



CAPE FEAR PUBLIC TRANSPORTATION AUTHORITY

Hurricane Florence Debrief

Hurricane Florence

Hurricane Florence was a powerful Cape Verde hurricane that caused catastrophic damage to the Carolinas in September 2018. Florence dropped a total of 35.93 inches of rain in Elizabethtown, North Carolina, becoming the wettest tropical cyclone recorded in the Carolinas. The sixth named storm, third hurricane, and the first major hurricane of the 2018 Atlantic hurricane season, Florence made landfall just south of Wrightsville Beach, NC on September 14, 2018 as a Category 1 hurricane.

With the threat of a major impact to the state becoming evident by September 7, 2018, North Carolina Governor Roy Cooper declared a state of emergency. President Donald Trump declared a state of emergency on September 10, 2018 making the areas impacted by the storm eligible for federal disaster assistance. On September 10, 2018 mandatory and voluntary evacuation orders were issued for Brunswick and New Hanover Counties.

Despite making landfall as a Category 1 hurricane, Florence had enough wind speed to uproot trees and cause widespread power outages throughout the Carolinas. A ridge of high pressure over eastern North America stalled Florence's forward motion for several days after making landfall, moving forward at only 2-3 miles per hour. The storm continually dumped heavy rain along coastal areas from September 13th, when the outer rain bands first began, to September 17th, when the storm was still stalled only a few miles west of Wilmington, NC. Coupled with a large storm surge, widespread flooding along a significant stretch of the North Carolina coast from New Bern to Wilmington occurred. Widespread flooding from the Cape Fear, Northeast Cape Fear and Lumber Rivers and their tributaries resulted in unprecedented flooding. Almost all roads and highways in the area experienced flooding, which resulted in large portions of I-40, US 74-76, and US 421 remaining impassable for days and making reentry to the area nearly impossible. New Hanover County was effectively cut off from the rest of the mainland by floodwaters. Many areas received record breaking rainfall, with more than nine trillion estimated gallons of rain falling during the event. At least 48 deaths have been attributed to Florence and 1,500 remain displaced.



Wave Transit Pre-Storm Response

The Cape Fear Public Transportation Authority is listed as a Primary Agency-ESF # 1 Transportation in the New Hanover County Emergency Operations Plan. This designation allows the county to utilize Wave Transit resources to "...meet the needs of the citizens as well as the other support functions to accomplish response, recovery and assistance missions." The Authority is also required by the plan to "provide representative and transportation assets to the Individual Care Coordination Center (IC-3) during an emergency."

On Monday, September 10, 2018 a State of Emergency was declared for New Hanover County and Authority personnel reported to the New Hanover County Emergency Operations Center and the New Hanover Regional Medical Center IC-3 in preparation for the storm. On Tuesday, September 11, 2018 New Hanover County requested that the Authority provide evacuation assistance utilizing Wave Transit buses to shelters in western Wake County, NC. These services were provided in conjunction with regular transit service and pushed the Authority to test the limits of available resources. Over a two day period, Wave Transit transported 138 passengers, including pets and significant personal property to out of county shelters. NCDOT's Public Transportation Division coordinated efforts to move these evacuees from western Wake County to long term shelters in Chapel Hill and Winston-Salem, NC. On September 21, 2018, seven days after the storm, Wave Transit buses were dispatched to Chapel Hill and Winston-Salem to transport 101 storm weary evacuees back to shelter in New Hanover County. The evacuation resulted in over 7,260 miles traveled and 724 payroll hours.



In preparation for a direct strike from a major hurricane, the Authority also provided significant resources to transport ADA passengers to evacuation staging areas and provide transit service between the five in-county shelters of last resort that were open before the storm. This emergency service led to 138 of the most vulnerable residents of the county being transported to safe refuge from the approaching storm. In-county evacuation miles totaling 436 and 217 payroll hours were allocated to Florence preparedness and pre-storm response. With residents safely sheltered, Wave Transit staged and secured its high value buses in western Wake County to protect them from hurricane damage and ensure that the vehicles were staged for evacuee return.



Wave Transit Post-Storm Response

Over the course of four days, Hurricane Florence pelted the region with unprecedented rain and flooding. The storm ranked second only to Hurricane Harvey in amounts of rainfall. Wave Transit services were suspended for ten days due to flooding, downed power lines and significant road damage. On Tuesday, September 18, 2018 the Authority responded to a request from NHC Emergency Management to relocate 36 evacuees from shelters that suffered significant damage during the storm. The Authority also began providing non-emergency medical transportation for 232 evacuees from shelters to dialysis centers and medical providers. Special transportation was provided by Wave Transit to National Guard troops providing security at three Points of Distribution Sites set up to distribute food and water.

The Authority was also responsible for relocating 111 passengers from the Hoggard High School shelter to a shelter in Brunswick County. The Authority assisted the Red Cross in an additional move for long term evacuees back to New Hanover County. Fixed route deviations and paratransit services were coordinated with shelter managers to ensure that evacuees had safe and available access to Wave services. Transit passes and travel training were also provided to shelter residents.

Wave Transit continues to provide transit services to displaced residents throughout the region. Authority staff remains in communication with the American Red Cross and is prepared for additional shelter relocations should they become necessary. In addition to deviated fixed routes, employment vanpool services and ADA transportation are being provided. Displaced UNCW students have been relocated up to 20 miles from campus and the Authority is offering bus transportation from as far away as Carolina Beach to ensure displaced students are able to access educational and dining opportunities as well as special storm related services offered by the University.



i-40 North of Wilmington resembles a river more than a highway

Financial Impact

Hurricane Florence resulted in significant losses to residents, businesses and government agencies throughout the region. Damage in North Carolina is currently \$13 billion and rising with some estimating costs to exceed \$50 billion. In addition to property loss and damage, many employees in the service industry faced lost wages and increased child care costs due to lengthy school closures. These impacts will affect the region for a significant period of time.

The Authority suffered no significant property damage from the storm. This was largely attributable to newer buildings built to stringent hurricane and wind standards and relocation of assets outside the county. The Authority continued to pay employees during the service suspension in order to minimize significant financial impacts to personnel. Lost payroll resulted in 5,807.4 hours. Half time bonuses were offered to employees who worked during the suspended service period. Lost fixed route service totaled 8,340 hours. Lost revenue hours were partially offset by service suspension. Fixed route ridership from the storm was 61.15% lower than September 2017.

Wave Transit staff is working with New Hanover County, FTA and NCDOT to access FEMA eligible reimbursements. The Authority has received \$25,000 from a business interruption insurance policy. A detailed accounting of storm related losses will be presented once FEMA eligible activities conclude. Strategies for dealing with budgetary compliance will be presented as part of the analysis. The report is tentatively scheduled to be presented to the board at a regular meeting on January 24, 2019.

Lessons Learned

An in-depth debriefing with New Hanover County Emergency Management is expected as the community recovers. Many lessons, both good and bad, were learned during the disaster. One of the most important takeaways from Florence is that a strong and well funded public transportation system is invaluable during times of emergency. Transportation ranks very high in importance when dealing with significant disasters. The services provided by Wave Transit before and after Florence were vital to ensuring the safety and well being of our community. Although several lessons were learned throughout the event, the response by Wave Transit was excellent and only minor changes to the response are being considered.

Authority employees put the community ahead of their personal needs and were essential to a successful response. The relationship between the Authority, NHC Emergency Management, NC Emergency Management, the Red Cross and NCDOT-PTD was proven to be a key to the successful response. Each of these agencies have demonstrated a commitment to serving communities in emergency situations and the level of knowledge and professionalism can not be overlooked. While we hope future significant storms will not impact the area, we find comfort in the fact that our efforts to respond to a disaster have been tested and proven successful.

The region will recover from Hurricane Florence and be stronger from it. Authority employees continue to volunteer and serve the community as our recovery efforts continue and our appreciation for these efforts is greater than words can express. The Authority is proud of our efforts in response to Florence and will remain diligent in providing value to Southeastern North Carolina.

