NFIP

Staff

- Dan Brubaker: NFIP Coordinator / NFIP Engineer
- Randy Mundt: NFIP Outreach Planner
- Steve Garrett: LOMC Management
- Stacey Fuller: Community Development Planner
- Eryn Futral: NFIP Eastern Planner
- Milton Carpenter: NFIP Central Planner
- Terry Foxx: NFIP Western Planner

NFIP Mission

To prevent or reduce damages and loss due to floods through management of the National Flood Insurance Program and coordination with the Flood Mitigation Assistance Program.

The National Flood Insurance Program

A VOLUNTARY program based on a mutual agreement between the Federal government and the local community:

In exchange for adopting, implementing and enforcing a FPM ordinance, Federally-backed flood insurance is made available to property owners throughout the community.

National Flood Insurance Program

- Minimize Flood Losses
- 44 CFR 59-65 Provide Regulations
- Enforced through locally adopted ordinance
- Participation is voluntary

Objectives

- Enrollments
  - All 100 Counties Participate
  - 486 Municipalities Participate
  - 33 Non-Participating Municipalities

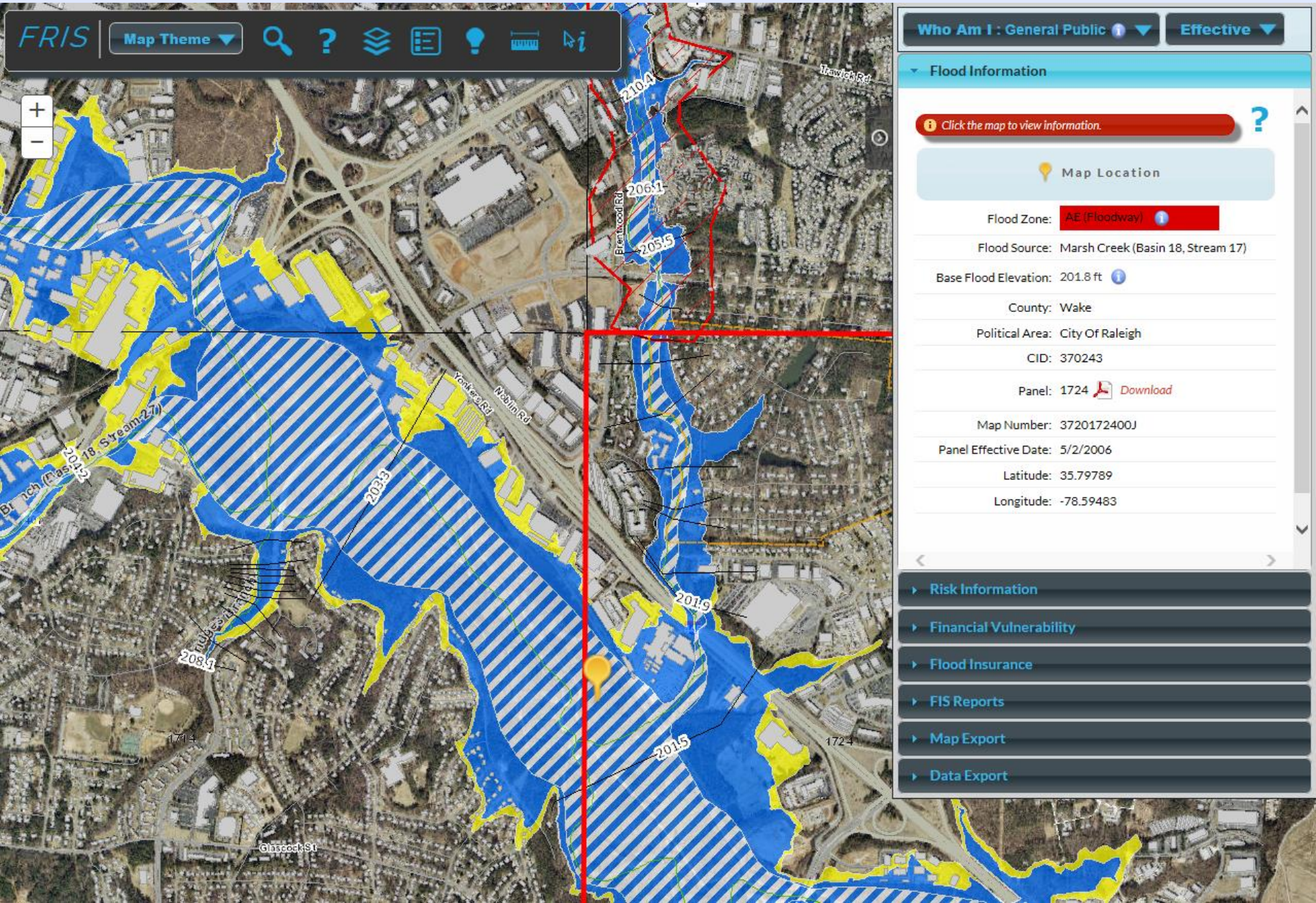
Objectives

- Training and Education
  - NFIP 101 – Intro to Floodplain Administration
  - 2-Day Summer Workshops
  - FEMA Field-Deployed Classes
  - Conferences and Workshops
  - NC Society of Surveyors

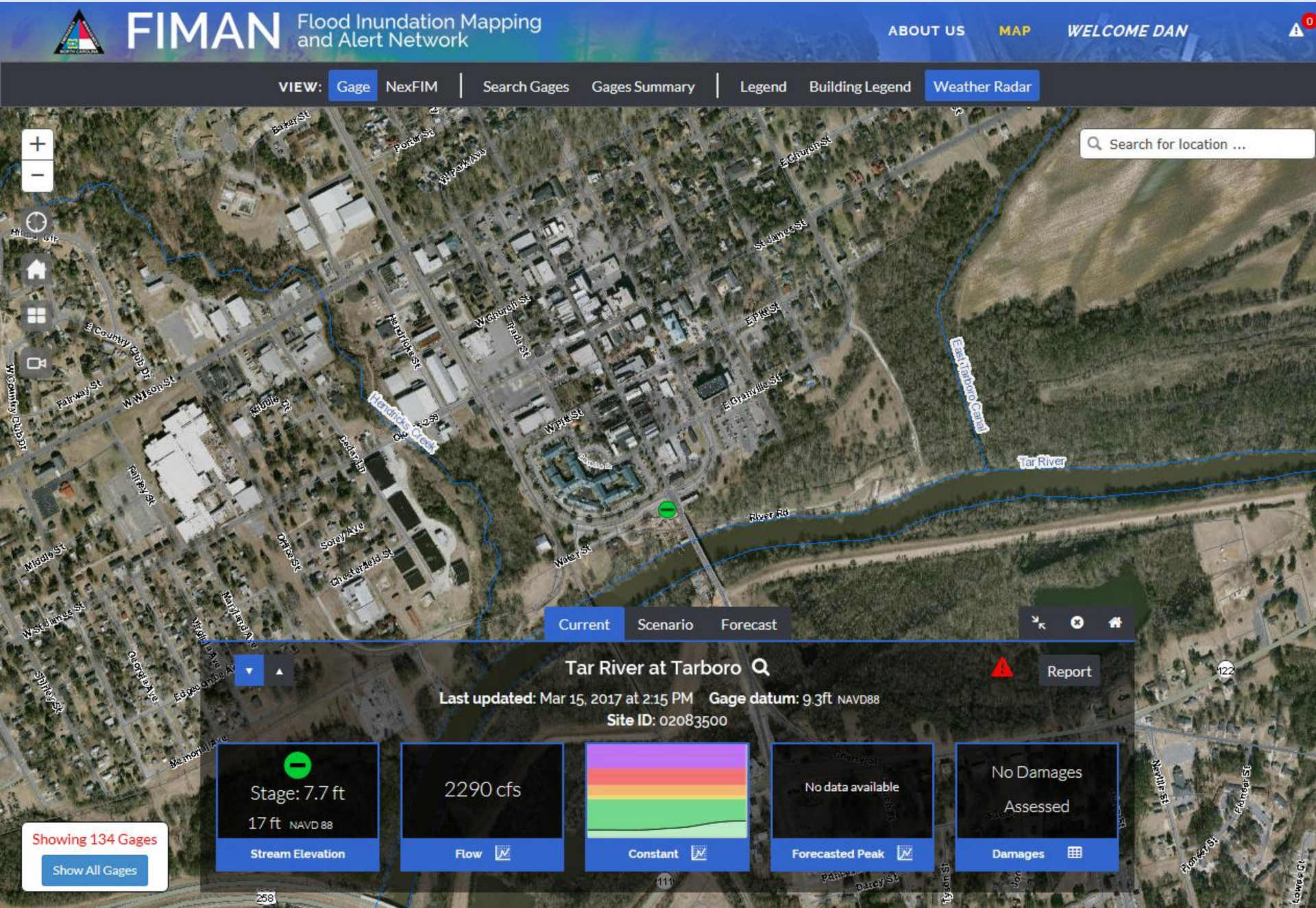
Objectives

- Community Assistance
  - Map Scoping and Updates
  - Visits (Audits)
  - Contacts
  - Technical Assistance
  - “No-Rise” Reviews

Flood Risk Information System: fris.nc.gov/fris/



FIMAN: fiman.nc.gov/fiman/

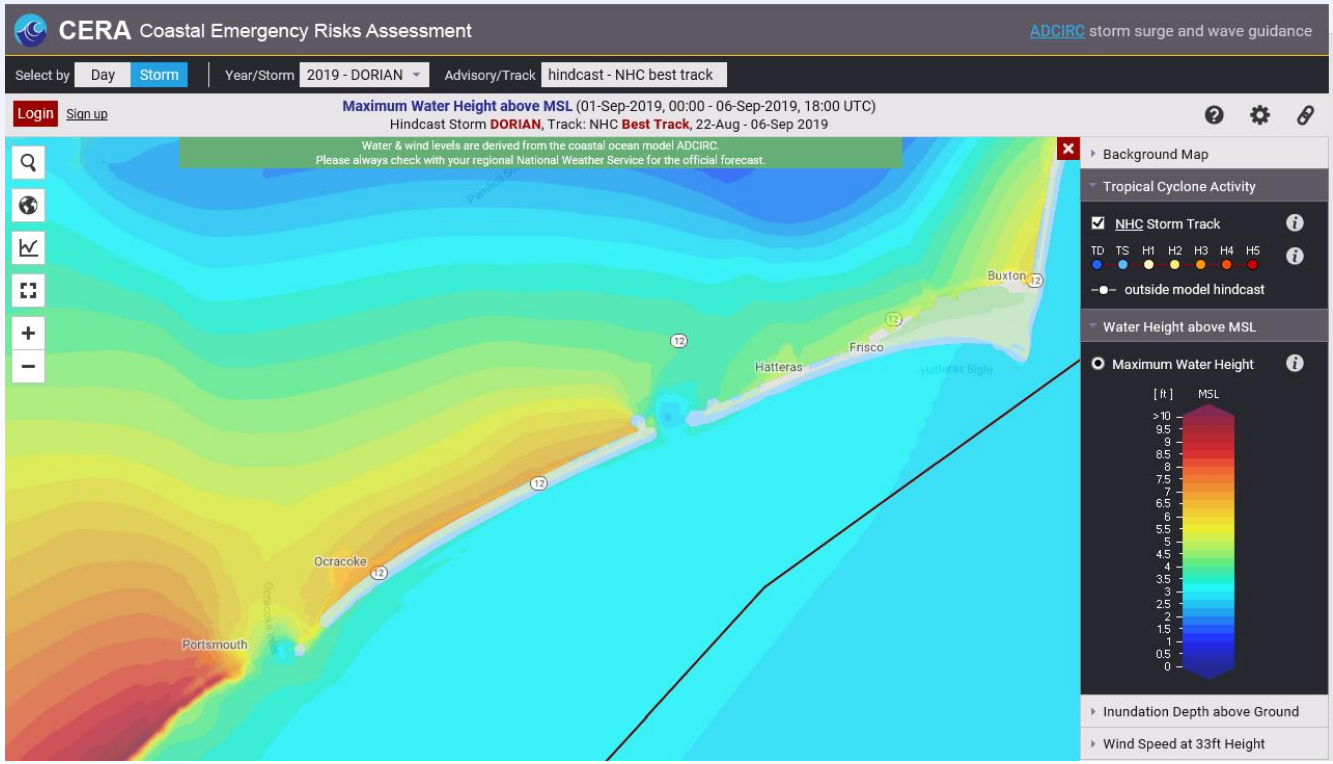


Objectives

- Disaster Response
- State Environmental Review Clearinghouse
  - NEPA
  - SEPA
- NCDOT Bridge Replacement MOA

Hurricane Dorian

- Most Powerful Hurricane Ever in the Open Atlantic
- Landfall on Cape Hatteras September 6 as CAT 1
- Huge Surge - 7.3 feet



Before & During the Event

- Contact communities to obtain a preliminary assessment of post disaster needs
- Provide post disaster toolkits (includes sample letters, documents, permitting protocol, etc.)
- Activation to the Eastern Branch EOC in Kinston

Eastern EOC

After the Event

Logistics

- Determine Needs
- Access
- List of Properties to inspect
- Personnel Available

List of Properties

- Look at Structures Built Prior to 2006
- Eliminate Structures w/ First Floor elevated at 6’ or Above
- Identify Historic Structures
- **259 Assessments in 2½ days**

Historic Structures

- Close coordination with the State Historic Preservation Office
- 60 historic or contributing structures
- Significant – these structures may be exempt from floodplain management regs.

Determined Extent of Damage

Determine Extend of Damage

Damaged foundations, damaged or missing decks, damaged interior components, etc.

Following the Assessments

- Provided a preliminary list of structures that were substantially damaged (elevate, demo/rebuild)
  - Based on tax value or ACV.
  - 110 structures out of 259.
- Provided follow-up technical assistance as needed.

As of Today

Hyde County has Permitted:

- 38 elevations
- 74 repairs
- 47 demolitions
- 2 new compliant mobile homes

On the Road to Recovery!

Resources

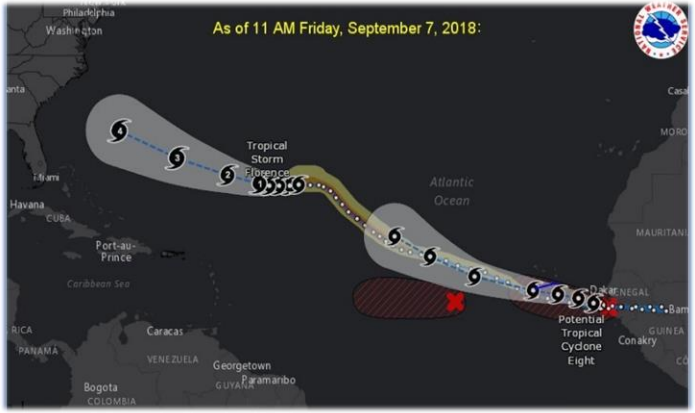
Flood.NC.gov

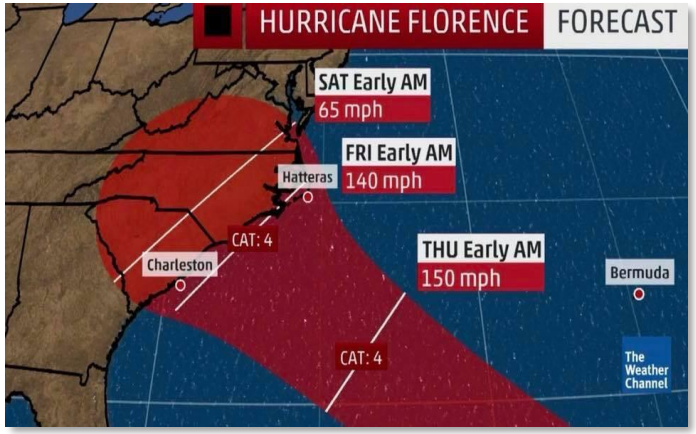
Eryn.Futral@ncdps.gov

(919)819-1734

Thank you!

Water Utility Emergency Response – Lessons Learned from Recent Events





Cape Fear
Public Utility Authority
Stewardship. Sustainability. Service.

Advance Preparation Critical to Success

- Since 2008, we worked extensively to prepare for an events of this magnitude
- Adopted National Incident Management System (NIMS) as basis for all-hazards planning & response
- Conducted table-tops, functional, and full-scale exercises
- Resource Typed & Categorized equipment and teams per AWWA standards
- Essential Employee Shift Roster
- Emergency Contractor/Vendor Roster
- Established strong working relationships with local and state EMA
- Working Emergency Operations Center

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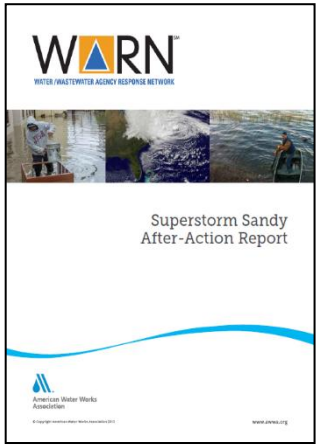
Advance Preparation Critical to Success (cont.)

- Free tools/publications: **EPA NIMS Compliance Objectives for the Water Sector**; EPA Table-Top Exercise Tool; EPA Toolkits for Water/Wastewater.
- FEMA Emergency Management Institute online and classroom course offerings, full use of Incident Command System (ICS) forms as appropriate.
- Utilize software and technology: WebEOC Situational Awareness websites; NCDOT Traffic Information Management System; USACE/FEMA/NOAA HURREVAC software; NWS/USGS real-time river and flood monitoring.
- Review water sector after-action reports to identify our gaps.
- WaterISAC webinars, DHS Infrastructure Surveys.
- NCWaterWARN Mutual Aid Program member with NC State Re-Entry Credential issued.

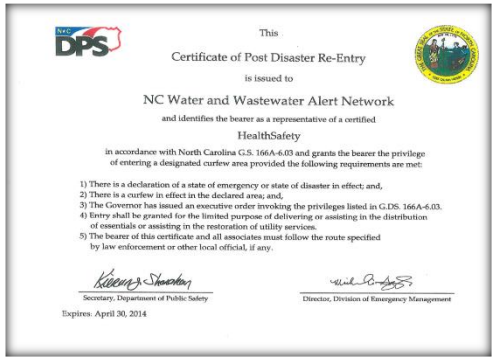
Lessons-Learned From Other Utilities

- Train Derailments (petroleum spills)
- Coal Ash Spills - TN, NC, VA
- Chemical Spills – Elk River, WV; Hagerstown, MD
- Algal Blooms – Toledo, OH
- Ice Storms
- Severe Drought and Flooding
- Hurricanes
- HAZMAT Discharges (Charlotte Water – PCB Incident)

Lessons Learned from Other Utilities: Hurricane Sandy



- Need for local mutual aid agreement – State MOA (NCWaterWARN) would be insufficient
- Formal emergency fuel contracts
- Re-entry credentials for utility
- Generator run times & fuel capacity
- USACE Emergency Power Assessment Tool



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Situational Awareness - Technology

"Information gathered from a *variety of sources* that when communicated can form the basis for incident management decision-making." Homeland Security Act 2002

- DHS ICS – CERT
- WaterISAC
- InfraGard

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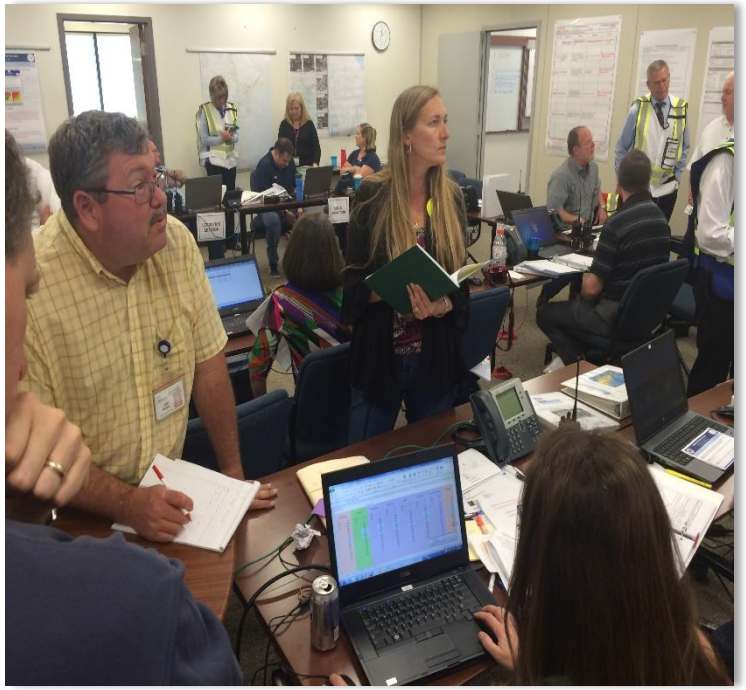
Use of NIMS/ICS – Language of Emergency Response



- We use it because it works! Don't have to reinvent the wheel – Existing Framework, Training, Forms
- Use Incident Action Plans to manage events and incident response
- Typing & Categorizing Teams and Equipment
- Have established relationships with local, state, and federal partners.
- Mutual Aid Programs (Local, State, and Federal)

Real Life Use of NIMS & ICS – Hurricane Matthew

- Regional Water Main Repair Event – Mutual Aid Enacted
- Activated CFPUA Emergency Operations Center
- Unified Command Established
- Public Messaging & Emergency Conservation Measures
- Staging Area for Teams & Equipment
- Unified Command daily calls to County EM, NCEM & Governor's Office

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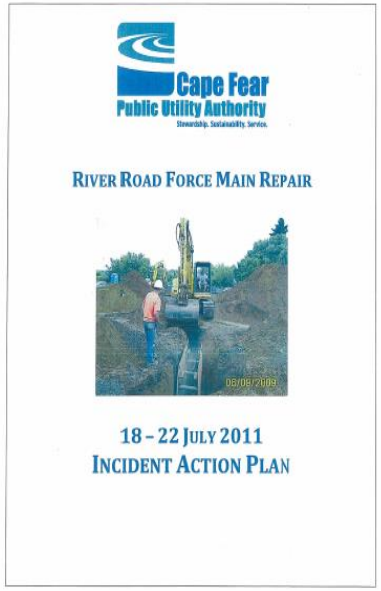
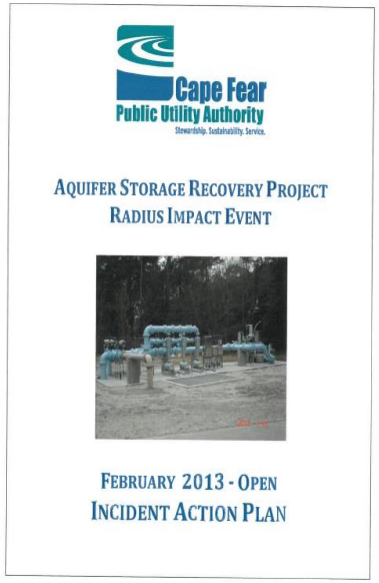
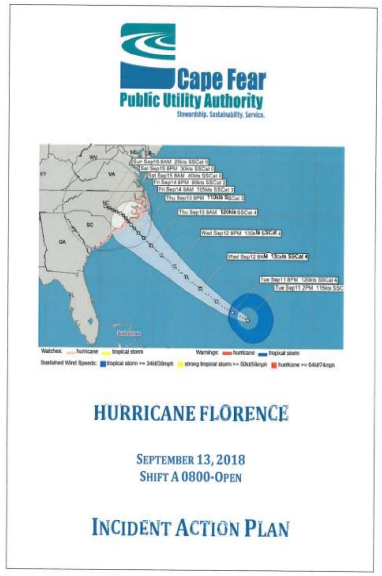
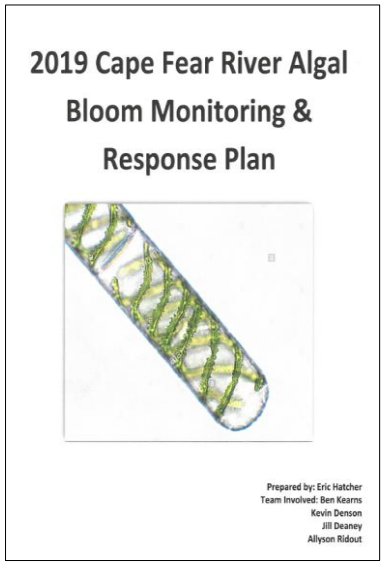
Incident Action Plans – Our Culture









- Aligns actions with priorities and goals for response and recovery
- Useful for large complex operations and routine critical construction projects
- Use of ICS forms forces a deliberate planning process and contingency thinking

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Florence Infrastructure Preparation

- Deployed and tested generators at all facilities and pump stations.
- Topped off chemical tanks, fuel tanks, and water tanks.
- Suspended manual and automatic flushing in the distribution system.
- Installed collection system bypasses at sites with historic SSO capacity-related issues.
- Replicated all IT network applications and utility data to off-site disaster recovery facility.
- Updated contact information for emergency contractors, CFPUA facility information, and resource inventories.

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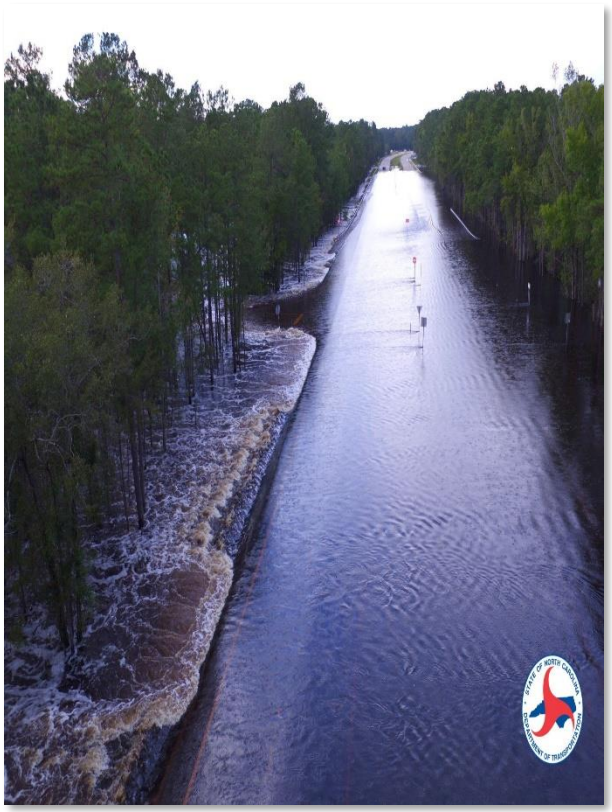
Isolated Due to Flooding & Washouts



Before

During

After

Power Supply During the Storm

- Fuel tanks were filled up before the hurricane arrived.
- Generators started on Thursday before strong tropical storm winds arrived (11:00 am Thursday).
- All facilities lost commercial power from Duke Energy during the hurricane.
- Winds in excess of 50 mph remained on all day Friday.
- By Saturday morning, most generators had run for over 48 hours.
- Maintained generators running into Sunday when refueling commenced.

Facility	Fuel Storage	Approximate Run-time
Sweeney WTP	20,000 gallons	6 days
Richardson WTP	10,600 gallons	5 days
Well sites	Varies	3 days
Northside WWTP	16,000 gallons	5 days
Southside WWTP	1,000 gallons	3 days
Pump Stations (148)	Varies	3 days

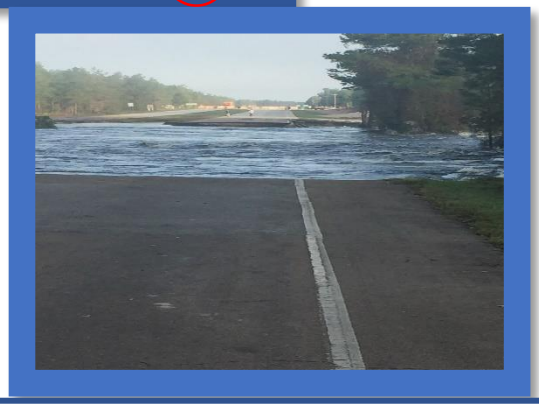
Responding to Damage During the Storm

- Southside Wastewater Treatment Plant lost generator power and bypassed partially treated wastewater for several hours.

- Sweeney WTP ozone roof membrane was damaged and torn causing leaks.
  - Protected key equipment
  - Arranged temporary repair with roofing contractor

CFPUA Emergency Work at U.S. 421 Protects Raw Water Supply Main

- Extreme flooding eroded road shoulder, exposing the Lower Cape Fear Water and Sewer Authority raw water supply main.
- Crews mobilized late Friday night to stabilize the water line.
- At 3:30 am the crews successfully stabilized the water main, preventing rupture and securing water supply to the public.

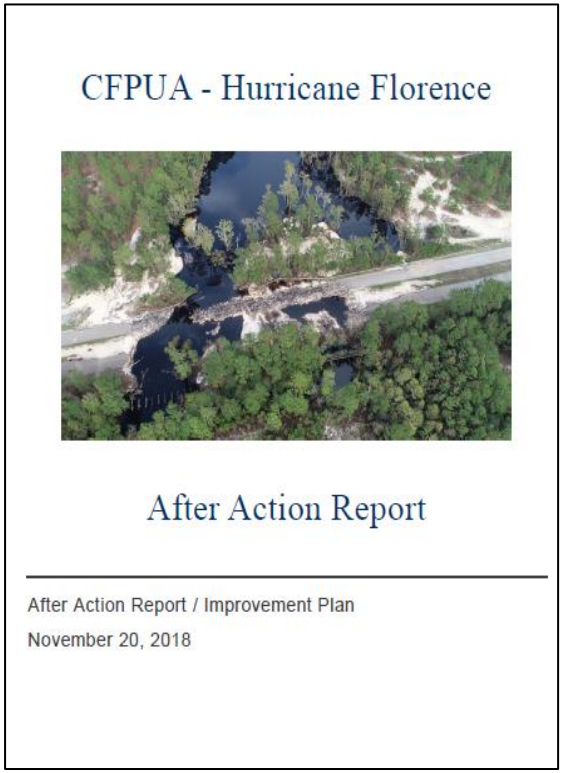


Before | During | After

Damage Assessments

- The Damage Assessment process began on Sunday. All pump stations, well sites, and treatment plants were assessed.
- Staff conducted an aerial assessment by helicopter of the raw water system.
- Except for the Sweeney roof, the system did not sustain major damage.
- Sink holes required water and sewer main repairs.
- Normal Fence and Antenna Tower Damage

After-Action Items / Lessons Learned


CFPUA - Hurricane Florence

After Action Report

After Action Report / Improvement Plan
November 20, 2018

- Strengthen emergency fuel supply resiliency - contract details with suppliers; increase on-site storage capacity; establish delivery capability redundancy.
- Assess Richardson Plant generator – employee safety; relocate/modify generator; install carbon monoxide meters in plant.
- Southside WWTP Generator – replace existing generator (already in capital plan); increase fuel storage.
- Spare parts – increase inventory of key spare parts.
- Policy improvements - essential employee/extended shift roster; sheltering; employee check-in; payroll; food service; preparing for extended operations.
- Targeted customer notification – investigate means to notify customer by geographic area.

Before | During | After

After-Action Items / Lessons Learned (cont.)



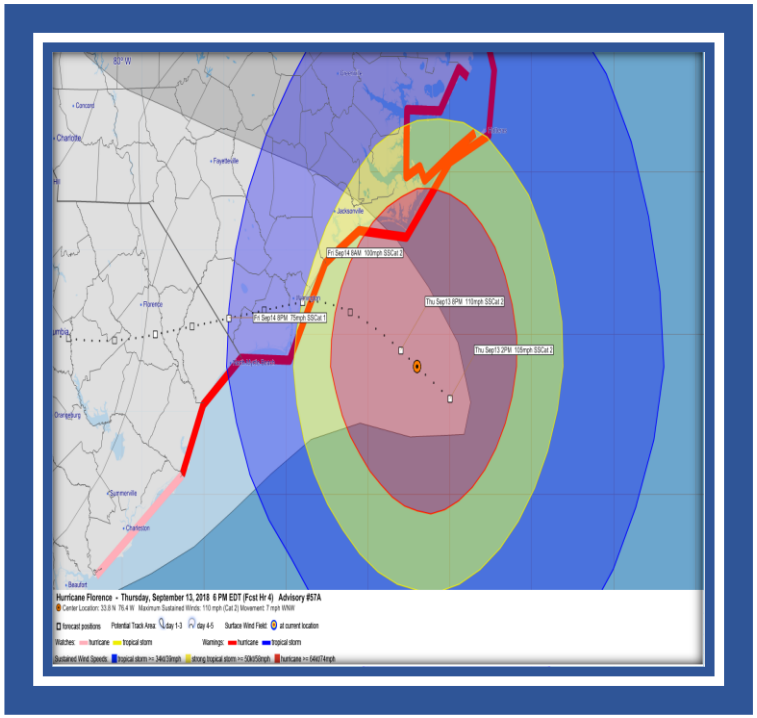



Before

During

After

Questions?



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