



Town of Holden Beach

After Action Report
Hurricane Matthew

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Incident: Hurricane Matthew
State of Emergency: October 6 - October 11, 2016

Preamble

Hurricane Matthew was a very powerful, long-lived and deadly tropical cyclone which became the first Category 5 Atlantic hurricane since Hurricane Felix in 2007. Matthew originated on September 22nd and developed into a tropical storm on September 29th. Matthew became a Category 5 hurricane on September 30th. The Town's Emergency Preparedness team, in conjunction with Brunswick County Emergency Services, monitored and prepared for the storm during this time period. Matthew weakened to a Category 1 cyclone when it hit the Myrtle Beach area on the morning of Saturday, October 8th and headed to Holden Beach.

General

- While the threat of a major storm is ever present in coastal communities, the timeframe between events serves to dim the societal and governmental perspective of disaster memories. Operations are challenged due to the infrequency of occurrence and unique variability of circumstances.
- All storms are different. Same category of storm can affect in drastically different ways. Time of year, population load are but two of the variables affecting decisions.

Town Staff

- Personnel Impacts
 - Three stages of an event (before, during and after).
 - Potential for long hours with minimal staff.
 - Many Town staff members have childcare conflicts with closure of schools.
 - Variables of the storm dictate their needs for childcare.
 - Damages to employees' residences, etc. is a definite threat to Town's ability to field manpower to deliver services. Concern for the wellbeing of their own families affects abilities and performance.
- 4- 5 days limit on full duty.
 - Request additional resources early on WebEOC for Police.
 - Need runners for valve pit inspections. How do we staff that?
 - Staff needs to be on hand to assist with answering phones and questions during storm recovery, it is not business as normal.
 - Information is delivered as passed down from emergency officials and as may be verified locally.

Emergency Operations Center

- Canteen, Quarters & Control, Communications
 - Adequate mess facilities (kitchens).
 - Bivouac -marginal/ close to camping.
 - Standing watch/ sleep walking.
 - Cloud wise works.
- Facilities
 - Generator - need to replace auto transfer switch. Training on manual start procedures needed for selected personnel.

Sewer System

- Power outage at all four stations can (did) happen.
- Takes about 10 hours to bring all stations back up (not counting going from pit to pit) once power is restored/ provided (approximately four man days).
- There are approximately 1,500 valve pits. Takes 30 hours of manpower to check each one.
- It takes all employees on staff to regenerate the sewer system in a timely manner. If there is a need to scrape roads that would take away two employees at a minimum.
- Need to make the decision to commit or not commit on if the sewer system will be shut down.
- The earlier the decision on the sewer is made, the better.
- Water can get into pump stations due to the current design of the stations. (Appendix Section 1)
- Wet well filled up. It feeds conduit. Need to address that.
- Only have one six inch pump to run wet well. Need a second one. If something else would have happened, would not have been able to run.
- A commercial industrial electrician with specific experience with Town's sewer system panel boxes greatly enhances response to storm issues. Not so much as it relates to power production with genset, but specifically the control panels in vaults.
- Storm surge of five to seven feet overtopped valve pits and "candy canes" in many locations, canal subdivisions and west end in particular (see Inspector's section).
 - Since sewer system was shut down as a resource protection measure, the candy canes acted as discharge points for raw sewage.
 - Valve pits' volume is approximately fifty gallons; some serve multiple residences.
 - Candy cane as "intakes" are in violation of building codes. No drains entry below BFE.

Power

- BEMC doesn't turn off power. Only goes off as a result of a failure or interruption in their system.

Police

- From a safety standpoint, officers need to direct non-decal holders to a different station (underneath the bridge).
 - No conversations in right-of-way. No pedestrians.
- Source equipment to help restrict traffic (mobile traffic light like DOT uses).
- Curfew is not realistically enforced with existing personnel.
- Cannot control other access points (canals, shoreline).
 - Don't have the resources or assets.
- By providing instruction to proceed directly to residence and remaining there until curfew ends, it is intended to control trips and groups. Relies on the honor system.

Public Facilities/ Beach

- Public Facilities must all be inspected for safety and FEMA damages.
 - Takes time and functional expertise.
- Shade Sails at Bridgeview Park – we participate in a seasonal take-down program to preserve the life of the sails. In a storm event take down, there is a cost of \$700 for our staff to take down and sail company to put up. If a storm is projected in October through the end of storm season, having them taken down for the season is the most fiscally responsible choice and saves valuable time for the Public Works Department.
- Need to make sure to take beach mats off beach prior to a storm.
- Beach Surveys (Visual & Transects) – Windshield tour of the beach as soon as possible after the storm. We did a good job of doing calculations of dune, sand fence and vegetation loss in consultation with our vegetation contractor. NC Department of Emergency Management and the Corps were happy to hear that we were prepared with initial estimates as they toured with Town staff. Should continue to be prepared to take Emergency Management officials on windshield tours as they arrive. FEMA may still come to do a tour. Early estimates are 80% of the sand fence and vegetation work that has been completed in the last 10 years is gone. Approximately 1.2 million cubic yards of sand lost. Transects being run by official survey at this time to verify quantities.

Decals

- Need to review process of distributing decals.
 - Go back to tracking with database?
 - Amount of decals?
 - Review written policy.
 - Make sure consistent with ordinance.
- Business Decals
 - Why are contractors getting stickers?
 - Some resident contractors are starting work before assessment.
 - Business Registration Fee
 - Investigate the creation of a new category to establish a business database.
 - Statutory reference for allowance of fee.
- Decal system works to control vehicular access across the bridge.
 - It does not control the number of trips, nor number and composition of group.
- Consistency is key. No means no.
- Evacuation from inland to the beach.
- Access control is limited to the bridge.

Planning & Inspections

- Prior to the storm, give more guidance to contractors. Items not being secured.
- The current walkway ordinance in place works.
- Educate the public about repetitive losses and their adverse impact on CRS rating.
- Open drains below the BFE are in violation of the plumbing code (candy canes).
 - Water in the candy canes as a result of the flooding.
 - Need to use as illustration as why people shouldn't expect to stay during a storm. It is a public health issue.
- Capable of running department by paper if communications go down.

Dock Construction and Damages

- Bulkhead repair and enforcement activities believed to aide property protection.
- Failures to bulkheads may not appear for several months.
 - Implications for Canal Dredging Program.
- Conditions survey by Canal Dredging Working Group (CDWG). Master Plan update soon.
- Floating docks in particular - High tide damaged many ramps and docks.

- Inspections program for bulkheads did not get around to docks and ramps. Goal there was driven by CDWG to keep from having to dredge so often. Inspector had on his list as next up project to canvass canal systems and assess dock/ ramp systems. Matthew beat us to it.
- Pirating of float offs - access to canals was unrestricted. One known instance of conflict with "salvaging" of loose docks.
- Get opinion/ reference from the town attorney about liability of docks floating away.
- To reduce damage, need more specific ordinance for moorings for floating docks.

Communications

- Everyone with a cell phone is a cub reporter.
- Email & app updates for period of September 30th - October 10th (Appendix Sections 2 & 3)
- App, email, website, facebook, twitter works to pass information along.
- Email feedback/ inquiries received the event: Restrictions/ Curfew - 10, Sewer - 3, Damage - 11, Access - 79, Power - 8, Debris/ Trash - 4, Roads - 4, General Inquiries - 45. (Appendix Sections 4 & 5)
- Social media, while well intended can misinform. (Appendix Section 6)
- Power outages affect the ability to receive digital communications for those not prepared for power interruptions.
 - All weather radios.
- The cloud proved itself again.
- Power surges zapped the phone system and various other IT equipment (even with generator backing up & surge protectors).
- Public Information Channels
 - ATMC Channel 2 directed users to website for current updates.
 - Hosted by ATMC
 - Time Warner Channel 8 is out of service.
 - High cost to repair.
 - Hosted in Town's communications center.
- Website
 - Emergency education information is not highly visible on website.
 - Cumbersome to adapt.
 - Needs updating.
- Webcam is not Town's. Look at the potential of installing Town owned webcam.
- County typically only holds two conference calls each day.
- Solicited feedback about the Town's performance during the storm. Generally speaking 45 responses showed Adequate/ Exceeds Expectations, six showed a need for improvement. Suggestions compiled in

a feedback form as attached in Appendix Section 7. Feedback will be taken into consideration for future events.

- Beacon Article (Appendix Section 8)

Miscellaneous

- The artificial reef is yielding tires.
- Campers did not leave, even though advised to.
- Renters Insurance won't reimburse unless a mandatory evacuation is ordered.

Appendix

Section 1	Sewer Pictures
Section 2	Newsletter Updates
Section 3	App Updates
Section 4	Emails during the Storm
Section 5	Feedback Graph
Section 6	Facebook Comments during the Storm
Section 7	Feedback after Storm
Section 8	Beacon Article