Title: Tropical Storm Isaac Presentation

Summary: In response to a request by the Board of County Commissioners (BCC), staff will present a summary of the events and actions taken in preparation of, during and after Tropical Storm Isaac and of the County's lessons learned.

Background and Policy Issues: In August, Tropical Storm Isaac greatly impacted Palm Beach County which its ramifications continue today. From August 22 to 28, 2012, the Public Safety Department/Emergency Management Division monitored, prepared for, responded to and coordinated with County Administration and emergency management stakeholders the impact of Tropical Storm Isaac and continues to this day to coordinate and manage the recovery efforts. Due to the impact by Tropical Storm Isaac Governor Rick Scott issued a State Declaration on August 25, 2012. On the same date, Palm Beach County issued a Local State of Emergency. Palm Beach County declared over 6 million dollars mainly in flooding related damage thereby meeting the State's required damage assessment threshold. On September 10, 2012, Governor Rick Scott requested a total major State disaster declaration from President Obama of over 26 million dollars in damage for seven counties including Palm Beach. Although, initially denied, the State's disaster declaration was granted upon appeal. Public Safety Department/Emergency Management Division's focus now is on the coordination of and management of the County's recovery efforts.

Attachment: PowerPoint Presentation
II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact: None

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<th>Fiscal Years</th>
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<td>NET FISCAL IMPACT</td>
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Is Item Included In Current Budget? Yes_____ No_____

Budget Account No.: Fund____ Department____ Unit
Object____ Reporting Category____

B. Recommended Sources of Funds/Summary of Fiscal Impact:

None

C. Departmental Fiscal Review:  

Stephanie Sepulveda 10/31/12

III. REVIEW COMMENTS

A. OFMB Fiscal and/or Contract Dev. and Control Comments:

B. Legal Sufficiency:

Assistant County Attorney

C. Other Department Review:

Department Director

REVISED 9/03
ADM FORM 01
(THIS SUMMARY IS NOT TO BE USED AS A BASIS FOR PAYMENT.)
Workshop Agenda Summary

Part I – Tropical Storm Approaches So. Florida.................................3-7
  – Vince Bonvento, Assistant County Administrator

Part II – So. Florida Water Management District Responds ..........9-18
  – Tommy Strowd, PE, Director of Operations, Maintenance & Construction

Part III – Indian Trail Improvement District Responds ...............19-24
  – Tanya Quickel, District Administrator

Part IV – Palm Beach Co. Initiates Response and
  Recovery Efforts.................................................................25-31
  – Bill Johnson, RN, Director, Emergency Management

Part V – Lessons Learned and Questions....................................32-33
  – Vince Bonvento, Assistant County Administrator
Monitoring *T.S. Isaac*

**Wednesday – August 22, 2012**
- Emergency Operations Center (EOC) went to Level 3 (monitoring) at 11:00 a.m.

**Thursday – August 23, 2012**
- Initial Executive Policy Group (EPG) meeting held at 1:30 p.m. at EOC

**Friday – August 24, 2012**
- Tropical Storm Watch issued at 5:00 p.m.
- Tropical Storm Warning issued at 11:00 p.m.
Weather:

- **Tropical Storm Isaac** has moved across Haiti; heading toward Cuba.
- Tropical storm force winds were forecast to impact Palm Beach County on Sunday around 1:00 p.m.
- Rainfall forecast: 5-10 inches area-wide Sunday through early Monday.

Objectives:

- Manage shelter operations addressing mass care issues to ensure safety and comfort of evacuees.
- Provide for public and responder safety.
- Ensure resources are effectively managed.

Actions Taken:

- Gov. Rick Scott issues a State declaration of emergency at 9:25 a.m.
- EPG meeting held at 2:00 p.m.
- Palm Beach County issues a local state of emergency at 3:00 p.m.
- EOC escalates to a Level 2 (partial) activation at 3:00 p.m.
Sunday - August 26, 2012

Weather:

- *Tropical Storm Isaac* has cleared Cuba; squalls just off the coast of South Florida.
- Winds from the NE at 31-36 mph with gusts as high as 49 mph.
- Rainfall forecast: 4-8 inches area-wide Sunday through early Monday
- Tropical Storm, Tornado, Flood warnings and watches issued for the County.
- Power outages reported per FP&L: 740 units

Objectives:

- Maintain effective communication and emergency public information.
- Manage shelter operations addressing mass care issues to ensure safety and comfort of evacuees.
- Ensure resources are effectively managed.

Actions Taken:

- Opened three (3) host shelters at 6:00 a.m.
- Libraries, beaches, parks, Port, and Transit closed based on forecast arrival of TSFW
- Host shelters were closed at 6:00 p.m.
- Schools and County Offices scheduled to open Monday morning

Potential South FL Impacts

**RAIN/FLOODING**

- 4-8 inches area-wide Sunday through Monday, with locally higher amounts, especially south and west.
- Flood Watch in effect through Monday evening.
Monday - August 27, 2012

Weather:
• Decision to close schools made by Superintendant at 1:00 a.m. due to street flooding
• EOC began to receive calls regarding impassable streets, flooding, closed storm drains, wastewater spillage and erosion.
• Flood Warning issued 8/27/12 at 4:39 p.m. to 10:30 p.m.

Objectives:
• Manage shelter operations addressing mass care issues to ensure safety and comfort of evacuees.
• Provide for public and responder safety.
• Ensure resources are effectively managed.

Actions Taken:
• Rapid Impact Assessment Teams established in coordination with Palm Beach County Fire Rescue and municipal Fire Rescue agencies.
• Due to escalating weather/flooding conditions, elevated the EOC Activation Level to Level 2 at 2:45 p.m.
• County offices closed at 3:00 p.m.
• Held conference call with cities and drainage districts at 5:00 p.m.
• One (1) host shelter open at 8:00 p.m.
• Palm Tran Connection suspended service at 9:00 p.m.
72-Hour Rainfall - Thru 8 AM August 28th, 2012
Source: ASOS, AWOS, AWSS, Co-Op observers, CoCoRaHS observers, SFWMD and AHPS data
Red dots are actual observations. Yellow dots are estimated values. Values between the observations have been interpolated and enhanced using AHPS data. This information is not official and should be considered as an estimation.

Rainfall (inches)

- 0.00 or T
- 0.01 - 0.50
- 0.51 - 1.00
- 1.01 - 2.00
- 2.01 - 5.00
- 5.01 - 7.50
- 7.51 - 10.00
- 10.01 - 12.50
- 12.51 - 15.00
- 15.01 - 20.00

NWS Miami, FL
Special Recognition and Thanks

For flood mitigation and response efforts by the following stakeholders:

– Loxahatchee Groves Water Control District
– Village of Royal Palm Beach
– Village of Wellington
– Lake Worth Drainage District
– City of West Palm Beach
– Northern Palm Beach Improvement District
South Florida Water Management District

- Tommy B. Strowd, P.E., Director
  Operations, Maintenance & Construction Division
Pre-Storm Actions

- Flood control system was operating at normal levels through the wet season
- Meteorological forecast projected heavy rains associated with TS Isaac
- Initiated pre-storm draw-down of the Lower East Coast canal network and Everglades Agricultural Area well in advance of forecasted landfall
- Staffed all pumping stations on a 24-hr basis in preparation for the storm
- Pre-positioned District equipment
- Activated District’s EOC
Sunday, August 26, 2012

- Pre-storm drawdown actions completed
- Wind field area and large, heavy rains anticipated throughout District
- Coastal water control structures remained configured to make maximum discharges
- Pumping stations were operated on a 24 hour basis at maximum practicable discharge
- Pump Station S-319 (full capacity) and STA-1E used for residential flood waters
18-Hour Rainfall Amounts
8am Sunday – 2am Monday
(Aug 26-27)
6-Hour Rainfall Amounts
9am – 3pm Monday (Aug 27)

Monday
Areas of Concern

Primary areas of concern were C-51 basin, C-17, C-18, L-8 basins and areas north of Lake Okeechobee; C-13, C-14

Water levels throughout the system were slowly receding.

Ponded water in the secondary and tertiary systems was slow in reaching the primary system.
Post Storm Operations

• Identified and issued emergency orders

• Regional system operations
  – Western C-51 discharged east and west
  – Utilized L-8 Reservoir
  – Discharged to Lake Okeechobee
  – Discharged to Water Conservation Area and tide
  – Coordinated with 298 Districts, local governments and others
Post Storm Operations

• Diversions to Water Conservation Area 1 (WCA-1)
  – Inflow into Stormwater Treatment Area 1E exceeded its capacity
    • SFWMD made an emergency diversion around STA-1E to WCA-1
    • Maintained flood discharges to protect human health and safety
  – Wellington given permission to pump directly into WCA-1

• Initiated ‘Backpumping’ to Lake Okeechobee to minimize flooding in EAA
Post Storm Operations

• Special Taxing District Operations
  – ITID Experienced extensive flooding of streets and swales in residential communities
  – Requested additional discharge capacity
    • ITID (C-51 permitted off-peak discharge)
    • Wellington (emergency discharge to WCA-1)
  – Coordination with affected downstream entities
    • Village of Royal Palm Beach
    • City of West Palm Beach
Post Storm Summary

- Advanced warning from meteorological forecasts allowed adequate time to initiate storm preparations
- Coordination with local communities and drainage districts during the event improved overall response to the event
- The water control system was operated in an effective and responsible manner to deal with the projected rainfall
- Additional pump capacity at S-319 improved overall C-51 performance
Indian Trail Improvement District

• Tanya Quickel
District Administrator
Indian Trail Improvement District

- ITID maintains 389 miles of unimproved roads – approx. 290 miles (75%) were impassable and underwater for 3 days. 389 miles is equal to the distance between The Acreage and Tallahassee.
- ITID has 165 miles of drainage canals and 983 miles of swales – all were at or above capacity.
- 128 thru road and canal intersections were compromised due to overflowing of canals flooding into the roads.
- There were extremely unsafe conditions at nightfall because the flooding made roads and canals indistinguishable – in other words, you could not see the road or the canal.
Indian Trail Improvement District

Actions Taken:

• ITID began pre-storm preparations on Wednesday, August 22, 2012 bringing down water levels to permitted control elevation
• ITID participated in all SFWMD Conference Calls and planned for a 4” to 6” rain event
• ITID operated four pump stations, 13 gravity structures, and 7 temporary pumps to discharge in excess of 2,000 ft³/sec of storm water by Friday, August 31, 2012 – or 80,000 residential swimming pools per day
• ITID repaired one major washout at 40th & 123rd
• ITID worked with SFWMD to monitor the Corbett Berm throughout the event – relief from emergency Corbett water levels was achieved with PBC’s help via installation of fixed weir across Corbett Road
• ITID coordinated with other local agencies throughout TS Isaac – SFWMD, PBC, Fire Rescue, FPL, Red Cross, Salvation Army, SERT, FEMA, Village of Royal Palm Beach, City of West Palm Beach, Cypress Groves CDD, and Seminole Improvement District
Indian Trail Improvement District

Initiatives – Moving Forward:

1. Corbett Berm – 5+ Miles
   - SFWMD is working with FWC proposing secondary isolation (new dike built to dam specifications)
   - SFWMD and PBC established a fixed weir for additional discharge east of Corbett Road to C-18
   - ITID requests permanent, additional discharge and storage through Mecca/Scripps from SFWMD

2. L Canal - Working with CWPB to install permanent pump station as a continuation of the Pilot Pump Project at the CWPB’s M Canal
Indian Trail Improvement District

Initiatives – Moving Forward:

3. Upper & Lower M1 Basin Divide
   • Improvements for increased flow options
   • Permit Modification for Permanent Emergency Peak Discharge to C-51
   • Drainage improvements along SPW and Acreage Community Park South Expansion
   • Drainage improvements to L-8 outfall canal and M1 impoundment discharge structures

4. M2 Basin – augmentation of existing drainage facilities

5. Additional Storage / Discharge – C-51 Reservoir Project

6. Unincorporated areas west of ITID’s active units of development in the M2 Basin:
   • Development of a comprehensive plan to address inadequate infrastructure
   • Consider options
Lessons Learned - ITID’s Board authorized a request to Palm Beach County for an overall comprehensive review of the Western Communities in response to Tropical Storm Isaac as part of ongoing cooperative efforts to address long term water management solutions.

Moving Forward - ITID’s goal is to be part of a constructive effort that encompasses a review of potential options for long-term solutions, including water storage and discharge, and cost-benefit analysis information. ITID requests this review be conducted by Palm Beach County Staff and others as deemed appropriate so that necessary improvements can be agreed upon and incorporated into future plans that will benefit our constituents.
Palm Beach County
Department of Public Safety
• Bill Johnson, Director
Emergency Management
Tuesday - August 28, 2012

Objectives:
• Maintain EOC Level 2 Activation.
• PB&Z deployed initial preliminary damage assessment teams.
• Continue Water Management District and municipal conference calls.
• Manage shelter operations to address mass care needs.
• EIC open for 24 hours.

Actions Taken:
• Conducted initial preliminary damage assessment.
• Dialogic messages were sent to 55,000 homes within impacted areas advising residents to call to report flood damage.
• All Palm Beach County schools closed.
• County offices closed.
• South Florida Water Management indicated a 24-hour rainfall total of up to 15”.
• State Emergency Response Team (SERT) Coordinator arrived at 10:30 a.m.
• Continued to operate a combined Red Cross/Special Needs host shelter.
• Salvation Army canteen was set-up in two (2) locations.
• Palm Beach County remained in a Flood Watch.
• Flash Flood Warning 8/28/12: 1430 -1730 hrs for Acreage and Wellington and was extended.
Wednesday - August 29, 2012

Objectives:
- Maintain shelter operations addressing mass care needs to evacuees.
- Conduct agriculture Preliminary Damage Assessment (PDA).
- Establish joint PDA.
- Collect, consolidate and map EIC flood damage received from citizens.
- Continue water district and municipal conference.
- Assemble PDA teams and assign to sections.
- Address needs through identified Emergency Operating Area’s (EOA).
- Plan for continuation of humanitarian well being checks/needs assessment/damage assessment.

Actions Taken:
- Governor Rick Scott and Florida DEM Director Bryan Koon visits SFWMD and Palm Beach County EOC
- Fish and Wildlife, Palm Beach County Fire Rescue and Palm Beach County Sheriff’s Office conducted assessments and humanitarian well being visits.
- Human Services and Animal Care and Control provided food and water for animals and live stock.
- EOA’s were activated at 11:00 a.m.
- Completed intake assessment forms and collaborated with EOA’s.
- A water truck was set up in Deer Run with potable water.
- Solid Waste Authority identified collection set up drop off points.
- EIC received an estimate 2,000 calls.
- Damage Assessment Teams continue to collect data.
- All but eight (8) Palm Beach County schools reopened.
Thursday - August 30, 2012

Objectives:
• Continue with the humanitarian missions.
• Maintain shelter operations
• Maintain EIC operations

Actions Taken:
• EOA Humanitarian missions continue.
• AC&C focused on removing animals from standing water. Representatives were out all day, by airboat, delivering livestock, food and water.
• Daily conf calls w/Gov
• Palm Beach County remains under a flood watch.
Objectives:
• Continue outreach with water districts.
• Deploy joint Individual Assessment Teams.
• Communicate with the cities and all other affected county and state stakeholders.
• Identify any additional resource needs and make requests through the EOC.
• Continue with RECON and humanitarian missions in the area as directed by Incident Command (IC).

Actions Taken:
• EIC received 3,072 calls to date.
• Briefing by Dr. Alonso/PBC Health Dept was held at 10:30 a.m.
• Major concerns were stagnant water, to include composition (decomposing organic materials, waste and chemical from ground), smell, and molding was mentioned.
• PBC Mosquito control began spraying in the evening of August 31
• Palm Beach County School District continues to have 7 schools closed.
Saturday - September 1, 2012

Objectives:
- Coordinate for removal and disposal of 11,240 lbs. of dead fish.
- Continue operating EOA humanitarian missions from Fire Rescue Station 28.
- Continue coordinating assistance with flood control measures in affected areas.
- Maintain high level support to Animal Care and Control and Public Health Operations.
- EOC at Level 2 including the EIC.

Actions Taken:
- A conference call with FDEM Director Brian Koon
- Over 350 missions and/or resource requests have been completed by EOC staff and field crews
- EIC remained open until 7:00 p.m.; total calls to date 3,300
September 2-7, 2012

Actions Taken:

• EOC de-escalated to Level 3 on September 4th at 7:00 p.m.
• State & FEMA Public Assistance Teams arrive to further assess damage
• Seven (7) Palm Beach County School’s were closed for one week
• PBC Mosquito Control conducted air-sprays over 270,000 acres
• Emergency Information Center received approximately 4,7860 calls
• Red Cross served 4,496 meals, 11,861 snacks, and 304 comfort items
• Red Cross distributed 1,287 clean-up kits
• Red Cross sheltered a total of 66 people
• Salvation Army distributed 4,178 meals, 7,147 drinks, 4,549 snacks, and 90 cases of water
• Two (2) local stables were made available for horse evacuations
• EOC deactivated on September 7th at 7:00 a.m.
Lessons Learned

- EOA and EIC systems worked well
- Working together, WORKED!!
- Communication between all levels of government is critical
- Enhanced communication with:
  - Water drainage districts
  - HOAs
- Communities not represented by a municipality or water control district should review their capabilities relating to flood control
- Establish working committee with SFWMD, ITID and County to address Corbett Berm
- Personal Preparedness is key – Have A Plan, Build a Kit, Get Informed
- A tropical storm can be just a bad or worse than a hurricane!
Questions?