



HAZARD-SPECIFIC ANNEX D FLOODING

Primary Agency: DPW, Mayors Council, GFD, GPD
Supporting Agency: OCD, ARC, DOE, GEPA

I. Nature of the Hazard

Flooding occurs when normally dry land is inundated with water (or flowing mud). Flooding may result from: bodies of water overflowing their banks, including artificial ones like rapid accumulation of runoff or surface water; typhoon-caused storm surges or earthquake-caused tsunamis; or erosion of a shoreline. (Coastal flooding and erosion are not treated in this attachment.) Typically, the two parameters of most concern for flood planning are suddenness of onset--in the case of flash floods; and flood elevation in relation to topography and structures. Other factors contributing to damage are the velocity or "energy" of moving water, the debris carried by the water, and extended duration of flood conditions. Flooding can happen at any time of the year, but predominates during the rainy season between June and December.

A. Risk Area Guam is at risk from flooding. Apart from a rainy climate, local risk factors, usually present in combination, include:

- *Rivers, Streams, and Drainageways:* These are bodies of water often subject to overflowing. The size of the stream can be misleading; small streams that receive substantial rain, locally or upstream, can overflow their banks. High-velocity, low elevation flooding can be dangerous and damaging. Six inches of moving water can knock a person off his or her feet; 12 inches of water flowing at 10 miles per hour carries the force of a 100 mile-per-hour wind, although the force would be distributed differently on obstacles.
- *Steep Topography:* Steep topography increases runoff water velocity and debris flow. Lack of vegetation to slow runoff is another factor.

II. Purpose

The purpose of this annex is to provide an outline of activities that would be implemented in response to a Flooding emergency. This annex establishes a format that identifies actions to be taken before, during and immediately following the flood emergency.

III. Situation and Assumptions

A. Situation

Most often flooding occurs at the onset of a Tropical storm or other cyclonic disturbance. Intensification from Tropical Depression to Typhoon averages approximately 3 days; however, there are cases of such intensification occurring in only 30 hours. It is this presumption that preparedness and response procedures are based. Experience has taught us that intensification from cyclonic disturbances can occur with little to no advance notice.

B. Assumptions

The greatest threat of natural disaster and the most predictable are cyclonic disturbances. The vulnerability to the people and property in Guam when flooding occurs is mainly in the low-lying areas and along the coastal regions where there is a confluence of a watercourse and shoreline.

The National Flood Insurance Program has produced a Flood Insurance Study identifying areas where the probability of flooding is greatest. With this in mind, the private or private sector should be aware of areas subject to flooding and take action to prevent and mitigate the losses due to flooding.

IV. Concept of Operations

When a tsunami alert is issued, the Office of Civil Defense (OCD) will notify the Mayors Council and the Guam Police Department (GPD) so that residents can be notified and evacuated to pre-identified shelters. The Emergency Operations Center (EOC) will be activated to coordinate response actions and issue warning to residents via the *City Watch* notification system.

With the implementation of the *City Watch* notification system, the Mayors Council will notify Village Mayors to coordinate notification and evacuation efforts in the identified villages. The lead response agencies, the Guam Police and Fire Departments will coordinate protection and evacuation actions with the Village Mayors.

- The Office of Civil Defense will activate the Response Agencies required to support the primary agencies to establish a Unified Command structure at the EOC.

V. Organization and Assignment of Responsibilities

A. Organization

Response to a localized flooding event will be conducted using the Incident Command System. The Incident Commander will establish an Incident Command Post to conduct activities on site and coordinate overall response efforts with the Office of Civil Defense. When and if conditions worsen generating a general condition of flooding, the Incident Command structure will transition to the Unified Command structure at the EOC.

Upon activation, the Response Agencies will report to the EOC to receive initial instructions and *in-brief on the situation from the EOC Director. The RAC will implement EOC operating procedures coordinating with Information & Planning section to use designated reporting forms, Plans of Action and briefing procedures. The EOC Director will then coordinate all agency tasking and action items.*

B. Assignment of Responsibilities

The activities required to address all emergencies or disasters have been identified as either primary or support functions. The assignment of Response Agency functions has been identified in the Functional Annex Section. Agencies activated as part of the Unified Command include, but will not be limited to:

- Office of Civil Defense
- Guam Police and Fire Departments
- Guam Department of Public Works
- Guam Power Authority
- Guam Water Authority
- Guam Environmental Protection Agency
- Department of Education
- American Red Cross
- Guam National Guard
- Mayors Council
- Department of Administration
- General Services Administration

VI. Administration and Logistics

Upon the activation of Response Agencies, the Department of Administration (DOA) will manage and track all emergency/disaster related expenses. When activated the Administration and Logistics function of the Unified Command System will be initiated.

DOA will establish emergency accounts for all response agencies to accommodate pre-event preparedness expenditures and activities up to deactivation of the response effort following the emergency or disaster.

The General Services Administration (GSA) will provide the logistics to source, acquire and distribute all response related materials and resources. Along with the Office of Civil Defense, GSA will receive, inventory and manage all response related resources and request for materials by establishing areas to collect, stage and distribute all requests for response materials and resources.

VII. Plan Development and Maintenance

The Administrator of the Office of Civil Defense will be responsible for the maintenance and revision of this annex

The Office of Civil Defense will review and exercise this Annex on annually. Updates and revisions to the Annex will be made accordingly.

An exercise will be conducted in conjunction with pre-typhoon season exercises in the 4th quarter as a part of Response Agency readiness activities.

VIII. Direction and Control

All issues of policy, coordination of operations and the direction and control of preparation and response efforts rests with the Office of Civil Defense. All Response Agencies will, by their activation, coordinate activities within the structure and organization of the Operations Section.

IX. Authorities and References

A. Authorities

This plan is issued under the authority of, and in accordance with the provisions of the Guam Civil Defense Act of 1951, and supersedes the Territorial Emergency Plan of October 1978. References governing the enactment and implementation of this are:

- The Organic Act of Guam, as amended and related statutes, Chapter 8A-Guam-Title-48 U.S.C.A. 1422
- Public Law 93-288, Disaster Relief Act of 1974
- Guam Government Code 8501-8515, (Public Law 1-21)
- Guam Government Code 62020
- Executive Order of the Governor 91-09, dated March 25, 1991.
- Guam Government Code 40400

B. References

The following publications/planning documents were utilized in formulating this Plan:

- The Federal Response Plan (9230.1 PL, FEMA)
- Guide for All-Hazard Emergency Operations Planning (SLG 101, FEMA)

X. *Appendices*

- A. Functional Annex E - Communication & Warning
- B. Functional Annex K - Sheltering & Mass Care
- C. Functional Annex G — Evacuation Procedures, Evacuation Routes

XI. *Tabs*

- A. Flooding Checklist

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Tsunami evacuation/staging areas

Please note: If the roads leading to your staging area are blocked with fallen debris or power poles, seek higher ground within your village.

- Agana (downtown) low-lying areas
Head to Agana Heights (Government Hose Overflow Parking Lot)
- East Agana low-lying areas
Head to Tiyán (Guam Police Headquarters) using Route 8
- Agat low-lying areas
 - From Namu River (Old Agat) to the Old Cemetery head to Southern High School.
 - From Old Cemetery to Fanili area head to Oceanview Middle School.
 - Umang area head to Umang Road (inland)
 - Pagachao area head to Mao Drive (Pagachao Subdivision)
 - From Nimitz Beach Park to Talayac head to Upper Santa Ana (Transfer Station)
- Anigua low-lying areas Head to Agana Heights (Government Hose Overflow Parking Lot) using Route 7
- Asan and Maina low-lying areas
Head to Nimitz Hill (Baseball Field) using Route 6
- Inarajan low-lying areas
 - From Lada through Inarajan Pool head to Ija Subdivision
 - From Ajayan Point through Lada head to UOG Farm
 - Village Area head to Inarajan /Elementary School
 - Chagami and Chagamin Lagu area head to Southern Regional Public Health Center
- Merizo low-lying areas
 - From Chalan Pedro Tainatongo through Chalan Quinene head to Chalan Jesus Quinene
 - From Chalan Quinene to Chalan J. A. Cruz head to Merizo Elementary/
Community Center

- From Chalan J. A. Cruz to Bile Bay head to Fort Soledad
- Piti low-lying areas
Head to Top O The Mar parking lot (Route 6)
- Ordot/Chalan Paga low-lying areas
Pago Bay head to Ordot/Chalan Paga Community Center or M.U. Lujan Elementary School in Yona
- Talofoto low-lying area
 - From Togcha Cemetery to Beja Road head to Windward Hills Golf Course area using Route 17
 - From Beja Road to Talofoto Bay (surf area) head to Notre Dame School using Route 4A
- Tamuning/Tumon low-lying areas
 - From Alupang area through oka Point head to ITC Building or U.S. Postal area (Route 1,14,30, & 30A)
 - From Ypao Point to Ypao Beach head to St. Anthony Church
 - From Ypao Beach to Fujita Hotel head to JFK High School (Route 14A)
 - From Fujita Hotel through Gun Beach head to Pia Marine (Pale San Vitores)
- Umatac low-lying areas
 - From Toguan through Sanchez elementary School head to Fort Soledad area.
 - From Sanchez Elementary School through Castizo area head to I Memorias Para I Laahita Vista Points.