

## PREFACE TO 1985 PLAN

Within the last fifteen (15) years Government has been actively involved with the monitoring of natural disasters and the means of warning and protection against them. This involvement has now increased and has promoted the preparing of a National Disaster Preparedness Plan.

Grenada, Carriacou and Petite Martinique always made the boast of being outside of the hurricane belt. However, the nation was shocked to reality on 22<sup>nd</sup> September 1955, by Hurricane Janet, which will long be remembered. Recorded in our history also are the Great Floods of 1921 and 1938.

Most recent are the man-made disasters of October 1983, and several motor accidents including the most recent of May 1985.

Earthquakes including tremors as a result of volcanic activity are only one of other types of disasters that can affect this country, as we were reminded recently by the unusual rumblings of Mt. St. Catherine.

It is with these considerations foremost in one's mind that this manual is compiled. It is a working document intended to guide activity in the event of a disaster. It comprises components of disaster preparedness and relief coordinated by the Office of the Prime Minister along with a working committee of officials from the Ministries of Health, Education, Construction, the Police, Fire and Coast Guard Services and the Red Cross Society. It is ably assisted by Mr. Roy Ward, Consultant of the Pan Caribbean Disaster Preparedness and Protection Project/UNDO.

The management of a disaster is beyond question an inter-sector activity. Co-operative action is essential. To maximise the effect of such action each sector must be prepared to undertake at its highest level of performance the functional role designated by its terms of reference.

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## INTRODUCTION

The countries and nations of the Earth share many concerns and responsibilities for their respective populations. One such mutual concern and responsibility is the effect of a disaster, be it domestic, civil or natural in occurrence. It is also necessary for the country to be aware of the types of disasters that affect the country. Once these have been identified, adequate protective preventative mechanisms can be instituted. This protective mechanism must be augmented by thorough preparedness and preventative planning. All national organisations must participate in developing a preparedness and preventative National Plan by first identify their existing emergency services, which are established for normal circumstances.

*Health Service, Fire and Rescue services, Police and Para-Military Services, the Cost Guard and the Voluntary Organisations*

Under normal circumstances each of these agencies has specific functions and defined rules of operation. During national emergencies, these agencies will fall under the control of the National Emergency Organisation. This will of necessity require a new managerial approach to the emergency situation and it is against this background that the 1985 National Plan amendments allow a system, which is best suited to the needs of the country and its people. It also allows for the

introduction of a new management system, which has created the components required for effective deployment of all emergency services, either on a sectoral or national basis.

The plan provides for the following:

### Pre-disaster

- The carrying out of preparedness exercise
- Implementation of a national public awareness programme
- The development of a comprehensive disaster preparedness training programme in all levels of disaster management.
- The monitoring of relief supplies
- Detailing of evacuation plans, identification of Emergency Shelters and personnel
- Full examination of relevant laws
- The re-development of the District Organisation
- The establishment of the following management committees:
  - Public Information and Education
  - Damage assessment
  - Emergency Works & Transport
  - Supplies Management
  - Emergency Communications
  - Shelter Management
  - National Response Team (Oil Spill)
  - Earthquake and landslide Management

\*The plan will also provide for the complete restructuring of the National Emergency Operations Center and the establishment of the District Emergency Operations Center.

The plan also provides the post disaster management phase to include:

- Emergency Transport
- Evacuation, house repair and house relocation
- Pumping off of flood waters and fire control
- Restoration of essential services
- Examination of public health Hazards

- Erection of alternatives shelters
- Collection of damage assessment information and the presentation of financial estimates
- Co-ordination of international and regional offers of assistance
- Conclusion

By expressing the desire to re-examine the Grenada National Plan, the Government and people have charged the National Organisation with the following dual responsibility.

(a) Ensuring that the populace is always in a stated of preparedness. This can be referred to include:

### **Knowledge of First Aid**

Knowledge of possible personnel and domestic emergencies, e.g. house fires, drowning, automobiles accidents and sickness, hurricane preparation techniques, hurricane shelters, identification of shelter personnel and the correct interpretation of warning bulletins.

It is charged with the responsibility of ensuring that directives issued by the government of Grenada are carried out and that those agencies designated specific duties and functions are performed at peak capacity and with maximum efficiency.

The role of the Grenada National Emergency Relief Organisation should be viewed as the "life blood" in any recovery programme. Its first function is one of co-ordination of all national services. Its powers are usually defined by the respective governments, but its responsibility is first to the country ensuring that adequate protective mechanism are in place.

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## CHAPTER 1

### **DISASTER PREPAREDNESS**

#### 1.1

Disaster Preparedness means preparing the community to react promptly to save lives and protect property if it is threatened or hit by a disaster or major emergency of any kind. In order to do this, planning must be done before there is even the threat of an emergency. This involves the assignment of responsibilities, classification and cataloguing of resources, training, practice drills and evaluation of experiences.

The role of the National Emergency Organisation must not be seen simply as that of rendering "help after the storm or eruption". Instead, its role is one of activating the community on a country wide basis to deal with any type of disaster. The function of the National Emergency Organisation with respect to emergencies can conveniently, be divided into five categories :

- **Informing** - the development and dissemination of information which will enhance the capability of the individual or the private organisation to cope with emergencies, to get help when needed.

- **Warning** - the analysis and forecasting of the nature of potential emergencies and the development and operation of systems designed to maximize warning time and precision for the benefit of both victims and helpers
- **Co-ordination** - the development of systems to enable resources to be effectively applied to emergencies.
- **Providing** - the provision and maintenance, when necessary, of extra-ordinary resources as well as the diversion of normal resources to meet emergency needs.
- **Evaluating** - the review of the performance of the Organisation with a view to its improvement.

Disaster Preparedness is a continuing exercise - it is a year round pre-occupation not only for members of the National Emergency Organisation, but for every citizen. Government agencies and private organisation alike are required to prepare their own internal disaster plans and these must be reviewed every year in order that they be kept up-to-date.

It is, therefore the responsibility of every citizen to become familiar with the National Emergency Plan and to be so versed in the roles which he/she is expected to play in the event of a disaster that, should action be necessary, the response would be instinctively orderly rather than merely a panic-stricken reaction. Everyone must see himself as a disaster worker.

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## 1.2

### **Types of Disaster**

This document not only concentrates on procedures to be followed in the event of a hurricane, but also identifies measures to be taken in the event of other disasters that are likely to threaten Grenada. Disasters can be divided into two categories :

#### **Natural**

hurricanes, fires, earthquakes, landslides, floods, droughts, tidal waves, storm surges, volcanic eruptions

#### **Man-made**

pollution, power failure, civil strife, epidemic, invasion, shipwreck, strikes, air crash, oil spills, explosion, nuclear accidents or spills, construction failures, major road accidents, hazardous material spills, mass poisoning, toxic chemical spills

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## 1.3

### **Hurricanes**

The official hurricane season in the Gulf of Mexico, the Caribbean Sea and the North Atlantic Ocean runs from 1<sup>st</sup> June to 30<sup>th</sup> November. However, the record shows that hurricanes have occurred outside of this period. It is important that the public be well advised of precautions to be taken before the actual hurricane season as well as those to be taken during the occurrence of a hurricane and in the aftermath of any such disaster.

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## 1.4

### **Consequences of Disaster**

loss of life, personal injury, hopelessness, physical damage to property, impact on social and economic development, impact on social and political organisations

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## CHAPTER 2

### **NATIONAL DISASTER PLAN**

## 2.1

The plan involves the mobilisation of human and material resources of the country in planning, training and managing the various aspects of a disaster or major emergency in order to return the country to a state of normality as quickly as possible. It includes:

- (a) the establishment of the National Emergency Organisation, the structure of the various emergency communities, the role and functions of Government Ministries and key departments, Public Utilities, Statutory bodies, non-governmental and other voluntary organisations.
  - (b) classification and cataloguing of resources at all levels.
  - (c) the role and functions of all agencies before, during and after a disaster.
  - (d) the emergency telecommunications network.
  - (e) the assessment of losses.
  - (f) the co-ordination between the various committees within the operation.
  - (g) the post-disaster relief, and rehabilitation mechanism.
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## 2.2

### **Pre-disaster Planning**

The main function of the National Emergency Organisation is to ensure that the country is in a state of preparedness at all times to deal effectively with any disaster which may occur. Its areas of planning include:

- Collaboration with the United Nations Disaster Relief Organisation (UNDRO) and similar International and Regional bodies.
- Arrangements for relief aircraft and ships, including customs and visa clearance for relief supplies and personnel.
- Storage and control of reserve equipment, fuel, drugs medical equipment, food, radios and other relief supplies.
- Public information and press briefings.

- Warning systems, warning dissemination, responsibility and control of broadcasting.
- Evacuation plans, shelter and refuge areas, including promulgation of the plans.
- Transport and equipment requirements.
- Direction of labour.
- Entry control of non-essential visitors.
- Anticipatory orders under the Emergency Powers Act.
- Post-disaster reconnaissance and reports.
- Post-disaster demolition and repair.

The successful implementation of the National Disaster Plan depends on public awareness of the disasters which are likely to affect the State and the roles which everyone is expected to play in the event of the country being hit by a disaster.

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## CHAPTER 3

The Organisation's general direction control and the development of policy will reside with the Honorable Prime Minister of Grenada.

### 3.1

The Organisation Structure has been developed to ensure the effective functioning of the National Plan.

### 3.2

#### **National Emergency Advisory Council**

Membership is as follows:

- Honourable Prime Minister - Chairman
- Cabinet Secretary - I
- Permanent Secretary, Office of the Prime Minister - Deputy Chairman III
- Chief Medical Officer, Ministry of Health
- Chief Technical Officer, Ministry of Communication & Works
- Permanent Secretary, Ministry of Finance
- Chief Government Information Officer
- Chief Engineer, Ministry of Communication & Works
- Commissioner of Police

- Senior Officer, Grenada Coast Guard
- Chief Meteorologist, Point Saline International Airport
- Representative, Grenada Ports Authority
- Representative, National Water & Sewage Authority
- Representative, Cable & Wireless
- Representative, Grenada Red Cross Society
- Representative, Grenada Chamber of Commerce
- Representative, Grenada Council of Churches
- Representative, Voluntary Organisations
- Representative, Agricultural & Farming Community of Grenada

The National Disaster Co-ordinator will be the Secretary to the Advisory Council and will attend, either in person or by proxy, meetings of all Management Committees established by the Advisory Council. The Co-ordinator will also be responsible for the administrative secretariat as established by the Government of Grenada.

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## 3.2

### **DUTIES AND RESPONSIBILITIES**

#### **National Emergency Advisory Council**

The following duties and responsibilities have been developed for the Advisory Council:

- (a) To ensure that all disasters and emergency preparedness means are adequate.
- (b) To mobilise, direct and co-ordinate response mechanisms for all disasters and emergency situations
- (c) To promote preventative mechanisms and activities and rapid response techniques by all organisations and agencies with disaster functions or services.
- (d) To promote preventative mechanisms and activities by all major response agencies - Police, Fire, Health Services etc.
- (e) To prepare in consultation with the Cabinet, guidelines and administrative policy for all sections of the National Organisation.
- (f) To acquire and disseminate adequate public information and to promote and approve educational and training activities on emergency situations.

The NEAC shall meet at least once per month during the hurricane season, and as necessary during cases of emergency.

**All correspondence concerning the Organisation should be addressed to:**

The National Disaster Co-ordinator,

National Emergency Relief Organisation,  
Fort Frederick,  
St. George's,  
Grenada

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### 3.3

#### **Management Sub-Committees**

Public Information and Education  
Damage Assessment (Statistics)  
Transport and Road Clearance  
Shelters and Shelter Administration  
Health Services  
Emergency Telecommunication  
Emergency Supplies - Food and General Supplies  
Public Utilities  
Rehabilitation and Reconstruction  
Search and Rescue - Land and Sea  
Welfare Services  
Voluntary Service  
Earthquake and Landslides  
Marine Pollution and Oil Spills  
Hazardous Materials and Toxic wastes

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### 3.4

#### **Management Sub-Committees Membership**

The membership of the sub-committees include:

##### **Public Information and Education**

- Chief Government Information Officer - Chairman
- Chief Education Officer or Nominee
- Chief Community Development & Social Extension Officer
- Chief Medical Officer or Nominee
- Manager, Grenada Broadcasting Corporation
- Manager, Spice Capitol Radio
- Manager, YSFM
- Representative, Grenada Red Cross Society
- Representative, Voluntary Organisations
- Senior Meteorologist

##### **Damage Assessment (Statistics)**

- Director of Budget and Planning
- Representative, Ministry of Agriculture
- Representative, Ministry of Health
- Representative, Ministry of Education - (shelters)

- Representative, Public Works - Public Utilities
- Representative, Grenada Housing Authority
- Representative, Ministry of Finance

### **Transport and Road Clearance**

- Chief Technical Officer, Ministry of Communications & Works - Chairman
- Manager, Grenada Port Authority
- Representative, Office of the Commissioner of Police
- Representative, Grenada Taxi Association

### **Emergency Shelters - Shelter Administration**

- Chief Educational Officer, Chairman
- Representative, Ministry of Communication & Works- Technical Division
- Representative, Ministry of Health - Public Health
- Representative, Grenada Housing Authority
- Representative, Grenada Red Cross Society
- Representative, Grenada Conference of Churches
- Representative, Grenada Voluntary Organisations
- Senior Education Officer, Chief Shelters Warden

### **Health Services**

- Permanent Secretary, Ministry of Health - Chairman
- Chief Medical Officer, Deputy Chairman
- Chief Public Health Inspector (Environmental Health)
- Hospital Administrator
- Principal Nursing Officer
- Medical Storekeeper (Supplies requisition and distribution)
- Representative, Grenada Red Cross Society
- Representative, Grenada St. John's Ambulance Brigade
- Representative, Grenada Chamber of Commerce (Pharmacy Group)

### **Emergency Telecommunications**

- Representative, Cable & Wireless
- Government Officer
- Telecommunication Officer, Office of the Commissioner of Police
- Representative, Grenada Coast Guard
- Representative, Grenada Amateur Radio Society
- Representative, Grenada Citizen Band Operators (CB'ers)

### **Emergency Supplies - Food and General Supplies**

- Permanent Secretary, Ministry of Agriculture - Chairman
- Chief technical Officer, Ministry of Communication & Works
- Fisheries Officer, Ministry of Agriculture
- Manager, Grenada Marketing & Importing Board
- Chief Medical Officer or designate

- Comptroller of Customs
- Representative, Grenada Banana Association
- Representative, Grenada Nutmeg Association
- Representative, Conference of Churches
- Representative, Grenada Food and Nutrition Council

### Public Utilities

- Permanent Secretary, Ministry of Communication & Works - Chairman
- Chief Engineer, Public Works Department
- Manager, Cable & Wireless
- Manager, GRENLEC
- Manager, NAWASA
- Manager, Grenada Ports Authority
- Manager, Point Saline International Airport

### Rehabilitation and Reconstruction

- Manager, National Housing Authority - Chairman
- Representative, Public Utilities Department
- Representative, Public Health Department
- Representative, Ministry of Finance
- Representative, Ministry of Agriculture
- Representative, Grenada Conference of Churches
- Representative, Grenada Chamber of Commerce

### Welfare Services

- Social Extension Officer - Chairman
- Representative, Community Development
- Representative, Welfare Department
- Representative, Grenada Red Cross Society
- Representative, Grenada St. John's Ambulance Brigade
- Representative, Conference of Churches
- Representative, Grenada Voluntary Organisations

### Voluntary Services

- Chief Community Development and Social Extension Officer - Chairman
- Representative, Jaycees
- Representative, Lions
- Representative, Rotary
- Representative, Grenada Conference of Churches
- Representative, Grenada St. John's Ambulance Brigade
- Representative, Youth Organisation
- Representative, Cadets
- Representative, Boys Scout & Girl Guide Association

### Search & Rescue - Land & Sea

- Commissioner of Police - Chairman
- Commander, Grenada Coast Guard
- Manager, Point Saline International Airport
- Manager, Grenada Port Authority
- Chief Fire Officer or Nominee
- Chief Medical Officer or Nominee

### Marine & Oil Spills

- Chairman of the National Science & Technology Council - Chairman
- Representative, Ministry of Legal Affairs
- Representative, Ministry of Health - Environmental Division
- Representative, Ministry of Tourism
- Representative, Ministry of Finance
- Representative, Fire Service
- Representative, Police Department
- Representative, Grenada Coast Guard
- Representative, U.S. Coast Guard
- Representative, Grenada Chamber of Commerce - Shipping Group

### Earthquakes and Landslides

- Land Use Officer - Chairman
- Supervisor of Forestry or Nominee
- Representative from Health
- Representative from Police Department
- Soil & Water Conservation Officer
- Land Resource Officer

### Hazardous Materials & Toxic Waste

- Chief Fire Officer - Chairman
- Deputy Chief Fire Officer - Deputy Chairman
- Representative, Grenada Coast Guard
- Representative, Science & Technology Council
- Representative, Police Department
- Representative, Ministry of Health -Environment Department
- Representative, Ministry of Agriculture
- Representative, Ports Authority
- Representative, P.S.I.A.

### Security Services

- Commissioner of Police

**N.B.** This Committee will be comprised primarily of members of the Grenada Police Force from various departments and augmented by senior officials of the Ministries of the Attorney General and the Prime Minister. The roles and functions of this committee are outlined in brief in Chapter 4 of this document.

## CHAPTER 4

### RESPONSIBILITIES AND FUNCTIONS OF THE MANAGEMENT COMMITTEES

The Management committees as have been presented in Chapter 3 have been developed by the Grenada National Emergency Relief Organisation to facilitate a better distribution of services and as a method of streamlining and co-ordinating all services within the country.

The management committees primary responsibility will be that of ensuring that the required preparedness and preventative measures have been instituted, in order to minimise loss of life and reduce property damage where possible.

The management committees are all designed to function and carry out their duties and responsibilities before the event. Their role is one of pre-disaster planning and establishing management systems for implementation.

The committees have not been presented in any specific order, as they are all of equal importance and do not take precedence over each other. Their duties are defined against the background of the sectoral and specific needs of the country.

#### Public Information & Education

- Development and organisation of ongoing public awareness and education programmes on all types of disasters as well as preventative measures to be taken.
- The dissemination of information before, during and after any type of disaster situation.
- Alerting the population on any impending disaster and the precautionary measures to be taken.
- Arranging for emergency services personnel on an annual basis at all levels of the administrative structure.

#### Damage Assessment

- Co-ordinating surveys in disaster areas to determine number of deaths, casualties, damages to property and relief requirements (food, shelter, medical attention).
- Conducting surveys of damages to public utilities (water-supplies, sewage and drainage facilities, telephone electricity) and assisting where possible with the other utilities.
- Co-ordinating surveys of damages to agriculture and livestock.
- Co-ordination surveys of roads, bridges, ports and other infrastructure to determine extent of damage.
- Supplying survey information to the Rehabilitation and Reconstruction sub-committee, as necessary, and providing initial financial evaluations and estimates to the relevant ministries and departments as required.

#### Transport & Road Clearance

- Developing a resource list of all transport (including boats and other marine craft) chain saw and heavy equipment that would be available for use in a disaster.
- Arranging for the release of privately owned vehicles, equipment and boats and other marine craft and where necessary and if available aircraft.
- Developing a development plan to cope with transportation requirements at National and

sectoral level.

- Arranging for relief drivers to assist in road clearance and transportation
- Arranging for the release of all vehicles from any department to be use as emergency ambulances and other emergency purposes.
- Arranging for clearing of main roads and movement of emergency personnel and relief supplies as soon as possible after a disaster.

### **Emergency Shelter**

- Selection of suitably safe buildings for use as emergency shelters including private buildings.
- Identification of emergency shelters through the relevant Government departments.
- Arranging for the proper maintenance of emergency shelters through the relevant Government departments.
- Staffing and administration of emergency shelters.
- Training of shelter management personnel on an annual basis to maintain
- Maintaining a list of all approved emergency shelters with locations, ownership, capacity facilities as well as contact persons, addresses and telephone numbers, where possible.
- Training of shelter management personnel on an annual basis to maintain the standards of management.

### **Health Services**

- Co-ordination of medical and first-aid assistance with the relevant health related voluntary organisations.
- Requisitioning of medical supplies through the relevant departments as necessary.
- Proper identification of health service workers and first aid personnel and First-Aid stations for information of field personnel and the public.
- Establishing a system of staffing and equipping of First-Aid Stations before the occurrence of a disaster.
- Co-ordinating arrangements with Transport sub-committee for the use of additional vehicles to augment existing ambulance service where necessary.
- Training of health service workers and emergency First-Aid personnel and operation at all emergency shelters and other First-Aid Stations established in the Districts.
- Identification and operation of field hospital, if necessary.
- Provision of environmental health services at emergency shelters and the development of plans for quick deployment of health personnel to all pre-determined points.
- Preparing a list of all telecommunications facilities in the State which can be used in the event of a disaster.

### **Emergency Communication**

- Conducting simulation exercises on a regular basis to test the effectiveness of the telecommunication system.
- The establishment of a training programme for all radio operations, to be conducted annually.
- The establishment of contact with the regional emergency communication system.

### **Emergency Supplies**

- Arranging for suitable buildings for the storage of food, clothing, building material and other emergency supplies.
- Arranging for other safe areas for storage of non-perishable emergency supplies.
- Establishing distribution centers for bulk distribution of emergency supplies.
- Arranging for staff to package and distribute emergency supplies.
- Arranging for the transportation of emergency supplies to storage at all predetermined points.
- Arranging for security of areas where emergency supplies are stored.
- Determining the quantity and type of assistance required.
- Maintaining proper records of emergency supplies received and distributed.

### **Search and Rescue**

- To train, orient and drill individuals in emergency procedures, and the development of a rapid deployment procedure.
- Rescuing trapped or dislocated persons in post-disaster operations and the preparation and issuing of reports to the Executive Committee within 48 hours.

### **Rehabilitation and Reconstruction**

- Repair and reconstruction of buildings and infrastructure to permit population to revert to normal activity in the shortest possible time.
- Determining need for resettlement in hazardous areas.
- Transfer of population from high-risk areas.
- Location of hazardous industries before the disaster.

### **Public Utilities**

- Ensuring that public utilities are in order.
- Restoring services as soon as possible after disaster.
- Maintenance of alternative backup services for use in disaster situations.

### **Voluntary Services**

- Arranging for the movement and care of the aged, disabled and incapacitated to emergency shelters.
- Providing emergency clothing to the aged, disabled and incapacitated.
- Arranging for the delivery of emergency supplies to institutions.
- Assisting in the management of emergency shelters.
- Providing messenger and stretcher bearer services.

### **Marine Pollution & Oil Spills**

- To plan for and co-ordinate all action to deal with any oil spill which may affect the State.
- Training of persons to deal with oil spill contingencies and other forms of marine pollution.
- The establishment of a monitoring service for all coastal areas to be operated by the relevant authorities.

### **Earthquake Emergency & Landslide Planning**

- dissemination of information to persons in the danger areas.
- selection of collection points and evacuation centers for people and such of their personal belongings as may be allowed.
- selection of reception centers depending on availability in collaboration with the Shelter Committee and arranging for reception of people at the sites.
- arranging for the collection of tents, clothing, medicines and other supplies for despatch to camp sites selected.
- arranging for the distribution of food, fuel, water, and other basic supplies to the relocation sites.
- organising transport-buses, trucks, boats - to and from damaged areas to evacuation centers
- arranging for storage and identification of certain basic belongings of evacuees.
- arranging for the collection, identification, transport and care of live-stock belonging to evacuees during the emergency.
- arranging for security in the evacuated zones as may be advisable depending on extent of damages.
- working with the reconstruction and Rehabilitation Committee in ensuring a smooth transition of people and their belongings back to the affected areas after consultation on the situation with the relevant technical authorities has been completed.

### **Hazardous material and toxic wastes**

- The method of storage, handling, transfer, movement, transportation and disposal of such materials.
- Training of personnel to identify, handle and dispose of Hazardous material and toxic waste.
- Nuclear safety precautions.
- Method of warning signals used etc.

The Fire Service assumes the responsibility to deal with Hazardous material and toxic waste and must be able to co-opt any other agencies for assistance as required.

### **Security Services**

- To be responsible for the identification of personnel
- To plan and organise simulation exercise
- To advise the National Disaster Advisory Council on all emergency security matters
- To draft and implement Joint Training Programmes

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## CHAPTER 5

### 5.1

#### **Responsibilities of Government Agencies**

All Government Agencies and Ministries are responsible for drawing up their own internal disaster manual. These manuals must provide for security of the department as well as service to the public.

All plans and revisions must be submitted to the Secretary of the National Emergency Organisation not later than 30<sup>th</sup> April of each year for submission to the National Emergency Advisory Council

within one week of receipt of document.

As a general rule, Government agencies and officers will continue to exercise their normal functions during a disaster, but in some cases, special additional responsibilities will be assigned.

It is important to note the following:

1. In case where a Department or Statutory Body is assigned specific responsibilities in this document, ultimate responsibility rests with the Permanent Secretary of the Ministry concerned. The Permanent Secretary must ensure that all members of staff involved are familiar with the plan.
2. Where more than one agency is involved with the same area of activity, it is the responsibility of the first listed Permanent Secretary or Head of Department, unless otherwise indicated herein, to arrange meetings to arrive at a common line of action.
3. Where an agency has to liaise with another organisation it must make sure that inter-communication is well established, e.g. by exchange of telephone numbers of relevant personnel and a code for recognition.

Some of the actions which will be required to be performed and which should be detailed in individual disaster plans are as follows:

#### **Office of the Prime Minister**

##### ***Ministry of Finance, Planning & Development***

- organise post-disaster surveys
- collect, collate and maintain damage statistics
- estimate amounts of financial and other relief and rehabilitation requirements
- assist with co-ordination of supplies and other assistance received by government and non-governmental organisations
- provide budgetary support for emergency expenditure
- process data

##### ***Police***

- Protection of public property, and prevention of looting/vandalism
- Traffic control to and from Emergency areas and hospitals
- Crowd Control
- Evacuation procedures
- Warning system
- Security of essential services and vulnerable points
- Co-ordination of Telecommunication system

##### ***Fire Service***

- All fire-fighting operations
- Assistance in Sea rescue
- Assistance in evacuation
- Pumping of flood water
- Airport fire and rescue

### *Grenada Coast Guard*

- Search and Rescue - form any part of the island; including Carriacou and Petite Martinique
- Law Enforcement - in contact with other vessels carrying Arms and Ammunition.
- Marine Safety - Distress, saving lives and property
- Pollution Control - oily substances into the sea from other ships and from land into the sea
- National Security - Along the coastline etc .
- Evacuation - assistance when required

### *Ministry of Education*

- selection and maintenance of government and non-governmental buildings
- staffing of shelter in collaboration with the Ministry of Public Works which will be used as emergency shelters should be done in co-operation with Emergency Committees as required.
- liaise with Ministry of Health review on Sanitary Services for shelters
- preparation of and the annual review of the operations administrative manual for shelter wardens
- requisitioning relief food and other essential supplies for shelter occupants
- training of shelter staff
- assisting District Emergency Committees in ensuring the delivery of First Aid boxes to emergency shelters
- Collaborating with Voluntary services Sub-Committee in distribution of supplies and other material

### *Ministry of Health*

- maintenance of staff of First-Aid stations in collaboration with the District Emergency Committees
- provision of First-Aid boxes and other medical supplies to First-Aid stations
- assisting the District Emergency Committee with the staffing of the First-Aid stations and training of personnel
- caring for injured, old persons and children/treatment of mass casualties
- education of the public in matters concerning public health
- arranging for mass immunization, if required
- investigating the quality of water supply
- ensuring that hospital and health centers make and practice disaster plans
- arranging for the prevention and /or control of any outbreak of disease resulting from a disaster
- preparation of a manual for First-Aid stations and personnel
- providing sanitary services for shelters
- establishing procedures for collaboration with the Red Cross Society and St. John's Ambulance Brigade
- arranging for sanitary inspection of relief food supplies
- recording, tagging, identifying and burying the dead
- manning ambulance services
- monitor, assort, store and distribute relief medical supplies
- participate in assimilated drill on airport, accidents in co-operation with fire service and airport authority

### *Ministry of Works and Communication*

- Road clearance
- Assistance in rescue work in collaboration with Fire Officers
- Provision of emergency transport service
- Maintenance of telecommunication system
- Supply generators and motor car batteries as directed by E.O.C.
- Demolition of unsafe buildings
- Evacuation operators as necessary
- Erection of temporary bridges
- Provision of protective materials, maintenance and repair to Government buildings

### *Community Development Division*

- In collaboration with the relevant government departments assist in the possible identification of suitable buildings, within their scope of authority , other than school which may be used as alternative emergency shelters.
- Assist with registration of evacuees at shelters
- Supplying of additional manpower if required by the senior shelter manager
- Assist with the transfer and relocation of evacuees
- Assist with information on possible numbers of evacuees and their district of organisations
- Assist with the distribution of food and other supplies
- Assist in the development of a register of all youth organisations as a resource manual for manpower support.
- Assist with unsupervised children and senior citizens

### *Government Information Service*

- keep the public informed about disaster preparedness by the publication of special leaflets
- control the dissemination of information during and after a disaster.
- inform the public of the whereabouts of emergency shelters and first-aid post
- provide liaison between the public and the National Emergency Advisory Council on emergency preparedness matters
- arrange with the local media for broadcasts, talks and publication of information on disaster preparedness and prevention

### *Ministry of Public Utilities*

- Maintenance and purification of National Water Service
- The supply of emergency water service to key areas in association with NAWASA
- Immediate of electricity services to key areas re emergency operation center, health and security centers
- Restoring of telephone and telexes services to the Emergency Operation Center and other key areas.

### *Ministry of Legal Affairs*

- Review and the development of rules and regulation for shelter administration in collaboration with the Ministry of Education
- Examine and update relevant sections of the Insurance Act for public liability

- Examine and revise relevant sections under the Emergency Powers Act, to provide additional supervisory authority, through legislation, when required by the National Emergency Relief Organisation in order to guarantee full delivery of relief services.

### *Ministry of Agriculture*

- Identification of Food Centers throughout the island
- Maintenance of adequate food centers throughout the country
- Assignment of personnel to work in these centers in the event of an emergency
- In collaboration with Grenada Farms Co-operation provide adequate food or vegetable from farms to food centers
- In collaboration with Marketing and National Import Board and Grenada Farms Co-operation the maintenance of adequate stocks of food during the hurricane season.
- Co-ordination with the Ministry of Works and Communication to arrange adequate transport service for the distribution of food
- Assist Food and Nutrition Council in the designing of rationing systems.

### *Marketing and National Import Board*

- Maintenance of adequate stocks of food during the hurricane season
- In collaboration with the Ministry of Agriculture and assignment of MNIB personnel to work in Food Centers

### *Welfare Department (Ministry of Labour)*

- Distribution of welfare supplies (other than food)
- Maintenance of adequate stocks of blankets, beds, feeding utensils, lanterns, torch lights, etc. during hurricane season

### *Department of Customs & Excise - Finance*

- Speedy handling of document in order too facilitate the inflow of relief supplies

### *Ports Authority/Pre-disaster*

- Advise Ministry of Fisheries of safe methods of guarding the Fishing Fleet.
- Informing and advising ships in the harbour of impending disaster.
- Advising small boat owners on safety of their boats.

### *Ministry of External Affairs*

- Informing Missions abroad of impending disaster
- Establish contact with International Organisation and Agencies

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## CHAPTER 6

### ROLE OF NON-GOVERNMENTAL ORGANISATIONS AND SERVICE CLUBS

#### 6.1

#### Chamber of Commerce

- identify and provide warehousing
  - ensure availability of essential emergency supplies
- 

## 6.2

### **Red Cross Society**

- assist with First-Aid training
  - provide relief supplies
  - assist with distribution of relief supplies
  - assist with First-Aid at Medical Centers and Emergency Shelters
  - co-ordinate activities of voluntary organisations
  - international tracing
  - assist in search and rescue
- 

## 6.3

### **Christian Council**

- assist with rehabilitation
  - assist with public awareness programmes
  - assist with management of shelters
  - assist with distribution of supplies
  - provide relief supplies
- 

## 6.4

### **Amateur Radio Club**

- assist with telecommunications at essential points in keeping with directions of the Telecommunications sub-committee
- 

## 6.5

### **C.B. Radio**

- assist with telecommunications
- 

## 6.6

### **Cable & Wireless**

- provide emergency telecommunications at essential points including the Emergency Operations Center
  - restore telephone services as soon as possible
-

## 6.7

### **Youth Organisations**

- **assist with evacuation of victims and aged persons**
  - **assist with the distribution of educational material**
  - **assist in clearing debris**
  - **performing messenger service**
- 

## 6.8

### **Jaycees**

- **assist with evacuation of disaster victims and aged persons**

### **Lions**

- **assist in distributing relief supplies**

### **Rotarians**

- **assist District Emergency Committee**
  - **assist with public awareness programmes**
- 

## 6.9

### **Boys Scouts**

- **assist with the evacuation of disaster victims**

### **Girl Guides**

- **assist local disaster preparedness Committees**

### **Cadets**

- **provide local messenger service**

### **Brigades**

- **assist in distribution of educational material**

### **4-H**

- **assist at emergency shelters and feeding centers**
  - **assist with sorting and parcelling of clothing**
  - **assist in record keeping**
-

## CHAPTER 7

### DISTRICT EMERGENCY ORGANISATION

The value of advanced planning of effective action in emergencies has often been proved to be the best method of maintaining and achieving efficiency.

Through advanced and effective organisational systems, before, during and after the emergency situation and the key factor in coping with disasters and initiating their effects. In respect of national planning, the involvement of the community ensures the widest level of co-operation. The District Emergency Committee will provide the essential link between the National Organisation and the community which they represent.

#### 7.1

##### Objectives

- Selection and appointment of members of the sub-committee
- Development of an organisational plan for each district
- Selection and training of volunteer personnel for field operations
- Participation in the overall planning of disaster preparedness operations in the district
- Co-ordination of operational plan of all emergency services at district level.
- Development of job functions for members of the district organisation
- Supplying half yearly reports to the Executive Committee on all disaster preparedness activities.

The District Organisation should provide for the development of the following management structures and services:

- District Shelter Officer
  - District First-Aid Officer
  - District Information and Damage Statistics Officer
  - District Road Clearance and Transport Officer
  - District Communications Officer
  - District Clothing Officer
  - District Feeding Officer
- 

#### 7.2

##### Services

- District Shelter Service
  - Selection of, in collaboration with, the Ministry of Education and Ministry of Public Works, suitable community buildings for Emergency Shelters
  - Implementation of all Government directives and procedures
  - assisting with staffing at Emergency Shelters
  - Co-ordination of District Shelter Plans with the National Emergency Organisation
  - Ensuring continuous service by developing a shift for staff if required
  - Providing the National Organisation and the District Chairman with periodic reports on the situation
-

## 7.6

### Emergency Feeding Service

- Establishing centers for distribution of supplies
  - Supplying staff and provide a briefing on the operation of the center
  - Assisting with transportation of food supplies from Official depots to district distribution centers
  - maintaining records on all supplies received and distributed in the area.
- 

## 7.7

### Emergency Medical Service

The Ministry of Health is responsible for all medical services. The District Organisation can provide the following supportive services:

- Identification of, in collaboration with the Ministry of Health, Emergency First-Aid Stations
  - Providing a rescue service for severely injured persons in the transportation of all injured personnel
  - Provision of supervisory support for injured, elderly and unsupervised children
  - selecting persons to be stretcher bearers
  - requesting medical supplies for First-Aid stations as required
  - Co-ordination of the District Medical rescue and First-Aid service with the Ministry of Health, the Health Services Committee and the National Organisation.
- 

## 7.8

### Clothing Service

- Establishing welfare centers for clothing distribution. The Center should be the same as the feeding distribution center.
  - Arranging for staffing of the centers, including an operations procedure
  - Working in close association with voluntary organisations such as the Grenada Red Cross Society
  - Maintenance of adequate records
- 

## 7.9

### Functions

#### Pre-Emergency During the Emergency

- liaise with group leaders evacuation operations
- nomination of working rescue of persons from endangered areas
- committee chairman
- development of operational plans
- developing an information and education Programme
- developing training programmes
- securing of emergency equipment
- conducting simulation exercises

- maintaining co-ordination of services at National and the district levels

### Post Emergency

- mobilisation of services
- damage assessment

implementation of the operational plan for the following:

- shelters, welfare, rescue of trapped persons, transport, First-Aid , road clearance, building repairs, communication systems and operators
- The district Organisation will require the assistance and co-operation of the security services, the organisation should therefore establish contact and involve the N.C.O., in charge of the District Police Station.

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## CHAPTER 10

### TELECOMMUNICATIONS

#### 10.1

The Emergency Telecommunications Center is located in the Control Room of Police Headquarters.

Points will be established in the Telecommunications Center for the installation equipment of Amateur Radio, Citizen Band and other radio operators likely to be used during a disaster.

In the event of a disaster or major emergency the Chairman of the Emergency Telecommunications Sub-Committee will contact the Amateur Radio and other operations with regard to assistance in telecommunications.

#### 10.2

##### Amateur Radio & C.B. Operators

In the event of an emergency and when so requested the Amateur Radio and Citizen Band Operators will make available to the National Emergency Organisation such equipment and operators as may be necessary for providing communications between the Emergency Telecommunication Center and the respective areas to which they may be assigned.

The Clubs will assign equipment and operators to the various areas identified by the Chairman of the Telecommunications Sub-Committee.

The Amateur Radio & Citizens Band Clubs should draw up their own internal disaster plans for submission to the National Disaster Co-ordinator for inclusion in the National Plan.

Cable & Wireless will assist in providing emergency links between the Emergency Operations Center, Police Headquarters and other areas as required.

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## CHAPTER 11

### EMERGENCY SHELTERS

The Chief Education Officer, as Chief Shelter Warden, will maintain a list of buildings which have been identified as shelters for use in an emergency.

The list of Emergency Committee will arrange for the wide publicity of shelters in its area through churches, school voluntary organisations and community groups.

The Chief Education Officer in collaboration with the Chief Community Development Officer and the District Emergency Committees will ensure that the manager of every emergency shelter open and ready to receive evacuees when necessary.

The Chief Education Officer will ensure the appointment of suitably qualified staff to manage emergency shelters.

The Chief Education Officer will collaborate with the District Committee and the Chief Community Development Officer and the Public Works Department to ensure the proper maintenance of emergency shelters.

Where tents are used as emergency shelters they will be under the control of the Department responsible for such equipment.

NAB

An internal Emergency procedures sectoral Plan will be developed and presented to the Office of the Prime Minister. The guidelines as outlined in the preceding paragraphs provide the foundation for the management of all shelters in Grenada.

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## CHAPTER 12

### DRAWING UP OF A DISASTER PLAN

#### 12.1

The preceding chapters outline some of the main responsibilities of various agencies, and these must provide for individual plans. Bear in mind that the aims of any disaster plan must be to ensure that the following:

- that all personnel are ready to make the earliest possible response to an emergency
- that some system for crowd control must be established as early as possible, so as to avoid unnecessary casualties
- the quick and efficient evacuation of any building or area considered to be in a dangerous situation
- the provision of first aid with a minimum of delay
- that factual information is relayed as early as possible to the Emergency Operation Team.

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#### 12.2

##### Leadership

Although there will be a main co-ordinating body - the Emergency Operation Center - it will be necessary to form your own central point of communication etc.

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### 12.3

#### Public Information

Public information is of major importance in disaster planning. Make sure that members of the public are versed in preparations for coping with disasters before a disaster strikes.

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### 12.4

#### Action Checklist

Provide a list of actions to be taken by individual members of your staff (or individual groups) in a disaster. This list should be clear and concise so that there is no doubt as to what has to be done, and when.

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### 12.5

#### Maps

Preparation of maps before hand is essential. These maps should show key areas, reporting points, etc. coloured pins are helpful in showing locations of shelters, centers communications points etc.

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### 12.6

#### Organisational Charts

Simple organisational charts are useful before and during emergency operations. Do not clutter your charts with copious details. The chart should indicate which members of your staff are responsible for certain actions. Include brief instructions on how to acquire emergency supplies, and emergency purchasing and requisitioning procedures. You should also include names, titles, address and telephone numbers of key emergency personnel.

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### 12.7

#### Identification Cards

Identification cards and/or permits should be issued to key personnel to allow them passage through police lines.

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### 12.8

#### Resource Data

Every major source of local manpower, equipment and supplies should be considered in preparing what could be called a "Resources Data Book". This information will have to be updated frequently.

In drawing up plans, effort should be made to make provision for action in the event of a disaster other than a hurricane or flood. Consideration should also be given to procedures in the event of

- Fire

- Earthquake
  - Bomb threat
  - Oil Spills
- 

## 12.9

### Terms of Reference of the National First Aid Training Sub-Committee

1. Co-ordinate and organise First Aid Training
2. Liaise with National Disaster Committee, National Disaster Committee, Pan-Caribbean Disaster Preparedness and Prevention Project (PCDPP), National Red Cross Society, Other organisations involved in First Aid Training
3. Advise the National Health Services Committee
4. Organise Public Education for First Aid Programme
5. Develop and maintain refresher training to be implemented by the National First Aid Co-ordinator
6. Liaise with all government departments with an interest in First Aid Training

## 12.10

### Members

- Grenada Red Cross Society
- Education Officer
- Community Development Officer
- Medical Doctor - Grenada Medical Association
- National First Aid Co-ordinator (to be appointed by Government)
- Director - School of Nursing
- Assistant Matron/General Hospital

## 12.11

### Hurricane & Emergency Supplies

Water - An adult will need a minimum of 1 litre (35 ozs.) of clean drinking water per day. One gallon (128 ozs.) per adult is a better quantity per adult per day - when he is active in tropical sun. Man will die in three days without water, but will survive about ten days without food. Keep water in a sealed clean plastic container (such as the containers used to package vinegar and cooking oil or the 25lb. plastic salt meat pails). If you have to use water from land, boil for at least ten minutes before drinking.

## 12.12

Food - Stock items that do not require cooking and provide food supplies for your family for at least ten days. In case of a hurricane, public feeding with hot meals is unlikely until day five - except injured, infants and young children.

- corned beef
- sardines
- luncheon meat
- jam/jelly/honey

**biscuits**

- salt-body needs daily salt to avoid cramp
- fruit juice
- raisins/currants/dates -dried
- rolled oats
- chocolate bars/barley sugar
- condensed milk, sugar
- toilet paper

**12.13****First Aid Kit**

- Band-aids
- Bandages
- Scissors/tweezers/needles/safety pins
- Alcohol
- Cotton-wool/lint
- Aspirin or other analgesic
- White Petroleum Jelly/Antiseptic Ointment
- First Aid Book

**12.14****Tools**

- Waterproof Flashlight - spare batteries/bulbs
- Hurricane Lantern - Kerosine oil spare
- Other safe lighting (NOT candles)
- Matches - waterproof container/plastic bag
- Hammer - professional with claw
- Wood saw - 3ft cutting edge
- Nails - 2 lb 2", 2 lb 4", 2 lb galvanise drive-nails
- Waterproof Plastic - 12'x12'
- Cutlass/axe
- Rope - nylon - about 50'x1/4'
- Pen-knife (heavy duty)

**12.15****Miscellaneous**

- Transistor Radio - spare batteries
- Note Book - pencils/pens
- Map of Grenada - Topographical
- Stove - Oil, Gas - Camp type
- Metal cup/plate/spoon/cooking pot
- Needle, thread, button, etc.

**12.16****Clothes**

- Raincoat and Rain Hat
- Umbrella
- Tennis shoes/Rubber boots

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## EMERGENCY DISASTER DISTRICT ZONE CLASSIFICATION

### ST. ANDREW'S

#### St. Andrew's South East

- Crochu
- Walker
- Mt. Cassell
- Union
- Mama Cannes
- Canal Road
- Hope
- Soubise
- Lower Mt. Carmel
- Telescope
- Tulleries
- Marquis
- Post Royal
- Felix Park
- Cafe
- Grand Bacolet
- Cuma

#### St. Andrew's South West

- Upper Mt. Carmel
- Lower Capital
- Lower Mt. Carmel
- Harford Village
- Bamboo
- Munich
- Tuilleries
- Walker
- Post Royal
- De Blando
- Plaisance
- Union
- Richmond
- Chutz
- La Digue
- Belle Vue Land
- St. James
- Upper Capital
- Birchgrove
- Holy Innocents

- Grand Bras
- Canal Road
- Caruth
- Forde
- Mt. St. Ervans
- Cook Hill
- Dunmore

#### St. Andrew's North East

- Simon
- Paradise
- Dunfermline
- Upper Pearls
- Paraclete
- Lower Pearls
- Blaize
- Upper St. John's
- Carriere
- Lower St. John's
- Tivoli
- Belair
- Pearls/Moyah
- Upper Conference
- La Poterie
- Lower Conference
- Belmont

#### St. Andrew's North West

- La Force
- Balthazar
- Adelphi
- Windsor
- Chantille
- Simon
- Morne Longue
- Dunfermline
- St. Clouds
- Mt. Horne
- Bylands
- Springs
- Mirabeau
- Paraclete
- Columbe
- Paradise
- Beauregard
- La Fillette
- Boulogne

## **ST. GEORGE'S**

- **Town of St. George's**
- **Tanteen**
- **River Road**

### **St. George's South**

- **Belmont/Mt. Pandy**
- **Jean Anglais**
- **Grand Anse**
- **Morne Tout**
- **Grand Anse Valley**
- **The Limes**
- **Morne Rouge**
- **Calliste**
- **Frequente**
- **Point Salines**
- **True Blue**
- **Upper Woburn**
- **Lance Aux Epines**
- **Lower Woburn**
- **Woodlands**
- **Calivigny**
- **Fort Jeudy**
- **Confer**
- **Springs**

### **St. George's South East**

- **Morne Jaloux**
- **Morne Delice**
- **Richmond Hill**
- **Creighton**
- **La. Borie**
- **St. Paul's**
- **Lower St. Paul's**
- **Mt. Airy**
- **Cobo Town**
- **Hope Vale**
- **Paddock**
- **Lowther's Lane**

### **St. George's North East**

- **Radix**
- **Willis**
- **Mt. Gay**
- **Annadale**
- **Mt. Parnassus**

- **Ravine**
- **Tempe**
- **Sung Corner**
- **Lower Mardigras**
- **Belle Vue**
- **La Mode**
- **Mt. Dor**
- **St. George's Estate**
- **New Hampshire**
- **Boca**
- **Vendomme**
- **Beaulieu**
- **Constantine**

#### **St. George's North West**

- **Cherry Hill**
- **Grenville**
- **Vale**
- **Fontenoy**
- **Grand Mal**
- **Mt. Moritz**
- **Molinierre**
- **Happy Hill**
- **Beausejour**
- **Shende**
- **Brizan**
- **Perseverance**
- **Darbeau**

#### **ST. JOHN'S**

- **Gouyave**
- **Douglaston**
- **Central Palmiste**
- **Grand Roy**
- **Waterloo**
- **Mt. Plasair**
- **Florida**
- **Marigot**
- **Clozier**
- **Concord**
- **Belvidere**
- **Black Bay**
- **Brothers**
- **Woodford**
- **Loretto**

#### **ST. MARKS**

- Union/Duquesne
- River Sallee
- Industry & Duquesne Coast Guard
- Diego
- Piece
- Victoria
- Fountain
- La Source/Gross Point
- Waltham
- Maran

## **ST.PATRICK'S**

- Belmont
- Points Field
- Upper Hermitage
- Rose Hill
- Lower Hermitage
- Plains
- Mt. Reuil
- River Sallee
- Mt. Rich
- La Taste
- River Antoine
- Mt. Fendue
- Mt. Rose
- Snell Hall

## **St. Patrick's West**

- La Fortune
- Mt. Rodney
- Levera
- Mt. Craven
- Madeys
- Prospect/Davie
- Caleste
- Mt. Williams
- La Mode
- Chantimelle
- Upper & Lower Marli
- Samaritian
- Sauteurs
- Red Mud

## **District First - Aid Stations - Grenada, Carriacou, Petite Martinique**

- General Hospital, St. George's
- Grand Bras Health Center, St. Andrew's
- Woburn Medical Station

## ST. DAVID'S

- Morne Delice
- Upper Mardigras
- Perdmontemps
- Windsor Forest
- Vincennes
- Laura
- Bailes Bacolet
- Beaton Place
- La Femme
- Charlotte Vale
- Barwoe
- Petite Bacaye
- New Westerhall
- Old Westerhall
- Corinth
- Syracuse
- Dudmar
- Providence
- Thebaide
- Apres Toute
- Belle Vue
- Belle Isle
- Requin
- La Sagesse
- Content
- Maulty
- Central St. David's
- Retreat
- Mt. Agnes
- Pomme Rose
- Marlmont
- La Tante

## CARRIACOU & PETITE MARTINIQUE

- Hillsborough
- Belair
- Beausejour
- Windward
- Lauriston
- Petite Carenage
- L'esterre
- Bogles
- Belmont
- Cherry Hill
- Dumfries
- Craigston
- Grand Bay

- **Petite Martinique**
- **La Resource**

## **METEROLOGICAL INFORMATION**

**Bulletin - Issued when a significant system is detected in the area.**

**Advisory - Issued at regular interval when a tropical storm or hurricane is first detected in the area. Keep listening.**

**Watch - Issued when once it is established that hurricane conditions are expected with 24 hours**

**Warning - Issued**

**Tropical Depression - A tropical system with a circulation, but with winds of less than 39 mph (34 - 63 Knots)**

**Hurricane - An intense Tropical System with maximum sustained winds greater than 74 mph (64 Knots)**

**Eye - The relatively calm area near the center around which the strongest winds blow. As the eye passes, light winds rapidly give way to very severe winds from the opposite direction.**

**Storm Surge - The rise of water (as high as 10 to 20) above sea level brought on by the strong winds and low pressure in the storm center.**

**N.B. The area used is that part of the Atlantic Ocean which is bounded by Latitude 9<sup>0</sup> North and 17<sup>0</sup> West.**

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