

FLOOD-WISE

Facilitator's Guide



Emergency contact numbers:  or  021 480 7700

DISASTER RISK MANAGEMENT



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
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Making progress possible. Together.

ABOUT DISASTER RISK MANAGEMENT



The aim of the Disaster Risk Management Centre (DRMC) is to identify, prevent or reduce the occurrence of disasters and to soften the impact of those hazards that cannot be prevented. The DRMC performs a coordinating role, ensuring that multiple emergency and essential services work in an integrated and efficient manner, both pro-actively (risk reduction, planning and preparedness) and re-actively (response, relief, recovery and rehabilitation).

This approach ensures that progress is made in an effort to help reduce the occurrence or impact of disasters and to ensure that we cope in the best way possible when they do occur. We need to think about safety and act safely.

During a disaster, communities may need to look after themselves without outside assistance for up to three days or more. Being prepared means having enough supplies and drinking water to last for this period. Families are encouraged to draft their own family emergency plans and to identify any risks and hazards which may affect them.

Remember that the emergency number is for emergencies only and not for routine City services.

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How to use this guide

The flood-wise guide is a manual that is flexible and can be adopted and applied appropriately in different situations.

The guide has four focus areas:

- Understanding the risk
- Preventing flooding
- Early warnings
- If a flood occurs
- Be flood-wise!

The guide is also accompanied by a flip chart set containing simple definitions of the five focus areas.

Tips for organising and facilitating a flood-wise training session

You will require the following to conduct a training session:

1. A suitable venue – preferably with chairs and a table.
2. An attendance list for participants to fill in their contact details.
3. DRM fire-wise training flip charts.
4. Materials for role-play and demonstrations.
5. Flip charts and khoki pens.

Facilitator's tasks

- Provide additional insight or information to participants when carrying out an activity.
- Ensure inclusivity by including less vocal residents and minority language groups who may play an important role in the community.
- Keep personal bias under control, be transparent and ensure that the training session is a learning opportunity for all participants.

BE FLOOD-WISE

Understanding the risk

Cape Town has a cold, wet winters. Areas that are dry in summer may become flooded in winter and this may cause misery for many people. Informal settlements are often located in low-lying, wetland-type areas which have a high risk of flooding.

Different types of flooding:

- **Rivers and estuaries:** where rain raises the water level in rivers, estuaries, lakes and also in wetlands.
- **Ponds:** where rain lies on the surface of the ground for a long time in poorly drained, low-lying areas.
- **Seepage:** where a high water table (perennial water under the surface) results in water rising above ground level.
- **Surface run-off:** caused by rainwater running down surfaces that do not absorb water easily, such as tarred roads or mountain slopes.
- **Leaking:** when rainwater enters poorly constructed buildings that have not been properly waterproofed.



Table 1: Environmental health risk – focus on behavioural risk factors

Hazard	Vulnerability factors increasing risk	Effects
Contaminated water sources or water bodies	- Inadequate or blocked drainage system increases the likelihood of contaminated surface run-off flowing into natural water sources - Accumulation of solid waste around and in water sources	- Contamination and pollution of downstream environments - Health problems, particularly among children
Accumulation of solid waste	- Poorly functioning waste collection and disposal system - Inadequate access to refuse bags - Models of behaviour that tolerate littering	- Contamination of the environment in and around dwellings - Contamination of standing water and surface run-off - Blockages of drainage systems with solid waste lead to greater flooding during the rainy season
Unsanitary practices	- Accumulation of waste in and around homes - Inadequate knowledge about good hygiene practices	Health problems

BE FLOOD-WISE

Preventing flooding

Do you know how to build your dwelling so that you can stay dry in winter? The most important thing is to plan ahead!

Here are the most sensible steps to take:

- Build away from low-lying areas and other areas prone to flooding during the rainy season.
- Do not build close to bodies of water or roads.
- Raise the floor above ground level using wood or stilts.
- Use cement floors rather than wooden or sand floors.
- Make sure the roof and outer walls are rain-proof.
- Use metal sheeting or sandbags to divert or hold back water.
- Dig canals to draw water away from your home.
- Keep stormwater drains clear.



Table 2:

Hazard mapping

Hazard mapping helps establish the sites and the specific nature of the flood risk. However, as flooding is more likely to be a seasonal hazard associated with wet winter months, flood risks may not be as obvious during the summer.

Hazard mapping	Questions to ask
Always gather information on sanitation and the management of solid waste. Even minor flooding can create health problems where water is contaminated with raw sewerage or by chemicals released by decomposing solid waste. Differentiate between flooding of dwellings due to inadequate drainage and flooding due to leaky roofs.	• Where are the main access roads, rivers, mountains, wetlands, etc. located? • Which places or areas in the settlements are most at risk of flooding? • Where are the drains or drainage ditches? • Who is most affected by flooding and why? • Which structure and resources are most likely to be damaged or affected by flooding?

BE FLOOD-WISE

Early warnings

Weather bringing heavy rain is predictable and you can find out about what is likely to happen through the following media:

Radio

Listen to the national or local radio stations for weather updates and emergency warnings.



Television

Watch your local TV stations (SABC) for regular weather updates and general information.



South African Weather Service

Flood warnings are provided by the South African Weather Service. If your cellphone has an internet connection, you can access the service from your telephone at www.weathersa.co.za.

Other reliable sources are www.accuweather.com and www.yr.no/place/South_Africa.

Warn your neighbours!

BE FLOOD-WISE

If a flood occurs

Floods can come suddenly, even in the middle of the night. It is important to stay calm and help one another.

- DO NOT touch any electrical appliances that are wet!
- Obey emergency orders from authorities, such as evacuating to higher ground.
- If you do have to leave your home, make sure your valuables are safe.
- If you have nowhere to stay, you may be housed in a community hall.
- Help friends and family: provide them with temporary shelter.



BE FLOOD-WISE!

Mopping up

- Stay out of your home if flood water remains deep around it.
- When re-entering your home after a flood, be careful because the structure might be in danger of collapsing.
- **NEVER use an electric appliance while standing in water!**
- Wash all surfaces that came into contact with flood water with soapy water and rinse the surfaces clean.
- Then disinfect with a mixture of two teaspoons of bleach in a bucket of water. If the surfaces are rough, scrub them with a brush.



Protect your health

Flood water is dirty and can make you sick. It is possible that the water may be contaminated with sewage. Rather be safe than sorry!

- Warn children not to play in flood water.
- Beware of sharp objects in the water.
- Wash your hands with soap and clean water before working with food.
- Wash children's hands frequently.
- If food or medicine has come in contact with flood water, throw it away.

Terms and definitions: Storms, flooding and water

Storms, flooding and water

berg wind	A hot, dry wind blowing off the interior plateau of South Africa, roughly at right angles to the coast. Occurs mainly in the winter when there is a low pressure system south of the country and a strong high over the country.
black southeaster	A specific application to local wind, the southeaster of Table Bay, South Africa (Table Mountain southeaster). When there are dark clouds over Table Mountain, it is a black southeaster.
Cape doctor	A strong, invigorating south-easterly wind on the south coast of South Africa. In Cape Town it brings the 'table cloth', a sheet of hill cloud that covers Table Mountain.
catchment	An area of any size that drains into a lake, stream or other body of water. Also known as a 'basin' or 'watershed'.
cold front	Any front that moves so that the colder air replaces the warmer air, i.e. the leading edge of a cold air mass.

Storms, flooding and water

cut-off low	A cold low which has become displaced out of the basic westerly current and now lies to the south of this current. A cut-off low is a closed low in the upper air, supported by a low pressure system on the surface. In other words, it is atmospheric circulation that becomes separate from the main flow or system and often results in heavy rainfall, gale force winds and other severe weather.
debris loading	The quantity of debris located within a specific water course or canal. It can be due to a natural process or due to anthropogenic causes such as litter.
flash flooding	A flood that rises and falls quite rapidly with little or no advance warning, usually as the result of intense rainfall over a relatively small area.
flood proofing	Any combination of structural and non-structural additions, changes or adjustments to structures that reduces or eliminates flood damage.
flooding	The temporary inundation of normally dry land areas resulting from the overflowing of the natural or artificial confines of a river or other body of water, including groundwater.

Storms, flooding and water

flood plain	A general term used to mean the area, mapped or not, most prone to flooding. The flooding may be a localised problem.
groundwater level	The level at which the soil and porous rock begin to be saturated with water.
informal settlement flooding	Flooding that takes place in an informal settlement. This includes ponding, leaks and seepage.
standing water	Stagnant water.
subsidence	The sinking or downward settling of the Earth's surface not restricted in rate, magnitude or area involved.
surface run-off	The natural drainage of water away from an area. It includes both surface and subsurface flow.
water table	The level below the Earth's surface at which the ground becomes saturated with water. The surface of an unconfined aquifer which fluctuates due to seasonal precipitation.

Source: South African Weather Service (SAWS)

Terms and Definitions: Infrastructure

Infrastructure	
canal	An open conveyance of surface stormwater. Canals can be natural or man-made. In informal settlements where there is a lack of drainage, residents may resort to digging canals.
culvert	A sewer or drain that passes under a road or embankment.
retention pond or basin or reservoir	A basin or reservoir where water is stored for regulating a flood. Unlike a detention basin, it does not have outlets for releasing the flows. The water must be disposed of by draining into the soil, by evaporation or by pumping systems.
stilt	A column of wood, steel or concrete that is driven into the ground to provide support for a structure. This can apply to informal structures too.

Infrastructure

stormwater drain

A drainage system for collecting the run-off of stormwater on roads and highways and removing it to appropriate outlets. The system includes inlets, catch basins, stormwater pipes, drains, reservoirs, pump stations and detention basins.

trench

A long, narrow excavation commonly dug for drainage or to install pipes.

wetland

A general term applied to land areas which are seasonally or permanently waterlogged. It is an area of low-lying land submerged or inundated periodically by fresh or saline water.

Wetlands (vleis, bogs, swamps, sponges or marshes) are vital ecosystems that have been described as some of the most productive in the world. They help to clean water of pollutants, provide habitats for a variety of plant, animal and insect species and they regulate floods.





Your first steps in being prepared:

- Write down 'Emergencies: Call 107' on or near your telephone at home and at work.
- Save the number 021 480 7700 on your cellphone under the name 'All Emergencies'.
- Teach your children how to dial the number.
- Explain that the number is strictly for emergencies only. prank calls clog up the system and can cost lives.
- Draft a family emergency plan.

Tell your family and friends about the 107 emergency number.

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