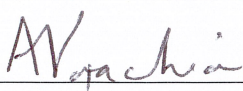
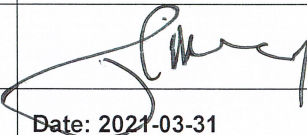
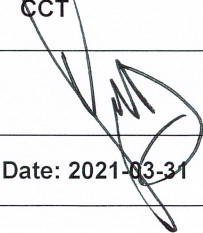


# MUNICIPAL DISASTER RISK MANAGEMENT PLAN



**REV 9**

**MARCH 2021**

| <b>Compiled by:</b>                                                                   |                                                                                      | <b>Reviewed by:</b>                                                                  | <b>Approved by<br/>Chairperson of DMAF</b>                                            |
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|    |   |  |  |
| Date: 2021-03-31                                                                      | Date: 2021-03-31                                                                     | Date: 2021-03-31                                                                     | Date: 2021-03-31                                                                      |



## DISTRIBUTION

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| 15-26            | Disaster Risk Management Centre – Management Team                |
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## AMENDMENTS / UPDATES

New amendments or updates will be added to the Amendments and Updates Listing below and it is the responsibility of the individual to regularly check the currency of their Plan copy.

Proposals for amendment or additions to the text of this Plan should be forwarded to: -

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## Amendments and updates listing

| REV. NO. | DATE OF ISSUE | DETAILS OF PAGE(S) AMENDED OR REPLACED                                                                                                                                                       |
|----------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | 2007/05/12    | Total Revision of the previous version (all pages).                                                                                                                                          |
| 2        | 2008/05/06    | Update of the entire document (all pages).                                                                                                                                                   |
| 3        | 2008/10/03    | Transport, Roads & Stormwater Directorate functionality amendments (pages 9, 21, 22 & 23).                                                                                                   |
| 4        | 2011/03/01    | Revision of entire document & updating of disaster risk assessment information (all pages).                                                                                                  |
| 5        | 2012/06/21    | Updating of the revised CCT Organisational Structure - inclusion of the new Directorates and their DRM responsibilities (pages 13 to 25).                                                    |
| 6        | 2013/09/11    | Update of the entire document, incorporating the revised CCT Organisational Structure of 2013 and comprehensive disaster risk assessment summary (all applicable pages).                     |
| 7        | 2014/06/18    | Updating of new CCT Logo, change JIMMS to JIMS, CCT Directorates and Hazard names (pages 1, 4, 5, 8, 9, 12, 13, 14, 36, 37, 38, 41, 43).                                                     |
| 8        | 2015/07/30    | Updating of the entire document (all pages).                                                                                                                                                 |
| 9        | 2021/03/31    | Update of the entire document, incorporating the revised CCT Organisational Structure 2018/2019 and revised comprehensive disaster risk assessment 2020/2021 summary (all applicable pages). |
|          |               |                                                                                                                                                                                              |
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# CITY OF CAPE TOWN

## MUNICIPAL DISASTER RISK MANAGEMENT PLAN

### 1. INTRODUCTION

The Municipal Disaster Risk Management (DRM) Plan serves to confirm the organisational and institutional arrangements within the City of Cape Town to effectively mitigate disasters from occurring and to lessen the impact of those hazards that cannot be avoided. Essentially, this DRM Plan serves as the **strategic co-ordination and co-operation mechanism between all the relevant Entities / Stakeholders** and is therefore the DRM Master Plan at the highest hierarchical level. The hazard/risk-specific DRM Plans, the CCT Directorate and any External Entity/Organisation DRM Plans and their related emergency procedures are to be focussed at the *tactical and operational levels* and should therefore be considered as being subsidiary to the CCT Municipal Disaster Risk Management Plan.

Disaster Management is defined as “a continuous and *integrated multi-sectoral and multi-disciplinary process* of planning and implementation of measures aimed at disaster prevention, -mitigation, -preparedness, -response, -recovery, and -rehabilitation” - as per Section 1 of the Disaster Management Act, 57 of 2002

The *slogan* to best describe this initiative is: “**Disaster Risk Management is Everybody's Business**”

### 2. BACKGROUND

The preventative, risk-reduction and preparedness elements of the Municipal DRM Plan must be implemented and maintained on a continuous basis. The emergency response or re-active elements of the Municipal DRM Plan will be implemented in the City of Cape Town whenever a major incident, emergency or disaster occurs or is threatening to occur within the municipal area.

The definition of a **disaster** is: “a *progressive or sudden, widespread or localised, natural phenomena or human-caused occurrence which –*

a) *causes or threatens to cause –*

(i) *death, injury or disease;*

(ii) *damage to property, infrastructure or the environment; or*

(iii) *significant disruption of the life of the community; and*

b) *is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources*” (Disaster Management Act, 57 of 2002).

#### Related terminology

In terms of the City of Cape Town's Joint (Unified) Incident Management System (JIMS), which advocates a **co-ordinated and standardised approach to incident response activities** in the City, an **incident** is defined as: “a *general description of a hazard occurrence or situation requiring intervention ranging from a limited co-ordination of emergency resources to a more extensive multi-disciplinary operation. This scenario may also develop into a major incident or emergency or disaster situation*”.

A **major incident** is defined as: “a *more complex situation requiring the co-operation and co-ordinated response of multiple emergency disciplines and resources and operations as set out in the JIMS. This scenario may also develop into an emergency or disaster situation*”.

An **emergency** is defined as: “an *event that requires the prompt implementation of actions, or the special regulation of persons or property, to limit the risk to health, safety or welfare of people, or to limit damage to property or the environment. Response actions should be co-ordinated on the basis of the JIMS*”.



The Disaster Management Act places the responsibility for the implementation of the Municipal Disaster Risk Management Plan for the City on the appointed Manager (Head) of the Disaster Risk Management Centre.

The Disaster Management Act requires the City to take the following actions:

- to prepare a Municipal Disaster Risk Management Plan for its area according to the circumstances prevailing in the area and incorporating all municipal entities/administrative units and relevant external role-players;
- to co-ordinate and align the implementation of its Municipal DRM Plan with those of other organs of state, institutional and any other relevant role-players; and
- regularly reviewing and updating when deemed necessary.

The City must submit a copy of its Municipal Disaster Risk Management Plan and any amendment to the said Plan, to the National Disaster Management Centre and to the Western Cape Government: Disaster Management Centre. The Municipal Disaster Risk Management Plan must also be included into the City's Integrated Development Plan (IDP).

The Municipal Disaster Risk Management Plan should:

- form an integral part of the City's IDP so that disaster risk reduction activities can be incorporated into its developmental initiatives,
- anticipate the likely types of disaster that might occur in the City's area and their possible effects,
- identify the vulnerable/communities at risk,
- provide for appropriate prevention, risk reduction and mitigation strategies,
- identify and address weaknesses in the capacity to deal with possible disasters,
- facilitate maximum emergency preparedness,
- establish the disaster risk management policy framework and organisation that will be utilized to mitigate any significant emergency or disaster affecting the City of Cape Town,
- establish the operational concepts and procedures associated with day-to-day operational response to emergencies by City Departments and other entities/organisations, as per their own mandates. These SOPs will also form the basis for a more comprehensive disaster response, as referred to in the CCT JIMS document,
- incorporate all hazard/risk-specific DRM Plans, as well as Directorate/Entity DRM Plans and related emergency procedures that are to be used in the event of a disaster. These will provide for –
  - (i) the identification and understanding of the risk that hazards/threats may pose;
  - (ii) the allocation of responsibilities to the various role-players and the co-ordination required in the carrying out of these responsibilities;
  - (iii) risk reduction and preparedness strategies;
  - (iv) prompt disaster response and relief;
  - (v) disaster recovery and rehabilitation focused on future risk elimination or mitigation;
  - (vi) the procurement of essential goods and services;
  - (vii) the establishment of strategic communication links; and
  - (viii) the dissemination of relevant information.

### 3. PURPOSE

The Municipal Disaster Risk Management Plan is designed to establish the framework for implementation of the provisions of the Disaster Management Act, 57 of 2002 and Disaster Management Amendment Act 16, of 2015 as well as the related provisions of the Municipal Systems Act, 32 of 2000.



The purpose of the Municipal DRM Plan is to outline policy and procedures for both the pro-active hazard and risk assessment, followed by disaster prevention (if possible), risk reduction, preparedness and the re-active disaster response, relief and rehabilitation phases of Disaster Risk Management.

The Municipal DRM Plan is intended to facilitate multi-agency and multi-jurisdictional co-ordination in both pro-active and re-active related programmes.

## 4. THE CITY OF CAPE TOWN'S APPROACH TO DISASTER RISK MANAGEMENT

### 4.1 CITY OF CAPE TOWN'S DISASTER RISK MANAGEMENT FRAMEWORK (DISASTER MANAGEMENT ACT 57 OF 2002 - SECTION 42)

Each Disaster Management Centre is responsible for consultatively facilitating the development of the Disaster Management Framework in its area of jurisdiction, and subsequently amending it in consultation with key stakeholders (Section 3.1.1.1 of the National DM Framework).

The City of Cape Town's Municipal Disaster Management Advisory Forum (DMAF) must establish and implement a policy framework for Disaster Risk Management in the municipality aimed at ensuring an **integrated and common approach to Disaster Risk Management (DRM) entities in its area.**

The City of Cape Town Municipal Disaster Risk Management Framework is –

- a) consistent with the provisions of the Disaster Management Act;
- b) consistent with the National Disaster Risk Management Framework; and
- c) consistent with the Disaster Risk Management Framework of the Western Cape Disaster Management Centre (WC: DMC).

The Disaster Risk Management Centre (DRMC) is the custodian of the City of Cape Town Municipal Disaster Risk Management Plan, drafted at the strategic level. Individual Directorates, Departments and other Role-players/Entities will be responsible for the compilation and maintenance of their own Service's/Entity's Disaster Risk Management Plans and Procedures, at the tactical and operational levels). The various Hazard/Risk-specific DRM Plans (covering the assessed risks to the City in detail) that have been drafted on an integrated basis (*refer to Section 9*), as well as all the Directorate, Department and Entity/Role-player DRM Plans and Procedures will be considered as integral parts of the CCT Municipal Disaster Risk Management Plan.

The processes involved in Disaster Risk Management can best be explained through the Disaster Risk Management Continuum.



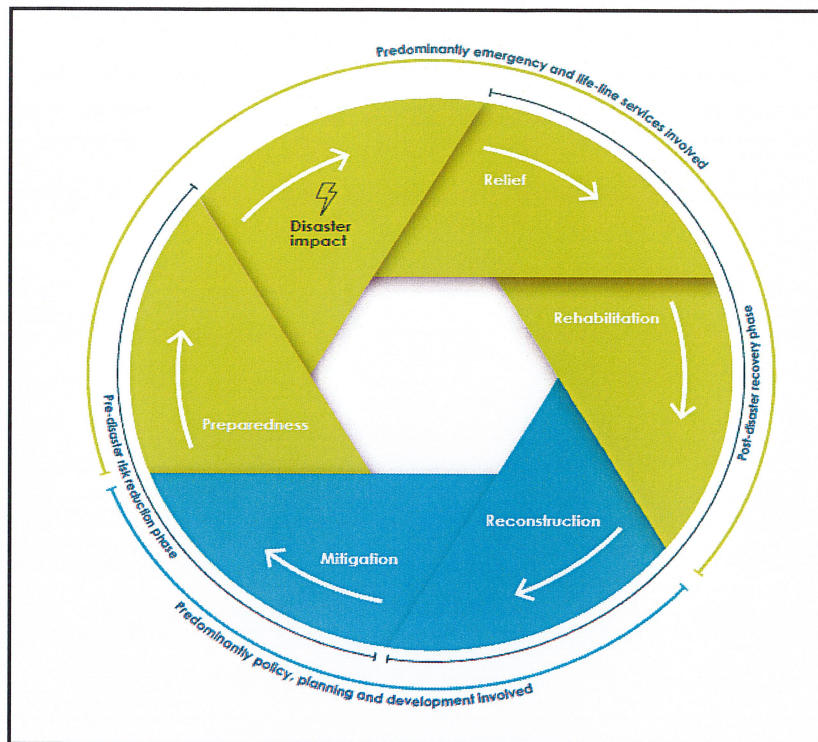


Figure 1: Disaster Risk Management Continuum (Courtesy of the CCT: Resilience Strategy Document)

**Figure 1** illustrates the DRM Continuum – it should be noted that Disaster Risk Management is not only re-active, but also involves actions aimed at preventing disasters, or mitigating the impact of disasters, i.e. disaster risk reduction and preparedness. Different line functions and departments must contribute in varying degrees to Disaster Risk Management in the various phases of the Disaster Risk Management Continuum. The needs identified in the Municipal Disaster Risk Management Plan will indicate where the different Directorates, Departments, Branches and other Entities should contribute. **These contributions must then be included in the respective Directorate's or Entity's Disaster Risk Management Plans and in the special risk-specific DRM Plans which have been drafted.**

Disaster Risk Management (DRM) Plans must cover the whole Disaster Risk Management continuum and must address all actions before, during and after disasters. Disaster Risk Management Plans are compiled on the basis of a generic plan which will include references to any Standard Operating Procedures (SOP's), legislation and best practice of the respective Services or Entities. These generic plans can be adapted to suit type of hazard/disaster-risk being dealt with. The respective Directorate/Department/Service/Entity Disaster Risk Managements Plans must be integrated with the relevant multi-disciplinary Hazard/Risk-specific DRM Plans so that all aspects are covered.



## 5. INSTITUTIONAL ARRANGEMENTS FOR DISASTER RISK MANAGEMENT

### 5.1 MUNICIPAL MANAGEMENT STRUCTURE AND ARRANGEMENTS

In terms of a management structure for Disaster Risk Management, the principle of functioning within the established structure of the City of Cape Town as far as possible will be adhered to. This will serve to link the appropriately mandated and functional Services/Departments/Branches.

The various levels making up the management structures for Disaster Risk Management in the City will respectively plan to maintain existing services and adapt to deal with the changed circumstances during major incidents or disasters. The planning, risk reduction, preparedness and response management structure for the City of Cape Town, illustrated in **Figure 2**, is as follows: -



Figure 2: The Executive Mayor and Mayoral Committee (Mayco) members



# The Executive Management Team (EMT)

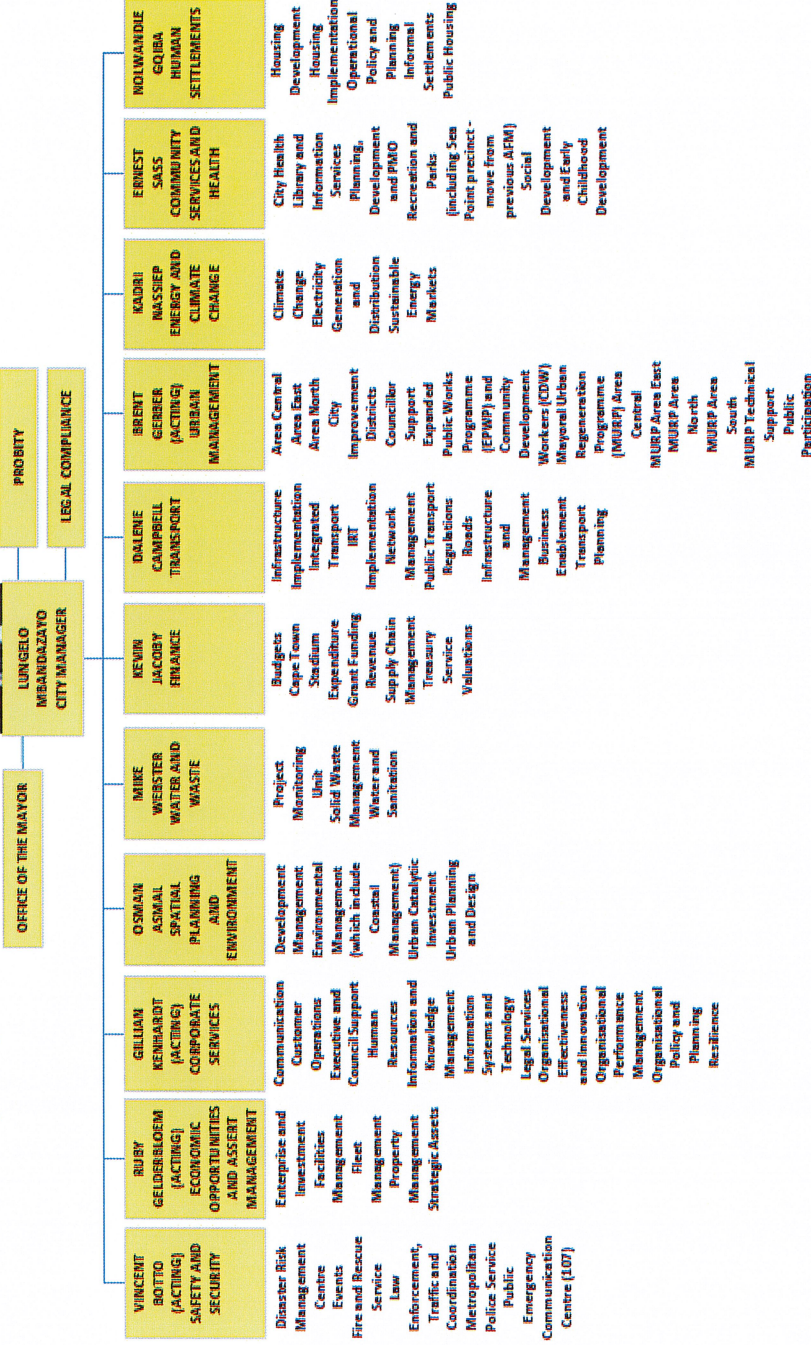


Figure 3: The Executive Management Team



The organizational chart is divided into two main sections: **RISK REDUCTION PLANNING & PREPAREDNESS STRUCTURE** (left) and **RESPONSE & RECOVERY (RELIEF & REHABILITATION) STRUCTURE** (right).

**RISK REDUCTION PLANNING & PREPAREDNESS STRUCTURE:**

- CITY MANAGER** (top left) oversees the **CITY OF CAPE TOWN DISASTER MANAGEMENT ADVISORY FORUM (MDMAF)**.
- The **MDMAF** oversees the **CCT's IDP & MUNICIPAL RISK MANAGEMENT PLAN** (represented by a circle).
- The **MDMAF** also oversees the **CCT DISASTER MANAGEMENT CENTRE (CO-ORDINATION)** (represented by a diamond).
- The **CCT DISASTER MANAGEMENT CENTRE (CO-ORDINATION)** oversees the **CCT DIRECTORATE'S TACTICAL DRIM PLANNING, RISK REDUCTION & PREPAREDNESS** (represented by a rectangle).
- The **CCT DIRECTORATE'S TACTICAL DRIM PLANNING, RISK REDUCTION & PREPAREDNESS** oversees the **HAZARD – SPECIFIC TACTICAL DRIM PLANNING, RISK REDUCTION & PREPAREDNESS WITH ALL ROLE-PLAYERS** (represented by a rectangle).
- The **HAZARD – SPECIFIC TACTICAL DRIM PLANNING, RISK REDUCTION & PREPAREDNESS WITH ALL ROLE-PLAYERS** oversees a series of specific hazards: **Wildfire**, **Flooding & Storms**, **Aircraft Incident**, **Structural Fire**, **Safety & Security**, **Economic Opportunity & Asset Management**, **Spatial Planning & Environment (new)**, **Water & Waste Services**, **Finance**, **Transport**, **Urban Management**, **Energy & Climate Change**, **Community Services & Health**, and **Human Settlements (new)**.

**RESPONSE & RECOVERY (RELIEF & REHABILITATION) STRUCTURE:**

- The **CCT DISASTER MANAGEMENT CENTRE (CO-ORDINATION)** oversees the **NDMCC / WCCMCC** (represented by a rectangle).
- The **NDMCC / WCCMCC** oversees the **CCT DISASTER OPERATIONS CENTRE (DOC) - DISASTER CO-ORDINATION TEAM (DCT) (for STRATEGIC MANAGEMENT)** (represented by a yellow rectangle).
- The **CCT DISASTER OPERATIONS CENTRE (DOC) - DISASTER CO-ORDINATION TEAM (DCT) (for STRATEGIC MANAGEMENT)** oversees the **MEDIA LIAISON & PUBLIC INFORMATION** (represented by a rectangle).
- The **MEDIA LIAISON & PUBLIC INFORMATION** oversees the **SERVICE CONTROL CENTRES** (represented by a rectangle).
- The **SERVICE CONTROL CENTRES** oversees the **INCIDENT SITE – INCIDENT COMMAND POST (ON-SITE JOC) (for TACTICAL MANAGEMENT, as per JIMS) plus SERVICE COMMAND POST (for OPERATIONAL MANAGEMENT) WITH VARIOUS SERVICES' RESPONSE & RELIEF TEAMS IN ACTION, AS PER THEIR MANDATE** (represented by a large rectangle).

MUNICIPAL DRM PLAN – Rev 9



The first objective of the disaster risk management structure indicated above is to achieve disaster prevention, risk reduction/mitigation and preparedness efforts in the day-to-day activities of the relevant Entities/Administrative Units in the City of Cape Town. The second, but equally important, objective is to ensure rapid and effective response, relief and rehabilitation efforts in the event of an emergency or disaster occurrence.

**The CCT's strategic Disaster Response and Recovery actions are described in *Section 10*.**



## 5.2 DISASTER RISK MANAGEMENT MULTI-DISCIPLINARY CO-ORDINATION ARRANGEMENTS

The CCT Municipal Disaster Management Advisory Forum (DMAF) should comprise of the following functionaries: -

### a. Internal to the City: -

#### **CITY MANAGER**

**EXECUTIVE DIRECTOR: SAFETY AND SECURITY**

**EXECUTIVE DIRECTOR: ECONOMIC OPPORTUNITIES AND ASSET MANAGEMENT**

**EXECUTIVE DIRECTORATE: CORPORATE SERVICES**

**EXECUTIVE DIRECTOR: SPATIAL PLANNING AND ENVIRONMENT**

**EXECUTIVE DIRECTOR: WATER AND WASTE SERVICES**

**EXECUTIVE DIRECTOR: FINANCE**

**EXECUTIVE DIRECTOR: TRANSPORT**

**EXECUTIVE DIRECTOR: URBAN MANAGEMENT**

**EXECUTIVE DIRECTOR: ENERGY AND CLIMATE CHANGE**

**EXECUTIVE DIRECTOR: COMMUNITY SERVICES AND HEALTH**

**EXECUTIVE DIRECTOR: HUMAN SETTLEMENTS**

#### **EXECUTIVE DIRECTOR: SAFETY AND SECURITY:**

Manager: Disaster Risk Management Centre

Manager: Events

Chief: Fire & Rescue Services

Chief: Law Enforcement

Chief: Traffic Services

Chief: Metropolitan Police Services

Director: Law Enforcement, Traffic and Coordination

Manager: Public Emergency Communications Centre (PECC - 107)

Chief: Civilian Oversight and Investigation

Manager: Business Partner (S&S)

Manager: Finance (S&S)

Manager: Support Services

#### **ECONOMIC OPPORTUNITIES AND ASSET MANAGEMENT:**

Director: Enterprise and Investment

Director: Facilities Management

Director: Fleet Management

Director: Property Management

Director: Strategic Assets

#### **EXECUTIVE DIRECTORATE: CORPORATE SERVICES:**

Director: Communications:

Manager: Customer Operations

Director: Executive Committees and Council Support

Director: Human Resources

Director: Information and Knowledge Management

Director: Information Systems and Technology

Director: Legal Services

Director: Organisational Effectiveness and Innovation

Director: Organisational Performance Management

Director: Organisational Policy and Planning

Director: Resilience



**EXECUTIVE DIRECTOR: SPATIAL PLANNING AND ENVIRONMENT:**

Director: Development Management

Manager: Environmental Management includes Coastal Management

Director: Urban Catalytic Investment

Director: Urban Planning and Design

**EXECUTIVE DIRECTOR: WATER AND WASTE SERVICES:**

Director: Project Monitoring Unit

Director: Solid Waste Management

Director: Water and Sanitation Management

**EXECUTIVE DIRECTOR: FINANCE:**

Director: Budgets

Director: Cape Town Stadium

Director: Expenditure

Director: Grant Funding

Director: Revenue

Director: Supply Chain Management

Director: Treasury Services

Director: Valuations

**EXECUTIVE DIRECTOR: TRANSPORT:**

Director: Infrastructure Implementation

Portfolio Manager: Integrated Transport

Director: IRT Implementation

Director: Network Management

Director Public Transport Operations

Director: Public Transport Regulations

Director: Roads Infrastructure and Management

Director: Business Enablement

Director: Transport Planning

**EXECUTIVE DIRECTOR: URBAN MANAGEMENT:**

Director: Area Central

Director: Area East

Director: North

Director: South

Manager: City Improvement Districts

Director: Councillor Support

Manager: Expanded Public Works Programme (EPWP) and Community Development Workers (CDW)

Director: Mayoral Urban Regeneration Programme (MURP)

Manager: Mayoral Urban Regeneration Programme – Area Central

Manager: Mayoral Urban Regeneration Programme – Area East

Manager: Mayoral Urban Regeneration Programme – Area North

Manager: Mayoral Urban Regeneration Programme – Area South

Manager: Mayoral Urban Regeneration Programme – Technical Support

Manager: Public Participation



#### **EXECUTIVE DIRECTOR: ENERGY AND CLIMATE CHANGE:**

Director: Climate Change

Director: Electricity Generation and Distribution

Director: Sustainable Energy Markets

#### **EXECUTIVE DIRECTOR: COMMUNITY SERVICES AND HEALTH:**

Director: City Health

Director: Library and Information Services

Director: Planning, Development and PMO

Director: Recreation and Parks (including Sea Point precinct)

Director: Social Development and Early Childhood Development

#### **EXECUTIVE DIRECTOR: HUMAN SETTLEMENTS:**

Director: Housing Development

Director: Housing Implementation

Director: Operational Policy and Planning

Director: Informal Settlements

Director: Public Housing

#### **b. External Entities / Organisations: -**

This includes all role-players identified in the **23 Hazard Specific DRM Plans**.

**Plus**, representation from other Western Cape Government and National Government Departments, the Airports Company South Africa (ACSA), the Victoria & Alfred (V&A) Waterfront, South African National Parks (SANParks), South African National Roads Agency Ltd. (SANRAL), South African Weather Services (SAWS), Eskom, South African Social Security Agency (SASSA) Koeberg Nuclear Power Station (KNPS), Transnet National Ports Authority (TNPA), PRASA/Metrorail, Transnet Freight Rail, Telkom, Robben Island Museum, Commerce & Industry, the Disaster Relief NGO's and from the broader Community of Cape Town.

**\*\* NOTE:** Representation may be adjusted by the Forum in accordance with the identified risks to the City which are being dealt with over a particular period.



### 5.3 LINES OF COMMUNICATION AND INTER-GOVERNMENTAL RELATIONS

In terms of Section 43 (1) of the Disaster Management Act, 57 of 2002, it is incumbent on the City to establish in its administration, a Disaster Risk Management Centre for its municipal area. Lines of communication and the relationship between the various Disaster Risk Management formations of the different spheres of government are illustrated in **Figure 5**.

The City of Cape Town's Disaster Risk Management Centre liaises with the Western Cape Disaster Management Centre (PDMC), which in turn liaises with the National Disaster Management Centre.

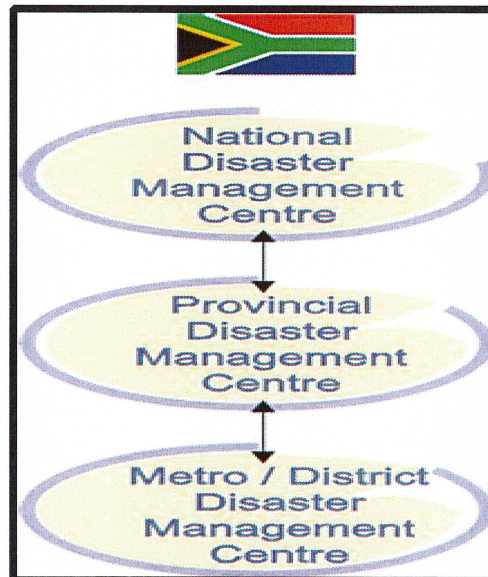


Figure 5: Lines of Communication

### 5.4 CITY OF CAPE TOWN DISASTER RISK MANAGEMENT CENTRE (DRMC)

The DRMC must specialise in issues concerning disasters and Disaster Risk Management within the City of Cape Town. In this regard it must promote an integrated and co-ordinated approach to the function, with special emphasis on prevention and mitigation.

The DRMC must perform functions and exercise powers as stipulated in Section 44 of the Disaster Management Act, 57 of 2002.

The DRMC will act as a repository of, and conduit for information concerning disasters, impending disasters and Disaster Risk Management in the municipal area.

The Disaster Risk Management Centre will perform its functions –

- (a) within the national, provincial and municipal Disaster Risk Management frameworks;
- (b) subject to the City's IDP and other directions of the City Council; and
- (c) in accordance with the administrative instructions of the municipal manager.

It will liaise with and co-ordinate its activities with those of the National Disaster Management Centre and the Western Cape Disaster Management Centre and render assistance as required in the legislation.

The Hazard/Risk-specific and Departmental Planning Teams, the functioning of the Disaster Co-ordination Team (DCT) in the Disaster Operations Centre (DOC) and the On-site (mobile) Joint Operations Centre, etc. will be described in other sections of this document.



## 6 RESPONSIBILITIES OF STAKEHOLDERS

The main stakeholders in the City of Cape Town's Municipal Disaster Risk Management Plan and their respective specific disaster risk management responsibilities in the pro-active phases, viz. **hazard identification, risk assessment, disaster prevention, risk reduction, planning and preparedness**, and in the re-active phases, viz. **disaster response, relief and rehabilitation**, are indicated in this Section.

In terms of the CCT Municipal DRM Plan, the primary objective of each Stakeholder's disaster risk management involvement must be to prevent the occurrence of emergencies or disasters that threaten life, property and the environment or economic activity in the City of Cape Town. If prevention of any major hazard(s) is not possible, the secondary objective is to reduce the disaster risk and vulnerability and thus lessen the possible impact of an emergency/disaster. **Preparedness** is also vital in order to increase the Stakeholder's resilience (**ability to cope**), when required, with all identified hazard occurrences so that the community can be assisted in the quickest and best possible way.

### 6.1 CCT MUNICIPAL DISASTER MANAGEMENT ADVISORY FORUM (DMAF)

It is the responsibility of the CCT Municipal Disaster Management Advisory Forum to approve the compilation and maintenance of a Municipal Disaster Risk Management Plan which will be compiled and maintained by the CCT Disaster Risk Management Centre.

The Disaster Management Advisory Forum shall review the Municipal DRM Plan on a regular basis in accordance to the Disaster Management Act, 57 of 2002 in terms of section 52 (1c). It must make recommendations for changes that are considered appropriate and that the required supporting documents, organisation, resources, training and facilities are in place at **all** of the participating Entities to ensure a viable emergency/disaster response structure for the City.

The DMAF must ensure that the following actions, which are in line with the benchmarked disaster risk management principles, take place during the following disaster phases:

- **Hazard Identification, Disaster Risk Assessment, Risk Reduction and Preparedness Phases:**
  - ensuring that regular Disaster Risk Assessments are undertaken in the City;
  - assessing capacity of the City to implement emergency/disaster response actions; and
  - to oversee the formulation of plans and projects to **reduce disaster risk, including the integration with the CCT Integrated Development Plan's (IDP) development projects and initiatives.**
- **During any major Emergency or Disaster Response and Relief Phases:**
  - respond to any incident, emergency or disaster occurrence with falls within the Service/Entity's mandate, as a lead or supporting role-players;
  - assess the impact of any disaster which has occurred in the City and examine any further consequences and subsequent disaster risk to the emergency area(s) – for large-scale impacts this effort will be led by the City's Disaster Co-ordination Team (DCT) – *refer to Paragraph 10.1;*
  - assess the consequences and disaster risk, when applicable, to the remainder of the City;
  - assess all response actions by the Entities participating in this Plan; and
  - advise and formulate strategic recommendations to the Disaster Co-ordination Team on the response and recovery actions after any major hazard occurrence, including the mitigation of any further disaster risk, as required.
- **During the Recovery and Rehabilitation phases:**
  - ensuring a return to normal functioning of affected communities as soon as possible; and
  - provide input on the lesson's learned on any adjustments that may be required for continuing disaster prevention/mitigation and preparedness through disaster risk elimination or reduction.



## 6.2 MUNICIPAL DISASTER MANAGEMENT ADVISORY FORUM (DMAF) SUB-COMMITTEES / SPECIAL HAZARD / RISK SPECIFIC AND DEPARTMENTAL TASK TEAMS

These sub-committees will be report to DMAF on an adhoc basis for updating and information sharing that address specific risk-reduction and disaster preparedness initiatives:

- they will co-ordinate special hazard-specific teams, which will be convened on a highest-risk priority basis to plan, manage and complete multi-disciplinary projects for pre-disaster risk reduction and preparedness and to draft the necessary integrated hazard-specific DRM Plans, i.e. for hazards such as structural fires, wildfires, radiological release/nuclear emergencies, flooding and storms, climate change, earthquakes, transport incidents, hazardous materials incidents, etc., as well as for mass events' preparedness,
- Policies, plans and procedures that address efficient incident management and inter-disciplinary co-operation during incidents are to be included in these DRM Plans. The input of specialist advisers in the various fields must be obtained on an on-going basis and DRM Plan maintenance and readiness programmes will continue.

Furthermore, these sub-committees may also be called up to address risk-mitigation issues during the *post-disaster recovery and rehabilitation phases*. These project teams will take over responsibility for recovery and rehabilitation from the Disaster Co-ordination Team (DCT) once the DCT is demobilised and/or in cases where recovery and rehabilitation takes place over an extended and protracted period. A Special Task Team under a specific line function/Department may also be convened to take responsibility for activities that address the causal factors of any disaster or major incident occurrence.

Such Teams will determine their respective terms of reference and deliverables under the direction of the Disaster Co-ordination Team (DCT) and the CCT Municipal Disaster Management Advisory Forum (DMAF) as may be required by the nature and extent of the Incident and the needs requirement.

## 6.3 THE CCT DIRECTORATES' DISASTER RISK REDUCTION AND PREPAREDNESS RESPONSIBILITIES

### **CITY MANAGER ASSISTED BY THE DIRECTORATES**

The City Manager, together with the City's Directorates, supported by the Disaster Risk Management Centre (DRMC), are to support disaster risk management activities such as hazard identification, disaster risk, vulnerability and manageability assessments, disaster prevention, disaster risk reduction/mitigation, planning and preparedness, as well as incident response, relief and rehabilitation, and to ensure that these are integrated in an effective and efficient manner into the functions/mandates of each Administrative Unit within the organisation of the City of Cape Town.

With over **70 different hazards** to deal with (refer to Section 8), aspects of disaster risk management will also fall within the mandates of **nearly all the Administrative Units/Services within the municipal structure**. This will therefore also incorporate the City's **Five-Pillar Strategic Focus** area approach. In addition, the City of Cape Town's Integrated Development Plan can also serve to reduce disaster risk to communities by targeting the highest risk and most vulnerable areas when integrated development projects are identified.

For any **responses** to major incidents/emergencies/disasters, the City Manager, will need to be **prepared, either personally or through a designated official, to:**

- report, liaise and consult with councillors and provincial and/or national government departments,
- assist with the mechanisms for the possible declaration of a local state of disaster,
- report on emergency impact and response to the Executive Mayor,
- report on emergency impact and response to the Councillor(s) for the affected area(s),
- report on emergency impact and response to the remaining Councillors,
- co-ordinate, as appropriate, with the DRMC and Integrated Strategic Communication & Branding and communicate with City management and staff, including call centres dealing with the public, on any significant aspects and updates concerning any incident, emergency or disaster occurrence,



- notify next-of-kin when a City employee is injured, missing or killed during any emergency situation,
- authorize any extraordinary expenditures (access to disaster funding and/or any alternative emergency funding sources), and
- identify persons/organisations to receive recognition for contributions made to emergency response.

The City Manager must ensure that Disaster Risk Management Plans are compiled and maintained in his/her Directorates and to provide strategy and management, both pro-actively and re-actively, for:

- Safety and Security,
- Economic Opportunities and Asset Management,
- Corporate Services,
- Spatial Planning and Environment,
- Water and Waste Services
- Finance,
- Transport,
- Urban Management,
- Energy and Climate Change,
- Community Services and Health and
- Human Settlements.

These plans must give specific reference to the following aspects:

- compilation of pro-active departmental Disaster Risk Management programmes to support disaster risk reduction or elimination and disaster preparedness,
- identify appropriate integrated development projects for incorporation into the CCT's IDP to target the highest hazard risk areas and the most vulnerable communities to assist with disaster risk reduction efforts,
- compilation of re-active departmental Disaster Risk Management procedures to ensure service continuation during emergency/disaster situations,
- providing information to persons at emergency facilities, e.g. assembly points, evacuation centres and mass care facilities,
- providing information to persons at special incident-related meetings,
- providing information to City employees and their families who are affected by emergencies/disasters,
- arranging site visits for persons affected by the emergency, e.g. families of deceased persons,
- arranging anniversary events of disasters for affected persons in support of efforts to facilitate psychosocial coping mechanisms,
- regularly updating on emergency situation to councillors,
- supporting the DRMC in communicating status reports and public safety notices,
- supporting the DRMC in risk-reducing public education and awareness programmes,
- supplying resources for Disaster Risk Management purposes as requested by the Disaster Co-ordination Team (DCT), and
- establishing and maintaining a resources database that can be integrated with the DRMC's Disaster Risk Management Resources Database (DisRes).

#### **EXECUTIVE DIRECTOR: SAFETY & SECURITY:**

Executive Director: Safety & Security must ensure that Disaster Risk Management Plans are compiled and maintained in his/her Directorate to provide strategy and management of Disaster Risk Management Centre with specific reference with to the following aspects:

- establish and ensure the effective functioning of the Municipal Disaster Risk Management Advisory Forum,
- identify appropriate integrated development projects for incorporation into the CCT's IDP to target the highest hazard risk areas and the most vulnerable communities to assist with disaster risk reduction efforts, and
- when necessary and assisted by the Head: DRMC, submit reports containing recommendations for changes to the Municipal Disaster Risk Management Plan to Council.



### **Manager (Head): Disaster Risk Management Centre (DRMC)**

The Manager (Head): DRMC is responsible for providing the strategy and management of the Disaster Risk Management Centre, focussing especially on the planning and functioning throughout all the phases of the Disaster Risk Management Continuum. He/she is also responsible for the performance by the DRMC of its disaster risk management functions, as per Section 44 of the Disaster Management Act, 57 of 2002. Amongst others, this includes the compilation, maintenance, distribution and the implementation and co-ordination, with the participation of all role-players, of the City's Municipal Disaster Risk Management Plan and supporting Hazard/Risk-specific and Departmental Disaster Risk Management Plans, including their risk reduction and resilience linkage to the CCT Integrated Development Plan's (IDP) projects.

**Pro-actively**, he/she must ensure that Disaster Risk Management Plans are compiled and maintained through integrated and co-ordinated mechanisms with all role-players identified for each hazard risk to the City, with *specific reference* to the following:

- establishment and maintenance of the City of Cape Town Disaster Risk Management Centre,
- establishment of the City of Cape Town's Municipal Disaster Management Advisory Forum (DMAF),
- compilation of pro-active departmental Disaster Risk Management programmes to support disaster risk reduction, adaptation and disaster preparedness
- monitor integrated development projects for incorporation into the CCT's IDP in order to target the highest hazard risk areas and the most vulnerable communities to assist with disaster risk reduction efforts,
- compilation of re-active departmental Disaster Risk Management plans to ensure service continuation during emergency/disaster situations,
- co-ordinating preparedness, response and mutual aid agreements with adjacent District Municipalities in the Western Cape and with the Western Cape and National Government Departments and with various external Entities including NGO's and Business, and
- establishing and maintaining a resources database that can be integrated with the DRMC's Disaster Risk Management Resources Database (DisRes).

**Re-actively**, when a significant Incident, Emergency or Disaster situation occurs, the Manager: DRMC, in consultation with the Disaster Co-ordination Team (DCT), when convened, will assess and determine the appropriate response structures, represented by the various role-players. They will also determine when these structures can be scaled down or de-activated. *Specifically*, during the Disaster Response Phase, the Manager: DRMC must:

- consider the initiation of the declaration of a local state of disaster process, as per the Disaster Management Act, 57 of 2002, if/when this is deemed necessary and in consultation with all the relevant role-players,
- liaise with provincial and national officials,
- ensure effective media liaison and public early-warning regarding the emergency situation,
- provide situation reports to all internal and external role-players on a regular basis,
- co-ordinate response with CBOs, NGOs and business entities as appropriate,
- co-ordinate the protection of the health and safety of emergency responders,
- establish and maintain the required telecommunications links with all the relevant departments and entities,
- identify available resources to be utilised for disaster risk management purposes and as requested by the DCT,
- maintaining a central registry of evacuees,
- identifying persons who may require long term care and accommodation,
- identifying target audiences for post-emergency communications,
- ensuring acceptable level of emergency and essential services delivery for areas outside of the emergency/disaster area(s),
- after consultation with the DCT and the on-site responders, authorise emergency area re-entry when it is declared safe,
- initiate emergency area rehabilitation and reconstruction efforts with the identified role-players,
- identify persons/organisations to contribute to post-emergency debriefs and reports, and



- identify persons/organisations to receive recognition for contributions to the emergency response.

## **EXTERNAL ENTITIES' DISASTER RISK REDUCTION AND PREPAREDNESS RESPONSIBILITIES**

External Entities, which are role-players in dealing with the various identified hazards that have a disaster-risk potential, have been identified in the various Hazard/Risk-specific Disaster Risk Management Plans produced by the CCT. These Entities have participated in the DRM planning processes and are aware of the disaster risk reduction and preparedness initiatives required from them for these hazards. These are contained in the relevant Hazard/Risk-specific DRM Plans along with the response strategies and other relevant information. Some of these External Entities are: - the various National and Western Cape Government Departments, Eskom, Koeberg Nuclear Power Station, SANRAL, SANParks, PRASA/Metrorail, Transnet National Ports Authority (TNPA), Airports Company South Africa (ACSA), SA Weather Service, Robben Island Museum, V & A Waterfront, Table Mountain Aerial Cable Car (TMACC), the various disaster relief agencies and other NGO's and CBO's, SPCA, Commerce and Industry and others, as identified.

The DRMC and the different line-functions are also engaging with the broader community of Cape Town, especially the most vulnerable to the different hazards that *may* affect them at some time, using various communication methodologies to make them aware and prepared for the hazards.

## **7. ENTITY/DISCIPLINE DISASTER RISK MANAGEMENT PLANS**

Each individual Directorate, Department or Service of the City of Cape Town, as well as applicable External Entities/Organisations, as indicated in the **City's Disaster Risk Management Framework**, are responsible for submitting their respective Entity's Disaster Risk Management Plan to the CCT Disaster Risk Management Centre, as per Section 52 of the Disaster Management Amendment Act, 16 of 2015. Disaster risk reduction aspects contained in these Entity/Discipline DRM Plans should also be incorporated into that Entity's submission to the Integrated Development Plan (IDP) to achieve the development targets of the City.

All Entity/Discipline DRM Plans, especially where they are identified as the Lead or as a Support Discipline to deal with one or more of the identified hazards, should primarily be directed at hazard prevention or disaster risk reduction as well as preparedness, but disaster response, relief and rehabilitation aspects must be included in their Plans and should be regularly exercised to ensure the Entity's/Discipline's readiness for any catastrophic event in the City.

## **SUGGESTED CONTENTS FOR THE DRAFTING OF A DISASTER / EMERGENCY RISK MANAGEMENT PLAN BY AN ORGANISATION / ENTITY**

Aspects that should be addressed in the drafting of all Disaster/Emergency Risk Management Plans (for both the Hazard/Risk-specific and Organisational/Discipline DRM Plans) should encompass the following aspects: -

- ◆ **Planning Framework & Scope of the DRM Plan**
  - how the concept and principles of Disaster Risk Management are to be applied within the Entity's functional area;
  - the relevant Entity's role and responsibilities in terms of the national, provincial or municipal Disaster Risk Management frameworks.
- ◆ **Applicable References, Statutory Requirements and Linked Documents / SOP's**
- ◆ **Abbreviations and Definitions Used in the Plan**
- ◆ **Hazard Identification with risk (including disaster-risk), vulnerability and manageability assessments which will also indicate a priority rating**
- ◆ **The Entity's Disaster Risk Management Efforts for the:**
  - a. **evaluation and description of Infrastructure / Organisation available**, e.g. the Entity's own Disaster Risk Management Resources Database (its capacity to fulfil its role and responsibilities)



- b. **hazard prevention through risk elimination efforts**, e.g. The Entity's initiative to remove hazards, alternative processes (particulars of its Disaster Risk Management strategies), **or**, if prevention is not possible, to focus on:
- c. **hazard mitigation through risk reduction efforts**, e.g. The Entity's education, awareness and training programmes, engineering and technical solutions (including budgets and project management), legislative compliance, safety culture, economic incentives, and preparedness.
- ♦ **Preparedness planning for major risks that cannot be eliminated**  
The Entity's contingency strategies and emergency procedures in the event of a hazard occurrence leading to an emergency or disaster, including measures to finance these strategies, and –
  - a. **Response planning**  
The Entity's role and responsibilities regarding a response to an emergency/disaster situation, and –
    - i. draft general and specific response plans and procedures for the identified hazards, i.e. structural fire, chemical spills, flooding, service disruptions, strikes, vandalism, etc.
    - ii. establish an emergency management structure and the allocation of responsibilities, including Standard Operating Procedures (SOPs), education and training requirements
    - iii. set-up integrated communications systems and other resources
    - iv. draft notification and activation procedures, including:
      - stand-by Lists; emergency contact numbers
      - resources to be used; additional resources
    - v. draft communication and liaison protocols with other Services and Responders = Internal and external communication lines (who informs who, who reports to whom).
- ♦ **Other Planning**  
Do any other required contingency planning and also develop business continuity and disaster recovery plans for their own Organisation/Entity, including the provision for possible disaster-related community rehabilitation projects and programmes.
- ♦ **Awareness and Education Efforts**  
Ensure that the Entity's strategies = BEFORE (Prevention, Mitigation and Preparedness), DURING THE INCIDENT (Notifications, actions and advisories) and AFTER (Advisories, public information and education), are communicated to all staff members and other role-players.
- ♦ **Evaluation and Maintenance programmes**  
The DRM Plan must be regularly reviewed and updated. Evaluate any incident occurrences and adjust as necessary, to be ready to deal with the next hazard.

## 8. SUMMARY OF THE REVIEWED (2020/21) DISASTER-RISK, VULNERABILITY AND MANAGEABILITY ASSESSMENT FOR THE CITY OF CAPE TOWN

An independent comprehensive disaster risk assessment for the City, incorporating both city-wide (technical) and community-based aspects, was undertaken during 2009/2010.

A recent review during 2020/2021 of this risk assessment was undertaken by an external service provider, Luticento Pty (Ltd) / Aivia Pty, through the assistance of the Western Cape Disaster Management Centre (WCG: DMC) in order to comply with the standards envisaged by the Disaster Management Act, 57 of 2002 and the National Disaster Management Framework, 2005.

The Disaster Risk Assessment, where the **PREDICTABILITY, IMPACT (SEVERITY / CONSEQUENCES), VULNERABILITY AND THE COPING CAPACITY (MANAGEABILITY)** requirements that a particular hazard poses, will determine the priorities for disaster risk management programmes and projects. The amount of possible benefit to be derived from a risk reduction and preparedness project in terms of lives protected, livelihoods secured and property or the environment/natural resources defended, will be the criteria that determines these priorities.



**Note that comprehensive disaster risk assessments should be undertaken on a regular basis (5 – 10 years) so that all the above-mentioned aspects can be re-assessed for each hazard and the appropriate risk reduction and preparedness adjustments made.**

## **8.1 DISASTER RISK ASSESSMENT: DETERMINATION OF THE RELATIVE DISASTER RISK PRIORITISATION**

Some definitions i.r.o. the terminology used in this Section are given below: -

**COPING CAPACITY (MANAGEABILITY)** - The ability of people, organizations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters. *Comment: The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during crises or adverse conditions. Coping capacities contribute to the reduction of disaster risks.*

**CRITICAL FACILITIES** - The primary physical structures, technical facilities and systems which are socially, economically or operationally essential to the functioning of a society or community, both in routine circumstances and in the extreme circumstances of an emergency. *Comment: Critical facilities are elements of the infrastructure that support essential services in a society. They include such things as transport systems, air and sea ports, electricity, water and communications systems, hospitals and health clinics, and centres for fire, police and public administration services.*

**DISASTER RISK REDUCTION** - The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

**EARLY WARNING SYSTEM** - The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss.

**EXPOSURE** - People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.

**HAZARD** - A potentially dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

**MITIGATION** - The lessening or limitation of the adverse impacts of hazards and related disasters.

**PREPAREDNESS** - The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.

**PREVENTION** - The outright avoidance of adverse impacts of hazards and related disasters.

**RECOVERY** - The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

**RESILIENCE** - The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

**RESPONSE** - The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduces health impacts, ensure public safety and meet the basic subsistence needs of the people affected.

**RISK (or DISASTER RISK)** - The measure of potential harm from a hazard or threat. Risk is usually associated with the human inability to cope with a particular situation. In terms of disaster management, it can be defined as the probability of harmful consequences, or expected losses death, injury, damage to property and the environment, jobs, disruption of economic activity or social systems. Hazards will affect communities differently in terms of ability and resources with which to cope. Poorer communities will be more at risk than others.

**RISK ASSESSMENT** - A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.

**RISK MANAGEMENT** - The systematic approach and practice of managing uncertainty to minimize potential harm and loss.

**VULNERABILITY** - The degree to which people, property, the environment or social and economic activity - in short, all elements-at-risk - are susceptible to injury, loss of life, damage, disruption, exploitation or incapacitation by all hazards.

### **Disaster Risk Quantification**

The disaster risk profiling assessment normally produces so many hazards that must be addressed that the sheer volume of work tends to be overwhelming. Consequently, a **Relative Disaster Risk Prioritisation Assessment** is conducted to assist the Municipality in their disaster risk management planning.

The **Relative Disaster Risk Prioritisation Assessment** involves the following action steps: -

- **Quantify the Hazard**
- **Quantify Vulnerabilities**
- **Quantify the Disaster Risk Manageability/Coping Capacity**



## - Determination of the Hazard's Overall Disaster Risk Score and Relative Priority Rating.

### Description of the (Simplified) Measurement Criteria to Quantify each Hazard

The Hazard Score has two components, the Probability of Occurrence and Estimation of Maximum Impact/Severity and Consequences that the particular hazard poses. They are all described below along with the Vulnerabilities, Disaster Risk Manageability/Coping-capacity and the Determination of the Hazard's Overall Disaster Risk Score and Relative Priority Rating.

#### Probability of Occurrence

Each hazard's characteristics, past occurrences and any other relevant aspects are assessed and a general probability of occurrence rating is then assigned. Due to the different hazards being very wide-ranging and yet striving to assign a reasonable comparative rating to each of hazards, these ratings are broadly defined as follows: -

**Very Likely** = the probability of one or more occurrences of this type of hazard within a relatively short period, i.e. one or more times within a month;

**Likely** = the probability of one or more occurrences of this type of hazard within the short-to-medium period, i.e. one or more times with 6 months;

**Possible** = the probability of one or more occurrences of this type of hazard within the medium to long term, i.e. one or more occurrences in 20 years;

**Unlikely** = the probability of one or more occurrences of this type of hazard in the long term, i.e. one or more occurrences in 50 or more years.

#### Estimation of Maximum Impact/Severity and Consequences of the Hazard

Each hazard's characteristics, the assessment of severity and consequences of hazard occurrences elsewhere, the area's and population's profile and various other factors are considered in order to estimate the possible maximum impact that an occurrence of this hazard may have. Also, due to the different hazards being very wide-ranging and yet striving to assign a reasonable comparative rating to each of hazards, these ratings are broadly defined as follows: -

**Extreme** = the description of the *possible maximum impact and consequences* of major emergency/disaster proportions that this type of hazard may have, i.e. hazard will hold extreme consequences to a community or area;

**Moderate** = the description of the *possible maximum impact and consequences* of smaller emergency proportions that this type of hazard may have, i.e. hazard will hold moderate consequences to a community or area;

**Insignificant** = the description of the *possible maximum impact and consequences* of incident or major incident proportions that this type of hazard may have, i.e. hazard will hold relatively minor consequences to a community or area.

#### Quantification of Vulnerability to the Community and/or Environment and/or the Economy

The hazard vulnerability incorporates *various factors* which, on their own or together, indicate the degree to which a community is vulnerable to each of the hazards in the region. These factors are: -

**Societal** = the prevailing community/societal circumstances and characteristics, which will be further weakened due to a particular hazard occurrence

**Environmental** = the prevailing environmental circumstances and characteristics, which will be further weakened due to a particular hazard occurrence

**Infrastructure, especially critical facilities and services** = the prevailing infrastructure and services' characteristics, which will be further weakened due to a particular hazard occurrence

**Economy** = the prevailing characteristics of a particular community's economy, which will be further weakened due to a particular hazard occurrence, due to the replacement and installation costs for damaged critical assets or loss of use or even revenue income due to service outage, etc.

**N.B. Political and Legal Vulnerabilities** may also be required to be assessed, depending on the Community's circumstances, but these have only been broadly considered for this vulnerability quantification.

The above-mentioned vulnerability factors are each assessed and the results then grouped together to indicate only a broad vulnerability description, as follows: -

**Small Vulnerability** = the prevailing societal, environmental, infrastructure and economic circumstances and characteristics which will decrease their vulnerability only in a small measure on the occurrence of the hazard;



**Vulnerable** = the prevailing societal, environmental, infrastructure and economic circumstances and characteristics which will decrease their vulnerability only moderately on the occurrence of the hazard;  
**Very Vulnerable** = the prevailing societal, environmental, infrastructure and economic circumstances and characteristics which will decrease their vulnerability to a large extent on the occurrence of the hazard.

### **Manageability/Coping-capacity to offset the Hazard's Impact and Prevailing Vulnerabilities**

The general rating of the overall preparedness for response to any hazard occurrence is quantified, considering the effectiveness or placement of the following aspects: -

- **Public Awareness:** The over-all awareness of people living in a potential impact area of a hazard to that hazard is one of the factors that determine the risk manageability of a community.
- **Legislative Framework:** The legislative framework that governs a particular hazard event is one of the factors that determine the risk manageability of a community.
- **Early Warning Systems:** The early warning systems for a hazard occurrence.
- **Government Response:** The response of the municipality, the provincial and national government to a hazard occurrence.
- **Government Resources:** The resources available to the municipality and to the provincial and national government for a hazard occurrence.
- **Existing Risk Reduction Measures:** The existing risk reduction measures of the municipality, the provincial and national government to a hazard occurrence.
- **Public Participation Measures:** The existing public participation measures of the municipality and the provincial government to a hazard event.
- **Municipal Management Capabilities:** The over-all management capability of the relevant municipality for a hazard event.

A simple model has been utilised to quantify the degree to which a community (this word must be seen in the holistic context, i.e. the population together with the local services and support) can intervene and manage the negative consequences of a hazard event. For the purpose of this Disaster Risk Assessment (DRA) description all the above-mentioned hazard management aspects' ratings are grouped together to indicate one of the following 4 ratings, viz. **Good, Adequate, Basic and Poor.**

**Good:** Indicates that the community has a **high level of manageability** for this type of hazard and it is unlikely that the hazard occurrence will impact negatively on the community.

**Adequate:** Indicates that the community has an **average level of manageability** for this type of hazard and it is possible that the hazard occurrence *may* impact negatively on the community.

**Basic:** Indicates that the community has a **basic level of manageability** for this type of hazard and it is **likely that the hazard occurrence will impact negatively** on the community.

**Poor:** Indicates that the community has a **poor level of manageability** for this type of hazard and it is **highly likely that the hazard occurrence will impact negatively** on the community.

### **Determination of the Hazard's Overall Disaster Risk Score and Relative Priority Rating**

The **OVERALL DISASTER RISK SCORE and RELATIVE PRIORITY RATINGS** for each hazard, incorporates **ALL** the factors indicated above so that a comparison and prioritisation can be made between all the identified hazards which may have a disaster potential.

In the risk analysis by Aurecon they focused on calculating the relative risk priorities of a hazard event, **using a simplified risk prioritisation model to calculate the relative priorities of the disaster risk** to which communities in a specific area are exposed: -

**Relative Disaster Risk Priority Score = Hazard score X Vulnerability score / Manageability score.**

The result will then indicate their priority for efforts of hazard prevention or risk reduction/mitigation, greater planning, awareness and preparedness (incl. increasing coping capacities for response) efforts to lower the risk. The indicator ratings through using this methodology the following priority indicators have been used: -

**Very High (intolerable) Risk Priority, with a very high Relative Risk Priority:** Should the relative risk priority of a particular hazard event impacting on a community be very high, that community faces a potentially **destructive** risk with a high probability of hazard occurrence, for which they are **unprepared**. This combination equates to an **intolerably high risk** and may be a disaster in the making. For these **very high risks urgent risk reduction interventions are then required!**



**High Risk Priority, with a high Relative Risk Priority:** If the relative risk priority of a particular hazard event impacting on a community is high, the risks to which these communities are exposed are potentially **destructive**, but the community is modestly prepared for this hazard occurrence. This combination equates to a **high risk** and a combination of **risk reduction interventions** and **preparedness plans** must be initiated for these risks.

**Medium Risk Priority, with a medium Relative Risk Priority:** The relative risk priority of a particular hazard event impacting on a community is medium - this translates in very little risk for a largely prepared community for this hazard occurrence. This combination equates to a **medium risk** and **preparedness plans** for these risks must be prepared, with less risk reduction efforts being required.

**Lower Risk Priority, with a low Relative Risk Priority:** Relative risk priority of a particular hazard event impacting on a community is of a **lower risk**, indicating a prepared community, but on-going preparedness and basic risk reduction is still required.

#### INDICATION OF THE INTEGRATION OF FACTORS FOR EACH HAZARD'S RELATIVE PRIORITY DETERMINATION

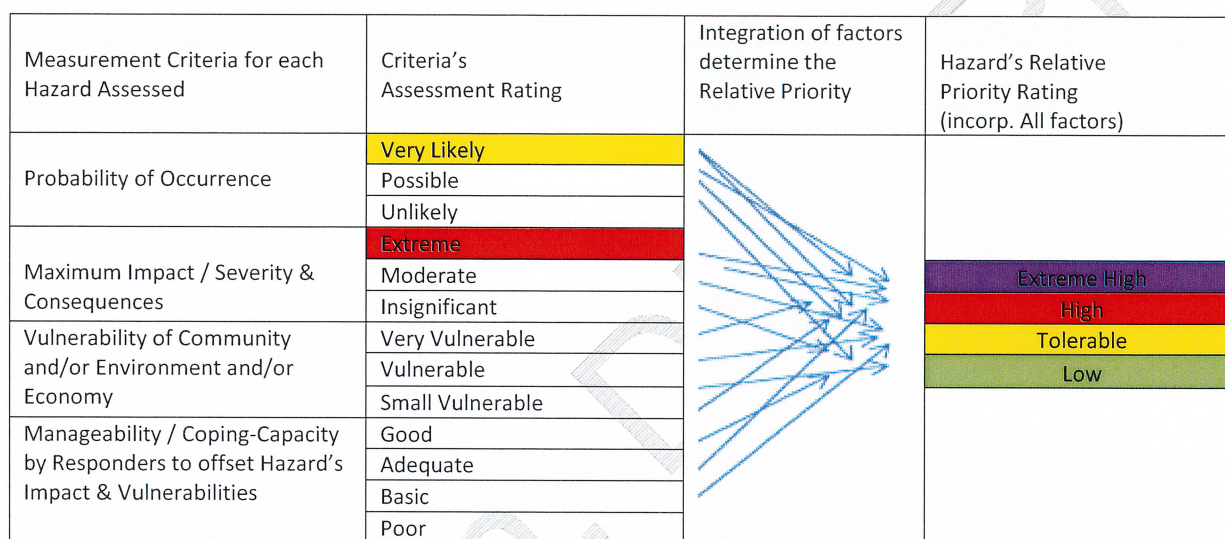


Figure 6: Indication of factors for each hazard's relative priority determination

The hazards identified through the independent Reviewed Disaster Risk Assessment for the City of Cape Town during 2020/21 undertaken by the Western Cape Government: Disaster Management Centre: Disaster Risk Management (refer to the Table overleaf) will be incorporated into the City's Disaster Risk Reduction, Planning & Preparedness Programme and, using the above-mentioned risk assessment methodology, will be prioritised according to their relative priority ratings.

**OVERLEAF IS THE 2020/21 REVIEWED DISASTER RISK ASSESSMENT TABLE INDICATING THE RELEVANT HAZARD PRIORITIES AND THEIR RESPECTIVE DISASTER RISK MANAGEMENT PLANS ...**



This document is a sample Hazard Vulnerability Capacity Assessment Tool. Individuals using this tool are solely responsible for any Disaster Risk Assessment and compliance with applicable laws and regulations.

#### INSTRUCTIONS:

Evaluate potential utilising the specific 5 X 5 scale and the indicators below. Please note specific score criteria on each work sheet to ensure accurate recording.

| RISK RATING INDICATORS                       |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                          |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HAZARD                                       |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                          |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                              | 1<br>Affect a small area                                                                                                                                                                                                                                         | 2<br>Affect a ward                                                                                                                                                                                       | 3<br>Affect an area like a local municipality                                                                                                                                                             | 4<br>Multiple local Municipalities/A District                                                                                                                                                                                                                        | 5<br>Affect multiple district municipalities                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Affected area</b>                         | Affects only a small part of a farming community/town/local municipality. No persons/produce/livestock injured and/or displaced. Limited damage.                                                                                                                 | Affects a part of the farming community/town/local municipality. Some displacement of people. Some environmental damage to crops and non-critical habitats and species. Short duration of impact.        | Affects a part of the region. Local to provincial impact. Some deaths may occur, multiple injuries / affected persons. Some displacement of people. Some environmental damage. Medium duration of impact. | Affects a part of the district. Fatalities and injuries to livestock. Displacement of whole communities. Environmental damage to endemism hotspots. Medium duration of impact.                                                                                       | Affects most of the area. Multiple deaths and injuries. Large displacement of people. National impact. Significant environmental damage, critical habitats or species affected. Extended period of impact. Extreme damage caused.                                                                                                                                                                                                                                       |
| <b>Probability</b>                           | 1<br>Highly improbable<br>No chance.                                                                                                                                                                                                                             | 2<br>Slight or unlikely<br>Slight possibility.                                                                                                                                                           | 3<br>Possible<br>50/50 chance                                                                                                                                                                             | 4<br>Very good chance.<br>Likely to occur                                                                                                                                                                                                                            | 5<br>Highly probable<br>100% certainty.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Frequency</b>                             | 1<br>Will happen >20 years.                                                                                                                                                                                                                                      | 2<br>Will happen 1 to 20 years.                                                                                                                                                                          | 3<br>Will happen every year.                                                                                                                                                                              | 4<br>Will occur monthly.                                                                                                                                                                                                                                             | 5<br>Will occur weekly.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Predictability</b>                        | 1<br>100% Predictable                                                                                                                                                                                                                                            | 2<br>Fairly accurate                                                                                                                                                                                     | 3<br>50/50 chance to predict                                                                                                                                                                              | 4<br>Slight chance to predict                                                                                                                                                                                                                                        | 5<br>Cannot predict                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Magnitude</b>                             | 1<br>Negligible                                                                                                                                                                                                                                                  | 2<br>Minor                                                                                                                                                                                               | 3<br>Moderate                                                                                                                                                                                             | 4<br>Serious                                                                                                                                                                                                                                                         | 5<br>Major                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| VULNERABILITY                                |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                          |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                              | 1<br>Not vulnerable                                                                                                                                                                                                                                              | 2<br>Slightly vulnerable                                                                                                                                                                                 | 3<br>Vulnerable                                                                                                                                                                                           | 4<br>Seriously vulnerable                                                                                                                                                                                                                                            | 5<br>Extremely vulnerable                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Political</b>                             | Very stable political condition.                                                                                                                                                                                                                                 | Limited cooperation between all political parties which is conducive to development which means there is limited political instability.                                                                  | Slight political instability and conflict                                                                                                                                                                 | Disruptive political activities with uncertainty in the Department and local communities.                                                                                                                                                                            | Dysfunctional political structures negatively influences the community life and could result in civil unrest.                                                                                                                                                                                                                                                                                                                                                           |
| <b>Economic</b>                              | Local economy of affected area is not susceptible, insignificant impact on national economy.                                                                                                                                                                     | Local economy of affected area is slightly susceptible for a small number of families.                                                                                                                   | The local region is susceptible to negative economic growth.                                                                                                                                              | Serious financial and economical impact on the local community. Consequences for the district.                                                                                                                                                                       | Local economy is seriously susceptible, will have significant negative impact on the district, provincial and/or national economy.                                                                                                                                                                                                                                                                                                                                      |
| <b>Social</b>                                | The community is resilient, well prepared, mitigation / risk reduction in place.                                                                                                                                                                                 | Limited defence which could lead to slight injuries and discomfort of individuals and short-term displacement.                                                                                           | Some injuries and limited displacement of some community members.                                                                                                                                         | Multiple and fatal injuries and/or displacement of a large number of families.                                                                                                                                                                                       | The community is highly susceptible and unprepared which could lead to multiple fatalities/injuries and damages. Permanent displacement of the total community. Low perception of risk.                                                                                                                                                                                                                                                                                 |
| <b>Technological</b>                         | No impact or destruction of affected area, critical infrastructure and services. Good protection against hazard.                                                                                                                                                 | Limited damage to affected area, critical infrastructure and services. Moderate protection against hazard.                                                                                               | Moderate damage to affected area, critical infrastructure and services. Moderate protection against the hazard.                                                                                           | Serious damage to affected area, infrastructure and services.                                                                                                                                                                                                        | Total destruction of affected area, critical infrastructure and disruption of services. No or limited protection against hazard. Will take an extensive period of time to recover.                                                                                                                                                                                                                                                                                      |
| <b>Environmental</b>                         | Less important habitats and species within affected area. Effective environmental protection and resource management in place.                                                                                                                                   | Limited impact on important habitats, livestock and species within affected area.                                                                                                                        | Moderate impact on habitats and species – putting them in harm's way.                                                                                                                                     | Serious impact on habitats, livestock and species particularly where there are high numbers of endemic species.                                                                                                                                                      | Impact is extreme on critical habitats, livestock, produce and species within affected area. Limited environmental protection in place – period of rehabilitation will be extensive.                                                                                                                                                                                                                                                                                    |
| CAPACITY                                     |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                          |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                              | 1<br>Very low                                                                                                                                                                                                                                                    | 2<br>Low                                                                                                                                                                                                 | 3<br>Medium                                                                                                                                                                                               | 4<br>High                                                                                                                                                                                                                                                            | 5<br>Very high                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Institutional and Management capacity</b> | No resources and risk reduction in place - in terms of land use planning, building codes, maintenance, preventative structures and environmental management. Risk reduction mostly ignored in development planning.                                              | Limited application of land use planning, building codes, maintenance, preventative structures and environmental management.                                                                             | Moderate application of land use planning, building codes, maintenance, preventative structures and environmental management.                                                                             | Well established application of land use planning, building codes, maintenance, preventative structures and environmental management.                                                                                                                                | Risk reduction is integrated into development planning through land use planning, building codes, maintenance, preventative structures and environmental management.                                                                                                                                                                                                                                                                                                    |
| <b>Programme Capacity</b>                    | There is no public participation or interest from public. Serious lack of tailored public awareness programmes, modules in school curricula or involvement during emergency response and/or evacuation drills.                                                   | There is limited public participation in hazard risk reduction, preparedness and response with some public awareness programmes and public participation in emergency response and/or evacuation drills. | Medium implementation of public awareness programmes, modules and some public participation in emergency response.                                                                                        | Good implementation of public awareness programmes, risk reduction modules in school curricula, public participation in emergency response and/or evacuation drills.                                                                                                 | There is wide public participation in hazard risk reduction, preparedness and response. This is facilitated through public awareness programmes, risk management groups/forums and modules in school curricula.                                                                                                                                                                                                                                                         |
| <b>Physical capacity and resources</b>       | Limited or no budget in the form of emergency funds (district/national/provincial) and insurance.                                                                                                                                                                | Provincial and national departments have limited resources or budget to respond to disasters in the form of emergency funds.                                                                             | Provincial and national departments have some resources or budget to respond to disasters in the form of emergency funds.                                                                                 | Good access to local/national/international emergency funds. Insurance in place.                                                                                                                                                                                     | Significant resources and budget to respond to the disasters in the form of local emergency funds. Insurance in place. Access to mitigation and reconstruction loans.                                                                                                                                                                                                                                                                                                   |
| <b>People capacity and competencies</b>      | Limited or no training conducted for selected role-players.                                                                                                                                                                                                      | Basic training conducted for all role-players.                                                                                                                                                           | Training conducted for all role-players.                                                                                                                                                                  | Wellbalanced training programme implemented to capacitate all role-players.                                                                                                                                                                                          | Integrated multi-disciplinary and multi-sector teams that are fully trained and operate at 100%.                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Support network</b>                       | Insufficient service delivery due to limited institutional arrangements. Inadequate skills and experience. Limited or no capability at municipal level for leadership directed at the DM function. No tailored DRA, DMP, risk maps, DMC or early warning system. | Level 1 DMP in place. Limited capability which is increasing due to functional arrangements, e.g. some degree of skills and experience. Limited communication and early warning system.                  | Some staff exclusively allocated to Disaster Management. Disaster Management Centre established but not operating optimally / sufficiently equipped.                                                      | Full compliance with the DM Act and Framework. Well established institutional arrangements with leadership taking an active role in DM matters. Tailored DMP and DRA available. Established and fully-functional DMC, early warning system and communication centre. | 100% demonstrated and tested DMPs, and readiness plans in place. 100% understood and implemented by all role-players. High levels of skill and experience which leads to well balanced managerial capacity. Good continuity in management which leads to sufficient service delivery. Disaster Management Centre established, fully functional, well equipped and resourced. Staff allocated exclusively to Disaster Management. Hazard within mandate of municipality. |



[illegible]



# CCT DRMC – SPECIFIC-HAZARD DRM PLANS LISTING – JUNE ‘14

|    | DRM PLAN REF. NO. | DRM PLAN TITLE                                               | SPECIFIC HAZARDS WHICH ARE INCLUDED IN EACH DRM PLAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----|-------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | B1                | WILDFIRE HAZARDS                                             | Wildfire (Veld, Forest, Mountain & Urban-Fringe Fires);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2  | B2                | HUMAN COMMUNICABLE DISEASE OUTBREAK                          | Human Communicable / Infectious Disease Outbreak , incl. Pandemic and Epidemic;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3  | B3                | ANIMAL COMMUNICABLE DISEASE OUTBREAK                         | Animal Communicable / Infectious Disease Outbreak, incl. Pandemic and Epidemic;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4  | B4                | PEST INFESTATION HAZARDS                                     | Pest Infestation; Plant Disease Hazards' Outbreak;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5  | E1                | ENVIRONMENTAL POLLUTION HAZARDS                              | Air Pollution; Ground / Soil Pollution; Illegal / Uncontrolled Solid Waste Disposal; Surface Water Pollution / Eutrophication (Harmful or Toxic Algal Blooms- Inland Waterbodies); Groundwater (sub-surface water) / Aquifer Pollution;                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6  | E2                | LAND & BIODIVERSITY DEGRADATION HAZARDS                      | Land Degradation; Soil Erosion; Desertification; Extinction of Species - Fauna; Extinction of Species - Flora (Loss of Fynbos, Renosterveld & Strandveld Ecosystems & Deforestation); Depletion of Wetlands;                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7  | G1                | EARTHQUAKE (SEISMIC) HAZARDS                                 | Strong Ground Motion; Fault Rupture; Soil Liquefaction;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8  | G2                | SLOPE INSTABILITY HAZARDS                                    | Rockfall; Landslide;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 9  | G4                | COSMIC IMPACT HAZARDS                                        | Solar Storm (Geomagnetic "space weather"); Bolide (Asteroid or Meteorite) Impact; "Space Debris" Impact;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10 | H1                | FLOODING & STORMS HAZARDS                                    | Storm-water Overflow Flood; River / Flash Flood ; Water-table Rise Flooding; Severe Storms; Gale-force (High) Wind; Tornado; Lightning Strike;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 11 | H2 / G3           | CLIMATE CHANGE & COASTAL ZONE PROCESS HAZARDS                | Sea-level Rise; Sea (Storm) Surge; Coastal Erosion; Sand-dune Migration; Saline Intrusion of Aquifers; Tsunami; Harmful Algal Blooms ("red-tide") - Marine; Stranding of Whales & Other Marine Animals; Change in Aquifer Recharge; Change in Rainfall Pattern; Drought; Heat Wave; Ultra-Violet (UV) Radiation Exposure; Cold Spell;                                                                                                                                                                                                                                                                                                                        |
| 12 | S1                | SOCIAL DISORDER HAZARDS                                      | Bomb Threat; Hostage-Taking; Bombing & Terrorism; Deliberate (Malicious) Chemical or Biological or Radio-active (CBR) Materials Release; Civil Unrest & Vandalism; Xenophobia / Social Conflict;                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 13 | T1                | AIRCRAFT INCIDENT                                            | Aircraft Incident Hazards (on-and-off airport) - various;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 14 | T2                | RAIL INCIDENT                                                | Rail Incident Hazards -various;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 15 | T3                | SHIPPING INCIDENT                                            | Rail Incident Hazards -various;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 16 | T4                | ROAD TRAFFIC INCIDENT                                        | Road Traffic Incident Hazards - various;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 17 | T5                | AERIAL CABLEWAY INCIDENT                                     | Aerial Cableway Incident Hazards - various;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 18 | T6                | STRUCTURAL FIRE HAZARDS                                      | Structural Fire - Formal; Structural Fire - Informal Settlement;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 19 | T7                | STRUCTURAL FAILURE HAZARDS                                   | Structural Failure Incident; Expansive Soils;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 20 | T8                | KNPS RADIOLOGICAL RELEASE HAZARD                             | Koeberg Nuclear Power Station - Radiological Release Hazard;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 21 | T9                | ACCIDENTAL HAZMAT RELEASE INCIDENT                           | Accidental HazMat Release (fire / spill / leak / explosion) Incident – at MHI's or during transportation;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 22 | T10               | COASTAL OIL SPILL HAZARD                                     | Ocean / Coastal Oil Spill Incident;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 23 | T11               | DISRUPTION OF ESSENTIAL SERVICES AND CRITICAL INFRASTRUCTURE | (Prolonged) Disruption of Electricity (Power) Supply; (Prolonged) Disruption of Water Supply (Bulk Water, Water Transfer Tunnels or Urban Reticulation); Dam or Local Water Service Reservoir Failure or Break; (Prolonged) Disruption of the Sewerage / Sanitation System; (Prolonged) Disruption of Other Essential Services & Critical Infrastructure = Health Services; Transportation Services (various Modes); Solid Waste Management Services; Telecommunications & ICT Services; Government Administration Services; Other Critical / Strategic Infrastructure, Services & Activities – Governmental, Commercial, Industrial, Agriculture & Tourism; |

## HAZARD CATEGORIES LEGEND: -

B = Biological

E = Environmental

G = Geological

H = Hydro-meteorological

T = Technological

S = Socio-Economic-Political



Over the past decades, a steady increase in the number of disasters have been witnessed. Municipalities are currently under severe financial pressure and are thus not prioritising the maintenance of their respective local municipalities' risk profiles. The CCT has undertaken a comprehensive DRA in 2009/10. However, due to the dynamic nature of risk, the existing DRA needed to be reviewed and updated to ensure that the disaster management plan of the municipality is informed by a current and credible disaster risk assessment. CCT has been exposed to many major incidents and disasters in recent years and high levels of vulnerability exist that may lead to deaths, injuries, damage, socio-economic loss, and the disruption of the normal functioning of communities. Due to the importance of having a current and accurate risk profile, Western Cape Disaster Management (WCDM) has committed itself to assist local municipalities in updating their DRAs and meeting a specific standard. This study was undertaken with the aim of providing disaster and risk management and role-players with a user-friendly "living" document to assist them in legislating Disaster Risk Reduction (DRR) by focusing on pertinent risks affecting CCT.

Climate Change is increasingly elevated as a boiling point and big focus on the global agenda. The reason for this is that the world is rapidly experiencing the effect of this phenomenon on fundamental socio-economic indicators such as water, sanitation, food security, health, energy, industrial developments and human settlements.

80% of disasters are the result of extreme meteorological events, all of which are becoming more frequent and intense as the climate changes, with the effects of the rest exacerbated as these changes accelerate. Climate-related impacts such as drought, flooding, thunderstorms, strong wind, fires and extreme heat are not new to the CCT but they are likely to be exacerbated, as well as increasing in frequency and severity. Importantly, long term incremental changes and shifts in trends in climatic variables will impact on the thresholds of tolerance of infrastructure and critical services provided by government.

It must be emphasized that a risk score is determined by **hazard, vulnerability and coping capacity** scores. Even if a hazard is a frequent and familiar occurrence (such as floods), it will not necessarily have a high risk score, due to, for example, a high level of coping capacities, *inter alia* government response and awareness. The opposite is also true, and is the reason for the elevated relative risk scores of the previously 'unknown' hazards. It must also be mentioned that the **probability and severity of a hazard** affects the risk score to a large extent. Even though a hazard has a low probability of occurrence, the sheer magnitude of the impact (the severity) may be extreme (a so-called low probability high impact event). This is the case in the occurrence of strong ground motion and tsunamis. Adding to that, due to the low probability of occurrence and the unknown impacts (lack of awareness for example), the risk scores are even further elevated due to a small coping capacity score.

The importance of key services has also become apparent in the priority list. Loss or disruption of services, whether it be water, electricity, sewerage, solid waste disposal, or governmental and commercial service delivery (strikes, possible lack of basic provisions, etc.) is a major threat to the City. Except for economic losses, the overwhelming impacts of most of these are of biological nature, resulting in human communicable disease. Whether the hazard is flooding, changing in rainfall patterns, fires, structural collapse, wind, air pollution, and UV radiation exposure, disruption in waste disposal, storms, cable-theft incidents or radiological disease, *human welfare is affected*. It is therefore of utmost importance to ensure *coping capacity in the health sector, surpassing that of the emergency services*. Effort should concentrate on decreasing the vulnerability of the poor. It must however be stressed that communicable/infectious human disease can present itself to the area as a major risk, and can happen at any time. This same may also apply to animal communicable disease impact.

Ageing infrastructure of specifically reticulation systems is a hazard recognized in all cities and duly noted. It is apparent from the report that a major contributor to risk in the City is the high levels of vulnerability of the urban poor. Migration has been identified as a major problem, increasing the community at risk by 35 000 people per year. **The spatial development policies of the City also**



***indicate increased densification, implying an increased risk (higher exposure to risk) in the area.***

The internationally accepted and proposed paradigm shift from disaster response to risk reduction is highlighted by the findings, as many of the disaster risks can only be addressed via mitigation. It is imperative that the Disaster Risk Management Centre plays an active role in co-ordinating any efforts and therefore needs to be organisationally placed to be effective in this task. The results of this assessment indicated a shift in importance to risks induced by climate change. The current research on climate change is however limited in terms of regional impacts, but the effects should constantly be monitored to evaluate the resulting risks based on best practice knowledge.

The objective of this disaster risk assessment(DRA) is to assist the CCT in acquiring credible data to inform planning, budgeting and the accompanied prioritization with respect to policy options. In keeping with international best practice, the DRA report makes recommendations for DRR plans that should be implemented to mitigate potential loss of life and property. This DRA report should inform and be supported by the CCT Metropolitan Municipal Council, wards and IDP so that the end results of this alignment would be the strengthening of a policy-led response that is aligned with an updated disaster risk profile.

### **THE CCT DRMC's COMMENT ON THE 2020/21 REVIEWED DRA REPORT**

As can be seen from the Disaster Risk Profile Table (pages 28 – 29), all the communities in Cape Town have a degree of vulnerability to many of the disaster-causing hazards mentioned above, but especially those communities living in the informal settlements and backyards, viz. the poorer sector of the City's population, are the most vulnerable to most of these hazards. Excluding exposure to the natural disaster hazards which may occur anywhere, the communities living in the proximity of certain installations, industry or transport routes are exposed to a greater disaster risk, viz. more vulnerable, because of this technology.

In terms of capacity to address and therefore reduce risks, there currently is a strong emphasis on preparedness and response planning. This means that capacity and planning in terms of mitigation and prevention should be strengthened.

**The following have been identified as critical Disaster Risk Management issues which should receive priority attention in the CCT Integrated Development Plan (IDP): -**

- **integrating Disaster Risk Management** plans and programmes of all Entities with those in the IDP;
- integrating the **City's Climate Change Policy** and the **Resilient Strategy** into DRM Plans and programmes of all Entities;
- the adequate functioning of a **Disaster Risk Management Centre** for the City of Cape Town;
- establish **disaster prevention/risk reduction programmes** that focus on the most vulnerable communities and which endeavour to support sustainable livelihoods;
- refine disaster **loss tracking** and establish a culture of **scientific disaster risk analysis** utilising the latest Information and Communication Technology (ICT), Emergency Policing Incident Control (**Programme EPIC**) and **Drone** technology available in the City;
- establish and maintain **multi-disciplinary co-operation** and **co-operative partnerships** to ensure that **integrated programmes** are being undertaken;
- expand on **pro-active media liaison** and rapid response to media / social media inquiries;
- contribute to preventative and re-active management strategies for the HIV/AIDS, TB and other pandemics e.g Covid-19;
- undertake extensive **education and awareness programmes** on best practices before, during and after disasters; and
- expansion of an **extensive CCTV camera network** in the City to monitor and assist in the management of any disaster situation.

### **HAZARD-SPECIFIC DISASTER RISK MANAGEMENT PLANS**

The CCT Disaster Risk Management Updated Planning Programme for Hazard/Risk-specific DRM Plans is on-going and work in progress. There will be participation, on an integrated basis, by ALL identified Entities/Services which have a role to play in either in the prevention, risk reduction/mitigation, preparedness and/or response, relief or rehabilitation phases of the identified hazards which are at risk of occurring in the City of Cape Town.



The updated CCT Hazard/Risk-specific DRM Plans are made available to all role-players once their drafting is completed. The list of these DRM Plans is included in the Disaster Risk Assessment Summary Table on (Pages 28).

## **9. PRE-DISASTER RISK REDUCTION AND PREPAREDNESS**

Pre-disaster risk reduction and preparedness are the primary objectives of this Municipal Disaster Risk Management Plan. All City Departments/Services, supported by the relevant External Entities, must pursue disaster-risk reduction and mitigation in all their activities.

### **9.1 PREVENTION AND RISK REDUCTION / MITIGATION STRATEGIES**

Integrated City-wide strategies must be developed and implemented covering disaster prevention and disaster risk reduction through the following:

- Policies and legislation;
- Economic development programmes and the CCT IDP;
- Continuing disaster-risk, vulnerability and manageability assessments;
- Risk reduction studies and projects;
- Public awareness and education
- Training and community awareness;
- Community education and capacity building;
- Environmental Impact Assessments;
- Hazard management;
- Insurance; and
- Early warning systems.

Each Directorate/Department/Service of the City is responsible for the compilation of pro-active Directorate and Departmental Disaster Risk Management programmes to support disaster-risk reduction or elimination and their own disaster preparedness.

### **9.2 DISASTER PREPAREDNESS**

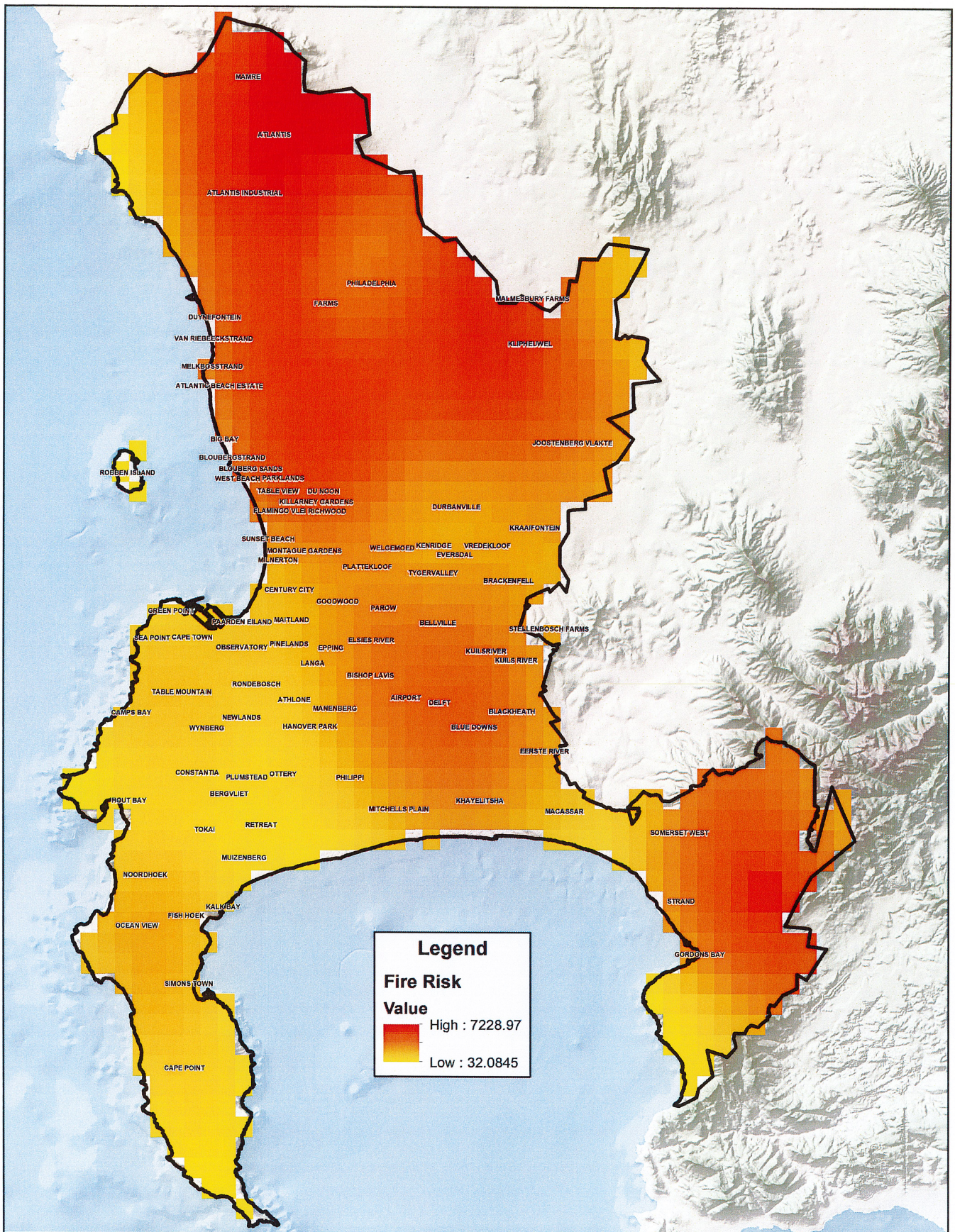
Integrated City-wide strategies must be developed and implemented covering disaster preparedness through the following:

- Emergency Response and recovery planning;
- Contingency planning;
- Drills, rehearsals and exercises;
- Training and exercises;
- Management and institutional arrangements;
- Mutual Aid agreements; and
- Early warning systems.

### **9.3 STANDARD OPERATING PROCEDURES (SOPs)**

All Services/Entities should formulate SOPs outlining the details of their own systems of operating and actions under especially emergency conditions and to create this awareness amongst its staff members. These will be linked to their Service's/Entity's DRM Plans to expand on the specific operations required during a particular hazard occurrence situation.

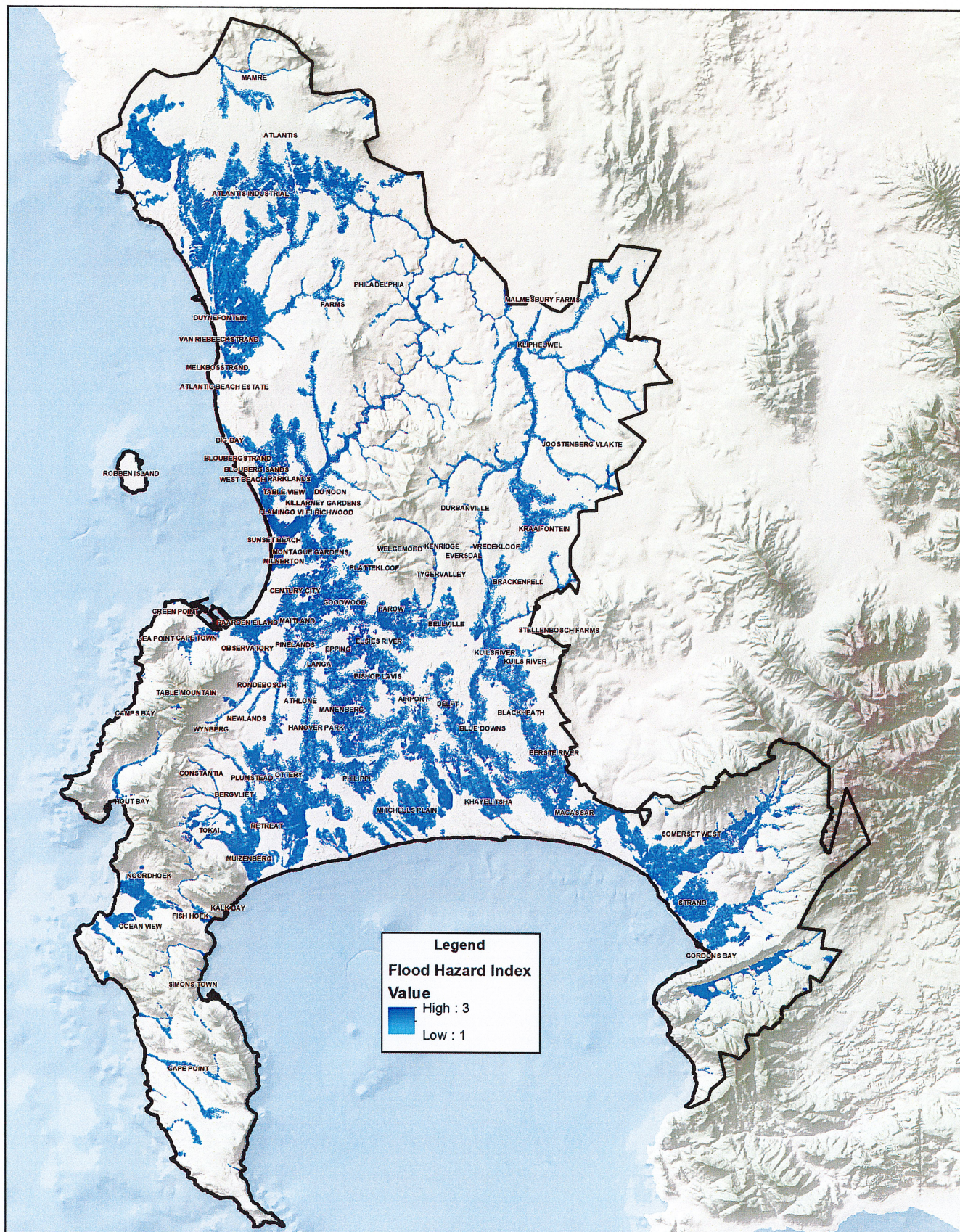




|                                                                                                                                                                                        |  |                             |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------|--|--|
| <p>THIS MAP WAS COMPILED BY:<br/>DISASTER RISK MANAGEMENT CENTRE - GIS<br/>GOODWOOD<br/>Contact Information: Tel 021 597 5054<br/>Contact Person: Werner Look<br/>Date: March 2021</p> |  | <p><b>Fire Risk Map</b></p> |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------|--|--|

Map 1: Fire Risk Map





|                                                                                                                                                                                               |  |                                 |                                            |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------|--------------------------------------------|--|
| <p><b>THIS MAP WAS COMPILED BY:</b><br/>DISASTER RISK MANAGEMENT CENTRE - GIS<br/>GOODWOOD<br/>Contact Information: Tel 021 567 5054<br/>Contact Person: Werner Look<br/>Date: March 2021</p> |  | <h2>Flood Hazard Index Map</h2> | <p>Making progress possible. Together.</p> |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------|--------------------------------------------|--|

Map 2: Flood - Risk and vulnerability map



## 10 DISASTER RESPONSE AND RECOVERY

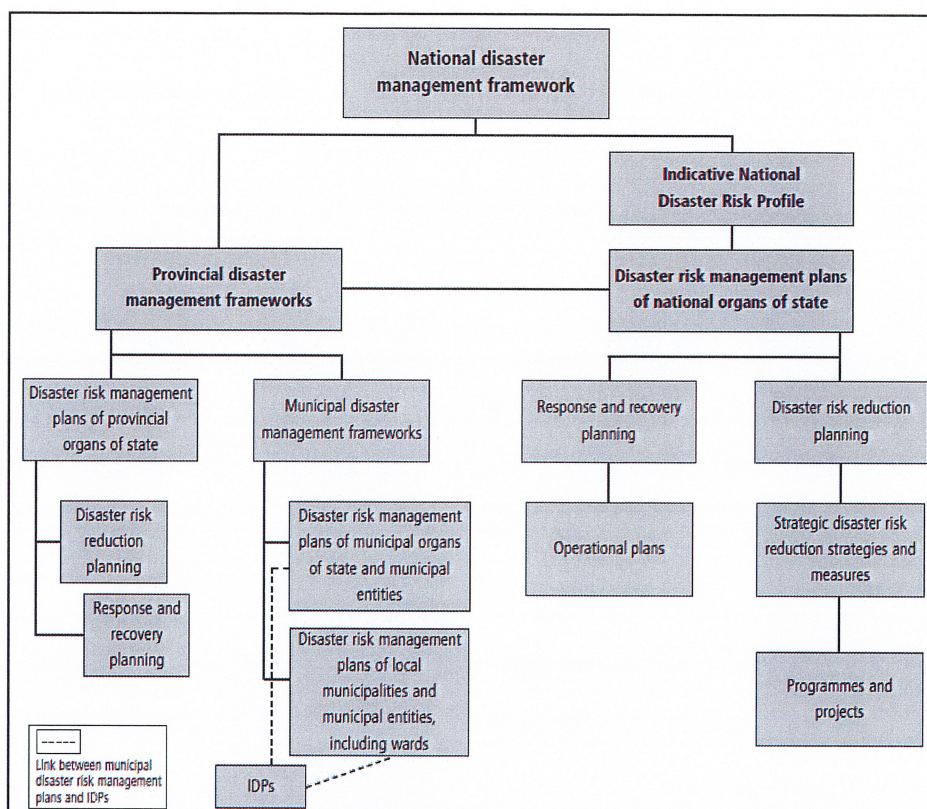


Figure 7: National, provincial and municipal disaster management framework and disaster management plans across the spheres of government.

### 10.1 DISASTER RESPONSE AND RELIEF CO-ORDINATION

At the notification of an occurrence of any significant hazard within the municipal area of the City of Cape Town the mandated Service/s will immediately respond to deal with the incident. These response initiatives are detailed in the City of Cape Town's Joint (Unified) Incident Management System (JIMS) documentation.

In addition to the Incident site(s) response activities and their support operations by the various Disciplines, the Disaster Co-ordination Team (DCT) *may* also be convened in the (off-site) Disaster Operations Centre (DOC) when an emergency or disaster has occurred or is likely to occur, that is within the following parameters: -

- where the size or seriousness of the emergency seems beyond the capability of one or more of the responding Services and, in the opinion of the most senior on-duty official of this Service/s, the DRMC can be requested to activate the DCT, and
- or where the Head of the DRMC is of the opinion that it is necessary to activate the DCT in order to effectively manage an emergency which has occurred or is likely to occur, the DCT must convene in the DOC.

The activating Service shall, via the Disaster Operations Centre (DOC), contact the Disaster Risk Management Duty Co-ordinator or the Head of the DRM Centre, who shall immediately arrange to notify the designated members of the Disaster Co-ordination Team (DCT) to convene. The Disaster Co-ordination Team will be convened and chaired by the Head of the Disaster Risk Management Centre, or any other designated person, at the DOC in Goodwood or at another suitable facility which is appropriately removed from any direct hazard or risk, if the DOC is unavailable for whatever reason.

The DCT will evaluate the situation at the strategic level to support all the responding Entities and to collaborate with the Head of the DRM Centre regarding the need for a declaration of a Local State of Disaster, as well as the continued activation or standing-down of the DCT.



All incidents will be managed by the DCT in accordance with the principles and guidelines contained in the City of Cape Town Joint (Unified) Incident Management System (JIMS) and the Disaster Operations Centre's Standard Operating Procedures (SOPs) and with the support of all DCT members.

The CCT Disaster Operations Centre (DOC) staff (a section of the DRMC), as well as special project teams which can be designated by the DCT, will assist with any additional/supporting functions, under the guidance of the Disaster Co-ordination Team (DCT), so that the response, relief, rehabilitation and any reconstruction phases of the disaster can be effectively dealt with -see below.

These supporting functions can include: -

- maintaining records of communications, decisions, actions and expenditures,
- having continuous communication and liaison with all Services/Entities that are on-site through the Incident Command Post (On-site Joint Operations Centre (JOC) and the respective Service Command Posts deployed at the incident site at a safe location,
- designating emergency area(s) and sites,
- deciding on emergency measures and priorities,
- assessing the impact / consequences resulting from the Incident,
- referencing the DRMC's Disaster Risk Management Resources Database (DisRes) when required,
- requesting emergency partner assistance / implement any mutual aid agreements as are necessary,
- closing public buildings as required,
- issuing public warnings, orders and instructions as required,
- protecting the health and safety of emergency responders,
- ensuring an acceptable level of emergency services for the City outside emergency area(s),
- preparing lists of fatalities, casualties and missing persons,
- preparing lists of destroyed and damaged properties,
- considering the declaration of a Local State of Disaster,
- co-ordinating response with provincial and national government departments through the WCG and National Disaster Management Centres respectively,
- co-ordinating response with non-governmental disaster relief organisations, neighbourhood and community organisations,
- identifying all persons/Organisations which can contribute to emergency response,
- co-ordinating information for public release with emergency partners' communications staff and the provision of information to the media for dissemination to the affected population(s)/communities and the general public,
- responding to inquiries from the media and the general public,
- identifying target audiences for post-emergency communications,
- identifying persons/Organisations to contribute to post-emergency reports/debriefs,
- submitting information for payment of invoices and any special grants, and
- assisting with any other tasks, as determined by the DCT.

## 10.2 RECOVERY AND REHABILITATION OPERATIONS

Post-disaster recovery and rehabilitation operations, which may include reconstruction or redevelopment efforts, will normally take on the nature of special programmes and projects.

The Disaster Risk Management Centre will assist with the identification of needs and will facilitate recovery and rehabilitation operations. The function or lead department with the most direct involvement in the operation will take responsibility for project management and delivery. Project Teams convened for these purposes must report to the CCT Municipal Disaster Management Advisory Forum on a regular basis (as determined by the MDMAF).

In this regard the causal factors of disasters must be addressed and disaster prevention through risk elimination should be pursued in the rehabilitation, reconstruction or redevelopment efforts in order to avoid a repetition of the disaster.



## 11. CLASSIFICATION AND DECLARATION OF A LOCAL STATE OF DISASTER

When an event of disaster proportions occurs or is threatening to occur in any part of the City, the Head of the Disaster Risk Management Centre, assisted by the Disaster Co-ordination Team (DCT), will determine whether the event can be classified as a Local State of Disaster in terms of the Disaster Management Act, 57 of 2002 and, if so, the DRM Centre will immediately: -

- initiate efforts to assess the magnitude and severity or potential magnitude and severity of the disaster;
- alert all the disaster risk management role-players in the municipal area that may be of assistance in the circumstances;
- initiate the implementation the disaster response plan or any contingency plans and emergency procedures that may be applicable under the circumstances of the threat; and
- inform the Western Cape and National Disaster Management Centres of the possible disaster and the initial assessment of the magnitude and severity or potential magnitude and severity of the disaster.

Approval from the City Council or Mayco is required to endorse the intention for a local state of disaster declaration (see below). When informing the Western Cape and National Disaster Management Centres, the Head of the CCT DRM Centre may make recommendations regarding the intention for the classification of the local state of disaster as may be appropriate, in terms of Section 49 of the Disaster Management Act, 57 of 2002.

Irrespective of whether a local state of disaster has been declared or not, the City is primarily responsible for the co-ordination and management of local disasters that occur in its area, in terms of Section 55 (1) of the Disaster Management Act, 57 of 2002.

Whether or not an emergency/disaster situation is determined to exist, municipal and other Entities may take such actions under this Plan as may be necessary to protect the lives and property of the inhabitants of the City of Cape Town.

**Declaration of a local state of disaster:** - In terms of Section 55 of the Disaster Management Act, 57 of 2002, in the event of a local disaster, the City Council may, by notice in the Provincial Gazette ***declare a local state of disaster*** if existing legislation and contingency arrangements do not adequately provide for the municipality to deal effectively with the disaster, or if there are any other prevailing or special circumstances that warrant the declaration of a local state of disaster.

This must be preceded by firstly obtaining a classification of the disaster from the (Western Cape Government: Disaster Management Centre) PDMC in terms of Section 23 of the Disaster Management Act, 57 of 2002.

***If a local state of disaster has been declared***, the City Council of Cape Town may make by-laws or issue directions, or authorise the issue of directions to: -

- Assist and protect the public;
- Provide relief to the public;
- Prevent or combat disruption; or
- Deal with the destructive and other effects of the disaster.

## 12. REQUESTS FOR PROVINCIAL AND NATIONAL GOVERNMENT ASSISTANCE

Under certain circumstances, National Departments (including the SANDF and SAPS), Provincial Departments and even International assistance, may be requested from the Western Cape Disaster Management Centre or the National Disaster Management Centre. This will be in the instance where ***a local or a provincial or a national state of disaster***, when a ***joint disaster management co-ordination system will be put in place*** with the other spheres of government.

## 13. DISASTER FUNDING ARRANGEMENTS

If the execution of obligations and duties as outlined in this Plan entails costs for any Service, provision must be made in the relevant Service's own budget.



Under certain circumstances the City will be reimbursed by National Government for disaster response efforts. However, the Disaster Management Act, 57 of 2002, Chapter 6, states that the Minister of Cooperative Governance and Traditional Affairs, (COGTA) may in the case of disaster relief funding, prescribe a percentage of the budget of a local authority which can be used as a threshold for accessing additional funding from the Department for response efforts.

This implies that the amount set as a threshold will have to be spent by the City on disaster response and relief before financial assistance may be considered by National Government.

The financial assistance to be provided by National Government may take into account what planning, prevention and mitigation measures were taken pro-actively and whether the situation could have been avoided or minimised had the City implemented the aforementioned actions.

If planning and prevention strategies have not been implemented the local authority may be penalised from a financial point of view. It is therefore vital that comprehensive Disaster Risk Management Plans are in place to substantiate any possible future financial claims.

## **14 REVIEW AND UPDATE OF THE MUNICIPAL DISASTER RISK MANAGEMENT PLAN**

The City of Cape Town will regularly review and update the Municipal Disaster Risk Management Plan, as required by Section 53 of the Disaster Management Act, 57 of 2002 and the Disaster Management Amendment Act, 16 of 2015.

## **15 ABBREVIATIONS**

The following abbreviations are used in the Municipal Disaster Risk Management Plan: -

|        |   |                                                      |
|--------|---|------------------------------------------------------|
| CCT    | - | City of Cape Town                                    |
| DMAF   | - | Municipal Disaster Management Advisory Forum         |
| DCT    | - | Disaster Co-ordination Team                          |
| DisRes | - | Disaster Resources Database                          |
| DRM    | - | Disaster Risk Management                             |
| DRMC   | - | Disaster Risk Management Centre                      |
| DOC    | - | Disaster Operations Centre                           |
| EMS    | - | Emergency Medical Services                           |
| IDP    | - | Integrated Development Plan of the City of Cape Town |
| JIMS   | - | Joint (Unified) Incident Management System           |
| JOC    | - | Joint Operations Centre                              |
| MPD    | - | Metropolitan Police Department                       |
| NDMC   | - | National Disaster Management Centre                  |
| PECC   | - | 107 Public Emergency Communications Centre           |
| SANDF  | - | South African National Defence Force                 |
| SAPS   | - | South African Police Service                         |
| SOPs   | - | Standard Operating Procedures                        |
| WCG    | - | Western Cape Government                              |
| WCDMC  | - | Western Cape Disaster Management Centre              |

## **16 REFERENCES**

- Constitution of the Republic of South Africa Act, 108 of 1996
- Disaster Management Act, 57 of 2002
- Disaster Management Amendment Act, 16 of 2015
- Local Government: Municipal Systems Act, 32 of 2000
- National Disaster Management Framework, 2002
- Western Cape Disaster Risk Management Policy Framework, 2002
- City of Cape Town Disaster Risk Management Policy Framework, 2021
- Independent Comprehensive Disaster Risk Assessment for Cape Town, 2009/10 (Aurecon)
- Revised and Updated Disaster Risk Assessment for the City of Cape Town, 2020/21 Luticento Pty (Ltd) / Aivia Pty



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