006. During her graduate career, Jennifer was fortunate to study at Preservation Institute: Nantucket as well as to be a member and conference attendee of the National Trust for Historic Preservation and the Florida Trust for Historic Preservation.