

BUILDING CODE TRIAGE TEAMS AFTER ACTION REPORT HURRICANE JEANNE

I. PROCEDURES FOLLOWED:

1. **DEPLOYMENT:** The deployment of the Building Code Triage was accomplished under a Tracker 2000 Mission Number, input by the Infrastructure Branch Chief (POC: Jim Naum, DEM).

2. **NOTIFICATION:** The notification of DCA team members was accomplished internally by calling tree. Additional augmentation of the team was provided by retired CBO Red Wilkes, Executive Director of the Suwanne River BOAF Chapter. Outside contractor PBS&J was not used in this deployment due to exhausting of funds during Hurricane Charley. No augmentation by FEMA or ARA occurred during this deployment.

3. **ACTIVATION:** The activation of the team was initiated on Sunday, September 26, 2004 with rendezvous in Kissimmee, FL at the Holiday Inn on HW-192. Two teams deployed on September 27, 2004: one to Brevard County and one to St. Lucie & Indian River Counties, concentrating primarily on residential construction subjected to category II winds.

4. **TRANSPORTATION & LOGISTICS:** The logistics of transportation for the DCA only members of the teams was provided by POVs-- a Ford F-250 crew cab pickup truck and a SUV. All Triage Team equipment was carried with the teams when they deployed.

NOTE: As anticipated, a major problem was experienced in finding hotel rooms with electricity, which accounted for our staying approximately 100 miles from the damaged sites.

II. FINDINGS:

1. **BREVARD COUNTY:** One Triage Team deployed initially to Melborne in Brevard County on Monday morning (09/27/04) and contacted the Chief Building Official (CBO). The Triage Team Leader explained why we were there and requested a local area map annotating residences built to the FBC. We were greeted in a most cordial manner, visiting with the CBO for some 30 minutes in his briefing of the damages sustained in various areas of the county. Maps were produced and housing developments built to the FBC were annotated for our visitations.

NOTE: Based on experience learned in Hurricane Charley, the Triage Teams had maps of the local area, generated by the DEM GIS, but Brevard County had a much more detailed map of residential developments.

FLORIDA BUILDING CODE (FBC) AND CODE COMPLIANCE: Residences designed to the Florida Building Code (FBC) and built since March 01, 2001, proved to be very adequate, which was repeatedly demonstrated in newly constructed homes that

sustained only cosmetic damage (soffits) compared to older homes in the same neighborhood that had significant roof damage (failed shingles, doors and windows). Scattered power outages were observed along the coast.

Almost total destruction of any aluminum pool coverings, lanais, sheds and carports was observed, with some anchoring bolts actually pulled from the concrete decking and aluminum vertical support members sheared off at the base. In cases where these accessories were attached to the roof, this ultimately led to partial roof failure where the aluminum attachment was attached to the roof. Galvanized connectors do not perform well in this salt environment, leading to the conclusion that only stainless steel should be used.

Some damage was observed to unprotected openings, while other sustained no damage. Most protected openings performed well, if installed properly. Improper installation of the anchoring system led to the failure of some steel shutters.

The Triage Team examined over 360 undamaged individual residences in an area survey that were subjected to an estimated 125 mph winds. Some of these homes were coastal and subjected to winds and storm surge.

The newer homes built to the FBC and out of the storm surge sustained no damage to roofs or structural areas. Coastal storm surge in Brevard County accounted for major beach erosion and substantial flood damage to beachfront property and in low-lying areas. Horizontally blown rain penetrated some CBS construction and window installations and may be an area for further study by the Commission.

Code compliance is being vigorously enforced in Charlotte County, which directly accounts for the survivability of homes built to the FBC (since March 01, 2001) and the adequacy of the FBC.

2. **ST. LUCIE COUNTY:** One Triage Team deployed to the port St. Lucie and Vero Beach area along I-95 and HW-1, respectively, on 09/27/04. Despite significant erosion, the road was open. The St. Lucie County Building Official was contacted and maps were furnished and areas were identified with no delays.

NOTE: No accurate measurement of winds could be ascertained at the site since there were no installations of the Coastal Monitoring Program's instrumented houses in this area, and it was not in close proximity to an airport with wind measuring instruments. Computer modeling will have to be used to determine these winds.

FLORIDA BUILDING CODE (FBC) AND CODE COMPLIANCE: Residences built to the FBC (since March 2001) survived the storm with little or no damage, attesting to the vigorous code enforcement by the County Building Official. This included roofs with three tab composite asphalt-fiberglass shingles, which, when properly installed, did indeed survive major hurricane force winds. Few barrel tile roofs were observed in St. Lucie County in the residences that the team inspected. Horizontally blown rain penetrated some

CBS construction and window installations and may be an area for further study by the Commission.

3. ST. LUCIE AND INDIAN RIVER COUNTIES: FLORIDA BUILDING CODE (FBC) AND CODE COMPLIANCE: Areas visited were coastal and inland from port St. Lucie to Vero Beach along HW-1. No damage was observed on any new buildings built to the FBC, attesting to vigorous code enforcement. Extensive power outages and damage to the electric grid were observed, as well as significant beach erosion. Horizontally blown rain penetrated some CBS construction and window installations and may be an area for further study by the Commission.

Almost total destruction was observed of any aluminum pool coverings, lanais, sheds and carports, with some anchoring bolts actually pulled from the concrete decking and aluminum vertical support members sheared off at the base. In cases where these accessories were attached to the roof, this ultimately led to partial roof failure where the aluminum attachment was attached to the roof. Galvanized connectors do not perform well in this salt environment, leading to the conclusion that only stainless steel should be used.

Some damage was observed to unprotected openings, while other sustained no damage. Most protected openings performed well, if installed properly. Improper installation of the anchoring system led to the failure of some steel shutters.

4. POLK COUNTY: This county experienced three major hurricanes and tremendous rainfall from August 13, 2004 to September 26, 2004. Hurricane Charley entered the county from the south on August 13 at 7:00 P.M. with 115 MPH winds on a northerly track and exited with approximately 100 MPH winds at approximately 9:00 P.M. Hurricane Frances entered Polk County from the east on September 5, 2004 at 11:00 A.M. with 90 MPH winds and exited with tropical storm force winds at 4:00 P.M. Hurricane Jeanne entered Polk County from the east on September 26, 2004 at 7:00 A.M. with 100 MPH winds and exited at 11:00 A.M. with 75 MPH winds. Source of this information was from the county building official's GIS section, which had plotted the tracks, times and wind speeds from NOAA. There are three geographic points in Polk County where two of the three hurricanes crossed, (Charley/Jeanne, Charley/Francis and Francis/Jeanne) respectively.

FLORIDA BUILDING CODE (FBC) AND CODE COMPLIANCE: Thankfully, code compliance in Polk County are vigorously being enforced by an acting Chief Building Official. Code enforcement in the cities of Bartow and Lake Wales is also being vigorously carried out. This enforcement accounts for the minimal damage to homes built to the FBC. Substantial damage to roofs was sustained due to uprooted trees and broken limbs. Horizontally blown rain penetrated some CBS construction and window installations and may be an area for further study by the Commission.

NOTE: The size and specie of the trees in central and northern Florida that were uprooted or lost large limbs accounted for significantly more structural damage to residences than those trees in south Florida that tend to be smaller. Generally, the Oaks, Hickories and Gums that grow in central and north Florida and do not grow in south Florida accounted for

this damage. This may be an area for further study and outreach information for Floridians planting trees around their residences.

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END OF REPORT