



**Western Cape  
Government**

**FOR YOU**


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Department of Local Government

**The prevalence of flood, drought and water conservation-related incidents/disasters that cause injury, loss of life, damage to property and displacement of people**

**Severe Weather Event: 14 to 19 June 2023**

Mr C Deiner  
13 September 2023



**A series of cold fronts:  
Severe flooding and  
damage in the Province  
14 to 19 June 2023**

- 2 Fatalities
- Many communities were displaced
- Extensive damage to infrastructure (roads, agriculture)
- Road closures & inaccessible towns



# Outline

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Disaster Risk  
Reduction

Disaster  
Preparedness  
& Response

Disaster  
Recovery

# WCDCMC Winter Readiness: DRR, Preparedness & Response

## Various Provincial Plans in place

- Provincial Response and Relief Plan 2023
- Flood Hazard Contingency Plan 2016
- Provincial Fire Plan 2022
- Provincial Major Electricity Disruption Contingency Plan 2020
- Provincial Covid-19 Resurgence Operational Plan 2020
- Provincial Drought and Water Scarcity Management Plan 2016
- Provincial Xenophobia Framework 2018

Sound stakeholder relationships and partners

Awareness, training & exercise

Dissemination of early warnings

Risk reduction (clearing of storm water drains)

Representation on the City of Cape Town's Flood and Storms Task Team and districts IGR structures

Monitoring of dam levels

Standard Operating Procedures for the activation of the Centre

Disaster Centres are in a state of readiness with 24/7 Standby procedure in place

# Winter Preparedness

Extreme weather conditions

Informal settlement fires

Impacts of electricity disruptions

Other risks monitoring:

- Covid-19 infections resurgence
- Measles outbreaks
- Cholera outbreaks
- Drought
- Xenophobia/Civil Unrest/Social Conflict/
- Impacts of Prolonged electricity disruptions
- Avian Influenza in coastal birds
- Locust infestation




# SAWS: Impact Based Weather Warnings

# South African Weather Services

## Advisory & Impact Based Weather Warnings

- ❑ **12 JUNE 2023** : weather advisory received from the South African Weather Services alerting the Province of series of cold fronts expected for the week.
- ❑ **13 JUNE 2023: IBF LEVEL 6** warning for **DISRUPTIVE RAIN** was issued for Wednesday to Thursday.
- ❑ **14 JUNE 2023:** Initial impacts received from the Districts & the Metro, with recorded rainfall figures ranging from **60mm in Stellenbosch and Grabouw, with Paarl recording 64mm** of rain overnight.
- ❑ **16 JUNE 2023: IBF LEVEL 7** warning for **DISRUPTIVE RAIN** was issued for the Cape Winelands and an **IBF LEVEL 4** for **DISRUPTIVE RAIN** was issued for the Metro, West Coast and parts of the Overberg for Saturday to Sunday.
- ❑ **19 JUNE 2023: IBF LEVEL 4** for **DISRUPTIVE RAIN** was issued for the Cape Winelands region for Monday; and an **IBF Level 5** for **DAMAGING WINDS** was issued for coastal towns (Metro to Bitou) for Monday.


**TYPE**



**RAIN**

High	2	6
Medium	3	4
Low	4	3
Very Low	5	7

**AFFECTED AREA: WESTERN CAPE**




**DISCUSSION**

A series of cold fronts is expected over most parts of the Western and Northern Cape until Thursday. Rainfall accumulations of about 25–30 mm can be expected, reaching 40–45 mm over high-lying areas of the West Coast, south-eastern Cape Winelands and western Overberg districts on Wednesday and Thursday. On the other hand, disruptive rainfall can also be expected over the City of Cape Town and most parts of Cape Winelands with accumulations of 45–60 mm reaching 80–100 mm over high-lying areas in those areas for this period.

**IMPACTS**

- Heavy downpours resulting in flooding can lead to difficult driving conditions and minor vehicle accidents, especially over dirt roads.
- Damage to infrastructure in formal and informal areas.
- Disruption to essential services.
- Mudslides and rockfalls are possible.


**TYPE**



**RAIN**

High	3	4
Medium	4	3
Low	5	7
Very Low	6	2

**AFFECTED AREA: WESTERN CAPE**




**DISCUSSION**

Another cold front is expected on Saturday which will result in rain and showers over the western parts of the Western Cape mostly in morning with conditions improving by the afternoon. Rainfall accumulations are expected to be 15–25 mm reaching 30–40 mm in the mountainous areas between Grabouw and Ceres. Due to already saturated soil and severely flooded areas from the past few days, further flooding may occur. Along with flooding of swollen rivers from heavy rains upstream.

**IMPACTS**

- Flooding of roads and settlements (both formal and informal) is possible which could result in further damage to property/ infrastructure.
- Certain communities may be displaced and potentially cut-off.
- Disruption of traffic flow is likely, along with increased motor vehicle accidents.
- Essential services such as water and electricity likely to be affected.
- Mudslides and rock falls may also occur in susceptible areas, where


**TYPE**



**RAIN**

High	3	4
Medium	4	3
Low	5	7
Very Low	6	2

**AFFECTED AREA: WESTERN CAPE**



**DISCUSSION**

Another cold front is expected on Monday which will result in rain and showers over the western parts of the Western Cape mostly in morning spreading to the east. Conditions are expected to start improving in the afternoon. Rainfall accumulations over the western parts of the Western Cape are expected to be 15–30 mm reaching 40–50 mm in the mountainous areas of Cape Winelands and north-western Overberg districts. Due to the already saturated soil, swollen rivers and flooded areas from the past few days, further flooding may occur.

**IMPACTS**

- Flooding of roads and settlements (formal and informal) is possible
- Disruption of traffic flow is likely, along with increased motor vehicle accidents
- Essential services such as water and electricity may also be

# Impact Based Weather Warnings: Disaster Management

## Impacts received:

- Flooding of formal and informal settlements;
- Flooding in farms and farm communities;
- Damage to road infrastructure;
- Displacement of vulnerable communities;
- Disruption to essential services i.e. Electricity;
- Road closures and disruption to traffic flow; etc



Eskom Substation at Somerset West on Lourens River crossing the N2.



Breede Rivier, Malgas



Citrusdal



# National Department of Water and Sanitation

# Western Cape Dam Levels (DWS)

Received 19 June 2023

<b>Breede River Catchment</b>						
Brandvlei	9,65	81,00	62,12	53,78	41,11	Not Applicable
Kwaggaskloof	14,08	91,00	60,55	52,34	40,81	Not Applicable
Lakenvallei	41,47	118,50	98,88	87,33	82,22	No Spill
Roode-Elsberg	48,95	249,00	101,00	46,76	22,82	12,89
Ceres	42,10	397,00	100,58	60,23	62,20	0,00
Buffeljags	7,70	55,00	102,82	102,82	100,28	8,21
Eikenhof	30,00	199,00	105,59	105,59	77,79	18,58
Elandskloof	51,00	145,00	102,75	98,53	33,09	15,37
Stettynskloof	32,45	339,00	106,85	106,15	76,53	21,34
Pietersfontein	17,70	0,00	90,68	87,77	20,18	No Spill
Poortjieskloof	6,40	0,00	7,64	3,96	3,20	No Spill
Keerom	26,69	0,00	100,00	100,00	17,34	0,00
Klipberg	16,86	0,00	98,68	100,13	55,70	No Spill
Theewaterskloof	27,10	36,90	96,39	76,67	72,30	No Spill
De Bos	24,00	0,00	100,00	100,00	88,91	0,00
<b>Berg River Catchment</b>						
Misverstand	4,92	N/A	162,19	133,33	120,62	311,80
Steenbras Upper	25,11	0,00	100,95	102,26	91,65	2,31
Steenbras Lower	23,62	104,60	102,46	94,86	77,08	13,56
Voëlvlei	13,54	50,50	63,35	54,09	57,95	Not Applicable
Berg River	42,83	496,60	103,51	102,66	81,51	77,90
Wemmershoek	53,08	249,50	98,70	97,11	55,65	No DT Available
<b>Olifants / Doorn River Catchment</b>						
Bulshoek	5,46	0,00	96,68	88,68	91,90	Not Applicable
Clanwilliam	28,24	N/A	96,28	53,31	34,12	No Spill
Karee	10,10	0,00	100,68	45,59	17,93	0,32

# Western Cape Dam Levels (DWS)

Received\_ 19 June 2023

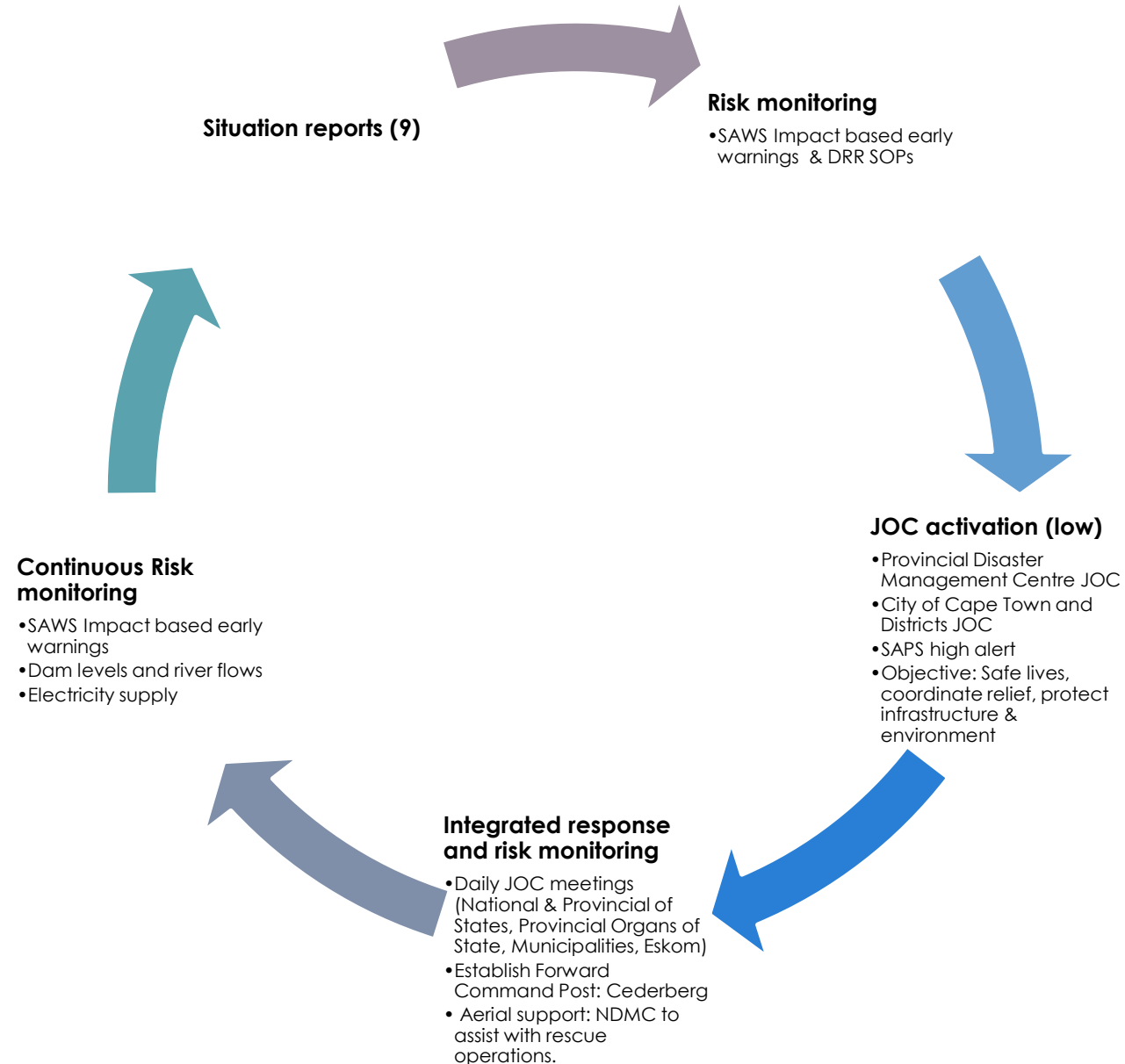
Dam	Gauge Plate Reading (m)	Rainfall for the last 7 days (mm)	WESTERN CAPE DAM LEVELS			Discharge (m <sup>3</sup> /s)
			% Full This Week	% Full Last Week	% Full Last Year	
<b>Cape Town System Dams Consist of : Wemmershoek-; Voëlvlei-; Steenbras Upper and Lower- ; Theewaterskloof Dam</b>						
<b>Cape Town System Dams (Combined)</b>	N/A	N/A	<b>92,07</b>	<b>79,31</b>	<b>70,83</b>	N/A
<b>Berg River Catchment</b>	N/A	N/A	<b>88,03</b>	<b>83,10</b>	<b>69,02</b>	N/A
<b>Breede River Catchment</b>	N/A	N/A	<b>81,24</b>	<b>67,49</b>	<b>59,11</b>	N/A
<b>Gouritz River Catchment</b>	N/A	N/A	<b>65,17</b>	<b>57,91</b>	<b>44,93</b>	N/A
<b>Olifants / Doorn River Catchment</b>	N/A	N/A	<b>96,32</b>	<b>54,57</b>	<b>23,14</b>	N/A
<b>Western Cape State of Dams</b>	N/A	N/A	<b>81,51</b>	<b>68,71</b>	<b>56,83</b>	N/A



Clanwilliam Dam and Olifants River

# Activation and situational overview

# Activation of Disaster Management Centre: Wednesday:14 – 19 June 2023



# Situation timeline

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## 14 June 2023

- Flooding at Hollandsche Molen :150 persons evacuated to the community hall
- Flooding in Cederberg : No access to Wupperthal and Elands Kloof
- Monitoring of dam levels: Bergriver dam due to overflow
- Power outages in the Overstrand area affecting 2 clinics; Hermanus 1x clinic; Generators provided by DoHW
- Evacuations in the Metro and Cape Winelands District
- Humanitarian relief to all affected areas
- WC: PDMC submitted request for aerial support: NDMC

## 15 June 2023

- Ongoing power outages in Overstrand and Somerset West;
- Assessments across the province;
- Cederberg major flooding impacts. All emergency services activated. Wuppertal area inaccessible: relief provided via rubber ducks.
- Citrusdal not accessible : adverse weather conditions prevented the transfer of a young patient with head trauma to Cape Town; Once the weather briefly cleared in the evening, the young patient was urgently transferred by helicopter.
- Risk of release of river in the Wemmershoek area : communities /farms alerted.
- Forward Command Post activated in Stellebosch (Hollandsche Molen)
- Displaced residents in Rawsonville and Spokiesdorp;
- The Augusta aircraft stationed at Ysterplaat is available until 23 June 2023, to assist with rescue operations;
- Humanitarian relief to the West Coast & Cape Winelands Districts.

# Situation timeline continued...

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## 16 June 2023

- Mop-up operations in the Metro
- Matzikama area : large influx of water from mountainside due to dam release
- Blankets and mattresses provided to Cederberg
- Access to Citrusdal by four-wheel drive, a helicopter and Gift of the Givers activated to assist in inaccessible areas
- Ongoing monitoring and response to the evacuated Hollandsche Molen residents
- DoA: Damage assessment forms to farmers
- Restoration of electricity in Hermanus; Villiersdorp power outages. Risk assessments by Eskom
- Media alerts to the public regarding flood awareness

## 17 June 2023

- 2x Fatalities confirmed: 1x fatality at Buffeljagsrivier, Overberg (tried to cross river) & 1x fatality in Matzikama, West Coast (refused evacuation)
- National Department of Human Settlements conducted assessments: Cape Winelands District
- Restoration of power outages in Hermanus, Grabouw & Villiersdorp and Lourensford Substation

# Situation timeline continued...

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## 18 June 2023

- Citrusdal area accessed on 17 June 2023 & humanitarian relief provided
- Aerial support plans in place to reach West Coast District
- Department of Social Development: psychological support and social workers to affected areas
- Eskom construction teams to enter West Coast District once flooding dissipates
- SAWS weather warning for Cape Winelands & Grabouw (Overberg District)
- Forward Command Post in West Coast District available for possible redeployment of resources

## 19 June 2023

- Assessments conducted in West Coast District
- Cederberg Local Municipality JOC co-ordinating flood response activities
- Structures in the Overstrand area are flooded; however, residents refuse evacuation
- Two hospital facilities affected by power outages in the Mitchell's Plain area; operating on generators
- Media platform provided by GCIS to affected districts



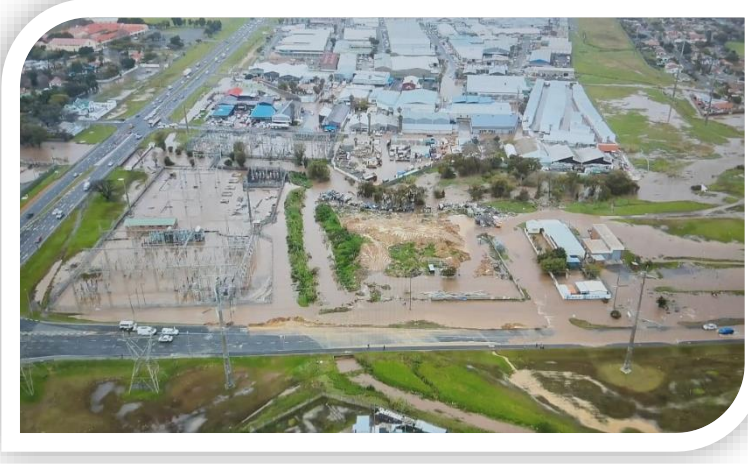
# Impacts



Road damages, W Coast



Road damages, W Coast



Eskom Sub-station, Somerset West



Wal de Vie



Malgas



Breede River

# Decision Support Tool as an enabler Matzikama Municipality (Klawer)

# Disaster Management - Decision Support Tool

The screenshot displays the 'Disaster Management Decision Support Tool' interface. The main map area shows a satellite view of the Knysna region, including the Knysna Lagoon Dam, Knysna National Lake Area, and several islands like Thesen Island and Leisure Island. Overlaid on the map are various hazard layers, such as fire hazard (red dashed lines) and flood hazard (blue shaded areas). The interface includes a search bar at the top left, navigation controls, and a 'Layer List' panel on the right. The layer list shows several layers, with 'Flood Hazard' and 'Flood Hazard Index' checked. The bottom of the map shows the coordinates 23.016 -34.039 Degrees and the Department of Agriculture, Land Reform and Rural Development logo.

Western Cape Government

Disaster Management Decision Support Tool

Help

Find address or place

Layer List

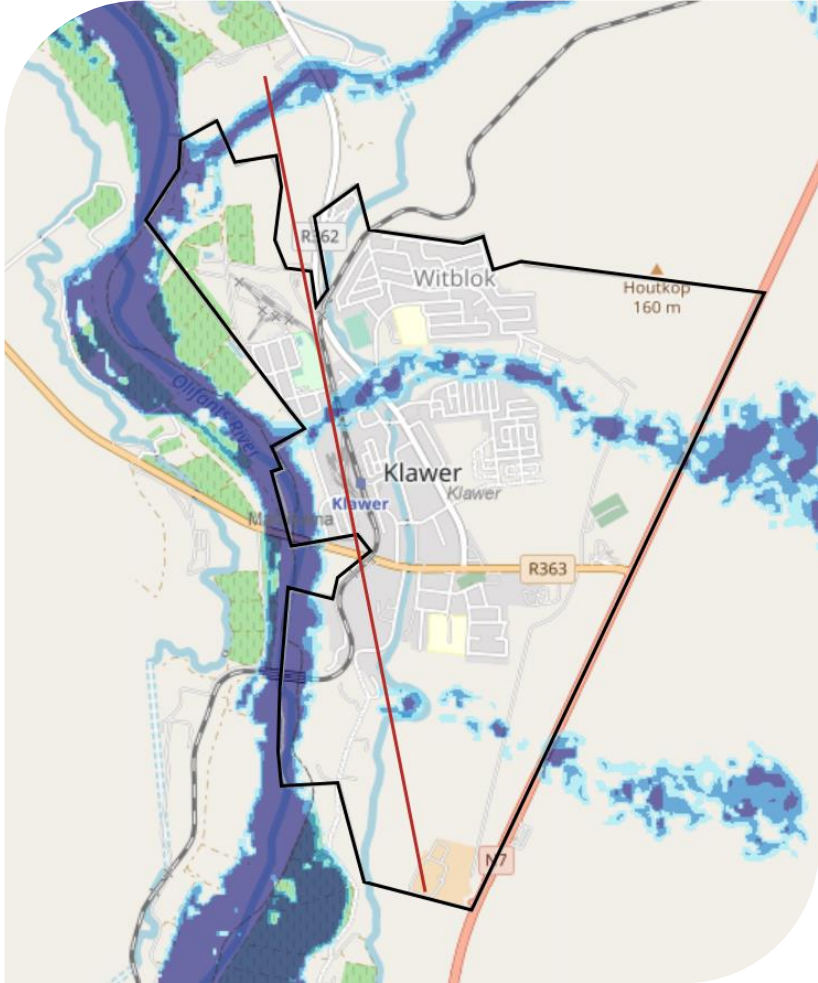
- Demographics
- Informal Settlements
- Informal Settlements - Cape Town
- Other Areas of Informality - Cape Town
- Informal Settlements - Western Cape Municipalities
- HERE Points of Interest
- Fire Hazard
- Mining Bussinesses
- Fire History
- Protected Area Invasive Alien Clearance Compartments
- Fire Hazard (modis density)
- Flood Hazard
- Quaternary Drainage Regions (DWS)
- Flood Hazard Index
- Seismic Hazard

23.016 -34.039 Degrees

Department of Agriculture, Land Reform and Rural Development (D

# Disaster Management – Decision Support Tool

## Flood Hazard Index (FHI)



The FHI is a spatial layer that provides an indication of areas which could be affected by flooding. During the recent floods, the FHI was used to guide the JOC's decision to evacuate Klaver:

- SAWS IBF- Warnings provided an indication of how much rainfall was expected over the Olifants River catchment;
- DWS provided information regarding dam levels; river flows and how much water was expected to pass through Klaver at hourly intervals;
- Using the aforementioned information and the FHI the JOC was able to determine which parts of Klaver would be inundated (everything below the red line).

# Humanitarian Support Operation: Cederberg Municipality

# Situation on Friday, 16 June 2023

## Cederberg cut off by heavy rainfall

- Consecutive heavy rainfall led to severe flooding in the West Coast District, with Cederberg Municipal area heavily impacted.
- The entire Citrusdal town was cut off due to the main arterial road into the town being completely destroyed. All other access roads were also rendered inoperable.
- The entire Biedouw Valley was also severely impacted, and the following communities were also completely cut-off from the outside due to road damage: Wupperthal, Langkloof, Eselbank, Kleinvlei, Brugkraal, Heuningvlei, Langbome, Prinskraal, Beukeskraal and Nuweplaas.

## The lack of access resulted in a humanitarian crisis unfolding

- Several thousand persons were isolated entirely with no immediate relief in sight
- Gift of the Givers availed nearly 22 tons of humanitarian aid, including water and food.
- However, inaccessible roads, hampered all efforts to distribute the latter

## The Western Cape Disaster Management Centre was tasked with formulating a strategy to distribute the aid



## Strategic intent

- Life safety (evacuation of threatened persons).
- Humanitarian support to communities in the Cederberg area.

# Operation concept

## Objectives for Operational Period 17/07/2023

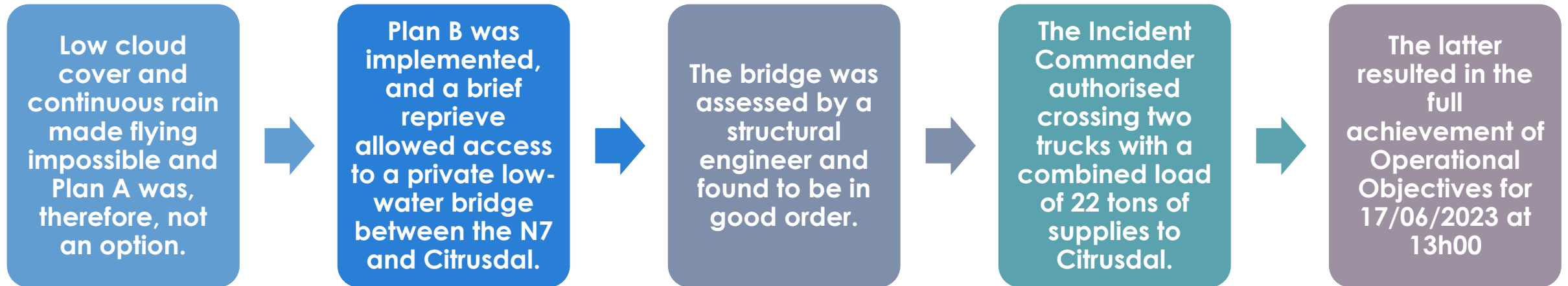
06h30 until 18h00

- **Plan A (Utilise helicopters to ferry 22 tons of supplies to Citrusdal Hospital Helipad and transfer to communities)**
  - Activate Porterville airfield to support staging of resources.
  - Movement of WoF Aerial Resources to Porterville as well as logistical support of aircraft and crew.
  - Identification of forward LZ and drop off point.
  - Identification of possible alternative access routes to the affected areas.
  - Provisional estimates of number of available resources and persons.
- **Plan B (alternative to Plan A)**
  - Identification of possible alternative means and access routes to transfer 22 tons of supplies to the affected areas.



# Execution of objectives: Saturday, 17 June 2023

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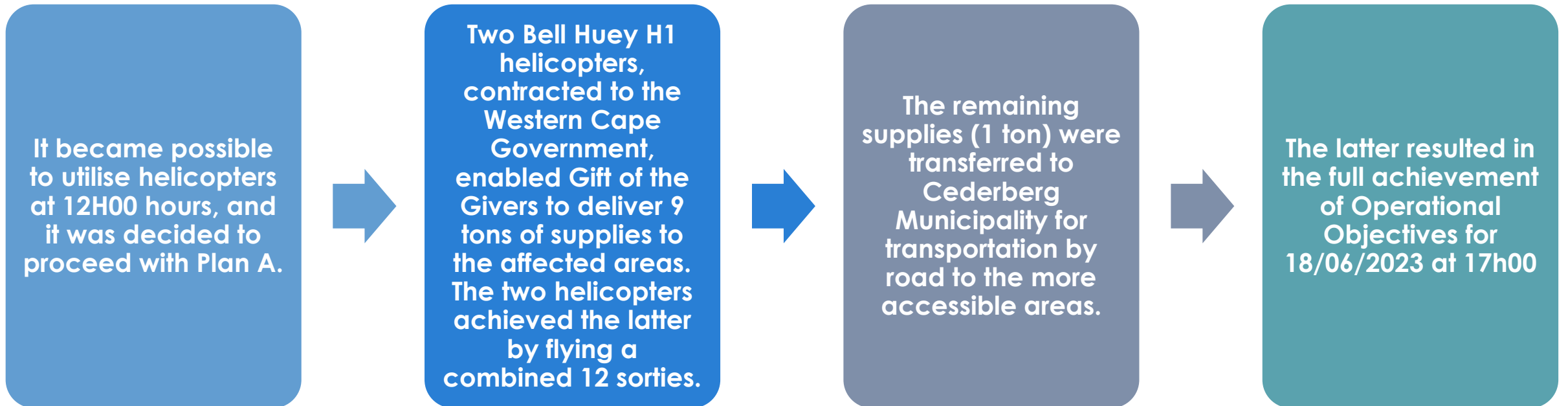
# Objectives for, Sunday, 18 June 2023

## Objective

- **Provision of 10 tons humanitarian support to Wuppertal, Langkloof, Eselbank, Kleinvlei, Brugkraal, Heuningvlei, Langbome, Prinskraal, Beukeskraal and Nuweplaas.**
- **Plan A**
  - Utilise helicopters to assist Gift of the Givers to deliver the supplies (10 tons) to the identified areas.
- **Plan B**
  - Utilise 4 x 4 vehicles to transfer the supplies (10 tons) to/or as close as possible to the affected area.

# Execution of objectives, Sunday, 18 June 2023

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# Cederberg operation: Conclusion

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**The combined efforts of all role players resulted in Gift of the Givers delivering a combined 32 tons of humanitarian aid to all identified affected areas. The operation commenced on the 17<sup>th</sup> June and was concluded on the 18<sup>th</sup> June 2023.**

**All objectives were achieved**

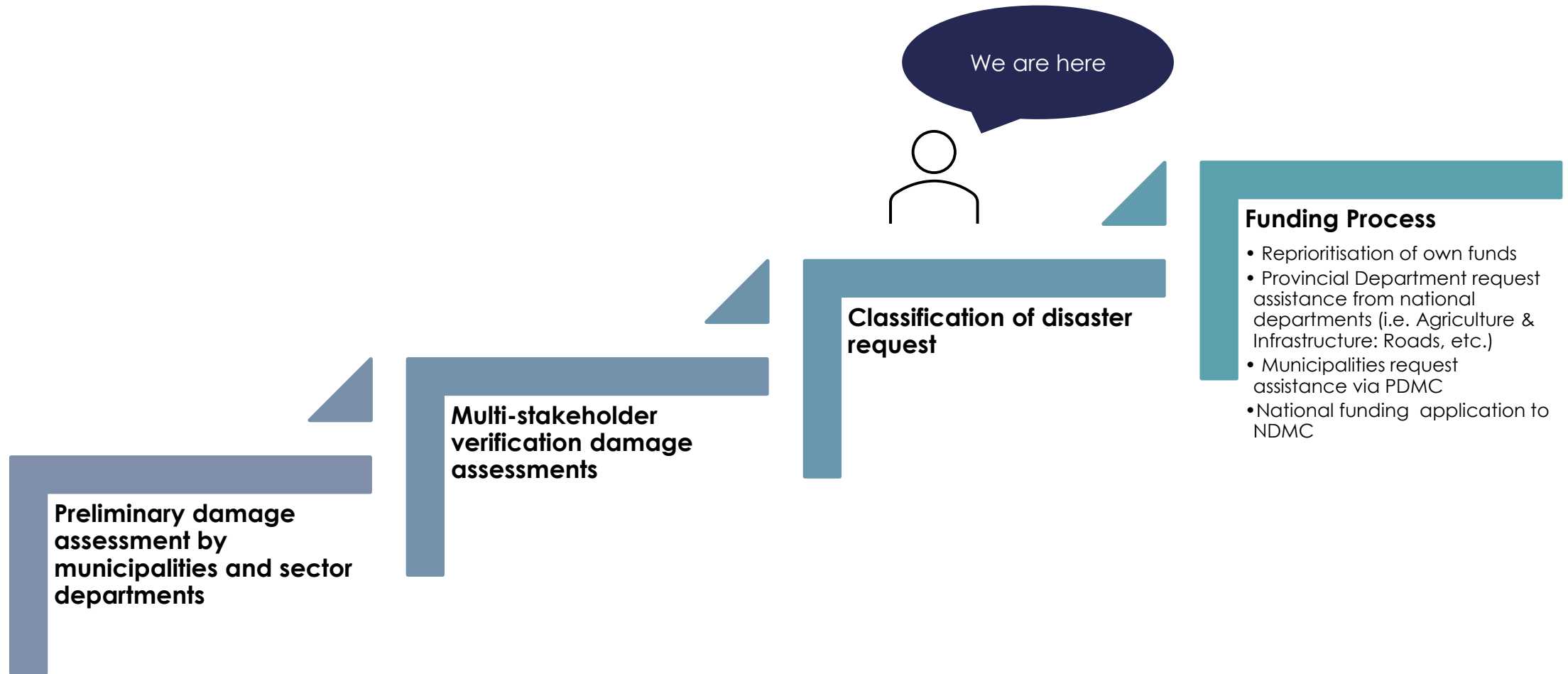
## **The following organisations participated:**

- Western Cape Government (lead agency)
- West Coast District Municipality
  - Cederberg Municipality
    - Gift of the Givers
    - Kishugu Aviation
      - SARZA
      - NSRI
- Greater Cederberg Fire Protection Association

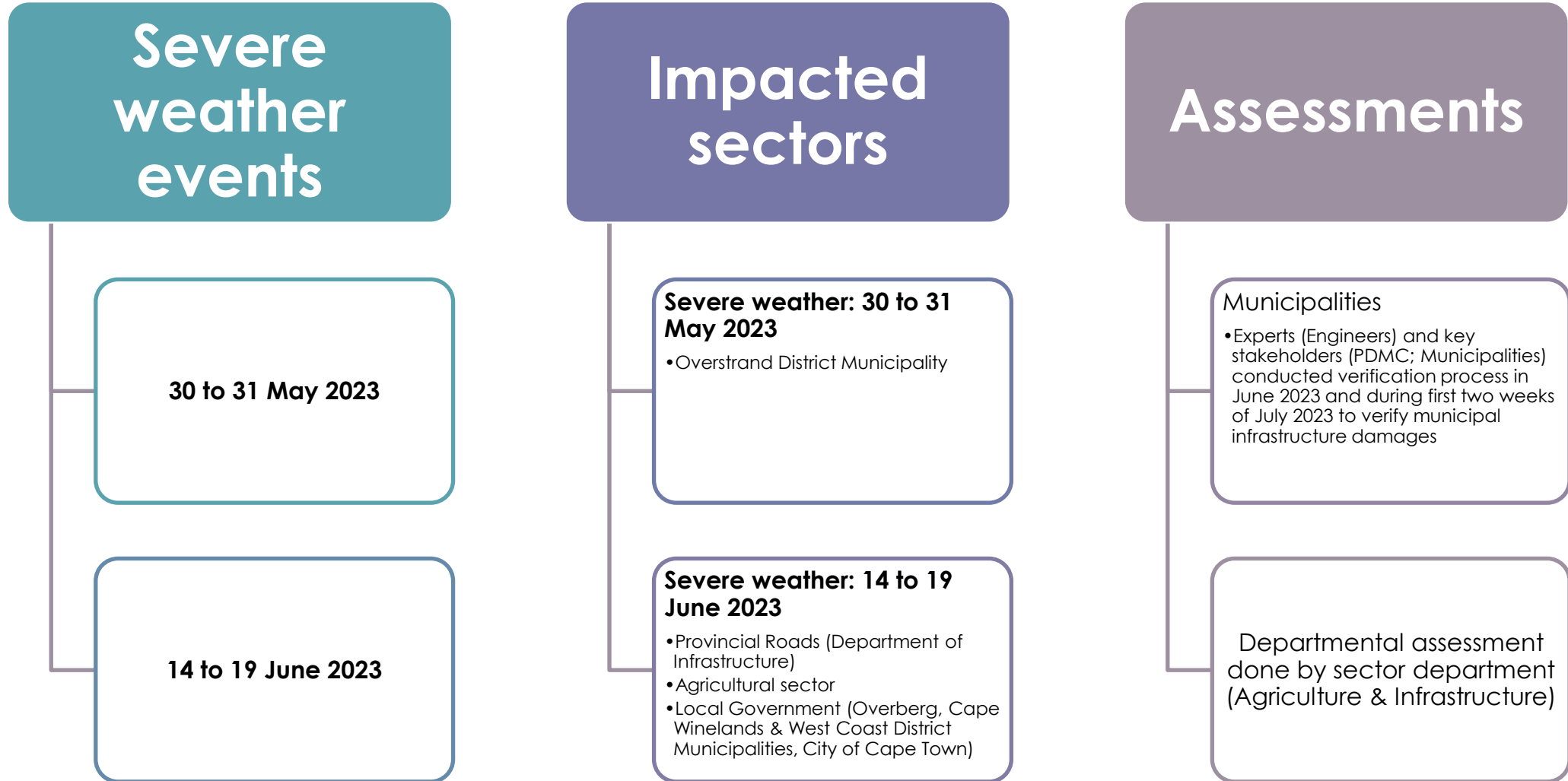


# Post-disaster recovery

# Disaster recovery process



# Disaster Assessments and Verification





# Flood related damages

## Overstrand Municipality



## Department of Agriculture



## Cederberg Municipality



## City of Cape Town



# Damage Assessment and Verification: 12 June, 05 – 14 July 2023

Date	Activity	Municipality	Preliminary Cost of Damages	Verified Cost of Damages
12 June 2023	Briefing & site visits (Road damages, Stormwater pipeline)	<b>Overberg DM:</b>	<b>R 45 996 661</b>	<b>R 5 745 000</b>
		Overstrand	R 44 546 661	R 4 350 000
		Theewaterskloof	R 1 450 000	R 1 395 000
05 July 2023	Briefing & site visits (Stormwater pipeline, Riverbanks)	<b>Cape Winelands DM:</b>	<b>R 182 346 000</b>	<b>R 5 995 571</b>
		Drakenstein	R 55 846 000	R 435 000
		Stellenbosch	R 126 500 000	R 5 560 571
13 July 2023	Briefing & site visits (Road damages)	<b>City of Cape Town</b>	<b>R 2 466 500</b>	<b>R 1 411 615</b>
13 - 14 July 2023	Briefing & site visits (Fencing, Electricity poles, Stormwater pipeline)	<b>West Coast DM:</b>	<b>R 62 513 900</b>	<b>R 9 184 700</b>
		Cederberg	R 62 013 900	R 8 834 700
		Swartland	R 500 000	R 350 000
<b>TOTAL</b>			<b>R 293 323 061</b>	<b>R 22 336 886</b>

# Municipal Cost of Damages

❖ Estimated total cost of infrastructure damages:

Sector	Total Preliminary Damages	Own Contribution	Insured	Verified Cost of Damages and supported by the PDMC
<b>Local Government</b>				
Overberg DM	R 45 996 661	R 55 000	R 0	R 5 745 000
Cape Winelands DM	R 182 800 000	R 266 000	R 120 454 000	R 5 995 571
West Coast DM	R 62 513 900	R 150 000	R 0	R 9 184 700
City of Cape Town	R 2 466 500	R 774 885	R 774 885	R 1 411 615
<b>TOTAL</b>	<b>R 293 777 061</b>	<b>R 1 245 885</b>	<b>R 121 228 885</b>	<b>R 22 336 886</b>

- ❖ Overstrand and Cederberg Municipality verified cost of damages reduced as the cost included existing damages (potholes) not flood related and municipal infrastructure upgrade projects (Disaster Grant Framework).
- ❖ Overstrand Municipality projects related to municipal infrastructure upgrades amounts to R32 546 582 and Cederberg Municipality projects relating to existing damages, and potholes amounts to R55 670 000.
- ❖ Stellenbosch Municipality cost of damages were reduced by insurance amounting R120 939 429.

# Sector Departments Cost of Damages

❖ Estimated total cost of infrastructure damages:

Sector	Total Preliminary Damages	Total Verified Damages	Own Contribution	Total Shortfall
<b>Provincial Departments</b>				
Infrastructure	R 186 368 000	R 186 368 000	R 4 568 000	R 181 800 000
Agriculture	R 1 053 920 000	R 518 620 000	R 18 620 000	R 500 000 000
<b>TOTAL</b>	<b>R 1 240 288 000</b>	<b>R 704 988 000</b>	<b>R 23 188 000</b>	<b>R 681 800 000</b>

# Cabinet Resolutions

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- **Damages and losses due to flooding from 30 to 31 May 2023 in the Overberg District Municipality;**
- **Damages and losses due to the storms from 14 to 19 June 2023, affecting Cape Winelands, Overberg, West Coast District municipalities and the City of Cape Town Metro Municipality;**
- **Need for organs of state to reprioritise existing budgets/ grants;**
- **The intention of sector departments to submit respective funding applications to the national departments; and**
- **Request for a Provincial Classification to the National Disaster Management Centre (NDMC).**

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Thank you