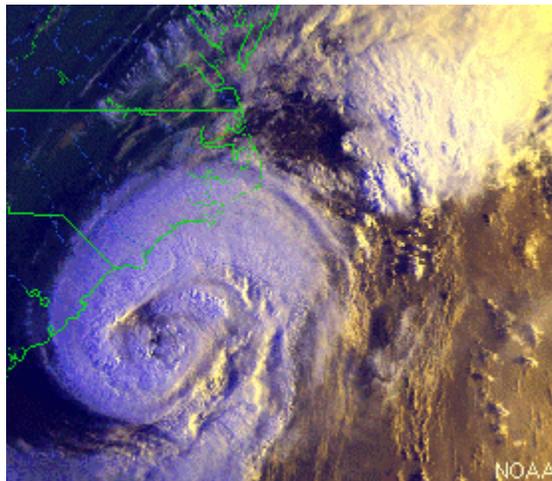


US Army Corps
Of Engineers
Norfolk District

EMERGENCY
OPERATIONS

DR 500-1-3

HURRICANE EMERGENCY PLAN



AUGUST 2002



DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
FORT NORFOLK, 803 FRONT STREET
NORFOLK VA 23510-1096

REPLY TO
ATTENTION OF

CENAO-TS-EOC (500-4a)

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: U.S. Army Engineer District, Norfolk, Hurricane Emergency Plan

1. Forwarded herewith is Norfolk District's Hurricane Emergency Plan, DR 500-1-3, dated August 2002, which is effective for planning purposes upon receipt. This plan supersedes, in its entirety, the previously issued plan entitled Hurricane Emergency Plan dated August 2000.
2. Changes or additions to this plan will be issued as necessary.
3. Addressees are requested to forward comments and recommendations to the Emergency Management Office.

A handwritten signature in black ink, appearing to read "D. L. Hansen", with a long horizontal flourish extending to the right.

DAVID L. HANSEN
Colonel, Corps of Engineers
Commanding

Encl

DISTRIBUTION:
See Annex R of Plan

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
HURRICANE EMERGENCY PLAN

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U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
HURRICANE EMERGENCY PLAN

BASIC PLAN

1. REFERENCES:

- a. Public Law 84-99, as amended.
- b. Public Law 93-288, as amended by Public Law 100-707.
- c. ER 500-1-1 dtd 30 Sep 01.
- d. EP 500-1-1 dtd 30 Sep 01.
- d. AR 500-60 dtd 1 Sep 81.
- e. Federal Response Plan dtd Apr 99.
- f. ESF#3 Disaster Mission and Function Guidebooks dtd 2 Aug 96.
- g. ESF#3 Handbook dtd 2 Jun 01.
- h. ER 11-1-320 dtd 1 Oct 98.

2. SITUATION.

a. General. Hurricanes are climatic disturbances of extreme proportions. As nature's way of expending excess energy built up in the atmosphere, hurricanes often unleash their fury far from land, harmlessly restoring an atmospheric equilibrium. Unfortunately, when a hurricane's path takes it near land, the effect of the storm can be devastating. The high winds and waves and the flooding caused by heavy rains and storm surge can take a heavy toll. Warning and preparation are essential in an attempt to minimize the hurricane's devastating effects.

(1) Background.

(a) Key words and definitions are listed in Annex B.

(b) On the average, six Atlantic hurricanes occur each year. Hurricanes are tropical cyclones whose sustained winds exceed 74 miles per hour (64 knots) and blow in the northern hemisphere in a large counterclockwise spiral around a relatively calm center or eye. Simply stated, hurricanes are giant whirlwinds in which the air moves in a spiral, tightening inward toward a center of extreme low pressure. Typically, the lower the pressure of the eye, the more intense the storm. Maximum wind speeds are found inland 20 to 30 miles from the rim of the eye, where gusts may exceed 200 miles per hour. The hurricane will dominate the ocean surface and lower atmosphere over tens of thousands of square miles.

(c) Hurricanes are dangerous, but even residents of coastal areas tend to ignore the danger and approach preparedness with apathy. Often, because it may have been years since the last hurricane, people become complacent, thinking that

there is less chance of a hurricane with time. Unfortunately, that is not the case, and poor preparedness results in increased damages and loss of life when the storm does occur. Damage is caused in several ways:

- The high winds cause damage by picking up and hurling all sorts of debris, including rocks, broken shutters, lawn furniture, or whatever else is loose or poorly secured. These missiles can cause extensive damage to personal property, cut communication and power lines, and take lives. The wind can also create very high waves that attack and damage coastal areas. Another hazard associated with the hurricane's winds are tornadoes, nature's most violent storm.

- Flooding associated with a hurricane is the storm's most dangerous aspect. The storm surge is essentially a piling up of water against the coast caused by the high winds. This storm surge can raise the water level more than 20 feet above normal, especially when superimposed on a severely high tide. The water level rise may come rapidly and produce flash flooding of coastal lowlands, or it may occur more gradually. In either case, the result is coastal flooding and increased damages from the violent storm waves. Torrential rains can cause more widespread flooding, even after the storm has moved inland and lost much of its force. Flooding pollutes water supplies, cripples communications, cuts utilities, undermines and destroys structures, and drastically changes ship channels and shorelines.

(2) Purpose.

- (a) Through pre-hurricane planning, establish a definite organization to indoctrinate personnel and to establish beforehand the actions to be taken.

- (b) To identify and define those actions required to prepare the Norfolk District, its employees and their families for the hurricane season.

- (c) To provide District staff and field operating elements with guidance and general procedures necessary to safeguard Corps and personal property.

- (d) To maintain District posture to respond immediately to a natural disaster under the authority of Public Law (PL) 84-99 and PL 93-288.

(3) Scope.

- (a) To identify actions to be taken to protect Corps and personal property during a hurricane emergency.

- (b) To include provisions for the Norfolk District to monitor a hurricane emergency.

b. Cooperating Agencies. Liaison and coordination will be maintained with the Commander, North Atlantic Division and the agencies listed in Annex J.

c. Assumptions.

- (1) Emergency assistance from the Corps of Engineers will be in accordance with existing authorities.

- (2) Assistance provided by the Corps of Engineers will be to supplement State and local efforts.

3. MISSION. The Norfolk District will:

a. Execute activities to maintain and ensure a high level of operational readiness to respond to a hurricane emergency. Activities will include, but will not be limited to, tracking of all hurricanes identified by the National Hurricane Center in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico, taking appropriate actions to safeguard Corps and personal property and ensuring personal safety.

b. Maintain liaison and coordination with appropriate Federal, State and local agencies, to include the Federal Emergency Management Agency, the Virginia State Department of Emergency Management, and the Hampton Roads Emergency Management Committee.

c. Operate Corps-owned dams and reservoirs within District boundaries in accordance with guidelines and procedures outlined in the appropriate reservoir regulations.

d. Be prepared to accomplish work under the following Continuing Authorities:

(1) Various Flood Control Acts and Rivers and Harbors Acts. Under this category the only statutory authority the Corps of Engineers has is contained in the Flood Control Acts and Rivers and Harbors Acts and provides for the protection and restoration of Federally constructed and maintained flood control structures and other civil works projects. Restoration of these projects will be accomplished by the District element having normal operation and/or maintenance responsibility. These include flood damage reduction projects, navigation projects, beach erosion control projects, snagging and clearing for flood control or navigation, streambank and shoreline protection projects, and mitigation of shore damage attributable to navigation works.

(2) Public Law 84-99. This act permits the Corps of Engineers to repair or restore other flood control projects damaged by a hurricane or severe storm, whether or not they were constructed with Federal funds, and Federally authorized and constructed Hurricane and Shore Protection Projects. Rehabilitation investigations and reports, including estimates, will usually be prepared jointly by the Planning and Engineering Branches. The District does not have the authority to approve rehabilitation projects. Instructions for preparation of requests to higher authority to accomplish work under PL 84-99 are contained in ER 500-1-1, Chapter 5, and are funded under FCCE Rehabilitation Category 300.

(3) Public Law 93-288. Following a major disaster declaration by the President of the United States, the responsibility for restoration rests with the Federal Emergency Management Agency (FEMA) under provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 93-288, as amended. Work under this authority includes the clearance of debris and wreckage; emergency protective measures; emergency repair or replacement of streets, roads and highway facilities; emergency repair or replacement of dikes, levees, irrigation works and drainage facilities; emergency repair or replacement of public buildings and related equipment; emergency repair or replacement of public utilities; and repair or restoration of public facilities under construction. Due to the limited construction capability of FEMA, the work outlined above, including engineering estimates, is usually performed by other Federal agencies or local entities upon request from FEMA and upon a cost reimburseable basis.

Following major disaster declarations, the Corps of Engineers has traditionally received mission assignments from FEMA to prepare initial engineering estimates. Additionally, the Corps may be requested to perform restoration work or provide direct assistance under all categories.

(4) AR 500-60. This authority allows the District Commander to take action as may be required and justified to save human life, prevent immediate human suffering, or mitigate major property damage or destruction when the disaster is of such imminent seriousness that waiting for instructions from higher authority would preclude effective response. Under this authority, only DOD resources may be used - no contracting is permitted.

4. EXECUTION.

a. Mission Execution

(1) The Norfolk District conducts a four-phased operation (see Annexes D, F).

(2) The Emergency Management Office will administer Hurricane Preparedness Phase I (for explanations of Hurricane Preparedness Phases, see Annex D) whenever a hurricane or severe storm develops or enters the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico.

(3) When a hurricane or severe storm enters Hurricane Preparedness Phase II, III and IV, the District Commander will direct District elements, through the Emergency Manager, to take necessary actions as indicated in Annex F of this plan.

(4) The Emergency Manager is responsible for coordinating all District activities through the Emergency Operations Center in relation to response to hurricane and severe storm emergencies.

(5) Predesignated Emergency Operations Center and Supplemental Staff (Annex H & Annex I) will report directly to the Emergency Manager for assignment, duty scheduling and situation-specific instructions. Additional personnel from various District elements may be tasked by the Commander to an emergency mission assignment. Personnel for specific mission assignments will be recommended by the Crisis Management Team (paragraph 5.c. below). If conditions warrant, additional personnel may be requested from other Corps districts or divisions.

(6) Each District element will be responsible for maintaining a roster of key personnel for notification purposes. An updated copy of the roster, to include areas of responsibility and home phone numbers, will be forwarded to the Emergency Manager by each District element yearly and prior to the beginning of the official hurricane season.

b. Concept of Operations

(1) Pre-Landfall

(a) The Emergency Management Office will monitor and track the movement of tropical storms and keep all District employees informed via e-mail of the current situation.

(b) Office managers, program and project managers and employees will take all necessary advance measures to minimize the damage to District facilities and projects.

(c) The District Engineer, in consultation with the District Crisis Management Team (see para.5.c.), will decide whether or not to deploy the Emergency Response and Recovery Office-Advance (ERRO-A) to vicinity Richmond Airport. The ERRO-A; also referred to as the Alternate EOC; is a redundant District headquarters element commanded by the Deputy District Engineer deployed to: reduce the impact of significant damage to the District; execute FEMA pre-declaration missions; and execute NAD and HQUSACE follow-on missions. The ERRO-A will consolidate all District response activities information, formulate the District situation report, and transmit it to the appropriate organizations. Should the ERRO-A not be established, the ERRO-A staff will report to the Waterfield Building Emergency Operations Center (EOC).

(d) The Deputy District Engineer, the Emergency Manager, and the District's State EOC support team will deploy to the Virginia State EOC when activated.

(e) Initial Preliminary Damage Assessment (IPDA) Team Leader meets with all team members to review assignments, scenarios, and reporting requirements.

(f) City Liaison Officers make contact with their local points of contact and deploy to the respective city EOC, if requested.

(g) The Waterfield Building EOC, led by Chief, Technical Services Division, will ensure all preparations are made so that post-event response and recovery operations can commence immediately after the hurricane event. The EOC will also ensure that employees have taken all necessary advance measures to minimize damage to District facilities and projects. In consultation with the District Engineer, determines when, if necessary, to close the District.

(2) Post-Landfall

(a) District Status

After the storm, Chiefs of Logistics, Safety and Security will investigate the extent of damage to the Waterfield Building and determine if the facility is operational and inhabitable. Chief, Technical Services, in consultation with the District Commander, will decide on District status (open, closed, liberal leave) and direct the Chief, Public Affairs to alert employees via local radio and television media.

(b) Emergency Response Operations

SCENARIO ONE - Waterfield Building is operational. Minimal damage to Norfolk area

i. The District Engineer, the Emergency Manager, and the District's State EOC support team will continue support to the State EOC, providing engineer technical advice while directing and coordinating the District's PL 84-99 response and recovery operations. Missions will be forwarded to the ERRO-A and District EOC for planning and execution.

ii. District employees are to return to work as soon as possible once the storm passes the Hampton Roads area.

iii. Office managers and Branch Chiefs will report the status of their respective offices to include number of personnel reporting to work and storm impact via e-mail to the District EOC (CENAO-EOC) mailbox.

iv. Program and Project Management Division Branch Chiefs will report the impact the storm had on all District projects to the District EOC (CENAO-EOC) mailbox.

v. Initial Preliminary Damage Assessment Teams will proceed to their designated areas and report their findings to the EOC in accordance with Annex Q.

vi. ERRO-A continues to plan, execute and coordinate FEMA mission assignments; plan and coordinate the reception, staging, and onward integration of USACE assets (Planning & Response Teams-PRTs, Logistics Response Teams, Subject Matter Experts, etc.) ERRO-A, unless directed otherwise by NAD to re-deploy to another location in support of NAD follow-on mission, will coordinate a hand-off of all FEMA mission assignments and status to the District EOC, and conduct a phased re-deployment to District Headquarters once the Waterfield EOC is fully operational. ERRO-A personnel will provide staffing for 24-hour operations of the EOC if required.

vii. District EOC continues to direct and report status of all disaster related information, i.e. PL 84-99 activities, civil works activities, dredging operations, district operations, personnel impact, status reports from city liaison officers, etc. to higher headquarters. Additionally, the District EOC will coordinate and synchronize with the ERRO-A, the reception, staging, and onward integration of USACE assets (PRTs, SMEs, etc.) to accomplish assigned FEMA missions.

viii. City liaison officers have reported for duty at their assigned cities, if requested. These liaison officers are the "eyes and ears" of the District Commander and will act as a conduit for information flow on all disaster related activities. Any disaster related issue the cities may have will be forwarded immediately to the EOC for action.

SCENARIO TWO - Waterfield Building is not operational. Significant damage to Norfolk.

i. Norfolk District is a "Victim or Impacted District." Under this scenario the major change is that all District EOC activities listed in scenario one are accomplished by the ERRO-A. Additionally, the ERRO-A plans and coordinates the reception, staging and onward integration of USACE assets to reconstitute the District.

ii. The ERRO-A staff will be augmented at the discretion of NAD. Further mission will be determined by the North Atlantic Division Commander.

5. ADMINISTRATIVE SUPPORT.

a. District elements will maintain their normal functions, and, at the same time, provide support to District emergency operations. Relative priorities will be directed by the District Commander.

b. Emergency Management will manage administrative activities required for fiscal control and accountability, including necessary support from other District elements, in the execution of the District's response to the emergency situation. The administrative support will include operations based at District Headquarters and/or Emergency Field Offices.

c. The Crisis Management Team, composed of the Emergency Manager, Commander, Deputy Commander, the Chiefs of Technical Services Division and Programs and Project Management Division, and the Area/Resident Engineers will identify personnel to be assigned to an Emergency Field Office if necessary (i.e., a Project Manager for a mission assignment for temporary housing, or a rehabilitation project under PL 84-99).

6. COMMAND AND SIGNAL.

a. Command.

(1) The Corps of Engineers command channels for emergency operations extend from the Secretary of the Army through the Chief of Engineers to the Division Commander, North Atlantic Division, to the District Commander, Norfolk District.

(2) Coordination and liaison will be maintained between the Emergency Operations Center and all other District elements (See Annex A-1 and A-2).

b. Signal.

(1) Notification Lists (Annex A-1 and A-2).

(2) Hurricane Probabilities (Annex E).

(3) Reports.

(a) Initial reports of disaster situations will be prepared and dispatched by Emergency Management staff via electronic mail. Included in the report will be any potential flood, coastal storm or advance measures action that should be brought to the attention of the Chief of Engineers.

(b) A Situation Report (SITREP) will be prepared by the pre-designated Disaster Reports Coordinator, will detail all information pertinent to the emergency situation and will be prepared on ENGLINK. A sample SITREP is shown at Annex A-3.

(4) Communications during an emergency will be in accordance with Annex K.

(5) During Phase I, normal communications will be maintained within the District. Notification of Phases II through IV will occur between the Emergency Manager and District elements as shown in Annex A. Communications systems, including

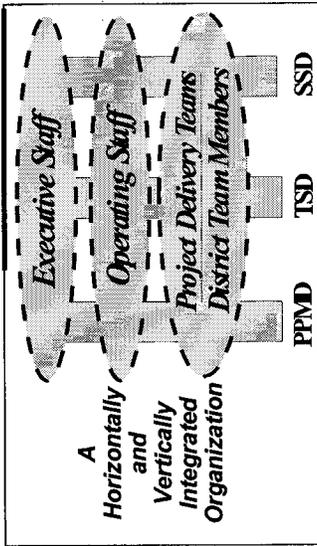
telephones, fax, e-mail, cellular telephones, pagers, VHF and HF radio, satellite communications, and GPS equipment, will be checked daily by the Information Management and Communications Coordinators during an emergency operation.

(6) Weather reports are accessed via the Weather Channel, the Internet, and through the Water Control Data System (WCDS) located in the Hydraulics and Hydrology and Floodplain Management Services Section (H&H & FPMS). H&H will monitor the WCDS during developing weather related emergencies and will provide reports, as requested, to the Emergency Operations Center. During hurricane season, the Weather Channel and Weather Radio are constantly monitored by Emergency Management personnel. Annex E provides information on the National Weather Service use of Hurricane Probabilities in Public Advisories.

(7) The National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce provides continuous radio broadcasts and telephonic recordings of the latest weather information directly from NWS offices. Taped weather messages are repeated every four to six minutes and are routinely updated every two to three hours, or more frequently if needed. The broadcasts are tailored to the weather information needs of the people in the respective geographical area. For example, stations along the seacoast provide specialized weather information for boaters, fishermen, and others engaged in marine activities, as well as general weather information. During severe weather, National Weather Service forecasters can interrupt the routine weather broadcasts and substitute special warning messages. See Annex G, para. 10, for operating radio broadcast station frequencies, and Annex J for recorded weather message telephone numbers within District boundaries.

7. AREA OF OPERATION

- a. Federal Response Plan, Emergency Support Function #3:** State of Virginia
- b. PL 84-99:** Norfolk District will perform PL 84-99 activities based on District boundaries, which encompasses the majority of the State of Virginia.



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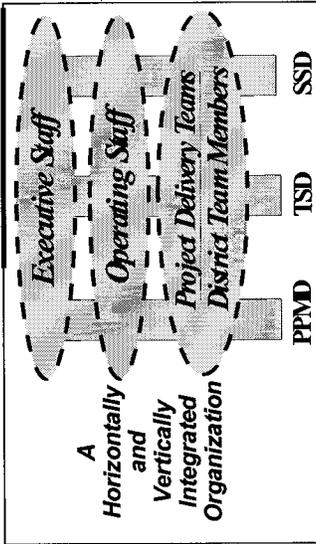
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April 2002



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Chief, Supv Procurement Analyst 485-5026
C.F. Drum, Acting

CENTRAL VIRGINIA AREA OFFICE

Supv Area Engineer
E.D. Merryman 804-452-0442
Norfolk District
930 20th Street
Fort Lee, VA 23801-0048

SOUTHWESTERN VIRGINIA AREA OFFICE

Supv Area Engineer, Acting
E.D. Merryman 804-452-0442
Norfolk District
Radford, VA 24114-0297

FORT EUSTIS RESIDENT OFFICE

Supv Resident Engineer
C.B. Field 757-850-3503
Norfolk District
P.O. Drawer B
Ft Eustis, VA 23604-0310

LANGLEY/MONROE RESIDENT OFFICE

Supv Resident Engineer, Langley/Monroe
B. T. Boynton 345-0155
Supv Resident Engineer, Langley-F22 Proj
A.J. Weaver 804-790-1044

Norfolk District
P.O. Box 65490
Langley AFB, VA 23665-5490

VA BEACH/GREAT BRIDGE RESIDENT OFFICE

Supv Resident Engineer
A. Spendlove 547-2253
Norfolk District
3007 Pacific Avenue, Suite #4
Va Beach, VA 23451
2508 Reservation Road
Chesapeake, VA 23322-5217

Home Phone Numbers

(757) 441 - unless noted

A-2

APPROVED:

DAVID L. HANSEN
Colonel, Corps of Engineers
Commanding
April 2002

ANNEX A-3
SAMPLE SITREP**Event:** Hurricane FLOYD**Organization:** NAO**Situation Report****Start Date:** 031858zNov1999**Valid as of:** 032217zNov1999**Report
Number:** 022**SITREP
Date:** 031858zNov1999**Situation****A GENERAL**

Hurricane FLOYD is gone. Cleanup and repairs ongoing.

B WEATHER

This Afternoon

Mostly sunny...breezy...and much cooler. Highs in the mid to upper 50s. West winds 15 to 25 mph and gusty.

Tonight

Clear. Near record lows of 30 to 35. West winds 10 to 15 mph.

Thursday

Mostly sunny. Highs 55 to 60.

Thursday Night

Mostly clear. Lows around 35.

Friday

Mostly clear. Highs in the lower to mid 60s.

Saturday and Sunday

Partly cloudy. Lows in the lower 40s. Highs 60 to 65.

C EOC ACTIVATION

Effective 4 Oct, hours of operation for the Norfolk District EOC will be 0800 - 1800, weekdays only, in coordination with DFO operations. Weekend staffing as needed. Effective 2 Oct, per direction of CENAD-EOC, Situation Reports will be submitted every Wednesday, with Spotreps daily, as needed.

Phone numbers are as follows:

EOC, Norfolk: (757) 441-7575

Fax Number: (757) 441-7833

E-mail, Internet Access and CEFMS are fully functional.

C - 1 EOC Activation Funding Status

FC&CE Class 210

Authorized: \$300,000

Committed: \$ 90,054

Obligated: \$ 95,558

Expended: \$ 93,358

Available: \$114,388

D IMPACTS TO LOCALITIES

a. Currently, 48 localities in the Commonwealth of Virginia have been declared eligible for Individual and/or Public Assistance. All jurisdictions in the Commonwealth are eligible for Hazard Mitigation assistance. An emergency declaration provided Federal assistance under CAT A (debris removal) and CAT B (emergency protective measures) to 19 jurisdictions.

b. Roads - Statewide - VDOT reports all Interstates and Primaries open.

c. City of Franklin - The VA Pilot reported that 182 businesses and more than 100 houses in the city had been flooded. FEMA, along with other Federal agencies, incl. COE, State and locals are providing assistance to the City.

ANNEX A-3
SAMPLE SITREP**Operations****A FEMA MISSIONS**

FEMA Region III DFO for VA is located in the Newmarket Fair Mall, 5200 West Mercury Boulevard, Newport News, Virginia 23605. DFO hours of operation are weekdays from 0800 - 1800 and closed on weekends.

Telephone:

DFO - 757-896-7263

ESF #3 - 757-896-7429

ESF #3 FAX - 896-7218

A - 1 ICE MISSION

Ice mission was cancelled. Ice PRT performing other EOC duties.

A - 2 WATER MISSION

Mission physically complete 23 Sep 99.

A - 3 TECHNICAL ASSISTANCE MISSION

1. The short term recovery plan for the City of Franklin has been completed.

2. Norfolk District representatives are on site in Franklin to assist Virginia State, City of Franklin, and Southhampton County representatives with contract development for debris management, removal and contract monitoring. Baltimore District has provided a debris expert to assist with this effort.

Debris clearing of Rights of Way 100% complete. One additional structure designated for demolition - all other sites graded, stabilized, and being seeded. Concrete and steel recycling ongoing. Compiling a work report for City and summary report for FEMA.

A-4 TEMPORARY HOUSING

Contract on schedule. Sewer line installation is on schedule. Site completely cleared and grading is progressing. Power company scheduled to begin work on 10 Nov.

A-5 FLOODPLAIN MGMT/HAZARD MITIGATION

Field work and physical surveys of flooded structures complete. Elevation certificates for each structure being prepared.

Discharge and high water data to initiate hydrologic and hydraulic studies for the Blackwater and Nottoway Rivers received from US Geological Survey on 28 Oct. Hydrology engineers have since run preliminary frequency analyses. They expect to complete this frequency analyses update within the next several weeks.

B NAVIGATION

The port of Hampton Roads is open to all traffic.

B - 1 Atlantic Intracoastal Waterway (AIW)

Dismal Swamp Canal (DSC) Operational Status:

Dismal Swamp Canal open; controlling depth of 5 feet.

C VIRGINIA BEACH HURRICANE PROTECTION PROJECT

NSTR

ANNEX A-3
SAMPLE SITREP**Crisis Management****A PERSONNEL**

Current Status:

EOC - 1 NAO person manning the EOC at Norfolk District. 1 NAO person manning the DFO ESF #3 Cell in Newport News. Housing PRT Action Officer from NAN at ESF #3 Cell at DFO.

Temp Housing - 3 NAN personnel, approx. 5 Norfolk Dist personnel working on housing mission.

Hazard Mitigation - 5 Norfolk Dist personnel working on hazmit mission.

Tech Assistance - 1 Norfolk Dist person working on TA mission.

Other NAO personnel assisting on missions as needed.

Totals listed in Personnel Section of ENGLINK.

B INFORMATION MANAGEMENT

Full network and communication capabilities are functional at the Norfolk District.

Officers

Field Officers: Jan Van Houten
EM Specialist
757-441-7575

Liaison Officers: Jan Van Houten
EM Specialist
757-441-7575

Actions for Next Reporting Period

1. Work on closing out Debris/Technical Assistance mission.
2. Forge ahead on Temporary Housing mission.
3. Continue work on FPMS/Hazmit mission.
4. Coordinate w/FEMA, State, and locals on Floyd related activities.

Actions:

Other Efforts: 1. Continue compiling After Action issues.

Prepared By**Name:** Jan Ilene Van Houten**Title:** Emergency Management Specialist**Phone(s):** CELL: 757-434-3808**Date:** 031858zNov1999**Released By****Name:** Jan Ilene Van Houten**Title:** Emergency Management Specialist**Phone(s):** CELL: 757-434-3808**Date:** 032217zNov1999**Division Released By****Name:** Thomas McBride**Title:** Civil Engineer**Phone(s):** [REDACTED]**Date:** 041319zNov1999

ANNEX B

DEFINITIONS OF ASSOCIATED WEATHER TERMS

a. Advisory. A formal message from a Weather Service Hurricane Warning Office giving warning information along with details on hurricane location, intensity and movement, and precautions that should be taken. The advisory may contain information on specific coastal warnings from which displays are made.

b. Bulletin. A public release from a Weather Service Hurricane Warning Office, issued at times other than those when advisories are required. The bulletin is similar in form to the advisory, except that the bulletin includes additional general newsworthy information. The bulletin routinely includes a resume of all warnings in effect.

c. Flood Watch. An announcement that predicted heavy rains may result in flooding in the specified area. Be alert and prepared for the possibility of a flood emergency which will require immediate action. Keep abreast of the latest advisories or bulletins in case flood warning is issued for the specified area.

d. Flood Warning. An announcement that flooding is occurring or is imminent in the specified areas. Move to safe ground immediately.

e. Gale Warning. A warning of sustained winds within the range 39 to 54 miles per hour (34 to 47 knots).

f. Hurricane. A warm core tropical cyclone in which maximum sustained surface wind is 74 miles per hour (64 knots) or greater.

g. Hurricane Center or Eye. The relatively calm area near the center of the storm. In this area winds are light and the sky often is only partly covered by clouds.

h. Hurricane "Season". The portion of the year having a relatively high incidence of hurricanes. In the Atlantic, Caribbean and Gulf of Mexico, it is regarded as the period from 1 June through 30 November.

i. Hurricane Warning. A warning that one or both of the following dangerous effects of a hurricane are expected in a specified coastal area in 24 hours or less: (a) sustained winds 74 miles per hour (64 knots) or higher; and (b) dangerously high water or a combination of dangerously high water and exceptionally high waves, even though winds expected may be less than hurricane force.

j. Hurricane Watch. An announcement for specific areas that a hurricane or an incipient hurricane condition poses a threat to coastal and inland communities. All people in the indicated areas should take stock of their preparedness requirements, keep abreast of the latest advisories and bulletins and be ready for quick action in case a warning is issued for their areas.

k. Local Statement. A public release prepared by a Weather Service Office in or near a threatened area giving specific details for its area or county responsibility on: (a) weather conditions; (b) sections that should be evacuated; and (c) other precautions necessary to protect life and property.

l. Squall. A sudden increase of wind speed by at least 18 miles per hour (16 knots) and rising to 25 miles per hour (22 knots) or more and lasting for at least one minute.

m. Storm Surge. A departure from a normal elevation of the sea due to the piling up of water against (or withdrawal from) a coast by strong winds, such as those accompanying a hurricane or other intense storm. Reduced atmospheric pressure often contributes to the departure in height during hurricanes. It is potentially catastrophic, especially in deltaic regions with onshore winds at the time of high water and extreme wind wave heights.

n. Storm Warning (associated with Tropical Cyclones). A warning of sustained winds in the range of 55 to 73 miles per hour (48 to 63 knots) inclusive.

o. Sustained Wind. The wind obtained by averaging the observed value over a one minute period.

p. Tornado Watch. An announcement for specific areas that weather conditions are present from which tornadoes are expected to develop. All people in indicated areas should keep abreast of the latest advisories in case a warning is issued.

q. Tornado Warning. An announcement for specific areas that weather conditions are present from which tornadoes are expected to develop. All people should seek inside shelter immediately, preferably below ground.

r. Tropical Cyclone. A warm-core low pressure system which develops over tropical and sometimes subtropical waters, and has an organized circulation.

s. Tropical Disturbance. A discreet system of apparently organized convection, generally 100 to 300 miles in diameter originating in the tropics or subtropics, having a non-frontal migratory character and having maintained its identity for 24 hours or more. It may or may not be associated with a detectable perturbation in the wind field. As such, it is the basic generic designation which, in successive stages of intensification, may be subsequently classified as a tropical wave, depression, storm, or hurricane.

t. Tropical Wave. A trough in the trade wind easterlies. The wave may reach maximum heights in the lower middle troposphere, or may be the reflection of an upper troposphere.

u. Tropical Depression. A tropical cyclone in which the maximum sustained surface wind is 38 miles per hour (33 knots) or less.

v. Tropical Storm. A warm core tropical cyclone in which the maximum sustained surface wind is in the range of 39 to 73 miles per hour (34 to 63 knots) inclusive.

ANNEX B
BEAUFORT WIND AND SEA CONDITIONS CHART.

<u>Beaufort Wind Force</u>	<u>Velocity (Knots)</u>	<u>Terms Used in National Weather Service Forecasts</u>	<u>Description of Sea</u>	<u>Height* of Waves (Feet)</u>	<u>Length* of Waves (Feet)</u>
0-Calm	Less than 1	Calm	Sea like a mirror.	----	----
1-Light Air	1-3	Light	Ripples-no foam crests.	Slight	Ripples
2-Light Breeze	4-6	Light	Small wavelets, crests have a glassy appearance and do not break.	1	15
3-Gentle Breeze	7-10	Gentle	Large wavelets, crests begin to break, scattered whitecaps.	2	30
4-Moderate Breeze	11-16	Moderate	Small waves becoming larger; frequent whitecaps.	5	75
5-Fresh Breeze	17-21	Fresh	Moderate waves, taking a more pronounced long form; many whitecaps, some spray.	8	135
6-Strong Breeze	22-27	Strong	Large waves begin to form; extensive whitecaps everywhere, some spray.	12	225
7-Moderate Gale	28-33	Strong	Sea heaps and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	16	350
8-Fresh Gale	34-40	Strong	Moderately high waves of greater length; edge of crests break into spindrift. The foam is blown in well-marked streaks along the direction of the wind.	25-30	540
9-Strong Gale	41-47	Strong	Moderately high streaks of foam along the direction of the wind. Spray may affect visibility. Sea begins to roll.	25-30	800
10-Whole Gale	48-55	Strong	Very high waves. Sea surface takes on a white appearance. The rolling of the sea becomes heavy and shocklike. Visibility is affected.	30-40	1080
11-Storm	56-64	Whole	Exceptionally high waves. Small and medium-sized vessels are lost to view in trough for long periods.	35-45	1400
12-Hurricane	Above 64	Hurricane	The air is filled with foam and spray. Sea completely white with driving spray; visibility very seriously affected.	Over 45	Over 1800

* These are only approximate measures. The size of waves depends on the length of time the wind continues to blow from a given direction, the fetch, depth of water and other factors.

The Saffir-Simpson Damage-Potential Scale

This scale was developed in the early 1970s by Herbert Saffir, a consulting engineer in Coral Gables, Florida, and Dr. Robert Simpson, then Director of the National Hurricane Center. The scale is based primarily on wind speeds and includes estimates of barometric pressure and storm surge associated with each of the five categories.

Category	Central Pressure	Winds	Surge
1 - Minimal	greater than 980 mb or 28.94 in	74-95 mph or 64-83 kts	4-5 ft.
2 - Moderate	965-979 mb or 28.50-28.91 in	96-110 mph or 65-96 kts	6-8 ft.
3 - Extensive	945-964 mb or 27.91-28.47 in	111-130 mph or 97-113 kts	9-12ft.
4 - Extreme	920-944 mb or 27.17-27.88 in	131-155 mph or 114-135 kts	13-18 ft.
5 - Catastrophic	less than 920 mb or 27.17 in	greater than 155 mph or 135 kts	greater than 18 ft.

Category 1 [Minimal] damage primarily restricted to shrubbery, trees, and unanchored mobile homes; no substantial damage to other structures; some damage to poorly constructed signs low lying roads inundated; minor damage to piers; small craft in exposed anchorages torn from moorings

Category 2 [Moderate]

considerable damage to shrubbery and tree foliage, some trees blown down; major damage to exposed mobile homes; extensive damage to poorly constructed signs and some damage to windows, doors and roofing materials of buildings, but no major destruction to buildings coastal roads and low lying escape routes inland cut off by rising water about 2 to 4 hours before landfall; considerable damage to piers and marinas flooded; small craft in protected anchorage torn from moorings evacuation of some shoreline residences and low lying areas required

Category 3 [Extensive]

foliage torn from trees; large trees blown down; poorly constructed signs blown down; some damage to roofing, windows, and doors; some structural damage to small buildings; mobile homes destroyed. serious flooding along the coast; many small structures near the coast destroyed; larger coastal structures damaged by battering waves and floating debris low lying escape routes inland cut off by rising water about 3 to 5 hours before landfall; flat terrain 5 feet or less above sea level flooded up to 8 or more miles inland evacuation of low lying residences within several blocks of shoreline may be required

Category 4 [Extreme]

shrubs, trees, and all signs blown down; extensive damage to roofs, windows, and doors, with complete failure of roofs on many smaller residences; mobile homes demolished flat terrain 10 feet or less above sea level flooded inland as far as 6 miles; flooding and battering by waves and floating debris cause major damage to lower floors of structures near the shore; low lying escape routes inland cut off by rising water about 3 to 5 hours before landfall; major erosion of beaches massive evacuation of all residences within 500 yards of the shore may be required, as well as of single story residences in low ground with 2 miles of the shore

Category 5 [Catastrophic]

trees, shrub, and all signs blown down; considerable damage to roofs of buildings, with very severe and extensive damage to windows and doors; complete failure on many roofs of residences and industrial buildings; extensive shattering of glass in windows and doors; complete buildings destroyed; small building overturned or blown away; mobile homes demolished major damage to lower floors of all structures less than 15 feet above sea level within 1500 feet of the shore low lying escape routes inland cut off by rising water about 3 to 5 hours before landfall; major erosion of beaches massive evacuation of residential areas on low ground within 5 to 10 miles of the shore may be required

**CATEGORY 1 WITH HIGH TIDE AND ERROR CORRECTION
CORRECTED STORM SURGE HEIGHT - CATEGORY 1**

STA. NO	LOCATION	JURISDICTION	TIDE RANGE	MAX SURGE	CATEGORY 1		CORR SURGE	ROUNDED
					ERROR COR	HIGH TIDE		
			FT.	FT. NGVD	(+20%)	CORR	FT. NGVD	FT. NGVD
1	NLANDING	VIRGINIA BEACH	0.0	2.6	0.5	0.0	3.1	3
2	BACKBAY	VIRGINIA BEACH	0.0	2.4	0.5	0.0	2.9	3
3	SANDBRIDG	VIRGINIA BEACH	3.5	4.6	0.9	1.8	7.3	7
4	RUDEE INL	VIRGINIA BEACH	3.4	4.6	0.9	1.7	7.2	7
5	LYNNHAVEN	VIRGINIA BEACH	2.0	4.5	0.9	1.0	6.4	6
6	LYNNHBAY	VIRGINIA BEACH	1.7	4.5	0.9	0.9	6.3	6
7	LITTLE CK	NORFOLK	2.6	4.8	1.0	1.3	7.1	7
8	WILLOUBY	NORFOLK	2.5	4.8	1.0	1.3	7.0	7
9	WATERSIDE	NORFOLK	2.8	4.4	0.9	1.4	6.7	7
10	WESTRN BR	PORTSMOUTH	2.6	4.3	0.9	1.3	6.5	6
11	DEEPCREEK	CHESAPEAKE	2.8	3.8	0.8	1.4	6.0	6
12	PIG POINT	PORTSMOUTH	2.8	4.0	0.8	1.4	6.2	6
13	SUFFOLK	SUFFOLK	3.8	4.7	0.9	1.9	7.5	8
14	NEWPORT N	NEWPORT NEWS	2.6	4.4	0.9	1.3	6.6	7
15	SHIP YARD	NEWPORT NEWS	2.6	3.3	0.7	1.3	5.3	5
16	JAMESTOWN	JAMES CITY CO	2.0	2.8	0.6	1.0	4.4	4
17	HOPEWELL	CHARLES CITY CO	2.6	2.4	0.5	1.3	4.2	4
18	GRANDVIEW	HAMPTON	2.5	4.4	0.9	1.3	6.5	7
19	LANGLEY	HAMPTON	2.5	4.5	0.9	1.3	6.7	7
20	POQUOSON	POQUOSON	2.4	4.6	0.9	1.2	6.7	7
21	YORKTOWN	YORK CO	2.4	5.2	1.0	1.2	7.4	7
22	CROAKER	YORK CO	2.6	4.2	0.8	1.3	6.3	6
23	GLASS	GLOUCESTER CO	2.5	5.3	1.1	1.3	7.6	8
24	NEW POINT	MATHEWS CO	2.3	4.7	0.9	1.2	6.8	7
25	DIGGS	MATHEWS CO	1.6	3.2	0.6	0.8	4.6	5
26	GWYNN IS	MATHEWS CO	1.2	3.0	0.6	0.6	4.2	4
27	WINDMILL	LANCASTER CO	1.2	2.9	0.6	0.6	4.1	4
28	CORROTOWN	LANCASTER CO	1.3	3.7	0.7	0.7	5.1	5
29	MOLLUSK	LANCASTER CO	1.5	3.3	0.7	0.8	4.7	5
30	TAPPAHAN	ESSEX CO	1.7	2.4	0.5	0.9	3.7	4
31	PORTROYAL	CAROLINE CO	1.9	3.1	0.6	1.0	4.7	5
32	DIVIDNG C	NORTHUMBERLAND CO	1.1	3.5	0.7	0.6	4.8	5
33	SANDY PT	NORTHUMBERLAND CO	1.2	3.0	0.6	0.6	4.2	4
34	GLEBE PT	NORTHUMBERLAND CO	1.2	4.1	0.8	0.6	5.5	6
35	SMITH PT	NORTHUMBERLAND CO	1.3	2.4	0.5	0.7	3.5	4
36	COAN RIV	NORTHUMBERLAND CO	1.3	2.8	0.6	0.7	4.0	4
37	YEOCOMICO	NORTHUMBERLAND CO	1.3	3.0	0.6	0.7	4.3	4
38	USANDY PT	WESTMORELAND CO	1.4	2.9	0.6	0.7	4.2	4
39	COLES PT	WESTMORELAND CO	1.5	3.0	0.6	0.8	4.4	4
40	MACHODOC	WESTMORELAND CO	1.6	3.5	0.7	0.8	5.0	5
41	COLONIALB	WESTMORELAND CO	1.7	3.2	0.6	0.9	4.7	5
42	BRIDGE T	NORTHAMPTON CO	3.0	4.8	1.0	1.5	7.3	7
43	C CHARLES	NORTHAMPTON CO	3.0	4.0	0.8	1.5	6.3	6
44	CRADDOCK	NORTHAMPTON CO	1.7	2.8	0.6	0.9	4.2	4
45	TANGIER	ACCOMACK CO	1.6	2.6	0.5	0.8	3.9	4
46	SAXIS	ACCOMACK CO	2.3	3.8	0.8	1.2	5.7	6
47	CAPEVILLE	NORTHAMPTON CO	3.5	5.2	1.0	1.8	8.0	8
48	HOG ILAND	NORTHAMPTON CO	3.9	4.9	1.0	2.0	7.8	8
49	WACHAPRG	ACCOMACK CO	3.9	5.2	1.0	2.0	8.2	8
50	CHINCOTEG	ACCOMACK CO	3.6	5.5	1.1	1.8	8.4	8

**CATEGORY 2 WITH HIGH TIDE AND ERROR CORRECTION
CORRECTED STORM SURGE HEIGHT - CATEGORY 2**

STA. NO	LOCATION	JURISDICTION	TIDE RANGE	MAX SURGE	CATEGORY 2		CORR SURGE	ROUNDED
					ERROR COR	HIGH TIDE		
			FT.	FT. NGVD	(+20%)	CORR	FT. NGVD	FT. NGVD
1	NLANDING	VIRGINIA BEACH	0.0	4.0	0.8	0.0	4.8	5
2	BACKBAY	VIRGINIA BEACH	0.0	3.6	0.7	0.0	4.3	4
3	SANDBRIDG	VIRGINIA BEACH	3.5	8.2	1.6	1.8	11.6	12
4	RUDEE INL	VIRGINIA BEACH	3.4	8.2	1.6	1.7	11.5	12
5	LYNNHAVEN	VIRGINIA BEACH	2.0	8.2	1.6	1.0	10.8	11
6	LYNNHBAY	VIRGINIA BEACH	1.7	8.4	1.7	0.9	10.9	11
7	LITTLE CK	NORFOLK	2.6	8.7	1.7	1.3	11.7	12
8	WILLOUBY	NORFOLK	2.5	9.8	2.0	1.3	13.0	13
9	WATERSIDE	NORFOLK	2.8	8.0	1.6	1.4	11.0	11
10	WESTRN BR	PORTSMOUTH	2.6	7.4	1.5	1.3	10.2	10
11	DEEPCREEK	CHESAPEAKE	2.8	7.7	1.5	1.4	10.6	11
12	PIG POINT	PORTSMOUTH	2.8	6.7	1.3	1.4	9.4	9
13	SUFFOLK	SUFFOLK	3.8	8.4	1.7	1.9	12.0	12
14	NEWPORT N	NEWPORT NEWS	2.6	8.6	1.7	1.3	11.6	12
15	SHIP YARD	NEWPORT NEWS	2.6	4.8	1.0	1.3	7.1	7
16	JAMESTOWN	JAMES CITY CO	2.0	4.5	0.9	1.0	6.4	6
17	HOPEWELL	CHARLES CITY CO	2.6	5.8	1.2	1.3	8.3	8
18	GRANDVIEW	HAMPTON	2.5	8.3	1.7	1.3	11.2	11
19	LANGLEY	HAMPTON	2.5	9.1	1.8	1.3	12.2	12
20	POQUOSON	POQUOSON	2.4	8.6	1.7	1.2	11.5	12
21	YORKTOWN	YORK CO	2.4	9.5	1.9	1.2	12.6	13
22	CROAKER	YORK CO	2.6	7.9	1.6	1.3	10.8	11
23	GLASS	GLOUCESTER CO	2.5	9.0	1.8	1.3	12.1	12
24	NEW POINT	MATHEWS CO	2.3	8.0	1.6	1.2	10.8	11
25	DIGGS	MATHEWS CO	1.6	5.8	1.2	0.8	7.8	8
26	GWYNN IS	MATHEWS CO	1.2	5.3	1.1	0.6	7.0	7
27	WINDMILL	LANCASTER CO	1.2	5.0	1.0	0.6	6.6	7
28	CORROTOWN	LANCASTER CO	1.3	7.0	1.4	0.7	9.1	9
29	MOLLUSK	LANCASTER CO	1.5	5.1	1.0	0.8	6.9	7
30	TAPPAHAN	ESSEX CO	1.7	5.0	1.0	0.9	6.9	7
31	PORTROYAL	CAROLINE CO	1.9	5.2	1.0	1.0	7.2	7
32	DIVIDNG C	NORTHUMBERLAND CO	1.1	5.5	1.1	0.6	7.2	7
33	SANDY PT	NORTHUMBERLAND CO	1.2	5.1	1.0	0.6	6.7	7
34	GLEBE PT	NORTHUMBERLAND CO	1.2	7.0	1.4	0.6	9.0	9
35	SMITH PT	NORTHUMBERLAND CO	1.3	3.7	0.7	0.7	5.1	5
36	COAN RIV	NORTHUMBERLAND CO	1.3	4.6	0.9	0.7	6.2	6
37	YEOCOMICO	NORTHUMBERLAND CO	1.3	5.0	1.0	0.7	6.7	7
38	USANDY PT	WESTMORELAND CO	1.4	4.7	0.9	0.7	6.3	6
39	COLES PT	WESTMORELAND CO	1.5	4.8	1.0	0.8	6.5	7
40	MACHODOC	WESTMORELAND CO	1.6	5.5	1.1	0.8	7.4	7
41	COLONIALB	WESTMORELAND CO	1.7	5.6	1.1	0.9	7.6	8
42	BRIDGE T	NORTHAMPTON CO	3.0	8.5	1.7	1.5	11.7	12
43	C CHARLES	NORTHAMPTON CO	3.0	7.2	1.4	1.5	10.1	10
44	CRADDOCK	NORTHAMPTON CO	1.7	4.9	1.0	0.9	6.7	7
45	TANGIER	ACCOMACK CO	1.6	4.6	0.9	0.8	6.3	6
46	SAXIS	ACCOMACK CO	2.3	6.7	1.3	1.2	9.2	9
47	CAPEVILLE	NORTHAMPTON CO	3.5	10.7	2.1	1.8	14.6	15
48	HOG ILAND	NORTHAMPTON CO	3.9	10.9	2.2	2.0	15.0	15
49	WACHAPRG	ACCOMACK CO	3.9	10.4	2.1	2.0	14.4	14
50	CHINCOTEG	ACCOMACK CO	3.6	9.1	1.8	1.8	12.7	13

**CATEGORY 3 WITH HIGH TIDE AND ERROR CORRECTION
CORRECTED STORM SURGE HEIGHT - CATEGORY 3**

STA. NO	LOCATION	JURISDICTION	TIDE RANGE	MAX SURGE	CATEGORY 3		CORR SURGE	ROUNDED
					ERROR COR	HIGH TIDE		
			FT.	FT. NGVD	(+20%)	CORR	FT. NGVD	FT. NGVD
1	NLANDING	VIRGINIA BEACH	0.0	4.7	0.9	0.0	5.6	6
2	BACKBAY	VIRGINIA BEACH	0.0	5.2	1.0	0.0	6.2	6
3	SANDBRIDG	VIRGINIA BEACH	3.5	11.7	2.3	1.8	15.8	16
4	RUDEE INL	VIRGINIA BEACH	3.4	11.4	2.3	1.7	15.4	15
5	LYNNHAVEN	VIRGINIA BEACH	2.0	11.7	2.3	1.0	15.0	15
6	LYNNHBAY	VIRGINIA BEACH	1.7	12.0	2.4	0.9	15.3	15
7	LITTLE CK	NORFOLK	2.6	12.1	2.4	1.3	15.8	16
8	WILLOUBY	NORFOLK	2.5	12.5	2.5	1.3	16.3	16
9	WATERSIDE	NORFOLK	2.8	12.3	2.5	1.4	16.2	16
10	WESTRN BR	PORTSMOUTH	2.6	10.9	2.2	1.3	14.4	14
11	DEEPCREEK	CHESAPEAKE	2.8	9.3	1.9	1.4	12.6	13
12	PIG POINT	PORTSMOUTH	2.8	10.9	2.2	1.4	14.5	14
13	SUFFOLK	SUFFOLK	3.8	13.0	2.6	1.9	17.5	18
14	NEWPORT N	NEWPORT NEWS	2.6	12.4	2.5	1.3	16.2	16
15	SHIP YARD	NEWPORT NEWS	2.6	8.9	1.8	1.3	12.0	12
16	JAMESTOWN	JAMES CITY CO	2.0	8.9	1.8	1.0	11.7	12
17	HOPEWELL	CHARLES CITY CO	2.6	6.6	1.3	1.3	9.2	9
18	GRANDVIEW	HAMPTON	2.5	11.6	2.3	1.3	15.2	15
19	LANGLEY	HAMPTON	2.5	12.7	2.5	1.3	16.5	16
20	POQUOSON	POQUOSON	2.4	12.0	2.4	1.2	15.6	16
21	YORKTOWN	YORK CO	2.4	12.2	2.4	1.2	15.8	16
22	CROAKER	YORK CO	2.6	9.7	1.9	1.3	12.9	13
23	GLASS	GLOUCESTER CO	2.5	12.7	2.5	1.3	16.5	16
24	NEW POINT	MATHEWS CO	2.3	11.1	2.2	1.2	14.5	14
25	DIGGS	MATHEWS CO	1.6	8.5	1.7	0.8	11.0	11
26	GWYNN IS	MATHEWS CO	1.2	8.0	1.6	0.6	10.2	10
27	WINDMILL	LANCASTER CO	1.2	7.4	1.5	0.6	9.5	9
28	CORROTOWN	LANCASTER CO	1.3	9.6	1.9	0.7	12.2	12
29	MOLLUSK	LANCASTER CO	1.5	7.2	1.4	0.8	9.4	9
30	TAPPAHAN	ESSEX CO	1.7	7.2	1.4	0.9	9.5	9
31	PORTROYAL	CAROLINE CO	1.9	7.2	1.4	1.0	9.6	10
32	DIVIDNG C	NORTHUMBERLAND CO	1.1	8.9	1.8	0.6	11.2	11
33	SANDY PT	NORTHUMBERLAND CO	1.2	7.8	1.6	0.6	10.0	10
34	GLEBE PT	NORTHUMBERLAND CO	1.2	11.1	2.2	0.6	13.9	14
35	SMITH PT	NORTHUMBERLAND CO	1.3	5.4	1.1	0.7	7.1	7
36	COAN RIV	NORTHUMBERLAND CO	1.3	5.9	1.2	0.7	7.7	8
37	YEOCOMICO	NORTHUMBERLAND CO	1.3	6.7	1.3	0.7	8.7	9
38	USANDY PT	WESTMORELAND CO	1.4	6.6	1.3	0.7	8.6	9
39	COLES PT	WESTMORELAND CO	1.5	6.8	1.4	0.8	8.9	9
40	MACHODOC	WESTMORELAND CO	1.6	7.7	1.5	0.8	10.0	10
41	COLONIALB	WESTMORELAND CO	1.7	8.1	1.6	0.9	10.6	11
42	BRIDGE T	NORTHAMPTON CO	3.0	11.9	2.4	1.5	15.8	16
43	C CHARLES	NORTHAMPTON CO	3.0	10.4	2.1	1.5	14.0	14
44	CRADDOCK	NORTHAMPTON CO	1.7	7.3	1.5	0.9	9.6	10
45	TANGIER	ACCOMACK CO	1.6	6.5	1.3	0.8	8.6	9
46	SAXIS	ACCOMACK CO	2.3	5.9	1.2	1.2	8.2	8
47	CAPEVILLE	NORTHAMPTON CO	3.5	15.7	3.1	1.8	20.6	21
48	HOG ILAND	NORTHAMPTON CO	3.9	17.3	3.5	2.0	22.7	23
49	WACHAPRG	ACCOMACK CO	3.9	14.9	3.0	2.0	19.8	20
50	CHINCOTEG	ACCOMACK CO	3.6	14.1	2.8	1.8	18.7	19

**CATEGORY 4 WITH HIGH TIDE AND ERROR CORRECTION
CORRECTED STORM SURGE HEIGHT - CATEGORY 4**

STA. NO	LOCATION	JURISDICTION	TIDE RANGE		CATEGORY 4		CORR SURGE FT. NGVD	ROUNDED FT. NGVD
			FT.	FT. NGVD	ERROR COR (+20%)	HIGH TIDE CORR		
1	NLANDING	VIRGINIA BEACH	0.0	12.4	2.5	0.0	14.9	15
2	BACKBAY	VIRGINIA BEACH	0.0	15.0	3.0	0.0	18.0	18
3	SANDBRIDG	VIRGINIA BEACH	3.5	14.4	2.9	1.8	19.0	19
4	RUDEE INL	VIRGINIA BEACH	3.4	14.4	2.9	1.7	19.0	19
5	LYNNHAVEN	VIRGINIA BEACH	2.0	14.3	2.9	1.0	18.2	18
6	LYNNHBAY	VIRGINIA BEACH	1.7	13.4	2.7	0.9	16.9	17
7	LITTLE CK	NORFOLK	2.6	15.0	3.0	1.3	19.3	19
8	WILLOUBY	NORFOLK	2.5	15.5	3.1	1.3	19.9	20
9	WATERSIDE	NORFOLK	2.8	15.0	3.0	1.4	19.4	19
10	WESTRN BR	PORTSMOUTH	2.6	15.0	3.0	1.3	19.3	19
11	DEEPCREEK	CHESAPEAKE	2.8	15.0	3.0	1.4	19.4	19
12	PIG POINT	PORTSMOUTH	2.8	13.7	2.7	1.4	17.8	18
13	SUFFOLK	SUFFOLK	3.8	15.8	3.2	1.9	20.9	21
14	NEWPORT N	NEWPORT NEWS	2.6	15.7	3.1	1.3	20.1	20
15	SHIP YARD	NEWPORT NEWS	2.6	11.5	2.3	1.3	15.1	15
16	JAMESTOWN	JAMES CITY CO	2.0	10.6	2.1	1.0	13.7	14
17	HOPEWELL	CHARLES CITY CO	2.6	8.3	1.7	1.3	11.3	11
18	GRANDVIEW	HAMPTON	2.5	14.6	2.9	1.3	18.8	19
19	LANGLEY	HAMPTON	2.5	15.8	3.2	1.3	20.2	20
20	POQUOSON	POQUOSON	2.4	14.9	3.0	1.2	19.1	19
21	YORKTOWN	YORK CO	2.4	15.6	3.1	1.2	19.9	20
22	CROAKER	YORK CO	2.6	13.5	2.7	1.3	17.5	18
23	GLASS	GLOUCESTER CO	2.5	16.2	3.2	1.3	20.7	21
24	NEW POINT	MATHEWS CO	2.3	14.4	2.9	1.2	18.4	18
25	DIGGS	MATHEWS CO	1.6	10.9	2.2	0.8	13.9	14
26	GWYNN IS	MATHEWS CO	1.2	10.4	2.1	0.6	13.1	13
27	WINDMILL	LANCASTER CO	1.2	9.7	1.9	0.6	12.2	12
28	CORROTOWN	LANCASTER CO	1.3	11.3	2.3	0.7	14.2	14
29	MOLLUSK	LANCASTER CO	1.5	10.1	2.0	0.8	12.9	13
30	TAPPAHAN	ESSEX CO	1.7	10.7	2.1	0.9	13.7	14
31	PORTROYAL	CAROLINE CO	1.9	9.4	1.9	1.0	12.2	12
32	DIVIDNG C	NORTHUMBERLAND CO	1.1	10.7	2.1	0.6	13.4	13
33	SANDY PT	NORTHUMBERLAND CO	1.2	9.6	1.9	0.6	12.1	12
34	GLEBE PT	NORTHUMBERLAND CO	1.2	13.9	2.8	0.6	17.3	17
35	SMITH PT	NORTHUMBERLAND CO	1.3	7.1	1.4	0.7	9.2	9
36	COAN RIV	NORTHUMBERLAND CO	1.3	7.7	1.5	0.7	9.9	10
37	YEOCOMICO	NORTHUMBERLAND CO	1.3	8.6	1.7	0.7	11.0	11
38	USANDY PT	WESTMORELAND CO	1.4	8.6	1.7	0.7	11.0	11
39	COLES PT	WESTMORELAND CO	1.5	8.9	1.8	0.8	11.4	11
40	MACHODOC	WESTMORELAND CO	1.6	9.4	1.9	0.8	12.1	12
41	COLONIALB	WESTMORELAND CO	1.7	10.7	2.1	0.9	13.7	14
42	BRIDGE T	NORTHAMPTON CO	3.0	15.0	3.0	1.5	19.5	20
43	C CHARLES	NORTHAMPTON CO	3.0	12.9	2.6	1.5	17.0	17
44	CRADDOCK	NORTHAMPTON CO	1.7	9.4	1.9	0.9	12.1	12
45	TANGIER	ACCOMACK CO	1.6	8.4	1.7	0.8	10.9	11
46	SAXIS	ACCOMACK CO	2.3	8.8	1.8	1.2	11.7	12
47	CAPEVILLE	NORTHAMPTON CO	3.5	20.1	4.0	1.8	25.9	26
48	HOG ILAND	NORTHAMPTON CO	3.9	22.6	4.5	2.0	29.1	29
49	WACHAPRG	ACCOMACK CO	3.9	19.8	4.0	2.0	25.7	26
50	CHINCOTEG	ACCOMACK CO	3.6	18.9	3.8	1.8	24.5	24

ANNEX C
HURRICANE NAMES and HURRICANE HISTORY

Atlantic Names:

<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
Arthur	Ana	Alex	Arlene	Alberto	Andrea
Bertha	Bill	Bonnie	Bret	Beryl	Barry
Cristobal	Claudette	Charley	Cindy	Chris	Chantal
Dolly	Danny	Danielle	Dennis	Debby	Dean
Edouard	Erika	Earl	Emily	Ernesto	Erin
Fay	Fabian	Frances	Franklin	Florence	Felix
Gustav	Grace	Gaston	Gert	Gordon	Gabrielle
Hanna	Henri	Hermine	Harvey	Helene	Humberto
Isidore	Isabel	Ivan	Irene	Isaac	Ingrid
Josephine	Juan	Jeanne	Jose	Joyce	Jerry
Kyle	Kate	Karl	Katrina	Kirk	Karen
Lili	Larry	Lisa	Lee	Leslie	Lorenzo
Marco	Mindy	Matthew	Maria	Michael	Melissa
Nana	Nicholas	Nicole	Nate	Nadine	Noel
Omar	Odette	Otto	Ophelia	Oscar	Olga
Paloma	Peter	Paula	Philippe	Patty	Pablo
Rene	Rose	Richard	Rita	Rafael	Rebekah
Sally	Sam	Shary	Stan	Sandy	Sebastian
Teddy	Teresa	Tomas	Tammy	Tony	Tanya
Vicky	Victor	Virginie	Vince	Valerie	Van
Wilfred	Wanda	Walter	Wilma	William	Wendy

Experience shows that the use of short, distinctive given names in written as well as spoken communications is quicker and less subject to error than the older more cumbersome latitude-longitude identification methods. These advantages are especially important in exchanging detailed storm information between hundreds of widely scattered stations, coastal bases, and ships at sea. Since 1953, Atlantic tropical storms have been named from lists originated by the National Hurricane Center and now maintained and updated by an international committee of the World Meteorological Organization. The lists featured only women's names until 1979, when men's and women's names were alternated. Six lists are used in rotation. Thus, the 2001 list will be used again in 2007.

The only time that there is a change in the list is if a storm is so deadly or costly that the future use of its name on a different storm would be inappropriate for reasons of sensitivity. If that occurs, then at an annual meeting by the WMO committee (called primarily to discuss many other issues) the offending name is stricken from the list and another name is selected to replace it.

Several names have been changed since the lists were last used. Four names from the 1995 list have been retired. On the 2001 list, Lorenzo has replaced Luis, Michelle has replaced Marilyn, Olga has replaced Opal, and Rebekah has replaced Roxanne. Three names from the 1996 list have been retired. On the 2002 list, Cristobal has replaced Cesar, Fay has replaced Fran, and Hanna has replaced Hortense. Two names from the 1998 list have been retired. On the 2004 list, Gaston has replaced Georges and Matthew has replaced Mitch. On the 2006 list, Kirk has replaced Keith.

The Hurricane History of Coastal Virginia

Continuous weather records for the Hampton Roads Area of Virginia began on January 1, 1871 when the National Weather Service was established in downtown Norfolk. The recorded history of significant tropical storms that affected the area goes back much further. Prior to 1871, very early storms have been located in ship logs, newspaper accounts, history books, and countless other writings. The residents of coastal Virginia during Colonial times were very much aware of the weather. They were a people that lived near the water and largely derived their livelihood from the sea. To them, a tropical storm was indeed a noteworthy event. The excellent records left by some of Virginia's early settlers and from official records of the National Weather Service are summarized below. Learning from the past will help us prepare for the future.

Seventeenth and Eighteenth Centuries

1635	August 24	First historical reference to a major hurricane that could have affected the Virginia coast.
1667	September 6	It appears likely this hurricane caused the widening of the Lynnhaven River. The Bay rose 12 feet above normal and many people had to flee.
1693	October 29	From the Royal Society of London: "There happened a most violent storm in Virginia which stopped the course of ancient channels and made some where there never were any."
1749	October 19	Tremendous hurricane. A sand spit of 800 acres was washed up and with the help of a hurricane in 1806 it became Willoughby Spit. The Bay rose 15 feet above normal.

Historical records list the following tropical storms as causing significant damage in Virginia: September 1761; October 1761; September 1769; September 1775; October 1783; September 1785; July 1788.

Nineteenth Century

1806	August 23	Called the Great Coastal Hurricane of 1806.
1821	September 3	One of the most violent hurricanes on record.
1846	September 8	Hatteras and Oregon Inlets were formed.
1876	September 17	Average 5 minute wind speed at Cape Henry was 78 mph; 8.32" of rain
1878	October 23	Cobb and Smith Islands, on the Eastern Shore, were completely submerged. Average 5 minute wind at Cape Henry was 84 mph. Eighteen died when the A.S. Davis went ashore near Virginia Beach.
1879	August 18	Tide in Norfolk 7.77 feet above Mean Lower Low Water. Average 5 minute wind speed at Cape Henry 76 mph with 100 mph estimated gusts.
1887	October 31	Average 5 minute wind speed at Cape Henry 78 mph. The storm caused a record number of marine disasters.
1893	August 23	Average 5 minute wind speed at Cape Henry 88 mph.
1894	September 29	Five minute wind speed at Cape Henry 80 mph; gusts to 90 mph.
1897	October 25	Lasted 60 hours. Norfolk tides 8.1 feet above Mean Lower Low Water.
1899	October 31	Average 5 minute wind at Cape Henry 72 mph. Tide in Norfolk reached 8.9 feet above Mean Lower Low Water.

Noteworthy storms also occurred in June 1825, August 1837, August 1850 and September 1856.

Twentieth Century

1903	October 10	Average 5 minute wind speed at Cape Henry 74 mph, the tide in Norfolk reached 9 feet above Mean Lower Low Water.
1924	August 26	Average 1 minute wind speed 72 mph at Cape Henry.
1924	September 30	Fastest 1 minute wind speed in Norfolk 76 mph.
1926	August 22	Fastest 1 minute wind speed in Cape Henry 74 mph.
1928	September 19	Fastest 1 minute wind speed at Cape Henry 72 mph. The tide reached 7.16 feet above Mean Lower Low Water in Norfolk.
1933	August 23	This hurricane established record high tide of 9.8 feet above Mean Lower Low Water. 18 people died. Highest 1 minute wind speed in Norfolk was 70 mph, 82 mph at Cape Henry, and 88 mph at NAS, Norfolk.
1933	September 16	Fastest 1 minute wind speed was 88 mph at NAS, Norfolk, 75 mph at the NWS City Office, and 87 mph at Cape Henry. The tide reached 8.3 feet above Mean Lower Low Water.
1936	September 18	The fastest 1 minute wind speed was 84 mph at Cape Henry and 68 mph at the NWS City Office. The tide reached 9.3 feet above Mean Lower Low Water and is the second highest tide of record.
1944	September 14	Fastest 1 minute wind speed was 134 mph at Cape Henry which is the highest speed of record in this area. Gusts were estimated to 150 mph. The NWS City Office recorded 72 mph with gusts to 90 mph.
1953	August 14	Barbara. The fastest 1 minute wind speed was 72 mph at Cape Henry, 63 mph with gusts to 76 mph at Norfolk Airport.
1954	October 15	Hazel. Fastest 1 minute wind speed was 78 mph at Norfolk Airport with gusts to 100 mph which is the highest wind speed of record for the Norfolk Airport location. A reliable instrument in Hampton recorded 130 mph.
1959	September 30	Gracie. Passed through western Virginia, 6.79 inches of rain at Norfolk Airport in 24 hours. Storm spawned a tornado eight miles west of Charlottesville, killing 11 people.
1960	September 12	Donna. Fastest 1 minute wind speed was 73 mph at Norfolk Airport, 80 mph at Cape Henry and estimated 138 mph at Chesapeake Light Ship. Lowest pressure of 28.65 inches holds the area record for a tropical storm. 3 deaths.
1964	September 1	Cleo. A storm noted for its rain. 11.40 inches in 24 hours is the heaviest in the coastal area since records began in 1871.
1969	August 19	Camille. Made landfall in Mississippi on August 17. The storm tracked northward and dumped a record 27 inches of rain in the Virginia mountains, primarily in Nelson County. Flash flooding took the lives of 153 people.
1971	August 27	Doria. The fastest 1 minute wind speed 52 mph at Norfolk Airport and 71 mph at NAS, Norfolk.
1972	June 21	Agnes. Made landfall on the Gulf Coast of Florida. As the storm crossed Virginia, it dumped 13.6 inches of rain on the east slopes of the Blue Ridge Mountains. The James River crested at a record high in Richmond. Virginia sustained \$222 million in damage, and 13 people died from flash flooding.
1979	September 5	David. Passed through central Virginia. Spawned 2 severe tornadoes - one in Newport News with over \$2 million in damage and one in Hampton with a half million dollars in damage.

1985	September 27	Gloria. Passed 45 miles east of Cape Henry. Fastest 1 minute wind speed WNW 46 mph, peak gust 67 mph at the Airport, NE 94 mph gust to 104 mph at the South Island CBBT. Highest tide 5.3 feet above Mean Lower Low Water, storm rainfall 5.65 inches and total Virginia damage \$5.5 million.
1986	August 17	Charley. The weak center passed over southeast Virginia Beach. Fastest 1 minute wind speed NNE 40 mph gust E 63 mph at Norfolk International Airport; NE 94 mph gust to 104 mph at South Island CBBT; and NE 54 mph gust to 82 mph at Cape Henry. Highest tide 5.5 feet above Mean Lower Low Water. Less than \$1 million in damage in Virginia.
1996	July 12-13	Bertha. Passed over portions of Suffolk and Newport News. Fastest 1 minute wind speed SE 35 mph gust to 48 mph at Norfolk International Airport. Bertha spawned 4 tornadoes across east-central Virginia. The strongest, an F1 tornado moved over Northumberland county injuring 9 persons and causing damages of several million dollars. Other tornadoes moved over Smithfield, Gloucester and Hampton.
1996	September 5	Fran. Passed well west of the area over Danville. Fastest 1 minute wind speed SE 41 mph gust to 47 mph at Norfolk International Airport. Rainfall amounted to only 0.20 of an inch in Norfolk.
1998	August 27	Bonnie. Tracked over the northern Outer Banks. Fastest 1 minute wind speed NE 46 mph with gust to 64 mph at Norfolk Airport. NE 90 mph with gust to 104 mph at CBBT. 4-7 inches of rain combined with near hurricane force winds knocked out power to 320,000 customers. Highest tide 6.0 FT above MLLW. Most significant storm since 1960.
1999	August 30 - September 5	Dennis. Meandered off the North Carolina/Virginia coast for 3 days before coming ashore near Morehead City, NC. Produced substantial rain and some flooding in southern, central and southeast Virginia, and eastern NC. Spawned an F2 tornado in Hampton. Heavy rains set the stage for Hurricane Floyd 2 weeks later.
1999	September 15-16	Floyd. Moved across extreme NE NC/SE VA on a track similar to Donna in 1960. Highest sustained wind at Norfolk Airport NE 31 mph with gust to 46 mph. Lowest Pressure 28.85" - 977 MB - 4th lowest of record. 10-20" of rain on saturated ground resulted in 500 year flood of record for Franklin, VA. WFO Wakefield was inaccessible for 36 hours.

Hurricanes come close enough to produce hurricane force winds approximately three times every 20 years. Two or three times a century winds and tides produce considerable damage and significantly threaten life. Three known storms have been powerful enough to alter coastal features.

Source - National Weather Service, Wakefield Office

ANNEX D STORM TRACKING

1. Plate 1 - Depicts the Hurricane Preparedness Phases outlined in paragraph 3 below.
2. Plate 2 - Format used to advise District elements of the storm position.
3. Hurricane Preparedness Phases:

a. The following phases were developed as a guideline to allow sufficient staffing to be placed so as to ensure the readiness posture of the District. The phases listed should be used as guidance; implementation of a phase may be impacted by hurricane probabilities released by the NWS and interpretations made with respect to the District by the Hydraulics and Hydrology and Flood Plain Management Services Section, Technical Services Division.

(1) **Phase I - Normal:** When a tropical storm exists south of 25°, normal daily operations continue. The Emergency Operations Center will track the storm on a daily basis and plot it on the EOC hurricane tracking chart. When the storm reaches Phase II, III, and IV, all District employees will be notified via e-mail.

(2) **Phase II - Advisory Alert:** When a hurricane moves north of 25° latitude and west of 65° longitude, an advisory alert will be issued. The EOC will continue to track and plot the storm as updates are received from the NWS, during normal duty hours only. When an Advisory Alert is announced, predesignated emergency personnel will be notified of the situation by emergency management staff; following notification the predesignated emergency personnel should arrange to receive weather service advisories through the EOC during duty hours and through weather bulletins on the radio and TV during non-duty hours.

(3) **Phase III - Standby Watch:** When the storm moves north of 30° latitude and remains west of 65° longitude, it is assumed to be within 24 hours of Cape Henry and the Virginia coast. At that time or when the NWS announces a Hurricane Watch for that part of the coastline, whichever occurs first, a Standby Watch will be issued. The storm's position will continue to be plotted as updates are received from the NWS. At this time, predesignated emergency personnel will be released from work in accordance with paragraph 3.b.(2) of Annex F to ensure individual preparedness as outlined in Annex G. During this phase all predesignated emergency personnel will be on 24-hour call and may be requested to report for duty at any time by the Emergency Manager (see Annex H and Annex I).

(4) **Phase IV - Warning:** A warning will be issued when either the storm moves north of 34° latitude and remains west of 65° longitude or the NWS announces a Hurricane Warning for Cape Henry and the Virginia coast, whichever occurs first. The storm is assumed to be within 18 hours of the District's area of operations. The hurricane's position will continue to be plotted as in Phase III. Personnel on standby status may be instructed to activate the EOC or to relocate to the Alternate EOC at any time. In anticipation of flooding, parameters such as river stages, reservoir levels, tide elevations, and wave and tidal surge data released by the NWS/NOAA will be recorded in the EOC by the predesignated Hydraulic Engineer.

b. In the event that weather conditions favor a potential storm or hurricane emergency immediately prior to a weekend or holiday non-duty period, all predesignated personnel will be notified of the situation by Emergency Management staff; predesignated personnel will furnish an off-duty method of contact or, in the case of extended leave, an approved duty alternate.

c. In the event that during on or off-duty hours a potential emergency situation arises, which requires implementation of any of the phases below, and the Commander or Deputy Commander cannot be contacted, the Emergency Manager will implement the appropriate phase and assume full authority and responsibility for the District Commander in response to the emergency situation.

d. During either Phase III or IV, the storm's location, direction or intensity may warrant a downgrading of the preparedness phase, but not a return to Phase I. In the event that the storm has moved out of a Phase or that its intensity has subsided, but there is concern that a change in course or intensity could bring it back into the District's area of concern, the Preparedness Phase may be downgraded by the Emergency Manager to Phase III or II to relieve predesignated emergency personnel not essential to the new Phase while maintaining the District readiness posture.

Norfolk District Emergency Operations Center

Commercial (757) 441-7575

Hurricane Preparedness Phases



HURRICANE ADVISORY - SAMPLE FORMAT

CENAO-TS-EOC

14 September 1999
1300 hours

MEMORANDUM FOR ALL DIV/BR/OFC CHIEFS

SUBJECT: Tropical Storm/Hurricane Tracking, Hurricane FLOYD Advisory No. 1

1. I am forwarding the latest advisory data for Hurricane FLOYD:

a. At 1100 hours EST, 14 Sep 99, the National Hurricane Center reported that Hurricane FLOYD is located at 25.7 N latitude and 76.8 W longitude and is moving toward the West Northwest at 14 MPH. A gradual turn to the Northwest is expected later today and Wednesday. The center of FLOYD is located about 215 miles East-Southeast of Palm Beach, Florida.

b. Maximum sustained Wind Speed is near 145 MPH with higher gusts. Hurricane force winds extend outward up to 125 miles from the center and tropical storm force winds extend outward up to 290 miles. Minimum Central Pressure is 932 MB 27.52 IN.

2. As outlined in Annex D of DR 500-1-3, the hurricane is located in the Preparedness Phase indicated below:

- Phase I Normal
 Phase II Advisory Alert
 Phase III Standby Watch
 Phase IV Warning

3. District elements should review the procedures indicated in Annex F of DR 500-1-3 Hurricane Emergency Plan for the Preparedness Phase checked above.

4. Governor Gilmore has declared a State of Emergency for Virginia so that state resources will be ready to respond anywhere in the Commonwealth if the need arises.

5. The following information can help you get ready for the effects of Floyd:

- If you live in low-lying areas prone to flooding, be prepared to evacuate quickly to high ground.
- Bring in garbage cans, lawn furniture or other items that could be blown around by the high winds.
- Prepare for extended power outages by stocking up on flashlights, batteries, non-perishable foods, water, prescription medications and other necessary items.
- When the heaviest winds approach your area, remain indoors and stay away from windows and glass doors.
- Stay tuned to new and weather reports for further information as this dangerous storm approaches Virginia.

/s/
JAN I. VAN HOUTEN
Emergency Management Specialist
Emergency Operations Center

ANNEX E NWS USE OF PROBABILITIES IN HURRICANE FORECASTING

Probabilities are included in public advisories for tropical storms and hurricanes issued by the National Weather Service, a major component of the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA).

Probabilities are defined as the probability in percent that the center of the storm will pass within approximately 65 miles of selected locations from Brownsville, Texas to Eastport, Maine. The full list of locations is indicated in Appendix 1 to this annex.

Use of probabilities by the National Weather Service is in response to a documented need for long-range forecasts of hurricane movement by local officials and many private industries. In a number of large metropolitan coastal areas, comprehensive hurricane evacuation studies have shown that the time required to complete the evacuation of threatened residents exceeds the lead time provided by the National Weather Service's Hurricane Warning.

The probabilities normally are issued four times a day, at 5 AM, 11 AM, 5 PM, and 11 PM Eastern Daylight Time. They will be attached to the bottom of the public advisories in tabular form. This table presents the probabilities for four time periods and a total, or general probability. A sample probability table is shown at Appendix 2.

When the hurricane is 36 to 72 hours from predicted landfall, probabilities are quite low. The numbers increase more rapidly as the storm gets closer than 35 hours. If a storm is forecast to be directly over a specific location in 72 hours, the maximum probability is 10 percent. At 48 hours from predicted landfall, the maximum is 13 to 18 percent. At 36 hours, the maximum is 20 to 25 percent, and at 24 hours, 35 to 50 percent. When the storm is less than 24 hours from forecast landfall, the values increase even more rapidly to 60 to 80 percent.

The probabilities express the chance that the center of the storm will pass within approximately 65 miles of the listed location. Obviously, the implication for damage and loss of life of such an event varies greatly depending on the intensity of the storm. Thus, the intensity of the storm must be taken into consideration, as well as the probability that the storm will pass near a given location. Hurricane/tropical storm probabilities must not be confused with precipitation probabilities which are routinely included in Weather Service forecasts issued by the National Weather Service.

APPENDIX 1 TO ANNEX E
PROBABILITY OF HURRICANE CONDITIONS
- COASTAL LOCATIONS -

BROWNSVILLE, TEXAS
CORPUS CHRISTI, TEXAS
PORT O'CONNOR, TEXAS
GALVESTON, TEXAS
PORT ARTHUR, TEXAS
NEW IBERIA, LOUISIANA
NEW ORLEANS, LOUISIANA
BURAS, LOUISIANA
GULFPORT, MISSISSIPPI
MOBILE, ALABAMA
PENSACOLA, FLORIDA
PANAMA CITY, FLORIDA
APALACHICOLA, FLORIDA
ST. MARKS, FLORIDA
CEDAR KEY, FLORIDA
TAMPA, FLORIDA
VENICE, FLORIDA
FORT MYERS, FLORIDA
MARCO ISLAND, FLORIDA
KEY WEST, FLORIDA
MARATHON, FLORIDA
MIAMI, FLORIDA
WEST PALM BEACH, FLORIDA

FT. PIERCE, FLORIDA
COCOA BEACH, FLORIDA
DAYTONA BEACH, FLORIDA
JACKSONVILLE, FLORIDA
SAVANNAH, GEORGIA
CHARLESTON, SOUTH CAROLINA
MYRTLE BEACH, SOUTH CAROLINA
WILMINGTON, NORTH CAROLINA
MOREHEAD CITY, NORTH CAROLINA
CAPE HATTERAS, NORTH CAROLINA
NORFOLK, VIRGINIA
OCEAN CITY, MARYLAND
ATLANTIC CITY, NEW JERSEY
NEW YORK, NEW YORK
MONTAUK POINT, NEW YORK
PROVIDENCE, RHODE ISLAND
NANTUCKET ISLAND, MASSACHUSETTS
HYANNIS, MASSACHUSETTS
BOSTON, MASSACHUSETTS
PORTLAND, MAINE
BAR HARBOR, MAINE
EASTPORT, MAINE

APPENDIX 2 to ANNEX E
SAMPLE PROBABILITY TABLE

ZCZC MIASPFAT3 ALL
TTAA00 KNHC DDHMM
HURRICANE FLOYD PROBABILITIES NUMBER 33
NATIONAL WEATHER SERVICE MIAMI FL
5 PM EDT WED SEP 15 1999

PROBABILITIES FOR GUIDANCE IN HURRICANE PROTECTION
PLANNING BY GOVERNMENT AND DISASTER OFFICIALS

AT 5 PM EDT...2100Z...THE CENTER OF FLOYD WAS LOCATED NEAR
LATITUDE 31.3 NORTH...LONGITUDE 79.0 WEST

CHANCES OF CENTER OF THE HURRICANE PASSING WITHIN 65 NAUTICAL MILES
OF LISTED LOCATIONS THROUGH 2PM EDT SAT SEP 18 1999

LOCATION	A	B	C	D	E	LOCATION	A	B	C	D	E
36.5N 77.1W	24	3	X	X	27	BOSTON MA	X	X	8	4	12
39.4N 75.0W	X	11	3	1	15	PORTLAND ME	X	X	5	7	12
42.5N 71.5W	X	1	7	4	12	BAR HARBOR ME	X	X	2	10	12
SAVANNAH GA	3	X	X	X	3	EASTPORT ME	X	X	1	11	12
CHARLESTON SC	57	X	X	X	57	ST JOHN NB	X	X	1	10	11
MYRTLE BEACH SC	70	X	X	X	70	MONCTON NB	X	X	X	11	11
WILMINGTON NC	61	X	X	X	61	YARMOUTH NS	X	X	1	10	11
MOREHEAD CITY NC	38	X	X	X	38	HALIFAX NS	X	X	X	11	11
CAPE HATTERAS NC	18	4	X	X	22	SABLE ISLAND NS	X	X	X	9	9
NORFOLK VA	12	9	X	X	21	SYDNEY NS	X	X	X	10	10
OCEAN CITY MD	X	14	2	X	16	EDDY POINT NS	X	X	X	11	11
ATLANTIC CITY NJ	X	10	4	X	14	PTX BASQUES NFLD	X	X	X	10	10
NEW YORK CITY NY	X	5	7	1	13	BURGEO NFLD	X	X	X	9	9
MONTAUK POINT NY	X	2	8	2	12	ILE ST PIERRE	X	X	X	8	8
PROVIDENCE RI	X	1	8	3	12	CAPE RACE NFLD	X	X	X	5	5
NANTUCKET MA	X	X	7	5	12	HIBERNIA OILFLD	X	X	X	2	2
HYANNIS MA	X	X	7	5	12						

COLUMN DEFINITION PROBABILITIES IN PERCENT
A IS PROBABILITY FROM NOW TO 2PM THU
FOLLOWING ARE ADDITIONAL PROBABILITIES
B FROM 2PM THU TO 2AM FRI
C FROM 2AM FRI TO 2PM FRI
D FROM 2PM FRI TO 2PM SAT
E IS TOTAL PROBABILITY FROM NOW TO 2PM SAT
X MEANS LESS THAN ONE PERCENT

LAWRENCE

NNNN

ANNEX F
EMERGENCY PROCEDURES

When the National Weather Service (NWS) identifies a hurricane, the District will implement the following procedures based on the location of the storm:

1. PHASE I NORMAL. Continue normal District activities. Emergency Management Office tracks storm on a daily basis.

2. PHASE II ADVISORY ALERT.

a. Emergency Manager:

(1) Notifies all District personnel, via e-mail, that a hurricane has entered the Phase II area. Division Chiefs and Deputy Commander should, in turn, alert their respective organizational elements as shown in Annex A.

(2) Notifies Predesignated EOC Personnel (Annex H and Annex I). If storm conditions warrant, activates EOC and appropriate staff during this phase. Predesignated personnel will be granted time required to prepare for deployment.

(3) Upon activation of the EOC, ensures that travel orders for a period of seven days are prepared for ERRO-A personnel, to be distributed upon a decision to relocate to the ERRO-A by the District Commander and Emergency Manager.

(4) Ensures material readiness of emergency response equipment.

(5) Ensures communication checks are performed in accordance with Annex K.

(6) Coordinates emergency management activities with the North Atlantic Division (NAD), closest adjoining Districts (CENAB and CESAW), Virginia State Department of Emergency Management (VDEM), other ESF's, NWS, and localities. NAD and VDEM will initiate periodic conference calls.

b. Technical Services Division:

Civil Works Technical Support Section will monitor the WCDS and provide updates on the position and movement of the storm, flood-related data, and forecast model data to the Emergency Operations Center.

c. Logistics Management Office, upon notification, will:

(1) Restrict the use of vehicles to daily trips only.

(2) Coordinate vehicle requirements with the Emergency Operations Center for predesignated EOC and Alternate EOC personnel. Ford Explorer, Tag #G61-07027, will be reserved for use by the EOC.

d. Contracting Division:

- (1) Will process emergency purchase requests over \$2,500, as required by the EOC.
- (2) Emergency procurements, under \$2,500, will be made using VISA IMPAC Credit Cards, by the designated Contracting Specialist or EOC personnel.

3. PHASE III STANDBY WATCH.

a. Emergency Manager:

- (1) May activate the Emergency Operations Center, as required, to ensure an adequate District response posture and for upward reporting, utilizing predesignated EOC personnel as shown in Annex H and Annex I. Upon activation of the EOC, Class 210 funds will be requested from HQUSACE through HQNAD.
- (2) Instructs the Fiscal Coordinator (Annex H) to establish the appropriate emergency operations fund accounts under the authorities in Reference c., ER 500-1-1 and in accordance with Reference g., ER 11-1-320.
- (3) Increases EOC staffing, if necessary, with the concurrence of the Commander. Creates a staffing schedule for the District EOC. ERRO-A personnel and IPDA Team (see Annex Q) may be mobilized at any time during this phase.
- (4) Liaison personnel will be given duty assignments and dispatched, if required.
- (5) Will ensure that communications and radio checks will be performed in accordance with Annex K.
- (6) Ensures operational readiness of the EOC to include the contingency of a power outage.
- (7) Through the assistance of the Area Engineers, notifies appropriate military installations of possible requirements for bailey bridges, water buffalos, pumps, medical assistance, etc.
- (8) Instructs Emergency Management staff to procure any additional necessary EOC supplies, food, drinking water for the well-being of on-duty personnel for 24-hour District EOC and ERRO-A operations.
- (9) Contacts Richmond hotel, for accommodations and meeting space requirements, which will become the ERRO-A, if required.
- (10) Prepares PR&C, using Class 210 funds, for motor pool vehicles.
- (11) Ensures District EOC personnel have Waterfield Building access. Ensures ERRO-A personnel have hotel information.
- (12) Initiates the initial SITREP, reporting to higher authority the potential storm threat and the District response posture.

(13) With assistance from the IM Specialist, secures from various District elements, any available portable communications equipment which could be used by the Commander's Emergency Response Team (i.e., cellular telephones, VHF/UHF walkie-talkies, etc.) as outlined in Annex K.

(14) Issues supplies and equipment to ERRO-A personnel and Initial Preliminary Damage Assessment Team. All accountable property will be loaned on hand receipt.

b. Predesignated EOC Personnel:

(1) Personnel listed in Annex H as Predesignated EOC Personnel should prepare their homes and families as described in Annex G, Individual Preparedness.

(2) Supervisors of these individuals shall immediately release them for individual preparation.

(3) Predesignated ERRO-A personnel should pack and prepare for TDY. Government vehicles should be secured through the EOC.

c. Technical Services Division - Civil Works Technical Support Section:

(1) Upon announcement of Phase III, and until implementation of the recovery phase, will monitor weather reports and coastal conditions for purposes of upward reporting, as required by Reference c., ER 500-1-1. This information will be provided to the District EOC.

(2) Once the District EOC is disbanded, and all District personnel are released to weather the storm, the designated Hydraulic Engineer will continue to provide weather information, flooding reports, etc. to the ERRO-A and the District Emergency Manager and EOC staff via e-mail (e-mail address: CENAO-EOC).

d. Technical Services Division (to include Planning, Engineering, Construction, Operations, Regulatory Branches, and Area/Resident Offices):

(1) Upon notification of Phase III, takes the following actions:

(a) Secures Floating Plant Office and property against damage by wind and high water.

(b) Motor vehicles at field installations will be protected by shelter, if possible. When shelter is not available, each vehicle not scheduled for use during the emergency will be secured and made as safe as possible in accordance with Annex L.

(c) All floating plant will be secured at the Great Bridge reservation and made as safe as possible in accordance with Annex N.

(d) After all plant has been secured and personal safety ensured, all plant personnel not specifically assigned to other duties involving plant security will be placed on alert during the period of the emergency.

(e) Furniture and office equipment will be arranged in such a manner that it is not near windows during the storm. Windows at Area/Resident Offices will be boarded up or protected with tape at the discretion of the Area/Resident Engineer.

(f) Loose objects outdoors, including construction materials, will be secured or stored in a sheltered area.

(g) Emergency equipment will be placed in an easily accessible location; all equipment will be checked for serviceability. Emergency equipment includes emergency visibility items, flashlights, radios, first aid kits, life vests, protective clothing, cameras, and other necessary equipment. Individuals with immediate responsibilities following the passing of the storm should be issued all gear necessary for performance of job duties.

(2) Regulatory Branch will notify all field parties to return to the District or nearest field installation upon initiation of Phase III, where they and their equipment will be placed in an alert status. If unable to reach the District Office, field parties will secure their equipment in as safe a location as possible, locate safe quarters, and contact their respective supervisors concerning party status and location.

(3) Upon announcement of Phase III, all government contractors and inspectors will be notified of the preparedness phase by the appropriate office. The contractor or his representative will take adequate measures to safeguard plant and personnel and protect the work in progress and adjacent property. Construction representatives will make an inspection of all work in progress to determine repairs, alterations or changes that are necessary to ensure the safety of the projects.

(4) Area/Resident Engineers should obtain and follow installation procedures regarding evacuation and return to work policies.

e. Logistics Office:

(1) Motor vehicles assigned to the District Office will be protected by shelter if possible, or as a minimum precaution, moved to higher ground in accordance with Annex L.

(2) Ensure that motor vehicles of sufficient capability are available for use to support both emergency and normal operations within District operating areas following the storm event. Vehicle prepositioning will be in accordance with Annex L.

(3) Secure other government plant and property against damage by wind and water. This may require activation of the hurricane plan for the Waterfield Building and Fort Norfolk (see Annex M).

(4) Provide facilities (i.e., berthing, hygienic, etc.) for employees who may be required to remain in the Waterfield Building in the event that ingress and egress is not possible during the Emergency Operation.

f. Information Management Office:

(1) Provides additional District-owned cellular telephones and computer equipment, if required.

(2) Provides for 24-hour secure communications via qualified operator/courier, if required.

g. Contracting Division:

(1) Ensures availability of Contracting Officer for emergency procurements.

h. Public Affairs Office:

(1) Ensures that all responses to public inquiry regarding the District readiness posture are staffed through the Emergency Manager.

(2) Ensures that all employees are kept informed of the Commander's decisions regarding individual preparedness as outlined in Annex G.

(3) Coordinates with the EOC for need to provide photographer for assignment contingent to post storm operations.

i. Executive Office:

(1) Will request helicopter support at the Commander's request.

j. No persons except those serving in an Emergency/EOC capacity, or those with a need-to-know, will be admitted into the EOC during an emergency operation.

4. PHASE IV WARNING.

a. Emergency Operations Center will continue to monitor the storm progress and prepare to assume recovery operations.

b. No duties will be performed out-of-doors after Phase IV has been announced, unless absolutely necessary (i.e., securing physical plant, prevention of loss of life or human suffering). If duties must be performed outside, personnel will wear hard hats and high visibility items; in addition, life vests will be worn by personnel working near water or on floating plant.

c. The Commander or his Deputy will advise the PAO through the Emergency Manager of his decision that non-essential personnel will be sent home or be advised not to report for work, in accordance with Norfolk District Inclement Weather Announcements policy.

d. Government vehicles will be restricted to emergency use as outlined in Annex L.

5. POST STORM OPERATIONS. As soon as it has been determined to be safe, disaster recovery operations, if applicable, will be performed in accordance with ER 500-1-1 and the Federal Response Plan.

Norfolk District Emergency Operations Center

Commercial (757) 441-7575

ANNEX G INDIVIDUAL PREPAREDNESS

1. No one can work effectively in an emergency situation when concerned for the safety of his or her family. It will be at the discretion of the District Commander to release on administrative leave all non-essential personnel at appropriate phases of a hurricane emergency so that they may provide for protection of their families and property. Personnel required for the emergency operation will be given whatever time is available so that they also may provide for the safety of their families and protection of their property. Individuals who live in areas where evacuation is recommended or who are otherwise in more vulnerable situations will be given special consideration in being released early, provided they make their situations known. All personnel should be aware of the following recommendations for individual safety, so that they may make proper use of the time available to them.

2. During the Hurricane Season. Every June through November, when you hear announcements of tropical cyclones, make it a point to pay particular attention to future announcements. In this way you may be mentally prepared for a developing hurricane emergency and can make maximum use of the advance notice available to you, even before watches and warnings are issued. When these are issued, you will be less likely to miss hearing them.

3. During the Hurricane Watch. When your area is covered by a hurricane watch, you may continue your normal activities, but stay tuned to a radio or television for future National Weather Service Advisories. At work, these statements will be monitored by the EOC and all elements including field installations in the affected areas, will receive the information by e-mail whenever a watch or warning is set. During the watch phase is a good time to check battery powered equipment which might be essential later on. Your transistor radio may become your only link with the outside world, and emergency cooking units (such as campstoves, etc.) and emergency lighting and flashlights will be essential if utilities are interrupted. If you own a boat that stays in water, you should investigate whether it is safer securely moored where it is, or evacuated to a safe harbor.

a. Assume that the hurricane is going to strike within the time predicted and make your preparations accordingly. Plan the remaining time available so that you avoid the last-minute hurry, which might leave you unprepared or marooned. Unless you have essential duties in connection with hurricane preparations at work, a liberal leave policy will be implemented by individual supervisors in order for you to attend to your affairs. Notify your supervisor of any special problems you have, particularly if you are in an area where evacuation is recommended. It is possible that you may be provided with assistance in securing transportation or other help if it is necessary, but not unless you make your problems known.

b. This is the time to consider that you may have to evacuate low lying areas or unsecure buildings such as mobile homes. Determine where you will go (public shelter, home of a friend or relative, etc.) and what you will need to take with you. Your evacuation plans should not include removing large personal possessions unless you have the manpower and equipment to move them, the place to put them, and the time to do it, without depending upon public facilities.

c. You make your own decision to evacuate before the storm, or you may wait to rely on public advice. But remember that your own knowledge of your vulnerability is greater than that of public agencies who are sometimes reluctant to recommend evacuation for fear of initiating panic. If your judgement tells you to leave, do so, but well before the storm arrives. Mobile homes are extremely susceptible to high winds. Their survivability can be improved by properly anchoring them, but this is only a measure to protect the property. It should not be relied upon to protect lives. If you live or work in a mobile home or office trailer or similar structure, leave it for more substantial housing before the storm. If you receive public advice to evacuate any house or areas, DO NOT IGNORE IT.

4. Deciding to Evacuate. The Hampton Roads Emergency Management Committee provides the following on evacuation. Evacuation decision making is a basic emergency management function. Evacuation is a public protection action in a hurricane. The purpose of evacuation is moving people from the hurricane storm surge zones and mobile homes. The energy and the water volume in storm surge present the greatest risk to life and property. Mobile homes and similar type structures fail to provide reasonable protection from hurricane force winds. Emergency managers' first concern in hurricane events is moving those at greatest risk. Hampton Roads has a complex hurricane evacuation scenario with two bridge tunnels providing the only means away from one of the storm surge zones. Traffic clearance times for the region indicate a total evacuation of this area is not feasible or a realistic option. Consequently, emergency management public awareness programs encourage people who wish to leave the region to do so before they issue an evacuation advisory. Unfortunately, the public will find they have to make that decision before there is a reliable storm forecast. Evacuation decisions are local decisions. However, there is some effort to coordinate those decisions among jurisdictions in the region. Normally, jurisdictions within the region participate in conference calls for weather briefings and status updates from each jurisdiction and state agencies. Evacuation decisions use information gleaned from these calls, computerized tracking and analysis models, and one-on-one discussions with the National Weather Service. Key factors in evacuation decision making include:

- Providing enough time for people in storm surge zones and mobile homes to move before the arrival of 39 MPH winds;
- Selecting an evacuation time to provide for the significant movement during daylight hours; and
- Making the decision before a peak news time when the media can warn the greatest number of people.

People have several choices for their evacuation destination. They can go to a hotel or motel outside the storm surge zones, or home of family or friends, or they can go to a public shelter. Evacuation and shelter openings usually happen simultaneously.

Hampton Roads Evacuation Routes can be found at website
<http://www.vdot.state.va.us/traf/hurricane.html>.

5. Preparing for the Storm. Early in the hurricane warning phase that affects your area, be sure to take the following steps:

a. Windows. Protect small window panes with tape, larger ones with shutters or plywood. Danger to small windows is largely from wind-driven debris, larger ones may also be broken by wind pressure.

b. Small Items. Secure outdoor objects that might be blown away or uprooted. Garbage cans, garden tools, toys, signs, porch furniture, and a number of other normally harmless items can become missiles of destruction in the high winds of a hurricane. Store them inside, or if that is not possible, anchor them before the storm arrives.

c. Drinking water. Store drinking water in clean bathtubs, jugs, bottles, and cooking utensils. Your public water supply may be contaminated by flood water, or the distribution system may be damaged.

d. Food. Reduce or eliminate your supplies of perishable foods and replace them with canned foods and other items which do not require refrigeration. It may be better to distribute large stores of frozen food to relatives and friends rather than lose them through spoilage. The perishability of most frozen foods can be reduced by cooking or refrigeration. Electrical power outages can last several days.

e. Automobiles. Be certain that tires (including spares) are properly inflated on all vehicles and that gas tanks are nearly full, then park them in garages or other sheltered areas if possible, but close at hand for emergency use only during the storm. Service stations may not operate for several days after the storm, due to flooding or interrupted electrical power. Modern tubeless tires cannot be inflated without access to special mechanically operated air pumps or power compressors that are generally electrically operated.

6. Basic Hurricane Supplies. A hurricane survival kit should be created for family members. Some items it should contain include:

Canned or packaged foods, milk, and beverages (at least a three-day non-perishable food supply).
Water (for drinking purposes, one gallon per person per day; fill bathtub and other containers).

First aid kit.

Water purification tablets (can be purchased at your local pharmacy)

Bleach (without lemon or any other additive)

Extra prescription medicine

3/4" plywood boards to board up windows

Lantern, Lantern Fuel

Fire extinguisher

Battery-operated radio

Flashlights w/Extra batteries

Toiletries

Can opener (non-electric)

Eating utensils

Matches

Emergency cooking facilities

Baby food, diapers and formula

Portable cooler

Ice

Mosquito repellent

7. When the Hurricane Arrives. By the time the storm begins, you have had ample warning and have selected your safe shelter. Remain in it until the storm passes. It is a risk of your life to venture out for any purpose. If you are at work, your assignment will not require you to venture out for any purpose other than rescue of fellow human beings. No lesser motive justifies your leaving your shelter. Remember that even if observed high winds appear to be abated, unexpected gusts can fill the air with flying missiles or carry away an individual who has left his shelter.
8. Beware of the Eye. If the calm storm center passes directly overhead, there will be a lull in the wind lasting from a few minutes to a half hour or more. Stay in a safe place unless emergency repairs are absolutely necessary. At the other side of the eye, the winds are very rapidly increasing to hurricane force and come from the opposite direction.
9. Stay Informed. Information on the storm's progress and useful advice will be broadcast by Civil Defense Authorities. Watch the cable Weather Channel if there is power. Listen to radio at home, work, and in your car. During severe weather, the National Weather Service forecasters will interrupt the routine weather broadcast and substitute special warning messages.
10. After the Storm. When your radio has informed you that it is safe to venture out, inspect your shelter for damage which requires immediate repairs. If you require medical attention get it at a local hospital or Red Cross disaster station. Unless you have been told to return to work as soon as possible as a member of a disaster recovery team, follow instructions, as published in NAO Homepage Inclement Weather Announcements, to be broadcast on radio stations WCMS (FM 100.5, AM 1050), WTAR (AM 850), WFOG (FM 92.9), WNIS (AM 790). If you work at a field installation, respond according to your field installation inclement weather plan or other specific instructions you have received.
11. Special Precautions. Even though the storm has passed, you cannot relax yet. Observe the following precautions:
 - a. Avoid Sightseeing. Resist the temptation to go see the damaged areas that do not affect you. Do not venture into disaster areas unless you have an assigned mission there. Your presence will only hinder the recovery effort.
 - b. Avoid Telephoning. If the telephone system is still intact, it will be overloaded with traffic, much of it unnecessary. It may be necessary to verify the safety of a loved one, but limit your conversations only to those absolutely necessary.
 - c. Driving. Make only necessary trips. If you must drive, drive carefully when on debris-filled streets. Roads may be undermined and may collapse under the weight of a car.
 - d. Loose Wires. Avoid loose or dangling wires and report them immediately to the power company or the nearest law enforcement officer. Also report broken water and natural gas lines.

e. Prevent Fires. Fire prevention becomes doubly important at a time when water pressure for fire fighting may not be available and where a damaged electrical distribution system may start some unavoidable fire, which will tax the available firefighting equipment.

f. Food Spoilage. Both home and store supplies of food may be damaged by flood waters and lack of refrigeration. All food should be examined carefully before consumption.

ANNEX H
ACTIVATION OF THE EMERGENCY OPERATIONS CENTER

1. SITUATION: A hurricane is approaching the eastern seaboard, and the possibility exists that the Norfolk District may be impacted. The Norfolk District Emergency Operations Center is activated.

2. MISSION: Each organizational activity is responsible for providing a representative to staff the EOC and/or to provide assistance in its organization's area of expertise. These individuals will basically perform their normal job duties, but in an emergency response mode. They will be at the disposal of the Emergency Manager, and emergency duties will take priority over all other duties. In addition, several supplemental positions will require staffing, as shown on Appendix 1.

3. EXECUTION:

a. The EOC will track the movement of the storm, participate in coordination activities with local, State, and Federal agencies, and higher Corps of Engineer's headquarters. The EOC will increase level of readiness and preparedness, and, upon encroachment of the storm, proceed with implementation phases as described in Annexes D and F.

b. Upon reaching Phase III or Phase IV, as described in Annex F, the Emergency Response and Recovery Office - Advanced (ERRO-A), also called the Alternate EOC, may be activated. Once activated, predesignated individuals will be deployed to staff the ERRO-A. In addition, the Norfolk District EOC will remain activated. At the discretion of the District Commander, both "EOC's" may be activated simultaneously until the threat of the storm has passed.

c. Once the storm passes, and the Norfolk District Waterfield Building Office is undamaged, ERRO-A personnel will return to their home duty stations and assume duties of District EOC personnel.

d. Should the Norfolk District Waterfield Building Office sustain damage, and/or a substantial number of personnel are impacted by the storm, the ERRO-A will remain open to execute Corps mission assignments in support of Federal Emergency Management Agency (FEMA) activities and emergency PL 84-99 activities.

e. Should the Norfolk District Waterfield Building Office and the Hampton Roads area sustain major damage, and Norfolk District becomes a "victim" District, the ERRO-A will assume command and control, and it's primary mission will be reconstitution of the Norfolk District Corps of Engineers.

4. COMMAND SUPPORT:

a. Predesignated EOC Personnel are shown at Appendix 1 to Annex H.

b. Position duty descriptions for EOC and ERRO-A staffing are located in ENGLINK at <https://englink.usace.army.mil>.

ANNEX H
PREDESIGNATED PERSONNEL
NORFOLK DISTRICT
EMERGENCY OPERATIONS CENTER

<u>POSITION</u>	<u>PREDESIGNATED INDIVIDUAL</u>	<u>OFFICE NUMBER (757) 441- unless noted</u>	<u>HOME NUMBER (757) unless noted</u>
District Commander	COL David Hansen	7601	496-7366 Cell 434-1808
EOC Chief	Bill Sorrentino	7649	481-0766 Cell 615-7711
Emergency Manager	*Stan Ballard	7575	460-2722 Cell 434-5080
Emergency Mngmt Specialist/ Disaster Reports Coordinator	Jan Van Houten	7575	546-0871 Cell 434-3808
EOC Duty Chief	Robert Berg	7793	486-3905/ (Alt) 481-0267
	Lesley Leonard	7540	671-9323 Cell 348-3324
	Gregg Williams	7616	405-3436
Hampton Rds IPDA Chief	Robert Sweitzer	7666	479-3071
Hydraulic Engineer	Larry Holland	7774	484-3269
	Owen Reece	7772	986-2418
EOC Assistant	Amy Clipston	7040	563-8269
	Kaye Oliver	7649	548-9343
	Rickey Brown	878-5217	497-4217
	Evelyne Roldan	7016	431-3602
	Liz Tillett	7720	482-3066
	Elaine Atchison	7643	583-5109
	Deborah Lamb	3872	686-8436
	Sherri Jefferies	7129	558-2506
Radio Communications	Glenn Seay	7361	255-2557 Cell 434-4926
	*Ed Graham	434-645-8986	434-767-2571
	John Evans	7794	543-9101
	Larry Ives	7769	495-2949
	Bill Jones	547-2109	549-6277 Cell 749-5603
IM/Computer Specialist	Jerri Wehrle	7404	838-3191 Cell 286-8638
	Joe Holloman	7785	487-3945 Cell 286-8641
	Hung Ngyen	7006	
Real Estate Specialist	Wayne Barnes	7627	486-7157
Resource Mgmt Coordinator (CEFMS Database)	Inge Watkins	7712	423-6841

<u>POSITION</u>	<u>PREDESIGNATED INDIVIDUAL</u>	<u>OFFICE NUMBER (757) 441- unless noted</u>	<u>HOME NUMBER (757) unless noted</u>
(Mission Assignments, COs)	Cheryl Williams	7512	484-5956
Fiscal Coordinator	Michele Muller	7325	483-3290
Logistics Coordinator (Waterfield Bldg POC)	Karen Truxal	7800	680-6663 (Duty Pager)
Contracting Officer	Cherie Kunze	7132	426-6438
Public Affairs Officer	*Jerry Rogers	7779	986-4969
VA State ERT-A Liaison	*Lenny Tucker *Hunter Rountree (ALT)	7528 7779	425-4955 986-4969
GIS Specialist	Gene Batty	7482	474-2876
Emergency Operations Mission Manager (TSD)	Kate Field Matt Byrne Tom Friberg Anthony Weaver Ken Newton	878-5217 7668 7645 225-4053 225-4053	850-3503 481-2370 460-1258 804-790-1044 583-5426
(PPMD)	Jeff Irving Craig Jones Rex Goodnight	Work Cell 876-9161 7222 7070 7110	464-9255 625-3676 565-5244 Cell 439-6269
(24-hr Mission Manager)	Ken Bailey	7004	464-2269
Hampton Roads City Liaison Officers	Doug Stamper (Portsmouth) Pete Reilly (Suffolk) Meade Stith (Chesapeake) Brian Rheinhardt (Newport News) Jim Creighton (Virginia Beach) Robert Pretlow (Norfolk) Doug Martin (Hampton)	7861 7693 7641 7768 7224 7385 3538	640-8355 483-2491 625-2243 425-6503 479-4343 424-5899 487-4162

Norfolk District Emergency Operations Center
EOC FAX
EOC Radio Console

(757) 441-7575
(757) 441-7833
(757) 441-7896

NOTE 1: Upon Activation of the ERRO-A - *Individual will report to the VA State EOC.

NOTE 2: All upward reporting by the EOC Duty Chief will be made through the Emergency Manager or his Alternate as appointed by the Commander.

**NORFOLK DISTRICT
EMERGENCY RESPONSE and RECOVERY TEAMS**

1. ICE PRT (Planning and Response Team)

Purpose: Under the Federal Response Plan, DOD has designated the U.S. Army Corps of Engineers as its operating agent for planning, preparedness, and response under ESF #3. Prior to, during and following a presidentially declared disaster, ESF #3 is typically tasked by the Federal Emergency Agency to perform certain missions. One of these missions is for the procurement and delivery of ice to impacted areas. Missions have been divided up regionally throughout the Corps, and Ice is the mission that has been delegated to the Norfolk District.

There are seven Ice Teams throughout the Corps. Teams are deployed for duty on a rotational basis. Rotation standing is located on ENGLINK. The NAD Commander has the discretionary authority to deploy the NAD PRT's for disasters occurring with the North Atlantic Division boundaries.

Norfolk District ICE PRT (Primary and Alternate Members)

<u>Position</u>	<u>Name</u>	<u>Work Phone</u>	<u>Home Phone</u>
Action Officer	*Kellie Taylor (PRI)	7537	552-0656
	Tamitha Evans (ALT)	7323	686-8392
Mission Manager	*Steve Powell (PRI)	7788	546-8338
	*Walt Trinkala (ALT)	7769	548-4869
Mission Specialist	*Betty Roberts (PRI)	7215	460-3575
	*Betty Hayes (PRI)	7025	548-4838
	Beth Byrne (ALT)	7394	481-2370
	Gregg Williams (ALT)	7616	405-3436
Contracting Officer	*Charlotte Hofstetter (PRI)	7111	934-2802
Logistics Specialist	*David Monacelli (PRI)	7713	488-1686
	Charles White (PRI)	7723	467-1083
	Stan Sebolt (ALT)	804-279-4571	804-790-1021
	Christian Brumm (ALT)	878-5217	804-684-9538

* Designates Team Members have been formally trained.

2. Rapid Needs Assessment Team (RNAT)

Purpose: The Rapid Needs Assessment Team is comprised of Federal agency technical personnel who join State and local personnel to gather rapid field/needs assessments immediately following a disaster. The RNAT Team is alerted and deployed to the disaster

area to perform an assessment of the severity and impact of the disaster and what life sustaining needs are not met. This assessment is carried out in order to provide information to determine requirements for critical resources needed to support response activities. The RNAT augments/supplements State capabilities. The RNAT is trained by and called to action by the Federal Emergency Management Agency (FEMA).

<u>Norfolk District RNAT Team Member</u>	<u>Work Phone</u>	<u>Home Phone</u>
*Edward Graham	434-645-8986	434-767-2571
*John Clark	788-3239	868-0960

* Designates Team Members have been formally trained.

3. ESF-3 Team Leader/Assistant Team Leader

Purpose: To provide a trained, major command level disaster expert to coordinate mission assignments for the Corps pre, during, and post disaster. This individual is **highly trained and experienced** in all aspects of emergency management and represents the Division Commander in the FEMA Disaster Field Office and Regional Operations Center. He also serves as an advisor to FEMA and other Federal, State and local agencies on Corps emergency policy and procedures.

Norfolk District ESF-3 Team Leader/Assistant Team Leader Cadre

		<u>Work Phone</u>	<u>Home Phone</u>
ESF-3 Team Leader	Stan Ballard	7254, 7575	460-2722 Cell: 434-5080

PRIVACY ACT: The information contained in this appendix is covered under the Privacy Act and will be used only for official purposes associated with emergency operations activities.

ANNEX I
ERRO-A
EMERGENCY RESPONSE AND RECOVERY OFFICE-ADVANCE

1. SITUATION. The Emergency Operations Center (EOC) in the Waterfield Building is threatened by a major hurricane which has a high probability of striking Norfolk, Virginia, and the EOC must be relocated by direction of the District Engineer. The EOC has been officially activated and funds have been received from HQUSACE.

2. MISSION. The Norfolk District will temporarily relocate Norfolk District's EOC operational capabilities to the Emergency Response and Recovery Office-Advance (ERRO-A), which is also referred to as the "Alternate EOC," until after the storm passes and an assessment of damage to the District offices is made.

3. EXECUTION.

a. General. Upon decision by the Norfolk District Commander to relocate the EOC to the ERRO-A, Emergency Management staff will:

- 1) Obtain the telephone numbers of the lines to be provided by the host alternate EOC hotel.
- 2) Notify all Norfolk District Division/Office Chiefs, Area and Resident Engineers of the ERRO-A activation as well as the location and phone/fax numbers of the ERRO-A. See Appendix 5, page I-5-1.
- 3) Notify the ERRO-A Fiscal Coordinator that appropriate labor work items must be established for ERRO-A operations.
- 4) Notify all Norfolk District employees, HQUSACE EOC, NAD EOC, VDEM, and EOC Distribution Lists, that the Norfolk District will temporarily move its EOC to the alternate location. This notification will be made via SITREP on ENGLINK, telephonically, and by FAX.
- 5) Notify the ERRO-A Contracting Specialist to execute a contract with the selected pre-designated hotel in Richmond.
- 6) Notify pre-designated ERRO-A personnel to report to the alternate EOC location. Each individual shall be furnished with the exact location of the ERRO-A, a map showing directions, and a report date/time. Maps and directions are also contained at Annex I, Appendix 2.
- 7) Coordinate travel orders and arrangements with pre-designated personnel relocating to the ERRO-A. Issue travel orders and hotel confirmations as required.
- 8) Notify the Logistics Management Office of the EOC relocation operations and any requirements for government vehicles.

b. Major ERRO-A Functions.

1) Establishment of Command, Control, Communications - The ERRO-A will represent the District, coordinate all emergency measures, be a central point of contact, and provide required reporting until the District EOC returns to normal functional capabilities.

2) Staffing - Pre-designated ERRO-A personnel, as listed in Appendix 1 to this Annex, have volunteered for and will staff the ERRO-A. Identified personnel, who for personal reasons beyond their control are unable or unwilling to report to the alternate EOC, should so advise Emergency Management staff as soon as possible prior to notification to relocate.

3) Residual Capabilities Assessment - Immediately following passage of the storm, the ERRO-A staff should begin inquiry as to the status of the District HQ Building and employees, as well as the status of all Area and Resident Engineer Offices and their employees. Any information should be consolidated and reported to higher headquarters.

4) Communications - Landline and radio communications will be established and maintained with higher headquarters and the ESF-3 Function at the Virginia State EOC.

5) Contracting Support - A communication link will be established and maintained with the alternate SPS server, to ensure contracting capability

4. ADMINISTRATIVE SUPPORT.

a. All pre-designated ERRO-A personnel shall be issued government travel credit cards (VISA) for use during emergency operations TDY deployments away from the District duty station (Norfolk commuting area).

b. Pre-designated ERRO-A personnel shall be issued government purchasing credit cards (VISA IMPAC) for purchasing emergency supplies for the ERRO-A. As a minimum, the ERRO-A Contracting Officer and Logistics Specialist shall be issued IMPAC cards.

c. All pre designated ERRO-A personnel shall have drafted undated travel orders prepared at the beginning of each hurricane season to facilitate rapid deployment to the ERRO-A.

d. Emergency Management staff will coordinate funding and will provide appropriate work items and labor work items to pre-designated staff for use for ERRO-A TDY orders, and time and attendance reporting. This information will be provided concurrent with relocation notification.

e. Emergency Management staff will coordinate movement of supplies and equipment to the ERRO-A.

f. The Logistics Management Office will provide necessary vehicles and labor to load equipment and supplies for deployment to the ERRO-A.

5. COMMAND AND SIGNAL. Command and Signal for the ERRO-A will be as outlined in Part 5 of Chapter 1 of this plan with the exceptions outlined below.

a. The Deputy District Engineer will command the ERRO-A, or will delegate his authority when the order to relocate is given. The Emergency Manager, an Area/Resident Engineer, or Emergency Management Duty Chief may be delegated to represent the Deputy District Engineer at the ERRO-A.

b. The ERRO-A staff will consist of the small cadre of pre-designated individuals listed in Appendix 1 to this Annex, plus any staff elements so directed by the Deputy District Engineer or his delegated representative.

APPENDICES:

Appendix 1 - ERRO-A Pre-designated Staff

Appendix 2 - ERRO-A Pre-designated Hotels/Richmond Maps

Appendix 3 - ERRO-A Equipment List

Appendix 4 - ERRO-A Emergency Management Staff Checklist

Appendix 5 - ERRO-A Relocation Notification

Appendix 6 - Decision Criteria for ERRO-A Activation

Appendix 7 - Vehicles

Appendix 8 - Contracting Capability at the ERRO-A

APPENDIX 1
ANNEX I
EMERGENCY RESPONSE AND RECOVERY OFFICE - ADVANCE
ERRO-A PRE-DESIGNATED STAFF

		OFFICE NUMBER (757) unless noted	HOME NUMBER (757) unless noted
ERRO-A Commander	LTC David Dougherty	441-7601	410-1506 Cell 434-8868
Emergency Manager	Stan Ballard	441-7254	460-2722 Cell 434-5080
VA ESF-3 Team Leader	TBD by HQUSACE		
VA State ERT-A Liaison	Lenny Tucker Hunter Rountree	441-7528 441-7779	425-4955 986-4969
Duty Chief	Steve Powell*	441-7788	546-8338
Duty Officer	Kellie Taylor	441-7537	552-0656
Mission Manager	Craig Jones	441-7682	625-3676 Cell 404-2507
Resource Mgmt Coord (MA's, CEFMS DB)	Mary Hall	441-3460	460-0543
Fiscal Coordinator (PR&Cs, WIs)	Betty Roberts* Elizabeth Hayes (ALT)*	441-7215 441-7025	460-3575 548-4838 Cell 572-0463
Information Management /Computer Specialist	Sonny Grissom Tony Dunston	441-7526 441-7785	547-4499 Cell 286-8640 461-6451 Cell 286-8642
Contracting Officer	Charlotte Hofstetter*	441-7136	934-2802
Human Resources Specialist	Diane Rouse	441-7638	496-0183
Communications	Ed Graham	434-645-8986	434-767-2571
Logistics Specialist	David Monacelli* Vince Harris (ALT)	441-3867 441-7552	488-1686 430-0825
Real Estate Specialist	David Parson	441-7735	545-5826
Public Affairs Officer	Jerry Rogers	441-7606	825-1982
Administrative Assistant	Debbie Santiago	441-7455	474-4024

*Member of Norfolk District ICE PRT.

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APPENDIX 2
ANNEX I
ERRO-A PRE-DESIGNATED HOTELS

RICHMOND AIRPORT AREA; SANDSTON, VIRGINIA

Hilton Richmond Airport

5501 Eubank Road
Sandston, VA 23150
PHONE (804) 226-6400, FAX (804) 226-1269
Sales Manager: Jody Munn, (804) 226-6400, x6360

Directions from Norfolk:

Follow I-64 West to Exit 197A, RIC Airport/Sandston, and continue south on Rt. 156, South Airport Drive for 1/4 mile, go through the light. Approximately 0.9 mile from the light, turn right onto Eubank Road to the Hilton.

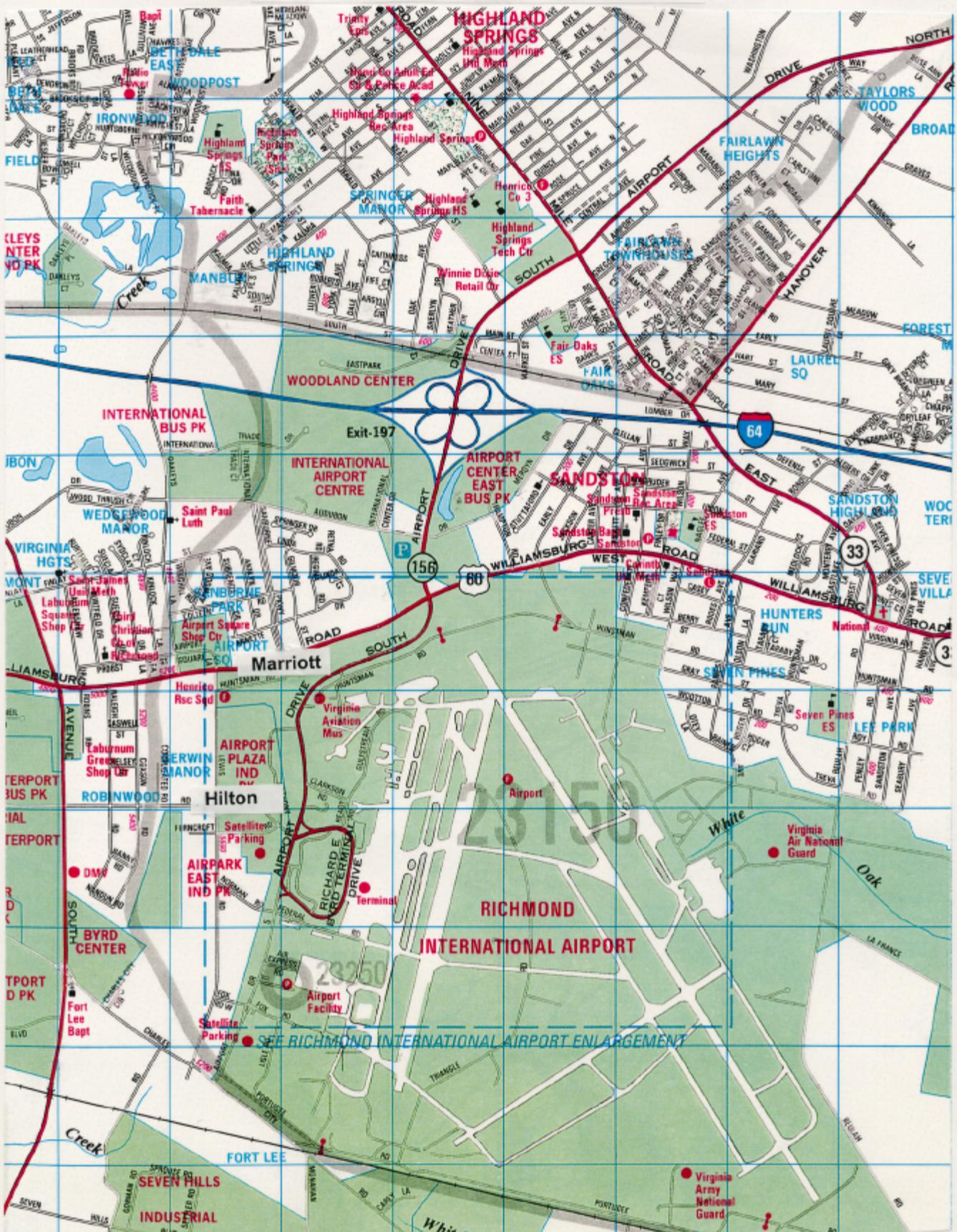
Courtyard Marriott Richmond Airport

5400 Williamsburg Road
Sandston, VA 23150
Phone: (804) 652-0500, FAX (804) 652-0527
Sales Manager: Sharon Childs, (804) 652-0500, x320

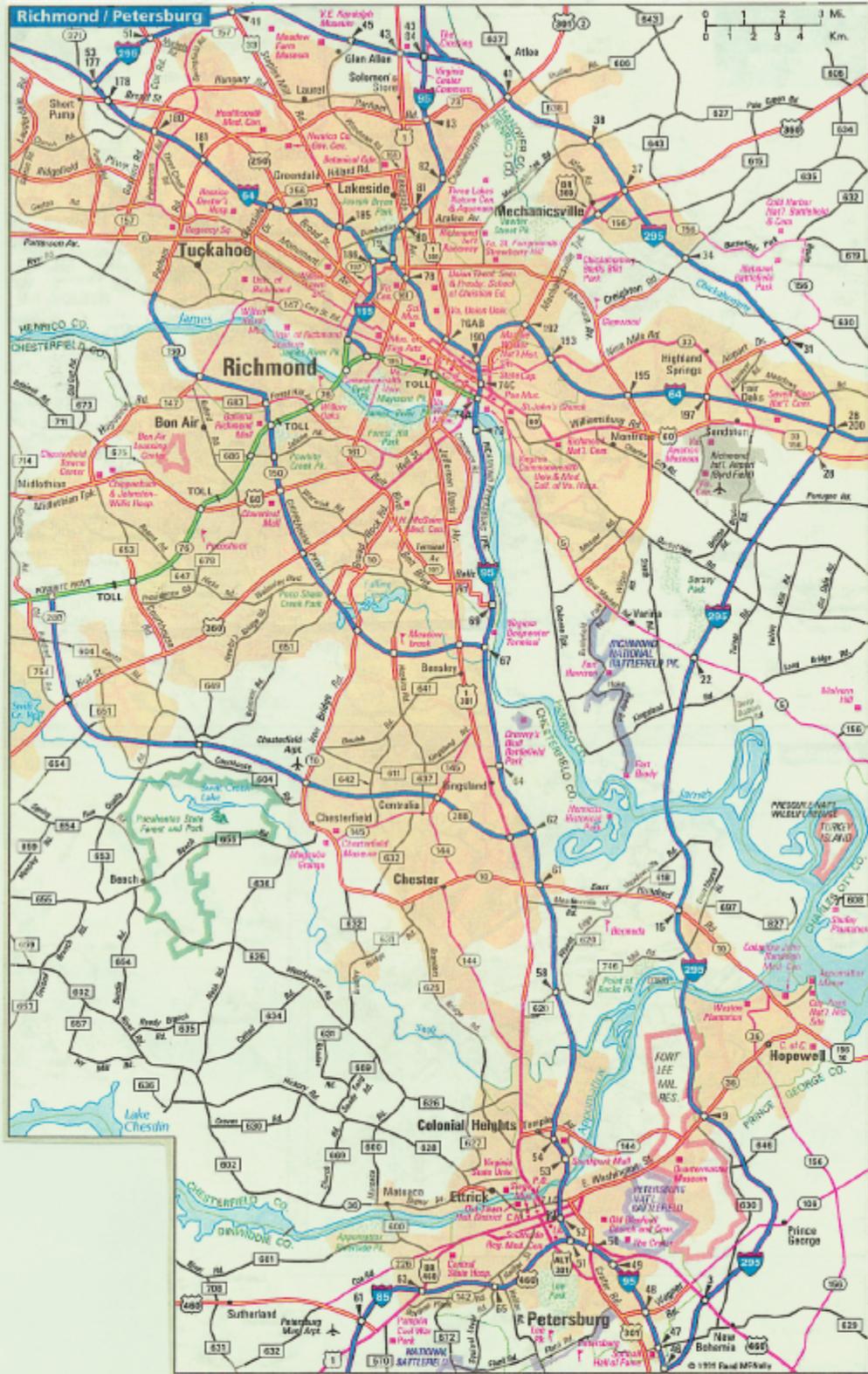
Directions from Norfolk:

Follow I-64 West to Exit 197A, RIC Airport/Sandston. At 2nd Light, turn Right onto Williamsburg Road. Hotel is approx. 1/2 mile on the Right.

RICHMOND AIRPORT HOTELS LOCATION MAP



RICHMOND AIRPORT VICINITY MAP



APPENDIX 3
ANNEX I
ERRO-A SUPPLIES

STORAGE CONTAINER #1

2 BATTERY OPERATED WALL CLOCKS
SEVERAL MULTI-OUTLET POWER STRIPS
EXTENSION CORDS
MISC. TELEPHONE/COMPUTER CORDS & CONNECTORS
2 FIRST AID KITS
GLUE STICKS
WHITE-OUT
PENS, PENCILS, HIGHLIGHTERS, MARKERS
SCOTCH TAPE

STORAGE CONTAINER #2

SHARP FO-48DR FAX MACHINE TONER CARTRIDGE
2 POLAROID CAMERAS (BC #12916, 12920)
SEVERAL DISPOSABLE 35MM CAMERAS
COFFEE MAKER
2 COE EMERGENCY MGMT BANNERS
SEVERAL EMERGENCY MGMT MAGNETIC VEHICLE SIGNS
2 FLASHLIGHTS W/BATTERIES
ASSORTMENT OF BATTERIES

STORAGE CONTAINER #3

COMMERCIAL TELEPHONE BOOKS
CORPS TELEPHONE BOOKS
DISASTER MISSION & FUNCTION GUIDEBOOKS
FEDERAL RESPONSE PLAN
DISTRICT HURRICANE PLAN
LABELS
6 REAMS 8 ½ X 11 COPY PAPER
2 CLIPBOARDS
MASKING & PACKAGING TAPE
STAPLERS, STAPLES
2 HOLE PUNCH
3 HOLE PUNCH

STORAGE CONTAINER #4

MOUSE PADS
US ROAD ATLAS
6 TRIMLINE TELEPHONES, CORDS, COUPLERS, ADAPTERS
1 PANASONIC ANSWERING MACHINE (BC #13358)
ASSORTED MAILING ENVELOPES, FRANKED & UNFRANKED
FAX HEADER NOTES
PHONE MESSAGE PADS
POST-IT PADS
LETTERHEAD STATIONARY
SCISSORS
RUBBERBANDS
MANILA FILE FOLDERS
DRAFTING TRIANGLES, ENGRS SCALES
100' TAPE MEASURE
2 BOXES DISKETTES
LENS CLEANERS

STORAGE CONTAINER #5

ASSORTED STREET MAP BOOKS
VA STATE MAPS
SEVERAL RED EMERGENCY OPS SHIRTS

MISC. ITEMS - TO BE HANDCARRIED SEPARATELY

HAND TRUCK
SHARP 4800 FAX MACHINE W/OPERATORS MANUAL
HP LASERJET 4050 PRINTER (BC #18604)
IPDA ZONE CHARTS
HURRICANE TRACKING CHARTS
DEBRIS PLAN SURVEY FILES
EMERGENCY POWER SURVEY FILES
CELLULAR TELEPHONES (STAN BALLARD, RE & ALT EOC DUTY CHIEF)

NOTE: Upon arrival to the Alternate EOC, the Administrative Asst and Logistics Specialist should immediately assess any requirements for supplies and IMPAC purchase anything needed from a local supplier.

APPENDIX 4
ANNEX I
ERRO-A EMERGENCY STAFF CHECKLIST

Prior to Decision to Evacuate, the Emergency Operations Staff will:

- Fill fuel tanks in Ford Explorer, Tag #G6107027, Antenna Tower Trailer, and Generator. Check tire pressure and oil.
- Test run generator.
- Load equipment and ERRO-A footlocker(s) into Ford Explorer and other government vehicles.

Upon Evacuation of the Waterfield Building, and Arrival of Staff at the ERRO-A, the Norfolk District Emergency Manager, will:

- Unplug all computers, printers, televisions, electronic equipment in Waterfield Building emergency management offices. Cover with plastic. HFSSB radio console and supporting equipment, will remain operational, at the discretion of the Radio Communications coordinator.
- Close Storm Shutters in the Radio Room and Electronics Shop.
- Forward EOC telephones to x7575 (which is connected to the Emergency Management office answering machine). A message recording will be placed on the answering machine stating that the EOC has been temporarily relocated to Richmond, and listing hotel and/or ERRO-A telephone numbers and POC's. If a direct number for the ERRO-A duty officer has been established, x7575 EOC telephone can be forwarded directly to the ERRO-A.
- Alert Commander, Deputy Commander, EOC Chief, and ESF-3 Team Leader by telephone that everyone has evacuated.
- Close and lock all doors in the Emergency Management office and vacate.

APPENDIX 5
ANNEX I
ERRO-A ACTIVATION NOTICE

CENAO-TS-EOC

DATE

MEMORANDUM FOR ALL DIV/OFC CHIEFS AND AREA/RESIDENT ENGINEERS

SUBJECT: ERRO-A Activation

1. As of _____ Annex I of the Norfolk District Hurricane Plan has been ordered for the event _____.
2. The ERRO-A (Emergency Response and Recovery Office-Advance), also referred to as the "Alternate EOC," will be located in the _____ hotel at the address given in Appendix 2, page O-2-1.
3. Until further notice, all message traffic related to Norfolk District Emergency Operations for this event should be directed to the ERRO-A. The following ERRO-A telephone numbers are provided _____.
4. All employees should be reminded to monitor local radio broadcasts for instructions following passage of the storm.

JAN I. VAN HOUTEN
Emergency Management Specialist

APPENDIX 6
ANNEX I
DECISION CRITERIA FOR ACTIVATION OF ERRO-A

1. At some point in time, during an approaching hurricane scenario, a decision must be made as to when the order is to be given to activate the ERRO-A Annex, prior to evacuating the Norfolk District Headquarters in the Waterfield Building.

Decision criteria come from the Technical Data Report, Virginia Hurricane Evacuation Study, April 1992, Chapter 7, with specific page numbers referenced below.

The following assumptions will be used in the Decision Arc Model for Waterfield Building Evacuation:

- Decision Arcs will be those listed in Table 7-8, page 7-16 of the Study (Virginia Beach), will assume a medium evacuee response, and the appropriate seasonal occupancy Clearance Time column.
- Add one Category to the storm in step 3 of the Hurricane Evacuation Decision worksheet, page 7-28.
- At the decision point, if probability is greater than 20%, the ERRO-A Annex of the Norfolk District Hurricane Plan shall be implemented (see para. 9, page 7-29).
- Emergency Management Staff will begin to apply the Decision Arc Model when the storm landfall prediction is greater than 10% for Virginia, or between 72 and 48 hours prior to predicted landfall.

2. The National Hurricane Center issues a Probabilities report in its Tropical Storm/Hurricane Forecasts. This Probabilities report is based on the same Decision Arc method discussed above, and more easily obtainable at website <http://www.nhc.noaa.gov/>. The Emergency Operations Center routinely monitors this site during emerging and threatening storms.

3. Discussions with the State of Virginia and the National Weather Service office in Wakefield, as well as the procedures being undertaken by the localities, will also be consulted in the decision-making process.

APPENDIX 7
ANNEX I
VEHICLES

ERRO-A staff will be authorized to use either POV or a Government furnished vehicle, if requested, during Emergency Response and Recovery Office-Advance operations. Individuals who choose to use a government furnished vehicle will be exempt from the government vehicle at domicile regulation.

All EOC staff members requiring a government vehicle should notify the Emergency Operations Center. At all times, team members should attempt to "buddy up" with another team member. Equipment needed to perform emergency mission should be transported with team member. Team members should consult with the EOC for any additional equipment which may need to be transported to the ERRO-A.

Implementation of the ERRO-A will automatically authorize employees who are furnished a government vehicle to take it to their domicile, if needed, prior to proceeding onto the ERRO-A TDY location.

Employees who choose to use their POV will be authorized 36.5¢ per mile for all official government travel coincident with the mission.

APPENDIX 8
ANNEX I
CONTRACTING CAPABILITY AT THE ERRO-A

Emergency Contracting for services, supplies and equipment to support emergency operations under PL 84-99 and PL 93-288 may be required at the ERRO-A. A Norfolk District contracting officer is assigned to the ERRO-A staff and will use both hard copy and SPS computer driven software to prepare and execute emergency contracts.

Prior to each hurricane season, the Chief, Contracting Division, Norfolk District, will ensure that connection to a backup or alternate SPS system server is available should the Norfolk District server fail due to flooding or storm conditions at Norfolk District Headquarters.

ANNEX J
COOPERATING AGENCIES

NATIONAL WEATHER SERVICE

National Weather Service
Rt. 460
10009 General Mahone Highway
Wakefield, VA 23888-2742

Tony Siebers,
Meteorologist-In-Charge
Recorded Forecast
(757) 899-5734, 5735
(757) 899-3605 (FAX)
www.nws.noaa.gov

Tropical Prediction Center
National Hurricane Center
Florida International University
11691 SW 17th Street
Miami, FL 33165

Dr. Max Mayfield, Director
Vivian George, Exec Assistant
(305) 229-4470 (phone directory)
(305) 229-4409 (direct line)
(305) 229-4419 (24-hrs dur emerg)
www.nhc.noaa.gov

Note: During an actual or developing emergency situation, more specific NWS information may be obtained from the EOC at (757) 441-7575. Hurricane information will also be posted on the EOC bulletin board.

FEDERAL EMERGENCY MANAGEMENT AGENCY

Federal Emergency Management
Agency
Region III
One Independence Mall
615 Chestnut St., Sixth Floor
Philadelphia, PA 19106-4404

Charlotte Herbert Mears
Regional Director
(215) 931-5608
(215) 931-5621 FAX
www.fema.gov

ENVIRONMENTAL PROTECTION AGENCY

U.S. Environmental Protection
Agency
Region III
1650 Arch St.
Philadelphia, PA 19103-2029

Dennis P. Carney
Chf, Hazardous Site Cleanup Div
(215) 814-3000 (24-hr)
(215) 814-3241
www.epa.gov

U.S. COAST GUARD

Fifth Coast Guard District
Portsmouth Federal Building
431 Crawford Street
Portsmouth, VA 23705

VADM Thad W. Allen, Commander
(757) 398-6288
www.uscg.mil/uscg.shtm

Commanding Officer
CG Marine Safety Office,
Hampton Roads
200 Granby St., Suite 700
Norfolk, VA 23510

CPT L.M. Brooks, Captain of the Port
(757) 441-3302
(757) 441-3298/3314 (24-hr)
(757) 441-3262 FAX

VIRGINIA DEPARTMENT OF TRANSPORTATION

Virginia Department of Transportation
Hampton Roads District
1700 North Main Street
Suffolk, VA 23434

(757) 925-2584, 1-888-723-8400
hamptonroadsinfo@vdot.state.va.us

Virginia Road Conditions

1-800-367-ROAD
www.doav.state.va.us

U.S. ARMY CORPS OF ENGINEERS

HQ, U.S. Army Corps of Engineers
Civil Emergency Branch

Edward Hecker, Chief
Office: (202) 761-4601
FAX: (202) 761-0378
Home: (410) 551-5380

North Atlantic Division
Emergency Management

Steve Monte, Chief
Office: (718) 765-7076
FAX: (718) 765-7221
Home: (718) 821-9127

Baltimore District
Emergency Management

Gilbert Dent, Chief
Office: (410) 962-4225
FAX: (410) 962-0076
Home: (410) 235-4023

Philadelphia District
Emergency Management

Micky Mulvenna, Chief
Office: (215) 656-6757
FAX: (215) 656-6767
Home: (856) 863-1263

New York District
Emergency Management

Randy Hintz, Chief
Office: (212) 264-1807
FAX: (212) 264-0179
Home: (516) 746-4159

New England District
Emergency Management

David Schafer, Chief
Office: (978) 318-8274
FAX: (978) 318-8378
Home: (508) 620-0692

South Atlantic Division
Emergency Management

Jose Delatorre, Acting Chief
Office: (404) 562-5150
FAX: (404) 562-5160
Home: (770) 578-8552

Wilmington District
Emergency Management

Ronald Stirrat, Chief
Office: (910) 251-4944
FAX: (910) 251-4946
Home: (910) 256-9627

Great Lakes & Ohio River Division
Emergency Management

Tom Porter, Chief
Office: (513) 684-3087
FAX: (513) 684-3844
Home: (513) 232-6945

Huntington District
Emergency Management

Carl Miller, Chief
Office: (304) 529-5483
FAX: (304) 529-5592
Home: (304) 523-0203

Nashville District
Emergency Management

David Verploegen, Chief
Office: (615) 736-7040
FAX: (615) 736-5811
Home: (615) 665-1926

Note: A complete listing of U.S. Army Corps of Engineers offices can be found on ENGLINK website <https://englink.usace.army.mil>

COMMONWEALTH OF VIRGINIA - www.myvirginia.org

Office of the Governor
Richmond, VA

Governor Mark Warner
Office: (804) 786-2211, x300
FAX: (804) 371-6351
www.governor.state.va.us

Virginia Department of Emergency Management

Virginia Department of
Emergency Management
10501 Trade Court
Richmond, VA 23236

Emergency Operations Center
EOC: (804) 674-2400 (24-hr)
FAX: (804) 674-2419
www.vdem.state.va.us
<http://165.176.249.147/about/veoc.cfm>

Public Affairs
Janet Clements, PAO
(804) 897-6500, x6510
FAX: (804) 897-6626

VA DEM, Region I - Pulaski
P.O. Box 1530
Pulaski, VA 24301

Jack Rowell, Regional Coordinator
Office: (540) 994-5006
FAX: (540) 994-5046

VA DEM, Region II - Culpeper
P.O. Box 1386
Culpeper, VA 22701

Cindi Causey, Regional Coordinator
Office: (540) 829-7371
FAX: (540) 829-7375

VA DEM, Region III - Gloucester
P.O. Box 1847
Gloucester, VA 23061

Wallace Twigg, Regional Coordinator
Office: (804) 695-9506
FAX: (804) 695-0417

Note: A complete listing of Virginia Department of Emergency Management offices can be found at <http://www.vdem.state.va.us>

LOCAL GOVERNMENT/MILITARY - HAMPTON ROADS AREALocality/CommandPOC/Phone/FAX (757)

Chesapeake City
Chesapeake Fire Dept.
304 Albemarle Drive
Chesapeake, VA 23322

Hui-Shan Walker
Office: 382-6193/6504
FAX: 382-8228

Hampton City
Police Dept.
40 Lincoln Street
Hampton, VA 23669

Peter F. Sommer, Coordinator
Office: 727-6354
FAX: 727-6774

Newport News City
513 Oyster Point Road
Newport News, VA 23602

A. Jack Williamson, Coordinator
Office: 269-2900
FAX: 269-2905

Norfolk City
3661 E. Virginia Beach Blvd
Norfolk, VA 23502

Peter R. Norwood, Coordinator
Office: 441-5600
FAX: 466-9387

Portsmouth City
309 County Street, Ste 100
Portsmouth, VA 23704

Chief D. Bruce Sterling, Dep Coord
Office: 393-8338
FAX: 393-5305

Suffolk City
400 Market Street
Suffolk, VA 23434

CPT James T. Judkins, Corodinator
Office: 923-2110
FAX: 538-0351

Virginia Beach City
Office of Emergency Management
Municipal Center, Building 21
Virginia Beach, VA 23456-9065

Mark C. Marchbank
Office: 427-4228
FAX: 426-5676

Langley Air Force Base
756 Durand Road
Langley AFB, VA 23665

Readiness Duty Officer, 764-1457
Command Post, 764-5411 (24-hr)

Virginia Port Authority
NMT, NNMT, PMT

683-8000
440-7070 (24-hr)

ANNEX K COMMUNICATIONS

1. Landlines - Communications during hurricane emergencies will normally be over TELCO landlines (hardwire).
2. HF/SSB Radio - In accordance with Annex F, the District High Frequency Single Sideband emergency radio network will be activated during Phase III of a hurricane emergency. Radio checks will be performed between the EOC and the emergency radio systems at the Area/Resident offices and Gathright Dam. The checks will test for equipment operation. At that time, primary and backup frequencies will be established for the event, and further instructions disseminated by the EOC Communications Officer.
3. VHF Radio - The Norfolk District VHF Radio Repeater system is used for VHF communications throughout the Hampton Roads area, including repeater sites in the cities of Norfolk, Virginia Beach, Hampton and Chesapeake.
4. Cellular Telephones - There are ten portable cellular telephones within the Emergency Management office. The Emergency Management Office staff have permanently issued cellular telephones, as noted below. The ERRO-A Duty Chief and IPDA Chief are issued a cellular telephone during emergencies. A cellular telephone will also be issued to the ERRO-A Real Estate Specialist, the EERO-A Logistics Specialist, the Public Affairs Specialist, and one Project Manager. The remaining phone will be issued to emergency personnel at the Emergency Manager's discretion. The Executive Office has two portable cellular phones: one each for the Commander and Deputy Commander. The Information Management Office is responsible for obtaining additional cellular units from other sources, if the need arises. Below is a list of emergency management critical points of contact and their cellular telephone numbers.

Emergency Cellular Telephones - Norfolk District

<u>Location/User</u>	<u>Cellular Phone No.</u>
Emergency Manager (Stan Ballard)	(757) 434-5080
Emergency Mgmt Spec (Jan Van Houten)	(757) 434-3808
Electronics Technician (Glenn Seay)	(757) 434-4926
ERRO-A Duty Chief	(757) 439-6240
IPDA Zone Chief (Robert Sweitzer)	(757) 434-7050
Real Estate Specialist (David Parson)	(757) 439-6277
Logistics Specialist (David Monacelli)	(757) 434-7049
EM Project Manager (Rex Goodnight)	(757) 439-6269
Public Affairs Specialist (Jerry Rogers)	(757) 434-5402
Emergency Management Commander (COL David Hansen)	(757) 434-3442 (757) 434-1808
Deputy Commander (MAJ David Dougherty)	(757) 434-8868
Chief, TSD (Bill Sorrentino)	(757) 615-7711
Chief, PPMO (Jim Thomasson)	(757) 636-5249
Chief, SSD (Joe Loschi)	(757) 434-1761
Chief, Public Affairs Ofc (Diana Bailey)	(757) 679-2408
Area Engr, CVAO & SWVAO (Darryl Merryman)	(804) 720-7539
Res Engr, Ft. Eustis RO (Kate Field)	(757) 719-7630
Res Engr, Grt Bridge/VA Beach RO (Andrew Spendlove)	(757) 544-1545
Res Engr, Langley F-22 (Anthony Weaver)	(804) 536-5792
Res Engr, Langley/Ft. Monroe (Brian Boynton)	(804) 306-7319

5. Radio Communications:

a. In the event of loss of landline communications, the cellular phone system should be used to try to regain communications. Attempts to establish radio communications between the EOC and field installations, using established primary and backup HF Radio frequencies, should begin at the time landlines are lost.

b. All stations in the District HF/SSB and VHF network are equipped with emergency gasoline or diesel powered generators. Unless antennas or equipment should be lost during the storm, all stations will be capable of continuous operation independent of local power utilities.

6. HF/SSB Radio Network:**HF/SSB Emergency Radio Network - Norfolk District**

Communications will normally be established on the Upper Sideband (USB) of Channel 02 (5015.0 KHz).

<u>Channel</u>	<u>Frequency (KHz)</u>
01	3345.0
02	5015.0
03	5327.5
04	5400.0
05	5437.5
06	6020.0
07	6785.0
08	9122.5
09	11693.5
10	12070.0
11	12122.0
12	16077.0
13	16326.0
14	16358.0
15	20659.0

FEMA Frequencies

Communications may be established with the Federal Emergency Management Agency (FEMA) on the following frequencies:

Frequency (KHz)

5211.0 USB
10493.0 USB

Call Signs and Radio Operator Telephone Numbers:

<u>Station</u>	<u>Call Sign</u>	<u>Telephone</u>
Norfolk District	WUB-5	(757) 441-7896
Ft. Eustis RO	WUB-56	(757) 878-5217
CVAO (Ft Lee)	WUB-57	(804) 734-4041
SWVAO (Radford)	WUB-58	(540) 639-7656
SVAO (Langley)	WUB-59	(757) 225-4053
Gathright Dam	WUB-55	(540) 962-1138/39
North Atlantic Div	WUB	(718) 765-7142
New England Dis	WUB-1	(978) 318-8273
New York Dist	WUB-2	(212) 264-0162/63
Philadelphia Dist	WUB-3	(215) 656-6756/6757
Baltimore Dist	WUB-4	(410) 962-4223/2013

7. VHF Radio Communications:

a. There are several vehicles within the District, located in the Survey Section vehicles listing, which are equipped VHF radio communications equipment (See Annex L). Communications in the VHF band are usually considered to be line-of-sight, with a normal operating range of 20 miles or less; communications in the HF band are limited in distance only by choice of operating frequency for the time of day, antenna type and prevailing atmospheric conditions.

b. VHF Radio information, including radio operations and procedures can be found in Annex Q, Appendix G.

8. Satellite Communications:

a. There are two INMARSAT satellite telephones located in Emergency Management. During a hurricane event, these satellite phones are issued to the Commander and the Emergency Management Specialist, who both remain in the Hampton Roads area during a storm event.

b. These phones would be used by the Commander and the Emergency Management Specialist to contact higher headquarters should the Hampton Roads area be impacted by a hurricane, and all other means of communications were inoperable.

<u>Phone Number</u>	<u>Issued To/Operator</u>
011 XXX 761 82 7473	COL David Hansen, District Commander
011 XXX 762 90 5250	Jan Van Houten, Emergency Mgmt Spec

c. **XXX** = Satellite Phone Prefix

AOR-W = 874 (Atlantic Ocean Region West)
AOR-E = 871 (Atlantic Ocean Region East)
POR = 872 (Pacific Ocean Region)
IOR = 873 (Indian Ocean Region)

ANNEX L VEHICLES

1. In accordance with Annex F, when the District enters Phase II of a hurricane emergency, Logistics will coordinate government vehicle requirements with the Emergency Operations Center and government vehicles will not be dispatched without prior clearance from the Emergency Manager. Use of privately-owned vehicles (POV) by employees for official duties, at the current POV mileage rate of 36.5¢, is authorized upon entering Phase II. In expectation of a FEMA mission assignment or performance of preliminary damage assessments in the Hampton Roads area, the Commander may require that Initial Preliminary Damage Assessment team members be assigned specific vehicles (4-wheel drive) prior to the arrival of the storm. A listing of District vehicles, including Survey vehicles which are equipped with VHF radios, appears on pages L-2 through L-4.
2. District Regulation 58-1-2 prohibits employees from keeping Corps vehicles at their places of residence overnight in expectation of official duties or travel the following day. However, the Commander, in expectation of unusual flooding or severe storm damage, may issue a determination and finding which will preempt this regulation for the emergency event. Disaster emergency response personnel may be issued vehicles and equipment prior to the arrival of the storm. These individuals may be requested to prepare their homes and families up to 24 hours before the expected arrival of the storm, and to be available on a 24-hour basis for duty assignment during or immediately following the storm event.
3. Upon implementation of Phase III, government vehicles at all District offices will be moved to areas affording the greatest possible protection from damage which could occur during the storm event. Vehicles at Fort Norfolk will be moved to the rear parking lot or to an alternate location at the discretion of the Chief, Logistics Management Office. Vehicles at other offices should be kept under cover if possible, or, as a minimum, moved to high ground and away from wind-driven missile hazards.
4. In the event of predicted extreme tidal surges which could cut off major transportation routes in Hampton Roads or other portions of Virginia within District boundaries, the Commander may direct that Corps vehicles equipped with 4-wheel drive, radios, etc., be prepositioned at specific locations, which would allow Corps emergency response officials maximum affordable transportation resources. The Civil Works Technical Support Section will make recommendations to the Emergency Manager regarding vehicle prepositioning with respect to the predicted flooding associated with the storm surge, and will assist with evacuation route plans available for various flood stages in Hampton roads (see website: www.vdot.state.va.us/traf/hurricane.html).

Tag Number	Status	Nomenclature	Location	Reported	Current
CE47246	Active	SEDAN MIDSIZE CLASS III	FT. A. P. HILL	30-SEP-2001	27490
CE48145	Active	TRUCK UTL 1/4-3/4T 4X4	FT. A. P. HILL	30-APR-2002	15800
CE48148	Active	TRUCK UTL 1/4-3/4T 4X4	FT. A. P. HILL	30-APR-2002	15773
CE19970	Active	TRUCK STK AND PLTFM 5-10T 6X4	CRANEY ISLAND	30-APR-2002	45179
CE25780	Active	TRUCK MAN/TEL/UTL	CRANEY ISLAND	30-APR-2002	18977
CE26773	Active	TRUCK TRACTOR 5-12T 6X6	CRANEY ISLAND	30-APR-2002	11032
CE27845	Active	TRUCK DUMP 5T AND UP 6X6	CRANEY ISLAND	30-APR-2002	38036
CE45753	Active	TRUCK DUMP 2-4T 6X4 OR 6X6	CRANEY ISLAND	30-APR-2002	50297
CE46996	Active	TRUCK TANK 5-10T 4X4	CRANEY ISLAND	30-APR-2002	10683
CE47240	Active	TRUCK DUMP 1-1-3/4T 4X2	CRANEY ISLAND	30-APR-2002	34837
CE47916	Active	TRUCK UTL 1/4-3/4T 4X4	CRANEY ISLAND	30-APR-2002	13235
CE47992	Active	TRUCK DUMP 2-4T 6X4 OR 6X6	CRANEY ISLAND	30-APR-2002	10025
G6100644	Active	TRUCK UTL 1/4-3/4T 4X4	CRANEY ISLAND	30-APR-2002	16951
G6100646	Active	TRUCK UTL 1/4-3/4T 4X4	CRANEY ISLAND	30-APR-2002	19562
G6100647	Active	TRUCK UTL 1/4-3/4T 4X4	CRANEY ISLAND	30-APR-2002	18185
G6135482	Active	TRUCK UTL 1/4-3/4T 4X4	CRANEY ISLAND	30-APR-2002	56238
G6300253	Active	TRUCK UTL 1/4-3/4T 4X4	CRANEY ISLAND	30-APR-2002	23349
G6330749	Active	TRUCK PKUP W/CAB 1/4-3/4T	CRANEY ISLAND	30-APR-2002	20849
G6203281	Active	TRUCK STDPKUP 4X4 1-1-3/4	CONTROL TEAM	30-APR-2002	47942
G6203282	Active	TRUCK STDPKUP 4X4 1-1-3/4	CONTROL TEAM	30-APR-2002	41491
G6203288	Active	TRUCK UTL 1/4-3/4T 4X4	CONTROL TEAM	30-APR-2002	15281
G6305062	Active	TRUCK UTL 1/4-3/4T 4X4	CONTROL TEAM	30-APR-2002	27844
G6308862	Active	TRUCK UTL 1/4-3/4T 4X4	CONTROL TEAM	30-APR-2002	19322
G6308863	Active	TRUCK UTL 1/4-3/4T 4X4	CONTROL TEAM	30-APR-2002	10321
G6330740	Active	TRUCK STDPKUP 4X4 1-1-3/4	CONTROL TEAM	31-MAR-2002	73481
G6330743	Active	TRUCK STDPKUP 4X4 1-1-3/4	CONTROL TEAM	30-APR-2002	36940
G6330744	Active	TRUCK STDPKUP 4X4 1-1-3/4	CONTROL TEAM	30-APR-2002	37031
G6330745	Active	TRUCK STDPKUP 4X4 1-1-3/4	CONTROL TEAM	30-APR-2002	44631
G1005843	Active	SEDAN COMPACT CLASS II	FT. EUSTIS	31-MAR-2002	6149
G1005848	Active	SEDAN COMPACT CLASS II	FT. EUSTIS	30-APR-2002	4903
G1005850	Active	SEDAN COMPACT CLASS II	FT. EUSTIS	30-APR-2002	4640
G1100190	Active	SEDAN MIDSIZE CLASS III	FT. EUSTIS	30-APR-2002	10579
G4148068	Active	TRUCK CARRYALL 1/2-3/4T	FT. EUSTIS	30-APR-2002	9445
G4158414	Active	TRUCK STD PKUP 1/4-3/4T	FT. EUSTIS	30-APR-2002	2756
G6107023	Active	TRUCK UTL 1/4-3/4T 4X4	FT. EUSTIS	30-APR-2002	5890
G6228377	Active	TRUCK UTL 1/4-3/4T 4X4	GATHRIGHT	30-APR-2002	20036
G6228378	Active	TRUCK UTL 1/4-3/4T 4X4	GATHRIGHT	30-APR-2002	11633
G6228380	Active	TRUCK STD PKUP 1/4-3/4T	GATHRIGHT	30-APR-2002	11189

Tag Number	Status	Nomenclature	Location	Reported	Current
G6228381	Active	TRUCK STD PKUP 1/4-3/4T	GATHRIGHT	30-APR-2002	11622
CE48144	Active	TRUCK STDPKUP 4X4 1-1-3/4	GREAT BRIDGE	30-APR-2002	13608
CE48149	Active	TRUCK UTL 1/4-3/4T 4X4	GREAT BRIDGE	30-APR-2002	12757
G6107027	Active	TRUCK UTL 1/4-3/4T 4X4	GREAT BRIDGE	30-APR-2002	24397
G1005847	Active	SEDAN COMPACT CLASS II	LANGLEY	30-APR-2002	10064
G1005851	Active	SEDAN COMPACT CLASS II	LANGLEY	30-APR-2002	8995
G1016546	Active	SEDAN MIDSIZE CLASS III	LANGLEY	30-APR-2002	4646
G1016548	Active	SEDAN MIDSIZE CLASS III	LANGLEY	30-APR-2002	3524
G1016588	Active	SEDAN COMPACT CLASS II	LANGLEY	30-APR-2002	6700
G2112752	Active	STATION WGN MIDSIZE CLASS III	LANGLEY	28-FEB-2002	31698
G4129481	Active	SEDAN COMPACT CLASS II	LANGLEY	30-APR-2002	20085
G6128287	Active	TRUCK UTL 1/4-3/4T 4X4	LANGLEY	28-FEB-2002	32585
G6325107	Active	TRUCK STDPKUP 4X4 1-1-3/4	LANGLEY	30-APR-2002	19785
G1095839	Active	SEDAN COMPACT CLASS II	FT. LEE	18-JUL-2001	23426
G12-31565	Active	SEDAN MIDSIZE CLASS III	FT. LEE	28-FEB-2002	1200
G1228779	Active	SEDAN COMPACT CLASS II	FT. LEE	28-FEB-2002	22915
G1228798	Active	SEDAN COMPACT CLASS II	FT. LEE	28-FEB-2002	4180
G1236587	Active	SEDAN MIDSIZE CLASS III	FT. LEE	28-FEB-2002	4415
G1236597	Active	SEDAN MIDSIZE CLASS III	FT. LEE	28-FEB-2002	6730
G4120081	Active	TRUCK VAN CARGO 4X2	FT. LEE	30-JUN-2001	33346
G4129655	Active	TRUCK STDPKUP 4X4 1-1-3/4	FT. LEE	28-FEB-2002	9728
G4143325	Active	TRUCK STD PKUP 1/4-3/4T	FT. LEE	28-FEB-2002	3353
G4143336	Active	TRUCK CMPT PKUP 4X4 1/4T-1/2T	FT. LEE	28-FEB-2002	5330
G4143361	Active	TRUCK CMPT PKUP 4X4 1/4T-1/2T	FT. LEE	28-FEB-2002	2629
G61-31722	Active	TRUCK UTL 1/4-3/4T 4X4	FT. LEE	28-FEB-2002	54645
G1005852	Active	SEDAN COMPACT CLASS II	FT. MONROE	31-MAR-2002	6011
G4129470	Active	TRUCK PKUP W/CAB 1/4-3/4T	FT. MONROE	30-APR-2002	8020
CE48043	Active	TRUCK DUMP 1-1-3/4T 4X2	MOTORPOOL	30-APR-2002	2051
G1016557	Active	SEDAN COMPACT CLASS II	MOTORPOOL	30-APR-2002	24161
G1016580	Active	SEDAN MIDSIZE CLASS III	MOTORPOOL	30-APR-2002	19310
G1016585	Active	SEDAN MIDSIZE CLASS III	MOTORPOOL	30-APR-2002	19355
G1106830	Active	SEDAN MIDSIZE CLASS III	MOTORPOOL	30-APR-2002	26084
G1106831	Active	SEDAN MIDSIZE CLASS III	MOTORPOOL	30-APR-2002	26034
G1106832	Active	SEDAN MIDSIZE CLASS III	MOTORPOOL	30-APR-2002	26741
G1106834	Active	SEDAN MIDSIZE CLASS III	MOTORPOOL	30-APR-2002	25847
G1106836	Active	SEDAN MIDSIZE CLASS III	MOTORPOOL	30-APR-2002	25291
G4101682	Active	TRUCK CARRYALL 1/2-3/4T	MOTORPOOL	30-APR-2002	37719
G4148069	Active	TRUCK VANWGN 1/4-1-3/4T	MOTORPOOL	30-APR-2002	38918

Tag Number	Status	Nomenclature	Location	Reported	Current
G6100643	Active	SEDAN MIDSIZE CLASS III	MOTORPOOL	30-APR-2002	41951
G6107025	Active	TRUCK UTL 1/4-3/4T 4X4	MOTORPOOL	30-APR-2002	24270
G6107028	Active	TRUCK UTL 1/4-3/4T 4X4	MOTORPOOL	30-APR-2002	29488
G6107029	Active	TRUCK UTL 1/4-3/4T 4X4	MOTORPOOL	30-APR-2002	35266
G6111084	Active	TRUCK UTL 1/4-3/4T 4X4	MOTORPOOL	30-APR-2002	15960
G6111088	Active	TRUCK UTL 1/4-3/4T 4X4	MOTORPOOL	30-APR-2002	25169
G6111089	Active	TRUCK UTL 1/4-3/4T 4X4	MOTORPOOL	30-APR-2002	26600
G6140858	Active	TRUCK UTL 1/4-3/4T 4X4	MOTORPOOL	02-APR-2002	44054
CE47245	Active	TRUCK STD PKUP 1/4-3/4T	FT. PICKETT	30-SEP-2001	36475
G1120055	Active	SEDAN COMPACT CLASS II	RADFORD	31-MAR-2002	40705
G1228757	Active	SEDAN MIDSIZE CLASS III	RADFORD	31-MAR-2002	33740
G6134141	Active	SEDAN COMPACT CLASS II	RADFORD	27-MAR-2002	49804
G6136510	Active	STATION WGN LARGE CLASS IV	RADFORD	31-MAR-2002	66998
G6140940	Active	SEDAN COMPACT CLASS II	RADFORD	30-JUN-2001	49999
G6140975	Active	STATION WGN LARGE CLASS IV	RADFORD	31-MAR-2002	42755
G6134059	Active	TRUCK MAN/TEL/UTL	VIRGINIA BEACH	30-APR-2002	32437
CE46928	Active	TRUCK UTL 1/4-3/4T 4X4	REGULATORY	30-SEP-2001	30181
CE46931	Active	TRUCK ST AND PTFM W/CAB 4X4	REGULATORY	30-SEP-2001	38063
CE47853	Active	TRUCK UTL 1/4-3/4T 4X4	REGULATORY	30-SEP-2001	22829
CE47854	Active	TRUCK UTL 1/4-3/4T 4X4	REGULATORY	31-AUG-2001	19880
CE47977	Active	TRUCK UTL 1/4-3/4T 4X4	REGULATORY	30-SEP-2001	8099
CE47978	Active	TRUCK UTL 1/4-3/4T 4X4	REGULATORY	30-SEP-2001	8782
CE48146	Active	TRUCK UTL 1/4-3/4T 4X4	REGULATORY	30-SEP-2001	17185
CE48147	Active	TRUCK UTL 1/4-3/4T 4X4	REGULATORY	17-OCT-2001	10565

ANNEX M
WATERFIELD BUILDING AND FORT NORFOLK

1. At any time during Phase IV, when height of storm threat is within 18 hours landfall of possibly impacting Norfolk District Headquarters, the Commander or his designated representative may give the order to evacuate the Waterfield Building and Fort Norfolk.

2. It shall be the responsibility of the Logistics Office to ensure that the following actions are accomplished following the notice to evacuate:

a. Move elevators to the second floor and lock them there.

b. Shut down and turn off power to the following:

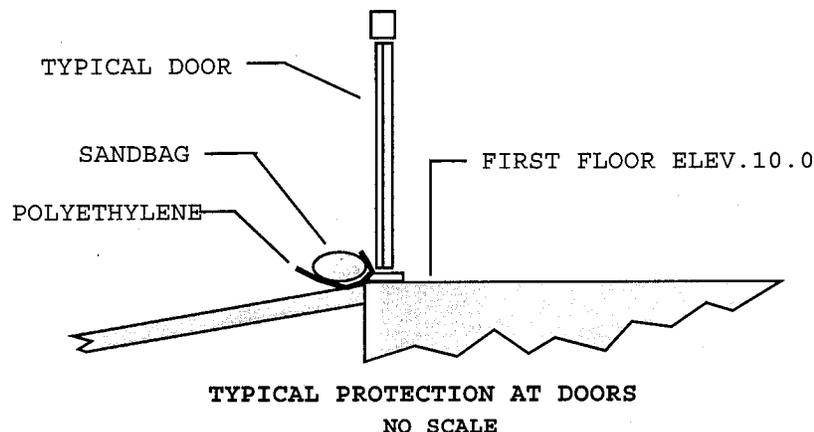
(1) Building HVAC system, pumps and equipment in the mechanical rooms.

(2) In conjunction with respective IMO Coordinators, the NAO Computer Center, including UPS battery backup systems.

(3) Emergency Generator.

(4) Pier facilities, exterior lighting, Bldg. 36, and Old Fort Norfolk.

c. If flooding is imminent or a tidal surge in excess of +8 Ft MSL is predicted by the EOC Duty Hydraulic Engineer, main power to the entire Fort Norfolk Reservation will be turned off and all exterior doors in the Waterfield Building will be sandbagged with one layer of sandbags and polyethylene to form a barrier against wind-driven rain and wave run-up (see sketch) as directed by the Emergency Manager.



APENDIX 1
ANNEX M
SANDBAGS

1. The Norfolk Emergency Management Office no longer stocks sandbags. A list of local sandbag suppliers follows. In addition to the suppliers listed, other Corps' Districts may be conducted for availability of sandbags.
2. The Logistics Office maintains filled sandbags to minimally protect the Waterfield Building.

Sandbag Suppliers

Eastern Burlap
834 W 25th Street
Norfolk VA 23510
Ph: 622-5914, 623-2074

ANNEX N
FLOATING PLANT

1. In accordance with Annex F, upon entry into Phase III of a hurricane emergency, the District will begin to take steps preparatory to securing all Floating Plant. The Chief, Navigation Support and Survey Section, will notify key personnel from his office with instructions to execute emergency procedures for securing all District Floating Plant. The Chief, Regulatory Branch will notify his key person responsible for securing the vessels assigned to his office. Depending on storm intensity and speed, notice to execute relocation of vessels may be made during Phase III (hurricane watch) or Phase IV (hurricane warning). Good judgement should be used to ensure that adequate measures are taken in advance, especially for hurricane events occurring during holiday periods, over weekends or other non-duty hours.

Norfolk District Floating Plant:

<u>Organization</u>	<u>No. of Vessels</u>	<u>Size</u>
Technical Services Division		
Navigation Support and Survey Section	6	Large
	6	Small*
Regulatory Branch	1	Small*

*25' or under, trailer-mounted

NOTE: All of the above vessels are based at Fort Norfolk. Specific information concerning the vessels is included on the following pages.

2. The primary safe harbor for the six large vessels which are based at Fort Norfolk is at the Great Bridge reservation in Chesapeake, Virginia, in the vicinity of the locks on the A&C Canal. Approximately 2 hours will be required for the large vessels to reach the safe harbor from Fort Norfolk. The vessels will be moored in the basin located southeast of the locks. Vessels will be positioned dependent upon the number present.
3. The Emergency Operations Center has VHF radio equipment installed which will allow communications with the large vessels during the storm event.
4. Under AR 500-60, paragraph 2-1f, boat captains have the authority to perform waterborne rescue operations to save human life, prevent human suffering or lessen major property damage. All such actions must be reported to the EOC Duty Chief, who will forward the information upward.
5. Smaller vessels on trailers should be secured at Fort Norfolk (Riverview parking lot), chained or cabled to a fixed object, or driven to Great Bridge. An alternative would be to hoist small boats onto ND-6 barge and transport them to Great Bridge. Trailered boats in the field should be located under shelter, such as in a garage or service station bay or, as a minimum, left on the trailer and filled with water.

FLOATING PLANT - LARGE**Points of Contact:**

Technical Services Division, Operations Branch - Ronald G. Vann, Chief, ofc 441-7057,
res 481-3303

Technical Services Division, Operations Branch, Navigation Support & Survey Section,
T. D. Woodward, Chief, ofc. 441-7125, res. 484-5589

VESSEL: Elizabeth (Cellular # 434-0977) and **ND-6** (Requires Vessel to move)

Length:	104'0"	80'6"
Beam:	31'2"	30'6"
Draft:	4'2"	2'2"
Max. speed:	7.5 mph	N/A
Crew:	4	N/A

<u>Title</u>	<u>Name</u>	<u>Telephone Nos.(A/C 757):</u>	
		<u>Office</u>	<u>Home</u>
Master, Derrickboat	Leonard R. White *	441-7550	482-1674
Mate, Derrickboat	Vacant **441-7550	547-2283	
Mechanic	Glen Boykin	441-7550	(919) 771-2689
Crane Operator	Dennis Barnes	441-7550	(919) 336-4551
Essential *			
Alternate **			
Responsible operator (rescue): L. White			

VESSEL: Harrell (Cellular # 477-3786)

Length:	53'0"
Beam:	15'0"
Draft:	4'6"
Max. speed:	16 mph
Crew:	2

<u>Title</u>	<u>Name</u>	<u>Telephone Nos.(A/C 757):</u>	
		<u>Office</u>	<u>Home</u>
Tender Operator	Richard Bruton, Jr.*	441-7550	686-2854
Deckhand	Gina Baer	441-7550	479-0074
Essential *			
Responsible operator (rescue): Richard Bruton, Jr.*			

VESSEL: Mobjack (Cellular # 434-1101)

Length: 65'6"
 Beam: 17'8"
 Draft: 7'0"
 Max. speed: 10 mph
 Crew: 3

<u>Title</u>	<u>Name</u>	<u>Telephone Nos.(A/C 757):</u>	
		<u>Office</u>	<u>Home</u>
Tender Operator	Claude S. Caldwell*	441-7550	233-6676
/Deckhand			
/Deckhand	Eduardo Azares	441-7550	479-0074

Tender Operators/Deckhands alternate positions.
 Essential *

Responsible operator (rescue): Claude S. Caldwell

NOTE: All crews above (both tender operators and deckhands) are interchangeable on all vessels.

VESSEL: Adams II (Cellular # 477-4809)

Length: 65'
 Beam: 19'6"
 Draft: 6'6"
 Max. speed: 21 kts
 Crew: 3

<u>Title</u>	<u>Name</u>	<u>Telephone Nos.(A/C 757):</u>	
		<u>Office</u>	<u>Home</u>
Boat Operator	Richard Cox *	441-7561	963-5885
Boat Operator	William Simmons**	441-7561	427-6677
Survey Tech	Anthony Smith	441-7561	868-9776
Essential *			
Alternate **			
Responsible operator (rescue): Richard Cox			

VESSEL: Lynnhaven (Cellular # 672-1280)

Length: 40'0"
 Beam: 15'0"
 Draft: 3'6"
 Max. speed: 14 mph
 Crew: 3

<u>Title</u>	<u>Name</u>	<u>Telephone Nos.(A/C 757):</u>	
		<u>Office</u>	<u>Home</u>
Boat Operator	Billy Simmons *	441-7561	427-6677
Survey Tech Essential *	Tim Woolard**	441-7561	482-9086
Alternate **			
Responsible operator (rescue): Billy Simmons			

FLOATING PLANT - SMALL

Regulatory Branch, POC: Rick Henderson, Action Officer, ofc 441-7653,
res 340-4073

Vessel: 1 - outboard skiff, trailered

Technical Services Division, Operations Branch, Navigation Support & Survey Section,
POC: T. D. Woodward, Chief, ofc. 441-7125, res. 484-5589

Vessels: 1 - 25' I/O aluminum boat on trailer ("CAWOOD")
(Adam Stephan, Operator) (Cellular # 672-1278)

1 - 21' outboard aluminum boat, on trailer ("SEAARK")
(Mike Williams, Operator) (Cellular # 672-1279)

1 - 17' outboard aluminum boat, on trailer ("LITTLE GIANT")
(Anthony Smith, Operator)

2 - open outboard skiffs

1 - small trailered "john" boat

ANNEX O

OPERATIONS SUPPORT SECTION
HURRICANE EMERGENCY PROCEDURES1. ATLANTIC INTRACOASTAL WATERWAY (AIWW)

The facilities at Great Bridge, Deep Creek, Lake Drummond, South Mills, the waterways and respective bridges are maintained under contract by U.S. Facilities, Inc. In accordance with emergency procedures Annex F, upon entry into a Hurricane Watch (Phase III) of a hurricane emergency, the District will begin to take steps preparatory to securing all AIWW Facilities. The Emergency Manager will notify the appropriate District elements responsible for AIWW Facilities. Respective divisions will notify key personnel from each of the affected branches/sections with instructions to execute emergency procedures for securing all the AIWW Facilities. Depending on storm intensity and speed, notice to execute relocation of vessels, vehicles and equipment may be made during a Hurricane Watch (Phase III) or Hurricane Warning (Phase IV). At all times, good judgment should be used to ensure that adequate measures are taken in advance, especially for hurricane events occurring during holiday periods, over weekends or other non-duty hours. The US Army Corps of Engineers Project Manager of the AIWW will coordinate with the AIWW operating contractor to insure that all adequate measures are implemented.

AIWW POINTS OF CONTACT:

<u>Organization</u>	<u>Business Phone</u>	<u>Home Phone</u>
Construction Rep, AIWW (O&M) William R. Jones	(757) 547-2109	Cell: (757) 749-5603
Project Manager, AIWW (O&M) Joel F. Scussel	(757) 441-7642	(757) 427-0642
Chief, Operations Support Section W. Meade Stith	(757) 441-7687	(757) 625-2243
Chief, Operations Branch Ronald G. Vann	(757) 441-7057	(757) 481-3303
U.S. Facilities, Inc. Martin E. Trueblood, Jr. U.S. Facilities Project Manager	(757) 547-2004	(252) 330-9977 Cell: (757) 447-2106
U.S. Facilities, Inc. Scotty W. Bateman Asst. Superintendent	(757) 547-2004	(252) 330-5638 Cell: (757) 447-2130
Chesapeake City Engineer Eric Martin	(757) 382-8740	(757) 482-9256
Chesapeake Deputy Coordinator Emergency Services Ms. Hui-shan Walker	(757) 382-6193	(757) 423-2313
USCG, Captain of the Port	(757) 484-8192	
USCG, Notice to Mariners	(757) 398-6225	

<u>AIWW Facilities:</u>	<u>Phone Number</u>
Great Bridge Bridge	(757) 482-2613
Great Bridge Lock	(757) 547-3311
North Landing Bridge	(757) 482-3081
Deep Creek Lock/Bridge	(757) 487-0831
Lake Drummond	(757) 477-2999
South Mills Lock/Bridge	(252) 771-5906

AIWW HURRICANE EMERGENCY PROCEDURES

Under the direction of the Project Manager (O&M), the following steps shall be taken to protect all Government property under their care from storm damage:

- a. Establish the emergency communications network to the degree required under DR 500-1-2 Annex J.
- b. Prepare the safe harbor site for the vessels arriving from Fort Norfolk.
- c. Place small boats and loose gear or any other items that may be blown away inside the sheds. Tie down any objects that cannot be stored inside.
- d. Disconnect or cut off any electrical equipment that may be subject to flooding:
 1. Pumps (gas, diesel, water, etc.).
 2. Electric motors.
 3. Shop equipment subject to flooding.
- e. Move all the vehicles to highest ground available.
- f. Cover all lock gears to protect them from floating debris.
- g. Ensure that the contractor and Corps personnel wear life jackets when working around the locks and waterways, especially during high winds. During Phase IV, no duties will be performed out-of-doors unless absolutely necessary in accordance with DR 500-1-3 Phase IV Warning (b).
- h. Windows without shutters are to be protected with plywood, when the severity of the storm is Category III or higher.
- i. Store drinking water in clean jugs or bottles for cooking or drinking and enough non-perishable foods to last for several days at remote sites.
- j. Make sure an ample supply of batteries and flashlights are available.
- k. Ensure all manned areas have first aid kits.

I. Review the emergency operations manual DR 500-1-3, U.S. Army Corps of Engineers Norfolk District Hurricane Emergency Plan.

2. ALBEMARLE AND CHESAPEAKE CANAL HURRICANE EMERGENCY PROCEDURES

In accordance with the Great Bridge Operations Manual for the Great Bridge Locks, when the difference in elevation between river and canal reaches 5 feet, 2 sets of gates will be closed at all times except when locking through. When elevation difference is 6 feet, all gates will be set in the closed position and the electrical current turned off due to possible flooding of the motors. At this time the waterway will be closed to navigation and the USCG, Captain of the Port and the USCG Notice to Mariners will be notified.

3. DISMAL SWAMP CANAL HURRICANE EMERGENCY PROCEDURES

The Corps of Engineers operates three low-level, water-control structures on the Dismal Swamp Canal, one at Lake Drummond, one at Deep Creek, and one at South Mills. This section provides guidance for operating the Dismal Swamp Canal in an effort to lessen the effects of flooding. It should be recognized that the spillways at Lake Drummond and the canal are low-level, water control structures and may be used to lessen the effects of flooding, but they are incapable of preventing flooding. When significant flooding occurs, floodwater simply runs around and over the Lake Drummond spillway as it did during Hurricane Floyd in 1999. When this occurred during Floyd, the tail water elevation was so high that a failure of the spillway would have had no effect on downstream flood elevation. A significant amount of water was simply flowing around the spillway. Concerns that a spillway failure would cause downstream flooding were unfounded.

a. References:

(1) River and Harbor Act of 3 March 1899 and modified by the River and Harbor Acts of 25 July 1912, 3 March 1925, and 3 July 1930 which authorizes the Dismal Swamp Canal.

(2) Public Law 93-402, passed in 1974, which contained the following provision: "In the administration of the Refuge, the Secretary (of the Interior) and the Chief of Engineers, Corps of Engineers, shall enter into such consultations and take such cooperative actions as they deem necessary and appropriate to ensure that any navigational or other uses made of the Dismal Swamp Canal do not adversely affect the Refuge and, in this regard, particular attention shall be given by the Secretary and the Chief of Engineers with respect to maintaining an appropriate water level in Lake Drummond."

(3) Water Control Plan of the Operational Procedures Manual for the Dismal Swamp Canal dated November 1996.

b. Hurricane Season:

(1) Water levels in Lake Drummond and the Dismal Swamp Canal are on the Internet at http://www.nao.usace.army.mil/HandH/wcds_main.htm.

(2) The Corps and the Contractor will review the Dismal Swamp Canal Operational Procedure Manual each hurricane season. Specific attention shall be placed on Section 7-07 which discusses spillway capacities, Plates 2-5 and 2-6 which provides rating curves for spillways at Lake Drummond, South Mills and Deep Creek, and Plates 2-9 and 2-10 which provides rating curves for the lock gate valves at Deep Creek and South Mills. Each of these ratings is for one wicket or lock valve as appropriate.

(3) The Dismal Swamp Canal shall be maintained at a normal range of elevation during the Hurricane Season (+1.0, DSC Datum). This depth is the minimum acceptable elevation for navigation based on channel depth, weather forecasts, evaporation, lock activities and reservoir capacities available in Lake Drummond.

(4) Weather and hydrometeorological conditions affecting the Dismal Swamp Canal will be closely monitored and releases will be increased as deemed appropriate. Excess reservoir storage capacity, above gauge reading 5.3 in Lake Drummond shall be discharged as quickly as conditions allow to maximize the system's ability to receive runoff from the Swamp and surrounding ditches. Releases shall be in accordance with the Dismal Swamp Canal Operational Procedure Manual on Page P-6 and P-7.

(5) When 80% or more of the system wickets are open, the Corps' AIWW operating contractor will have staffing available 24 hours a day to open additional wickets and the lock chamber flood valves as conditions and safety dictate.

c. Hurricane Watches (Phase III) and Warnings (Phase IV) for the Hampton Roads Area:

(1) During hurricane watches and warnings, local officials in the vicinity of the Dismal Swamp will be consulted with the water levels in Lake Drummond and the Dismal Swamp Canal a minimum of once a day and more as conditions and safety dictate.

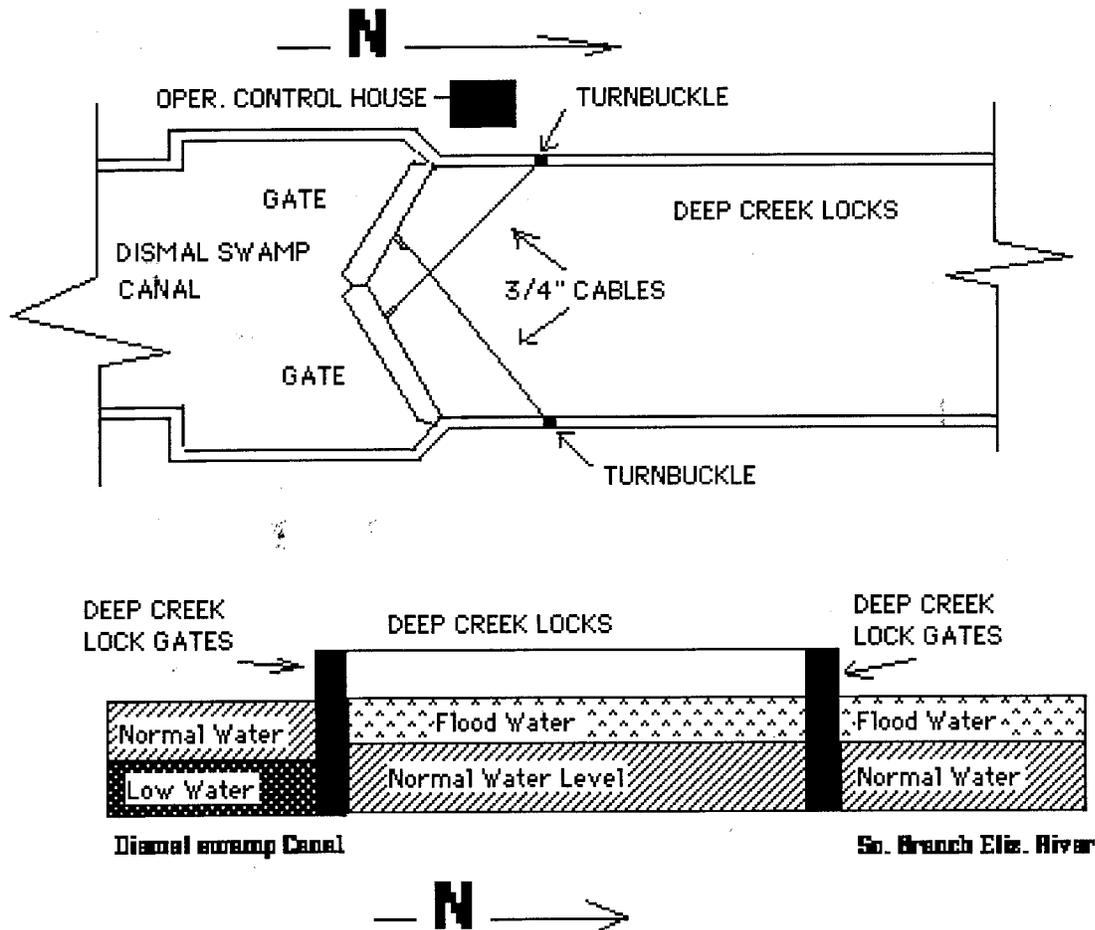
(2) During hurricane or flood warnings, the Corps' AIWW operating contractor will have staffing available 24 hours a day to open additional wickets and the lock chamber flood valves as conditions and safety dictate.

(3) During hurricane warnings when the water levels in the Dismal Swamp Canal and Lake Drummond are above normal and anticipated rainfall is expected to be heavy, additional wickets and flood valves shall be opened as conditions dictate at Lake Drummond, Deep Creek and South Mills. The Dismal Swamp Canal Project Manager (O&M) shall direct this after consultation with Hydraulics and Hydrology Section, Norfolk District Corps of Engineers and keep local officials advised.

(4) Even if communications are lost during storm conditions, operators will aggressively open spillway gates, wickets, and the lock flood valves as conditions dictate in an effort to prevent water from overtopping the lock gates and/or the Lake Drummond water-control structure.

(5) Normal navigation shall be suspended in the Dismal Swamp Canal if flooding conditions exist in the canal and the water levels exceed the capability of the wickets and the flood valves.

(6) The Deep Creek Canal side lock gates shall be secured with cable if the water level has dropped 3.5 feet below the predicted flood level of Southern Branch of the Elizabeth River, due to surge in tidal waters. When Lake Drummond and the Dismal Swamp Canal water levels rise above the tidal surge in the Elizabeth River due to heavy rainfall, remove the cables.



4. CRANEY ISLAND PROJECT.

In accordance with Annex F, upon entry into Phase III of a hurricane emergency, the District will begin to take steps preparatory to securing all equipment. The Emergency Manager will notify the appropriate District elements responsible for Crane Island. Good judgment should be used to ensure that adequate measures are taken in advance, especially for hurricane events occurring during holiday periods, over weekends or other non-duty hours.

CRANEY ISLAND POINTS OF CONTACT:

<u>Organization</u>	<u>Business Phone</u>	<u>Home Phone</u>
Facility Manager, Crane Island P. Denny Copperthite	(757) 484-1021	(757) 482-2715
Project Manager, Crane Island Thomas C. Friberg	(757) 441-7645	(757) 460-1258
Chief, Operations Support Section W. Meade Stith	(757) 441-7641	(757) 625-2243
Chief, Operations Branch Ronald G. Vann	(757) 441-7057	(757) 481-3303

CRANEY ISLAND HURRICANE EMERGENCY PROCEDURES

Under the direction of the Project Manager, the following steps shall be taken to protect all Government property under their care from storm damage:

a. Establish the emergency communications network to the degree required under DR 500-1-2 Annex J.

b. The heavy equipment that is in the field will be moved to high ground and secured, cranes will boom down.

c. All other equipment and large trucks should be moved to high ground in the area above the oil rack.

d. Small trucks will be secured in or near the maintenance bays.

e. Disconnect electric pump from pump house and store in Mechanics Shop.

f. During Phase IV, no duties will be performed out-of-doors unless absolutely necessary in accordance with DR 500-1-3 Phase IV Warning (b).

g. Windows without shutters are to be protected with plywood, when the severity of the storm is Category III or higher.

h. Store drinking water in clean jugs or bottles for cooking or drinking and enough non-perishable foods to last for several days at remote sites.

i. Make sure an ample supply of batteries and flashlights are available.

- j. Ensure all manned areas have first aid kits.
- k. Review the emergency operations manual DR 500-1-3, U.S. Army Corps of Engineers Norfolk District Hurricane Emergency Plan.

ANNEX P
EVACUATION OF THE WATERFIELD BUILDING
and
FORT NORFOLK

1. SITUATION. Prior to the predicted landfall of a dangerous hurricane, mandatory evacuation of the Hampton Roads area may be ordered by the Governor of Virginia. Corps of Engineers employees are not exempt from mandatory evacuation orders.

Prior to a mandatory evacuation order, and upon the recommendation of the Emergency Manager, the District Engineer may, at his discretion, order that preventive measures be taken to protect critical equipment, documents and records in the Waterfield Building which constitute the property of the U.S. Government under his command.

2. MISSION. The Norfolk District will take appropriate action in the Waterfield Building and Fort Norfolk to ensure the safety of equipment, documents and records against water and wind damage or loss. It will be assumed that building endwall exterior failure and window breakage will occur, exposing the building interior to high winds and wind driven rain. It will also be assumed that maximum predicted "SLOSH" corrected storm surges will occur, which will cause significant flooding to a height of 6 feet or 9 feet above the ground floor elevation of the Waterfield Building, respectively, for Category 3 or 4 storms (see Annex B, pages B-8, B-9). Wave action combined with flotsam in the floodwaters will affect the first floor of the Waterfield Building and other structures at Fort Norfolk.

The order to evacuate the Waterfield Building and Fort Norfolk will automatically implement Annex I of this Plan-*Activation of the Emergency Response and Recovery Office-Advance*.

3. EXECUTION.

a. Emergency Management Staff - Upon receiving orders to evacuate the Waterfield Building, Emergency Management staff will:

- 1) Ensure establishment of funding accounts for execution of this Annex.
- 2) Notify Division and Office Chiefs that the order to evacuate has been given, and advise them to begin the steps outlined below to safeguard Government property. See Appendix 2 to this Annex, page P-6.
- 3) Implement Annex I of this Plan, ERRO-A.

b. All Division and Office Chiefs will implement their respective contingency action plans to protect office machines, equipment, records and files. Upon completion of preventive measures, each Division or Office Chief will notify the Executive Office prior to releasing employees.

4. ADMINISTRATIVE SUPPORT.

a. Each District Division and Office shall develop a plan to ensure that protective measures are taken prior to evacuation. Respective plans should outline specific equipment, files and records which are to be moved and/or protected.

b. Each Division and Office shall maintain sufficient supplies and resources to implement respective evacuation plans. These items shall be inventoried yearly at the beginning of the hurricane season.

c. Each Division and Office shall ensure that all employees are made aware of the evacuation plan requirements of the respective organization, assigning specific tasks to groups or individuals.

d. The Logistics Management Office shall maintain sufficient stock of protective plastic sheeting, bags, filament tape etc. to assist District offices in protecting government property.

e. The Logistics Management Office shall provide labor with in-house forces or by contract to move heavy and/or voluminous material. The LMO shall update contractual agreements each year prior to hurricane season for offices requiring contracted labor and storage for safeguarding government property.

f. Critical areas in the Waterfield Building include:

1) First floor, items to be evacuated to a safe haven:

- a) Library - designated books/documents, map files, current records
- b) Office of Counsel - all files, Law Library, computers, office equipment
- c) Logistics Management Office - Mechanical room. Warehouse supplies, computers, office equipment.
- d) Engineering, Soils Lab - equipment and records
- e) IMO, Mail Room - all mail, files and equipment

2) Floors 2, 3 and 4 - All offices with exposure to the windows should move computers, office equipment and files to the center isle. Computer equipment should be protected with heavy plastic sheeting or bags secured with filament tape. All files, cabinets, desks etc. which would be susceptible to wind driven water should be covered with heavy plastic sheeting or bags secured in place with filament tape.

3) Credit Union - The President of the Credit Union is responsible for evacuation of all critical records and equipment to a safe haven.

g. Operations Branch - Property in flood zone:

- 1) Survey Field Office - all files and equipment
- 2) Survey Vehicles
- 3) Survey Boats
- 4) Plant Section - all files and equipment
- 5) Craney Island Office - all files and equipment
- 6) Great Bridge Office - all files and equipment
- 7) Great Bridge Records Holding Area - all files

- h. Information Management Office - Property in flood zone:
 - 1) Magnetic tape files in Old Fort Norfolk
 - 2) Records holding area (motor pool)
- i. Regulatory Branch - Property in flood zone: - historical files in motor pool area
- j. Logistics Management Office - Property in flood zone:
 - 1) Motor Pool - All vehicles not reserved for mission
 - 2) Building and Grounds - tools, supplies, equipment
- k. Planning Branch - Property in flood zone:
 - historical files in motor pool area
- l. Contracting Division - Property in flood zone:
 - all files and equipment stored on 1st floor and Old Fort Norfolk.

5. COMMAND AND SIGNAL - Command and Signal for this Annex will be as outlined in paragraph 5 of Chapter 1 of this plan, with the exceptions outlined below.

a. The authority to implement this Annex resides with the District Engineer or his designated representative.

b. It shall be the responsibility of the Emergency Manager to keep the District Engineer informed of the hurricane probabilities for Norfolk (see Annex E).

c. Following passage of the storm, it is the responsibility of all District employees to remain informed and to follow instructions broadcast by the local radio stations. Employees should return to work as soon as safely practicable (see Appendix 4 of this Annex).

APPENDICES:

Appendix 1 - Floor Elevations

Appendix 2 - Notice to Evacuate the Waterfield Building

Appendix 3 - Decision Criteria for Evacuation, Waterfield Building

Appendix 4 - Return to Work Following Evacuation

APPENDIX 1
ANNEX P
FLOOR ELEVATIONS

<u>LOCATION</u>	<u>ELEVATION ABOVE NGVD (FT)</u>
Waterfield Building Lobby	10.0
Building 36	9.7
Old Fort Norfolk (records holding area)	9.2
Bldg 1, Old Fort Norfolk (old library/repro)	9.3
Bldg 2, Ft Norfolk (old Dredging Management offices)	8.3
Bldg 4, Ft Norfolk (Historical Society Office)	9.1
Survey field office - admin, records and storage area	8.1
Survey field office - garage storage area	7.2
Carpenter shop, motor pool area	7.7
Record holding area 1, motor pool area	7.2
Record holding area 2, motor pool area	7.2
Operations Branch Plant Ofc	7.5
Craney Island Project office	15.9
Great Bridge Reservation Office, Bldg 1	6.8
Great Bridge Records Holding Area, Bldg 3	4.8
Great Bridge Machine and Carpenter Shop, Bldg 2	5.5

APPENDIX 2
ANNEX P

NOTICE TO EVACUATE THE WATERFIELD BUILDING

CENAO-TS-EOC

DATE

MEMORANDUM FOR ALL DIV/OFC CHIEFS AND AREA/RESIDENT ENGINEERS

SUBJECT: Notice to Evacuate the Waterfield Building

1. As of _____ Annex P of the Norfolk District Hurricane Plan has been ordered for the event _____. This order also implements Annex I, Activation of the ERRO-A.
2. Due to the imminent danger presented by this event, all Division/Office Chiefs shall carry out the procedures in their respective Office Evacuation Plans to protect government files, records and property from wind and water damage or loss.
3. Upon completion of preventive measures, Division and Office Chiefs shall report such status to the Executive Office and request final briefing prior to releasing their employees.
4. All employees should be reminded to monitor local radio broadcasts for instructions following passage of the storm.

CARL S. BALLARD, JR.
Emergency Manager

APPENDIX 3
ANNEX P

DECISION CRITERIA FOR EVACUATION OF WATERFIELD BUILDING

1. At some point in time, during an approaching hurricane scenario, a decision must be made as to when the order is to be given to evacuate the Norfolk District Headquarters in the Waterfield Building.

Decision criteria comes from the Technical Data Report, Virginia Hurricane Evacuation Study, April 1992, Chapter 7, with specific page numbers referenced below.

The following assumptions will be used in the Decision Arc Model for Waterfield Building Evacuation:

- Decision Arcs will be those listed on Table 7-8, page 7-16 of the Study (Virginia Beach), will assume a medium evacuee response, and the appropriate seasonal occupancy Clearance Time column.
- Add one category to the storm in step 3 of the Hurricane Evacuation Decision Worksheet, page 7-28.
- At the decision point, if probability is greater than 27%, the Evacuation Annex of the Norfolk District Hurricane Plan shall be implemented (see paragraph 9, page 7-29).
- Emergency Management Staff will begin to apply the decision arc model when the storm landfall prediction is greater than 10% for Virginia, or between 72 and 48 hours prior to predicted landfall.

2. The National Hurricane Center issues a Probabilities report in its Tropical Storm/Hurricane Forecasts. This Probabilities report is based on the same Decision Arc method discussed above, and more easily obtainable at website <http://www.nhc.noaa.gov/>. The Emergency Operations Center routinely monitors this site during emerging and threatening storms.

3. Discussions with the State of Virginia and the National Weather Service office in Wakefield, as well as the procedures being undertaken by the localities, will also be consulted in the decision-making process.

APPENDIX 4
ANNEX P

RETURN TO WORK FOLLOWING EVACUATION

Following passage of the storm, Norfolk District employees should continue to remain informed and await instructions by following the Norfolk District Inclement Weather Announcements policy, shown below.



**US Army Corps of Engineers
Norfolk District CorpsNet**



Inclement Weather Announcements

In the event of inclement weather, our main consideration is our employees' safety. If hazardous weather conditions arise outside normal duty hours, consult the media outlets listed below.

During inclement weather announcements, media outlets will use one of the following codes to broadcast reporting instructions:

- Code 1 (Report 1 hour later than your normal schedule)
- Code 2 (Report 2 hours later than your normal schedule)
- Code 3 (Do not report)

As a minimum, PAO will provide official announcements to the following radio and television stations:

Radio Stations

- WCMS (FM 100.5, AM 1050)
- WTAR (AM 850.0)
- WFOG (FM 92.9)
- WNIS (AM 790.0)

TV Stations

- WAVY (Channel 10)
- WTKR (Channel 3)
- WVEC (Channel 13)

For a back up, we will place a recorded inclement weather message on 441-7606 and 7673.

If you have questions, it's your responsibility to contact your supervisor for clarification.

Knowing the district's foul weather policy may not make it any easier to contend with slick roads and traffic tie-ups, but it can relieve the confusion that sometimes accompanies such situations and may help you plan ahead to get through foul weather safely.

ANNEX Q
NORFOLK DISTRICT
INITIAL PRELIMINARY DAMAGE ASSESSMENT (IPDA)
STANDARD OPERATING PROCEDURES (SOP)

1. PURPOSE The purpose of this SOP is to provide guidance and details for inspecting and reporting coastal damage in the Tidewater VA area immediately following the occurrence of a severe storm or hurricane.

2. AUTHORITIES AND REFERENCES.

- a. Public Law 84-99 As Amended
- b. ER 500-1-1 Civil Emergency Management Program
- c. EP 500-1-1 Civil Emergency Management Program - Procedures
- d. DR 500-1-3 Hurricane Plan

3. SITUATION.

a. The Tidewater area, being a lowland coastal region, is vulnerable to high winds and flooding associated with hurricanes. Should a hurricane strike this area, debris and flooding would prevent travel to many areas. Therefore, it is important to have Initial Preliminary Damage Assessment (IPDA) teams pre-positioned at various locations in the Tidewater area prior to a hurricane landfall, to report initial damages to the Emergency Operations Center. These reports will assist in assessment of the Norfolk District operations, status of its employees, and status of the infrastructure of the Hampton Roads area, to be reported to higher headquarters, State of VA and FEMA.

b. Once a hurricane becomes a moderate to severe threat to the Tidewater region, Emergency Management personnel will begin Emergency Response and Recovery Office - Advance (ERRO-A) relocation procedures, in accordance with DR 500-1-3, and the IPDA teams will be activated. IPDA teams will also be activated for less severe hurricanes, when relocation of the ERRO-A element does not occur.

4. CONCEPT OF OPERATIONS.

a. The concept of operations is built upon the premise that five highly skilled IPDA teams, pre-positioned at various locations throughout Hampton Roads, can report **initial** damage of their respective areas faster and more accurate than the local governments.

b. Immediately after a hurricane passes and an overall assessment of the team member's community/area of responsibility has been made, IPDA team members will report damages to their Team Leader. Reports to the team leader will be made via 1) land-line telephone 2) cellular telephone, or 3) VHF radio. Priority should be given to land-line telephone, with cellular telephone as a back-up, and VHF radio if both means of telephones are inoperable. Once information is gathered from all team members, the Team Leaders will make an initial report to the IPDA Chief via land-line telephone, cellular telephone, or HF/VHF radio,

depending on conditions. The IPDA Chief will consolidate all information and report to the Waterfield Bldg. EOC (if operable). The IPDA Chief shall also provide reports to the ERRO-A (Richmond EOC) Communications Officer, or Duty Officer if Commo Officer is unavailable. Following the initial report to the EOC's, IPDA teams will proceed to areas that are historically prone to flooding, briefly document damages and take pictures (see Appendix A and Areas of Inspection Map).

NOTE: Communications contact will always be attempted in the following order: 1) Land-line telephone 2) Cellular telephone 3) VHF or HF Radio. HF Radio used by Net Control only.

NOTE: The Net Control Officer will serve as a back-up to the IPDA Chief. If contact cannot be made with the Team Leader or IPDA Chief, reports can be made to Net Control.

Appendix A IPDA PROCEDURES

1. When the National Weather Service posts watches and warnings for the arrival of a hurricane threatening the Hamptons Roads/Tidewater area, the Emergency Operations Center will implement procedures outlined in Annex F of the Norfolk District Hurricane Plan based on the location of the storm. This Annex outlines procedures for activation of the IPDA Team and reporting responsibilities immediately following the passage of the storm.

2. Upon Activation of the IPDA Team:

a. IPDA Team Members should notify their supervisors that they have been activated by the EOC.

b. Government four-wheel drive vehicles will be reserved for Team Leaders requesting them. A release letter for overnight use will be prepared for the Commander's signature and kept on file in the EOC (See sample Appendix E). These vehicles may be used to transport all Team Members to perform inspections as a group in lieu of using POVs.

c. Team Members will be assigned equipment specified in Annex D.

d. Team Leaders will gather their team for last minute instructions, to verify addresses and phone numbers, designate meeting locations and times, and reporting times and procedures. Areas of responsibility shall be divided up between team members to ensure full coverage of assigned area and to alleviate duplication of reporting. Inspections can also be made as a group - if this is the plan, an assigned post-storm meeting location must be established by all team members.

e. Damage estimates should be approximations. Do not establish value. Document damages on Data Sheets (see Appendix F) or in a report format. Types of damages to be reported include, but are not limited to, debris, garbage, bridges and roads damage, damage to public buildings (libraries, schools), beach erosion, utilities.

f. Photographs - Locations should be noted for reference to photographs. Undeveloped film turned into the EOC should be identified. Name should be written or taped on film container.

3. Team Duties:

a. Immediately after the storm passes, Team Members are to attempt land-line telephone contact with their respective Team Leader. If the land-line telephones are not in operation, then team members are to attempt communication with their team leader via cellular telephone, then VHF Radio. Team members should remain aware of surrounding conditions and continue to attempt contact with their Team Leaders. Photographs should be taken to document significant damages.

b. Immediately after the storm passes, Team Leaders are to attempt land-line telephone contact with the EOC (441-7575) and ERRO-A (Richmond EOC) to give a short verbal report on conditions and to check in. If the land-lines are not in operation, then Team Leaders are to attempt communication with the EOC's via cellular telephone and/or VHF Radio. If communication with Team Members fails, Team Leaders should start "windshield" surveys via

government four-wheel drive vehicle or POV in their assigned areas (see Appendix C and enclosed map). Team Leaders should remain aware of surrounding conditions and continue to attempt contact with their Team Members if they have not heard from them. Team Leaders are to give initial verbal reports to the IPDA Chief at 0930. IPDA Chief will then report team's consolidated information to the EOC(s). Team Members will provide more conclusive reports by 1230 noon to the IPDA Chief, who will report consolidated reports to the EOC(s). Photographs should be taken to document significant damages.

REPORT TIMES:

- 0900** Team Members provide Initial report to Team Leader.
0930 Team Leaders provide Initial report to IPDA Chief (Friberg).
 Team Leaders check in briefly with Waterfield Bldg EOC (if operational) and with ERRO-A (Richmond EOC) Communications Officer/Duty Officer.
 If contact with IPDA Chief is not possible, provide Initial report to Net Control.
0930 IPDA Chief will report consolidated information to the ERRO-A (Richmond EOC) Communications Officer/Duty Officer and the Norfolk District Waterfield Bldg EOC (if operational).
1200 Team Members should submit Final report to Team Leader
1230 Team Leaders should submit Final report to IPDA Chief.
 If contact with IPDA Chief is not possible, provide Final report to Net Control
1230 IPDA Chief will report consolidated information to the ERRO-A (Richmond EOC) Communications Officer or Duty Officer, and the Norfolk District Waterfield Bldg EOC (if operational).

EOC PHONE NUMBERS:

Norfolk District EOC:	757-441-7575 (Phone) 757-441-7833 (FAX) 757-434-3808 (Cellular - Van Houten)
ERRO-A (Richmond EOC) ERRO-A Duty Officer	(To be provided once established) 757-439-6240 (Cellular)

NOTE: If additional reports are required, Teams may be requested to perform further surveys at a later time.

c. Radio Checks will be conducted between all Team Members and Net Control at times noted below. See Appendix G for radio operating instructions.

NOTE: Net Control will report any critical information to the EOC(s) at the discretion of the Net Control Officer.

RADIO CHECKS

0830
1700

4. Completion of Inspections. Teams will make every effort to return to their regular duty stations one day after their initial preliminary inspections have started, unless further guidance is received from the EOC.

5. **Safety** should be considered at all times. If an evacuation order is given for residents of Hampton Roads, IPDA Team Members should consider evacuation.

Appendix B
INITIAL PRELIMINARY DAMAGE ASSESSMENT TEAMS

<u>AREA</u>	<u>TEAM MEMBERS</u>	<u>OFFICE PHONE (757)441-unless noted</u>	<u>HOME PHONE (757) unless noted</u>
IPDA Chief	Robert Sweitzer	7666	479-3071 Cell 434-7050
Zone 1 Sub-area A	Greg Culpepper (Leader) 4040 Woodland Dr Chesapeake 23321	7655	465-5440 Cell 876-2393
	Bo Taran 4308 Faigle Rd. Portsmouth 23703	7612	483-6569
	Melissa Nash 4006 Reese Drive South Portsmouth 23703	7489	483-6111 Cell 876-2383
	Deborah Massenburg 500 Barlow Dr Portsmouth 23707	7595	399-4430
	Holly Kidd 5049 Bennett's Pasture Rd Suffolk 23435	7535	686-0054 Cell 334-3514, 8002
	Gregg Williams 2029 Ames Cir Chesapeake 23321	7616	405-3436 Cell 617-2744
	Rory Brown 306 Robin Rd Portsmouth 23701	3866	488-3721 Cell 617-3415
Zone 1 Sub-area B	John Evans (Leader) 1321 Rodgers St Chesapeake 23324	7794	543-9101 Cell 868-5558 Alt Cell 757-573-4738
	Ray Williams 5305 Arapahoe Tr Virginia Beach, 23464	7665	479-2780
	Robert Sweitzer (IPDA Chief) 2177 Fort Belvoir Dr Virginia Beach 23464	7666	479-3071
	Tim Woolard 619 Broadwindsor Cres Chesapeake 23322	7561	482-9086 Cell 650-6785

<u>AREA</u>	<u>TEAM MEMBERS</u>	<u>OFFICE PHONE</u> (757)441-unless noted	<u>HOME PHONE</u> (757) unless noted
Zone 1 Sub-area C	Jerry Swean (Leader) 2941 Woodduck Dr Sandbridge 23456	7771	426-7295 Cell 749-6969
	Brian Rheinart 518 9 th St Virginia Beach	7768	425-6503
	Robert Berg 665 Coral Key Virginia Beach 23452	7793	486-3905 (Alt) 481-0267
	Nandy Perillo 5613 Shinfield Dr Virginia Beach 23464	7080	479-1002 Cell 403-0913
Zone 1 Sub-area D	Tom Friberg (Leader) 4808 Sheldon Dr Virginia Beach 23455	7645	460-1258 Cell 434-7050
	Brad Atkins 919 Jamestown Cres Norfolk 23508	7528	489-8566
	Marc Gutterman 1216 Westover Ave Norfolk 23507	7669	627-5239
	Randy Born 553 Spotswood Ave, #3 Norfolk 23517	7098	622-4862
	Matt Parks 818 W 49th St, Apt 1 Norfolk 23508	7214	489-0377 Cell 469-0468

<u>AREA</u>	<u>TEAM MEMBERS</u>	<u>OFFICE PHONE</u> (757)441-unless noted	<u>HOME PHONE</u> (757) unless noted
Zone 2 Sub-area A	Bill Prillaman (Leader) 40 Camelot Ct Newport News 23602	878-4072	599-4863 Cell 532-9391
	Pat Devereux 81 Gresham Cir Newport News 23608	878-5217	874-8118
	John Clark 619 Yorktown Rd Poquoson 23662	788-3239 Alt 225-4053	868-0960 Cell 869-0212
	Karrin Frankie 876 Monarda Ct Newport News 23608	484-1021	872-0690
	Guy Ervin 109 Victory Rd Grafton 23692	764-2941	898-5524
	Greg Steele 25 Jacobs Lane Newport News 23606	7589	599-8307

Appendix C
AREAS OF INSPECTION

Zone 1, Sub-area A- Western Hampton Roads bound by Hampton Roads on the north, Elizabeth River and Southern Branch of the Elizabeth River on the east, Dismal Swamp on the south, and the Nansemond River on the west.

This area includes the entire City of Portsmouth, the Deep Creek, Gilmerton, Bowers Hill, and Western Branch sections of the City of Chesapeake, and the northeastern and downtown sections of the City of Suffolk. Major transportation facilities include I-64, I-264, I-664, U. S. Route 17, U. S. Route 58, U. S. Route 13, U. S. Route 460, and Dismal Swamp Canal Locks at Deep Creek. Major military facilities include the Norfolk Naval Shipyard, U. S. Naval Hospital, and USCG Headquarters.

Zone 1, Sub-area B- Southern Hampton Roads bound by the Eastern Branch of the Elizabeth River on the north, Princess Anne, Salem, and Elbow Roads and the North Landing River on the east, the Northwest River on the south, and the Dismal Swamp Canal and Southern Branch of the Elizabeth River on the west.

This area includes the Berkley, Indian River, Greenbrier, and Great Bridge sections of the City of Chesapeake, the South Norfolk section of the City of Chesapeake, and the southern Kempsville, and Stumpy Lake sections of the City of Virginia Beach. Major transportation facilities include I-64, I-464, U. S. Route 17, U. S. Route 13, S. R. Route 168, the AIWW Locks and Canal, and the Dismal Swamp Canal. Major military facilities include Fentress Airfield and the Naval Security Group Northwest.

Zone 1, Sub-area C- Eastern Hampton Roads bound by the Chesapeake Bay on the north, Atlantic Ocean on the east, the Currituck Sound on the south, North Landing River, Salem, Princess Anne, and Baxter Roads, and the Western Branch of the Lynnhaven River on the west.

This area includes the major portion of the City of Virginia Beach including the Oceanfront and Sandbridge sections. Major transportation facilities include I-264, U. S. Route 58, and U. S. Route 60. Major military facilities include Fort Story, Dam Neck, and Oceana Airfield.

Zone 1, Sub-area D- Central Hampton Roads bound by the Chesapeake Bay on the north, the Western Branch of the Lynnhaven River and Baxter Road on the east, the Eastern Branch of the Elizabeth River on the south, and the Elizabeth River and Hampton Roads on the west.

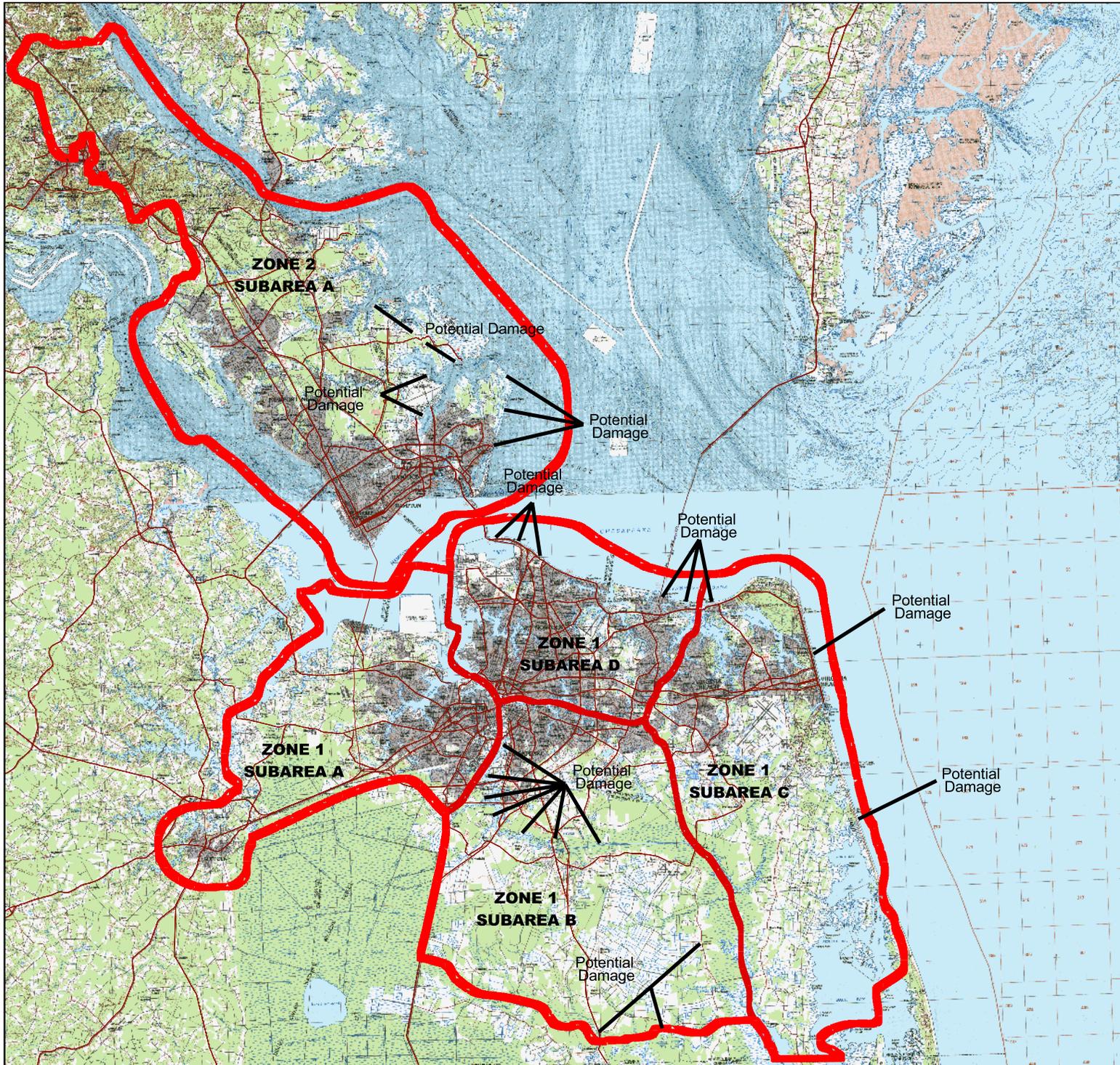
This area includes all of the City of Norfolk with the exception of Berkley and the western portions of the City of Virginia Beach including the Chesapeake Beach section. Major transportation facilities include both the Downtown and Midtown Tunnels, the Chesapeake Bay Bridge Tunnel, I-64, I-264, U. S. Route 13, U. S. Route 58, U. S. Route 60, and Norfolk International Airport. Major military facilities include the Little Creek Amphibious Base, Norfolk Naval Air Station, and Norfolk Naval Base.

Zone 2, Sub-area A- The Peninsula or Northern Hampton Roads bound by the York River to the north, Chesapeake Bay to the east, James River to the south, and the city of Williamsburg and James City County to the west.

This area includes, in their entirety, the cities of Hampton, Newport News, and Poquoson, and York County. Major transportation facilities include I-64, U. S. Route 17, U. S. Route 60, Patrick Henry Airport, Hampton Roads Bridge Tunnel, Monitor-Merrimac Bridge Tunnel, James River Bridge, and York River Bridge. Major military facilities include Fort Monroe, Fort Eustis, Langley Air Force Base, and U. S. Naval Weapons and Supply Centers.

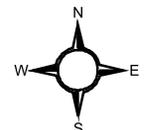
AREAS OF INSPECTION

Norfolk District
Army Corps of Engineers
August 14, 2002



Legend

-  Roads
- Zones**
-  Zones
-  Sub_Zones



2 0 2 4 Miles



Scale: 1" = 40,000'

Appendix D EQUIPMENT

Team Members will be assigned Emergency Supply Kits containing the following items:

- VHF Handheld Radio w/operating instructions
- 35mm Camera/Film
- Calculator
- First Aid Kit
- 100-ft Tape Measure
- Flashlight w/batteries
- Clipboard
- Various Stationery Items
- IPDA Handbook/Checklists
- Tidewater/Peninsula/VA Street Map Books

Appendix E
SAMPLE GOVERNMENT VEHICLE REQUEST FORM

CENAO-TS-EOC

1 August 2002

MEMORANDUM FOR Ch, Transportation and Supply Br, Logistics Management Ofc

SUBJECT: Use/Release of Government Vehicles

1. As an Emergency Operations member of the Initial Preliminary Damage Assessment Team, John Doe is hereby authorized to take a government vehicle overnight to his domicile for use in inspecting damages related to Hurricane FLOYD.
2. Questions may be directed to the Emergency Operations Center Duty Chief, at x7575.

DAVID L. HANSEN
COL, EN
Commanding

Appendix F
INITIAL PRELIMINARY DAMAGE ASSESSMENT CHECKLIST**LOCATION:**

<u>CATEGORIES</u>	<u>DAMAGE</u>				
	<u>N/A</u>	<u>None</u>	<u>Minor</u>	<u>Moderate</u>	<u>Severe</u>
1. Public Property					
2. Public Buildings					
3. Private Property					
4. Private Buildings					
5. Bridges & Roads					
6. Utilities					
7. Debris, Garbage					
8. Beaches					
9. Bulkheads					
10. Other					

NARRATIVE/DESCRIPTION:

SAMPLE IPDA REPORT**Initial Preliminary Damage Assessment Report****Prepared by** Greg Steele, Civil Engineer**Date** 08/28/98**Storm Event** Hurricane/Tropical Storm Bonnie

Area Examined The area bounded by Salem Road, Elbow Road, Indian River Road to Kempsville Road, Kempsville Road to Centerville Road, Centerville Road to Indian River Road, Indian River Road To Providence Road, Providence Road to Military Highway, Military Highway to Interstate 264. Neighborhoods examined include: Woodbridge Condominiums, Wyndamere, Glenwood Villas, Glenwood, Salem Woods, Rosemont Forest, Bellamy Manor, Indian Lakes, Haven Estates, Lake Christopher, Lake James, Brandon, Bent Tree, Cedar Hill, Avalon Hills, Woodstock, and Woodhaven. All areas were within the City of Virginia Beach. At 0830 I began my assessment of damage in the area of my residence. In general, debris was encountered almost everywhere from wind damage. Broken/uprooted trees were common, and I personally encountered 8 residences that were damaged from falling trees/limbs to varying degrees. Also I came across a location where a tree had fallen on 4 vehicles and caused sever damage to each. Exposed plywood on rooftops was common, as well as missing siding and trim on many residences.

Below is a listing of photographs that I took during my assessment.

- Photo #1 – Picture of fallen trees on Eagle Rock Road at Honey Bee Golf Course
- Photo #2 – Picture of fallen trees on Eagle Rock Road at Honey Bee Golf Course
- Photo #3 – Picture of fallen trees on Eagle Rock Road at Honey Bee Golf Course
- Photo #4 – Picture of fallen trees on Eagle Rock Road at Honey Bee Golf Course
- Photo #5 – Picture of damage to house (Eagle Ridge Court) that had a tree limb fall on the roof over garage
- Photo #6 – Picture of house (2213 Eagle Ridge Court) who had a snapped tree fall onto the corner of the house, causing severe damage to the structure of the corner of the house. Also, another tree fell from behind the house and damaged fence.
- Photo #7 – Picture of same house as Photo #6
- Photo #8 – Picture of same house as Photo #6
- Photo #9 – Picture of same house as Photo #6
- Photo #10 – Picture of house (2212 Eagle Ridge Court) that had a tree fall into the back attic space of the house
- Photo #11 – Picture of same house as Photo #10
- Photo #12 – Picture of tree in the attic space of the house in Photo #10
- Photo #13 – Picture of two condo units (5193 and 5177 K Thatcher Way) who had a tree fall across the corner, damaging the deck and side of the units.
- Photo #14 – Picture of four vehicles damaged by a fallen tree
- Photo #15 – Another picture of the four vehicles and the fallen tree
- Photo #16 – Picture of a tree that has fallen across Ludlow Drive
- Photo #17 – Picture of a house which had a tree fall into it lengthwise, through the attic and into the second floor living space, at the corner of Boston Court and Boxford Road.
- Photo #18 – Same house as in Photo #17

Photo #19 – Photo of a tree that fell across Dylan Rd at Albright Road

Photo #20 – Photo of a collapsed Chimney due to a fallen tree on Brandon Lane

Photo #21 – Photo of roof damaged caused by a fallen limb on 6233 Auburn Lane

Having completed my initial assessment at 1130, I returned to the Norfolk District.

Greg Steele
Planning Resources Branch

Appendix G
VHF RADIO OPERATIONS AND PROCEDURES

1. This annex defines the required back-up communications operations used with the VHF radio system. The radio coverage area is based on the map Area of Inspections, Appendix C. There are four repeater sites in the areas of inspection:

A. **Area One and/or Channel One** is located in Norfolk. Location of repeater is the Waterfield Bldg. The range of the radio is approximately 5 miles. The range may vary due to location and environment of the handheld radio.

B. **Area Two and/or Channel Two** is located in Virginia Beach. The location of the repeater is at the Breakers Hotel, 17th and Atlantic Ave. The range is approximately 5 miles, plus or minus your environment.

C. **Area Three and/or Channel Three** is located in Hampton. The location of the repeater is at the Gantry, Langley/NASA. The range is approximately 10 miles, plus or minus your environment.

D. **Area Four and/or Channel Four** is located in Chesapeake. The location of the repeater is at the Great Bridge Locks. The range is approximately 8 miles plus or minus your environment.

2. NOTE: Always try to find a clear path for radio signals to reach the repeaters. The effective range of your handheld radio is directly related to your location and environment. Distance, buildings, wooded areas, metallic structures all degrade performance. Moving away from objects and reaching higher elevations increase your radio clarity, both receiving and transmitting.

NOTE: The mobile or roof-top antenna system will give you the best transmitting and receiving quality for operations.

3. Reporting should be performed in your designated area or channel of operation (your physical location).

* Use of the VHF Radio should be the last option for reporting purposes. Reporting should be made in the following priority:

- 1) Land-line telephone
- 2) Cellular telephone
- 3) VHF Radio.

* All reports should be passed on to your Team Leader. When contact cannot be established with your Team Leader, information may be passed to the Net Control Officer.

4. A list of Tidewater Net Control Officers is provided below:

<u>Net Control Officer</u>	<u>Location/CH#</u>	<u>Telephone Nos.</u>
Glenn Seay	Churchland,CH1,CH3	686-3449
John Evans	S. Norfolk,CH1,CH4	543-9101
Ray Williams	W. Kempsville, CH2,CH4	479-2780

5. Telephone circuits are available at each repeater (if operational). To make a call, first push the orange button for DTMF operation. Push the # key, then the * key, you should hear the dial tone. You then simply dial the number to send. To disconnect or end the call push the # key twice.

NOTE: Norfolk/CH1 and Langley/CH3, you must dial a 9 before you dial the number.

6. Making telephone calls to radios in the field - simply call the repeater number and it will access the radios in that area. Repeater Numbers below:

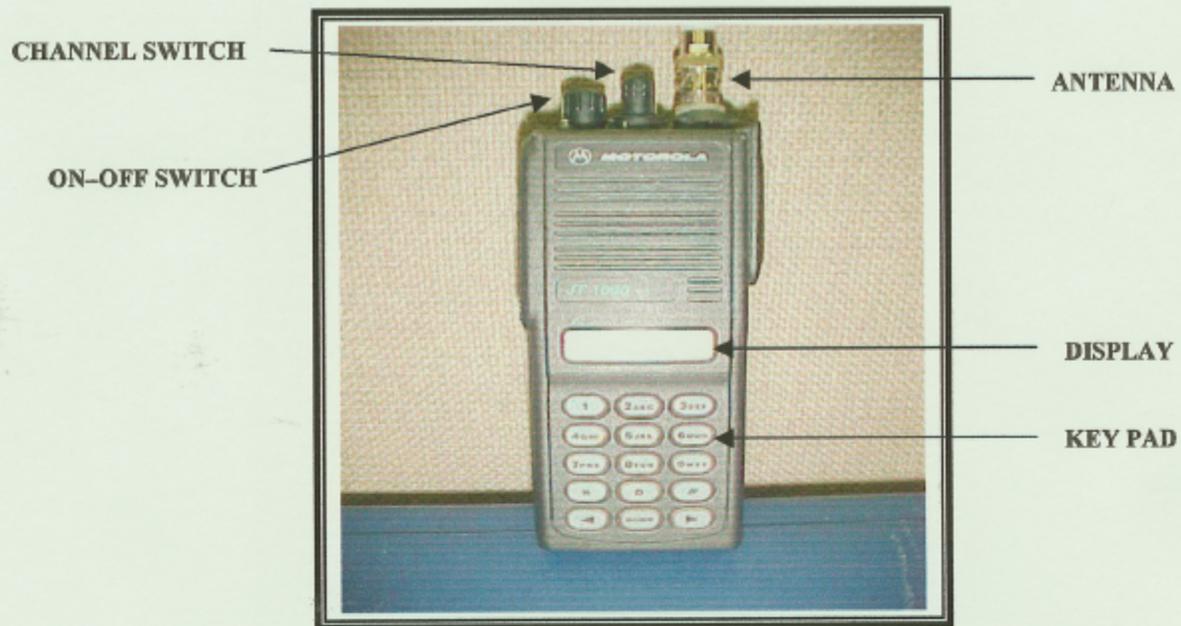
Norfolk Repeater	441-6259
Virginia Beach Repeater	422-9104
Langley Repeater	864-6829
Great Bridge Repeater	547-3539

7. The following is a list of radio channels to be used in your area of operation:

CH-1	Norfolk Repeater
CH-2	Virginia Beach Repeater
CH-3	Langley Repeater
CH-4	Great Bridge Repeater
CH-5	Weather Channel
CH-6	Simplex Working CH
CH-7	Simplex Working CH
CH-8	Simplex Working CH

8. Operating Instructions for the Motorola JT-1000 VHF Handheld Radio is shown on the following pages.

JT-1000 – The Radio's Front Panel



Front Panel Control



Turn unit **ON** with the left button turned clockwise.

Unit will SELF-TEST.

Unit will tune to the channel selector channel.

- **NOTE:**
1. A,B,C Switch is has NOT been configured on this radio
 2. The Ø0 Ring switch must be in the 0 position at all times

The Channel Select Mode

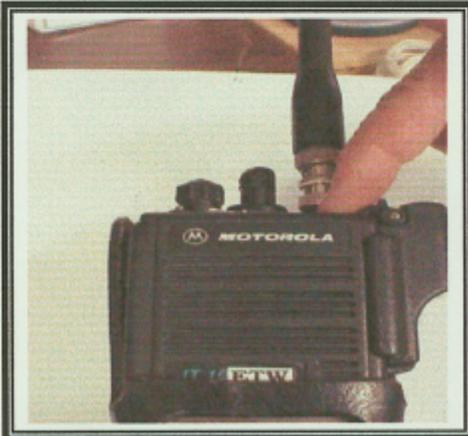


Selecting channels: Using the center knob, rotate knob clockwise or counterclockwise to select one of the 16 channels.

CHANNEL LISTING

CH-1 Norfolk Repeater
 CH-2 VA Beach Repeater
 CH-3 Langley Repeater
 CH-4 Chesapeake Repeater
 CH-5 NOAA Weather (162.55 MHz)
 CH-6 Corps CH-1 Simplex
 CH-7 Corps CH-2 Simplex (Primary)
 CH-8 Corps CH-3 Simplex

The Telephone Mode



1. Push the Orange Button for DTMF operation.
2. Push # * for Dial Tone then dial number.
NOTE: for Norfolk & Langley you must push 9 to get outside line and then the number.
3. To Disconnect: Press # #
4. Repeater Telephone Numbers are:

Norfolk:	441-6259
Virginia Beach:	422-9104
Langley:	864-6829
Chesapeake:	547-3539

The Antenna Select Mode



To Remove: Turning the BNC connector on the Rubber Duck antenna counterclockwise and slide off.

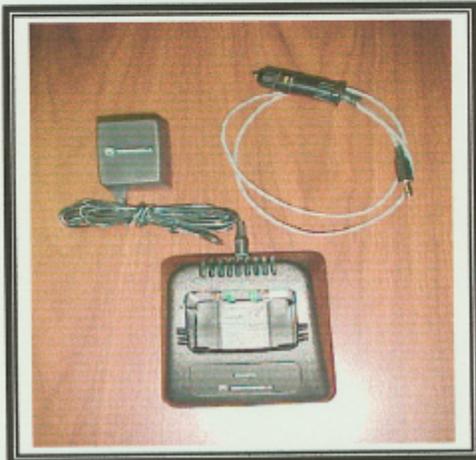
To Replace: Attach the coaxial cable or antenna to the connector and rotate the connector clockwise to make secure. A mobile antenna system could be installed in just a few seconds by using this connection.

Accessories



The accessories for the JT-1000 Radio are shown in the adjacent picture.

The Charging System



The charging system includes the following:

1. Radio with battery
2. Charger and 120VAC wall power transformer
3. 12VDC Cigarette lighter adapter to charger (Mobile Charging).



The radio can be charged by placing the battery into the charger ensuring that the grooves on the side of the battery are engaged over the ones on the drop-in charger, then plugging into a 120V AC wall outlet. The battery can be charged with or without the radio being attached.

Mobile Antenna System



The handheld radio's transmit distance can be greatly increased with the addition of an external antenna (shown left). Place the antenna on the roof of the automobile (Magnetic Mount Antenna) and run the coaxial cable inside the vehicle preventing the coaxial cable from being crimped or crushed. Remove the Rubber Duck antenna (placing in safe place for later use) and attaching the BNC connector of the external antenna to the handheld.

ANNEX R
DISTRIBUTION LIST

<u>AGENCY</u>	<u># OF COPIES</u>
<u>U.S. Army Engineer District, Norfolk</u>	
Commander	1
Deputy Commander	1
Deputy Commander/PPMD	1
Programs & Project Mgmt Division	1
Civil Br	1
Military Br	1
Environmental Br	1
Info Mgmt Ofc	1
Office of Counsel	1
Resource Management Ofc	1
Finance & Acct Br	1
Mgmt, Mpwr, Budget Br	1
Contracting Division	1
Civilian Personnel Advisory Ctr	1
Logistics Management Ofc	1
Public Affairs Ofc	1
Safety & Occupational Health Ofc	1
Equal Employment Opportunity Ofc	1
Internal Review Ofc	1
Security & Law Enforcement Ofc	1
Technical Services Div	2
Emergency Management	50
Operations Br	1
Gathright Dam Project Ofc	1
Norfolk Harbor/Craney Island Group	1
Operations Support Sec	1
Technical Support Sec	1
Navigation Support & Survey Sec	1
Southwestern Virginia Area Ofc	1
Central Virginia Area Ofc	1
Virginia Beach Resident Ofc	1
Langley Resident Ofc	1
Ft. Eustis Resident Ofc	1
Engineering Br	1
Civil Works Technical Support Sec	1
Planning Br	1
Construction Br	1
Regulatory Br	1
Real Estate Br	1
Library	1
IPDA Personnel/Net Control Ofc	25
Predesignated EOC Personnel	52
Predesignated ERRO-A Personnel	23

Note: DR 500-1-3 will be posted in Adobe format on the NAO Employees Only secure website. The plan may be printed from this location.

<u>AGENCY</u>	<u># OF COPIES</u>
Headquarters, U.S. Army Corps of Engineers, Civil Emergency Br	1
U.S. Army Engineer Division, North Atlantic	1
U.S. Army Engineer District, New England	1
U.S. Army Engineer District, Baltimore	1
U.S. Army Engineer District, New York	1
U.S. Army Engineer District, Philadelphia	1
U.S. Army Engineer District, Wilmington	1
<u>Federal Emergency Management Agency</u>	
Regional Director, Region III	1
<u>Commonwealth of Virginia, Dept of Emergency Management</u>	
Emergency Operations Center, Richmond	1
Regional Coordinator (Wallace Twigg)	1