



**Western Cape
Government**

Local Government

Disaster Management :Information Systems: (Challenges and opportunities)

08 April 2021

Western Cape Disaster Management Centre

Purpose

- The purpose of the WCDMC is to promote an integrated, coordinated and multi-disciplinary disaster management and fire rescue services.

Legislative mandate

- Disaster Management Act 57 of 2002 as amended
- National Disaster Management Framework of 2005
- Provincial Disaster Management Framework of 2010



Disaster Management Act provides for

an integrated and coordinated disaster management policy that focuses on **preventing and reducing** the risk of disasters, **mitigating** the severity of disasters, emergency **preparedness**, rapid and effective **response** to disasters and post-disaster **recovery**;

Background

Disaster Management Act calls for the establishment of National, Provincial and District Disaster Management Centres.

The Western Cape Disaster Management Centre was officially opened in 2005 at the Tygerberg Hospital.

Initial Information Technology Systems for Disaster Management were expensive and developed for foreign conditions. Hence: Limited capacity in SA.



BACKGROUND: INFRASTRUCTURE AND EQUIPMENT

Prior 2011



After 2011



BACKGROUND: INFRASTRUCTURE AND EQUIPMENT

Current



Risk Information: Getting Started



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Risk Assessment Methodology

HVC ASSESSMENT TOOL: THE FORMULA



HAZARD ANALYSIS

- Probability
- Frequency
- Severity



VULNERABILITY ANALYSIS

- Political
- Economical
- Social
- Technological
- Environmental

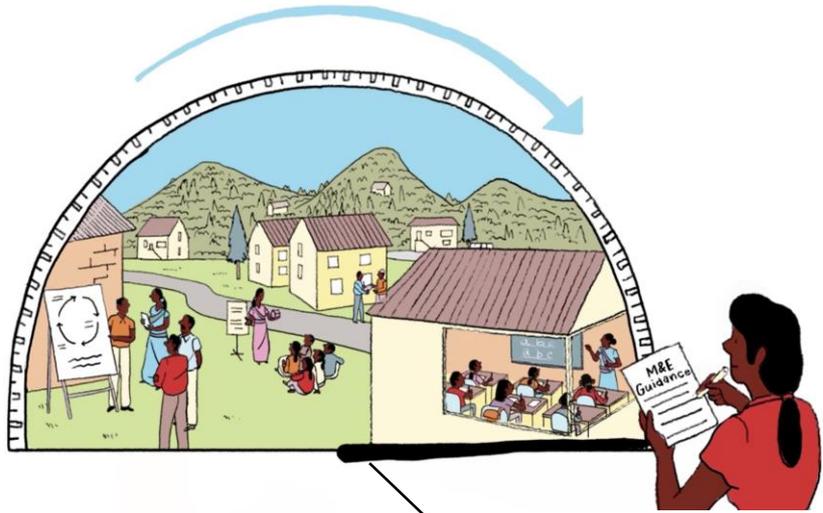


CAPACITY ANALYSIS

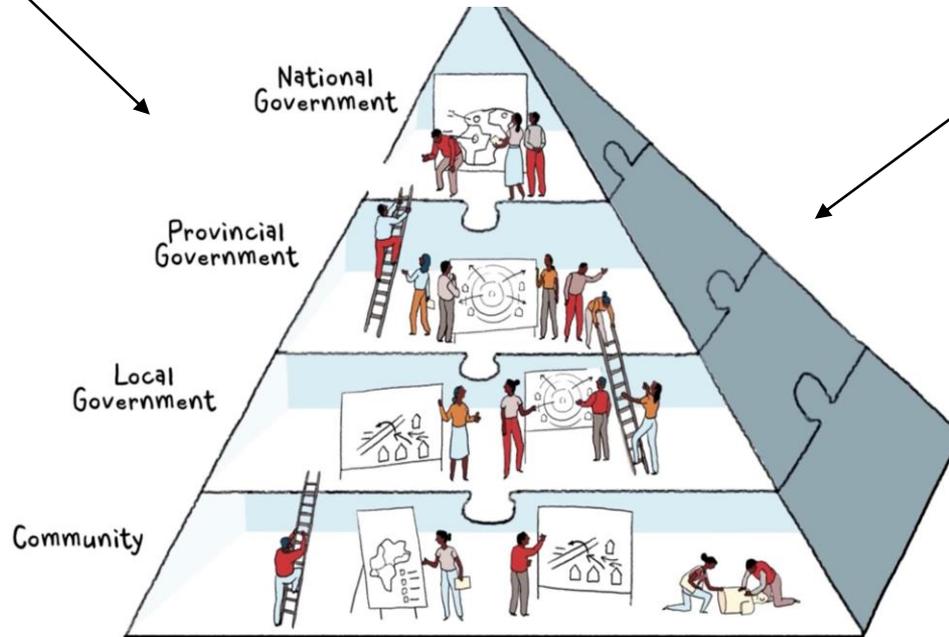
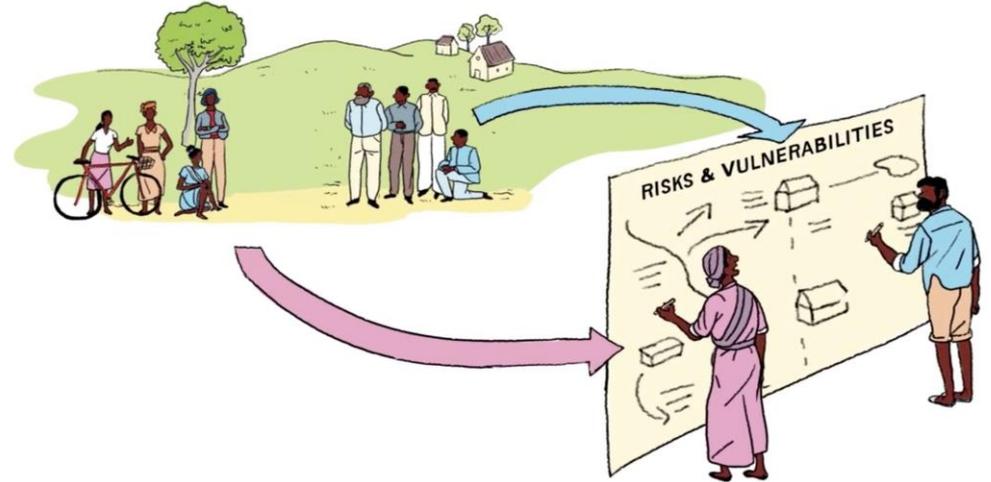
- Physical planning and engineering
- Societal
- Economic
- People and competencies
- Institutional
- Management



SCIENTIFIC COMPONENT

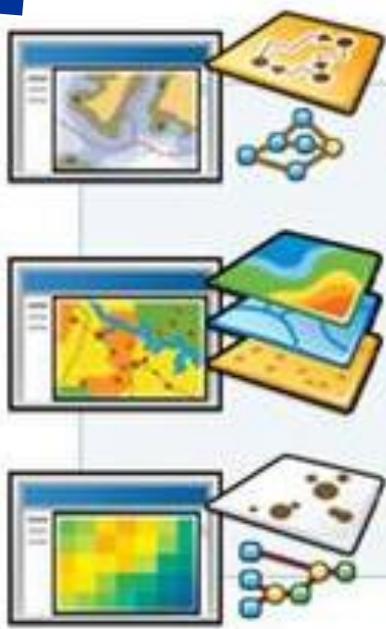


COMMUNITY-BASED APPROACH



Spatial Data Repository(SDR) – Flow of Data

Spatial data sets



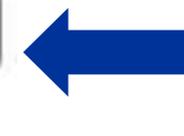
SDR



Local Disaster Managers And Stakeholders



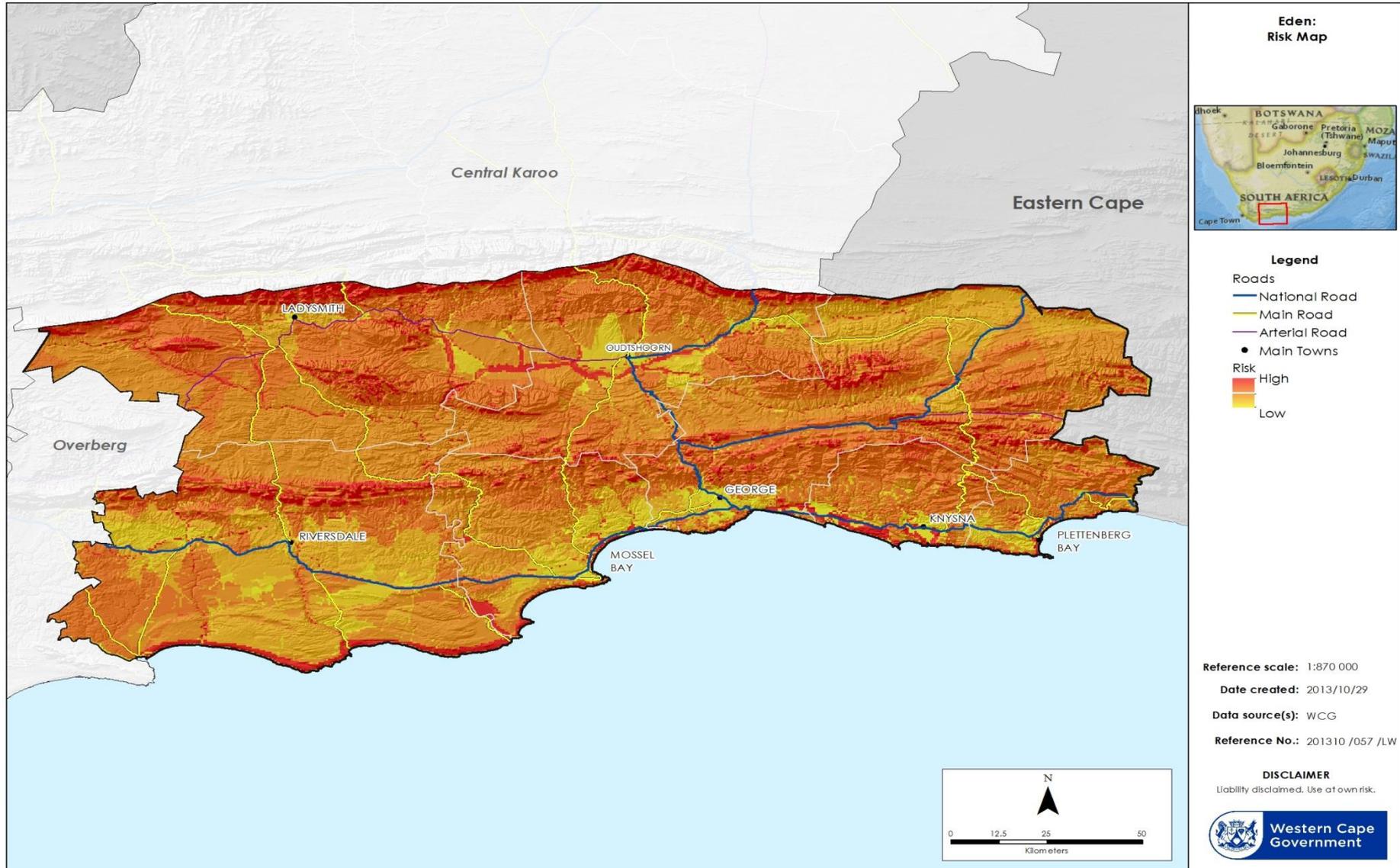
District Disaster Managers And Stakeholders



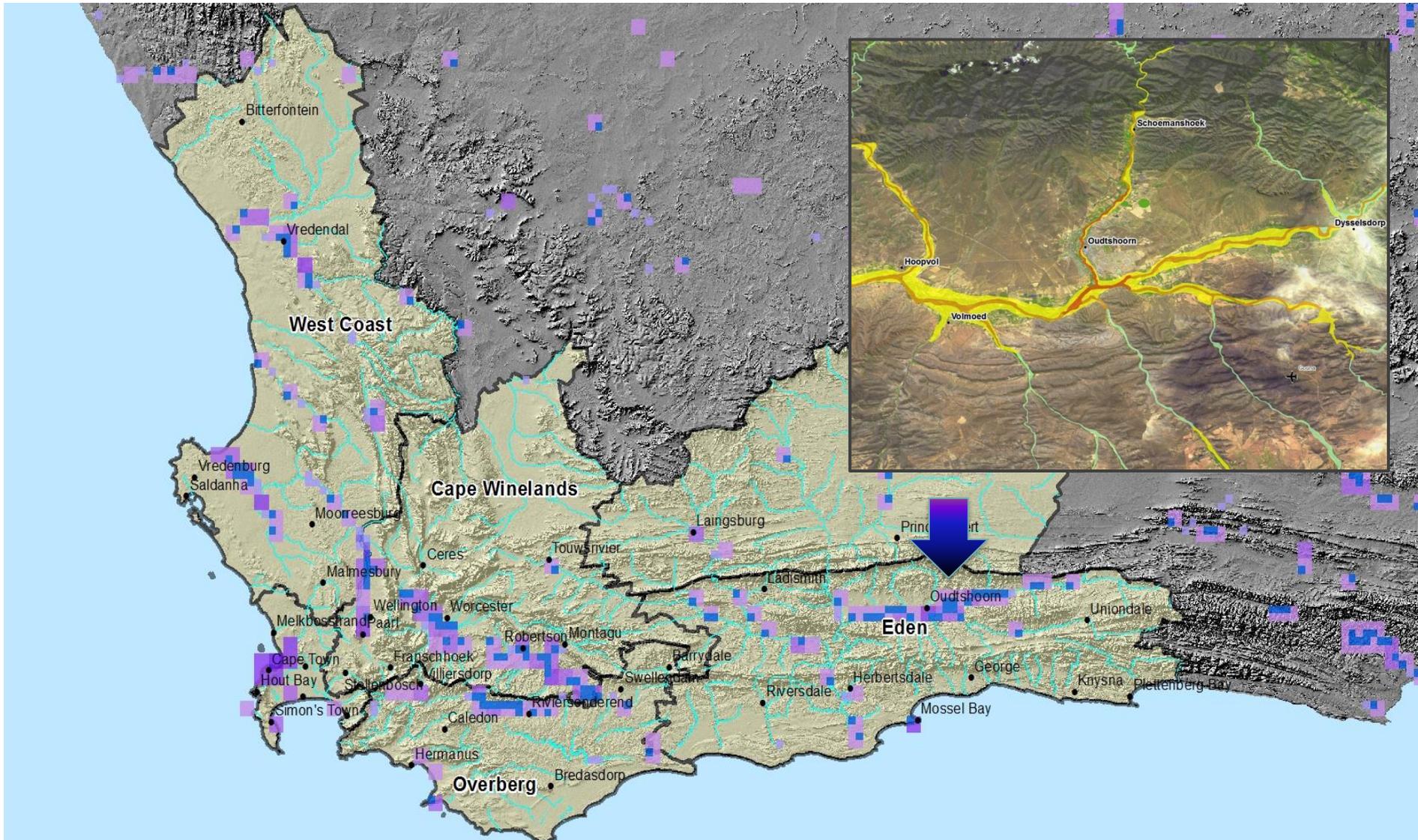
Provincial Disaster Managers And Stakeholders



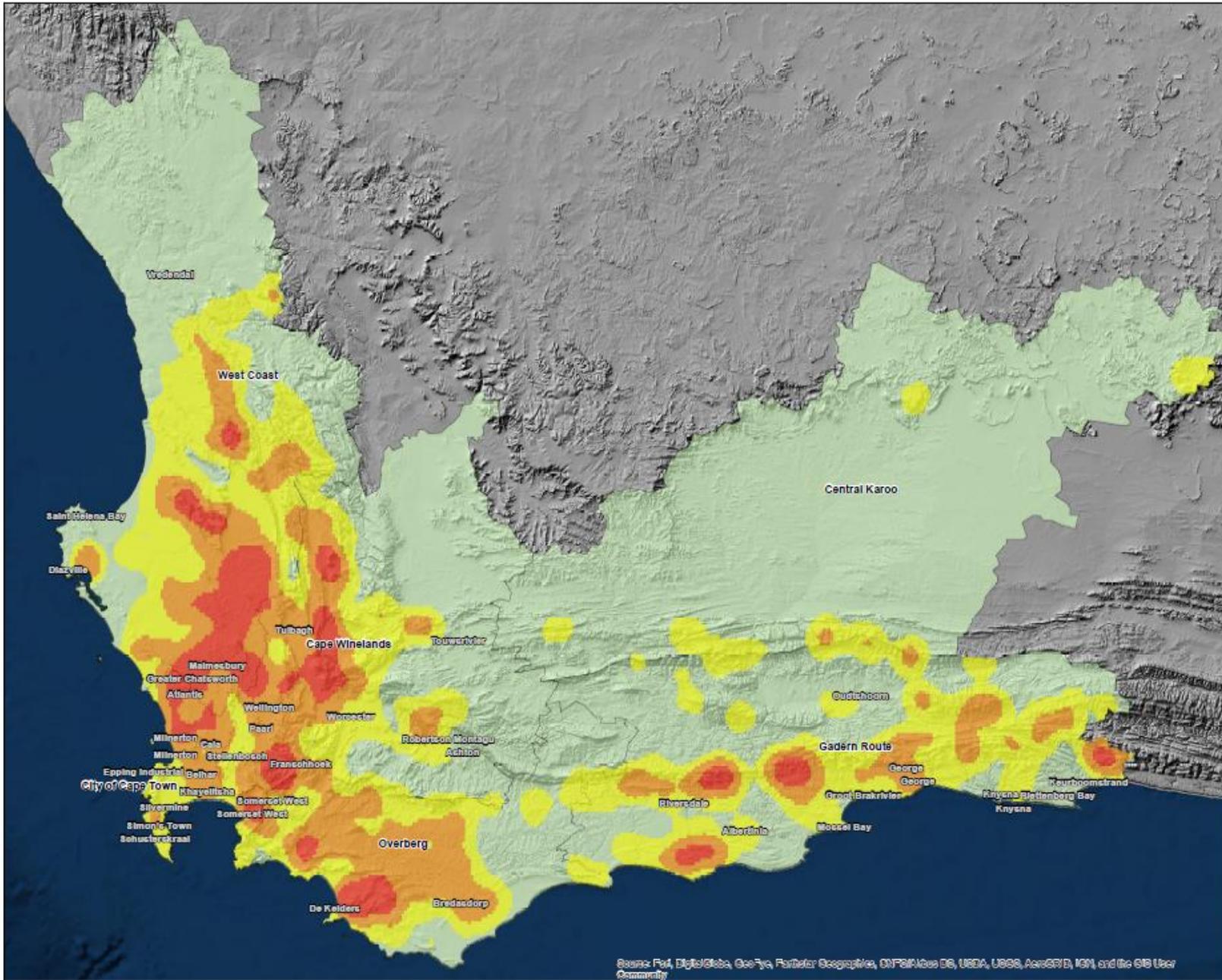
Risk Mapping – Eden District Municipality



Western Cape Flood Risk



Wildfire Risk Profile



WESTERN CAPE Fire Density

Legend

Fire Density

Low

Medium

High

Date : 10 June 2019



Data Source:
WCDMC

Developed by :



Decision Support Tool



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Web-Based Decision Support Tool(DST)

Eden Disaster Management

westerncapegov.maps.arcgis.com/apps/webappviewer/index.html?id=8ae19f81fb814217bffe312c2ce74163

Eden Disaster Management Decision Support Tool

Find address or place

Bulk Sewer Pipeline

PTYPE3	AC
CONTYPE	200mm
NAME	PLETTENBERG BAY BSP-294
CONSTRYR	1,980
SUBURB	PLETTENBERG BAY
WARD	2
SHAPE_Length	712.29

Zoom to

Layer List

- Operational Layers
 - Local Municipalities
 - District Municipalities
 - Independent Ordinary Schools
 - Public Ordinary Schools
 - WCG Health Facilities
 - Clinics and Community Centres
 - Hospitals
 - EMS Stations
 - Specialised Units and Centres
 - DOH Support Facilities
 - Western Cape Health Sub Districts
 - Utilities Infrastructure
 - Bitou LM

Local Municipalities | District Municipalities | Independent Ordinary Schools | Public Ordinary Schools | Informal Settlements - Cape Town | Informal Settlements - Outside Cape Town | Community Service Centers | Government Service Centers | Parking | Transportation Hubs

Options | Filter by Map Extent | Zoom to | Clear Selection | Refresh

OBJECTID	Name	Type	Subtype	Built Up Area	Zone	Municipality	Province	Shape
693802	Kingdom Hall of Jehovahs Witnesses	Place of Worship	Church	New Horizons	New Horizons	Bitou	Western Cape	
694258	Bitou Municipal Offices	Government Office		New Horizons	New Horizons	Bitou	Western Cape	
696882	St. Christopher Parish Hall	Place of Worship	Church	Plettenberg Bay	Plettenberg Bay	Bitou	Western Cape	

16 features 0 selected

COVID-19 Response



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Background - Activation

- The PDMC Joint Operations Centre (JOC) was activated on 24 March 2020 in terms of the Disaster Management Act.
- COVID-19 response lead by the Provincial Department of Health.
- The PDMC-JOC supported and facilitated a multi-disciplinary approach.
- Health with support of PDMC jointly led the operational coordinating structure.
- Primary focus: prevention/ mitigation (containment).
- JOC: responsible for the operational execution of policy decided upon by the cabinet



JOC Organisation:

- JOC operated on a 24/7 basis (Since 20 March 2020)
- Coordination of all operations in support of Health response.
- Cluster approach implemented to ensure a multi agency response.
- Risk Assessment done: Most prominent risks;
 - PANDEMIC and potential PANIC/ FEAR;
 - Social Distancing Challenges;
 - Impact of any other potential disaster (floods/ fires/ drought/ xenophobia);
 - Water & Food Security;
 - Informal Settlement exposure;
 - Public Disorder/Crime;
 - Socio-economic circumstances – unique South African context;
 - At risk population (HIV/Immune deficiencies/elderly/ underlying illnesses.....)
 - Poverty impacts;
 - Seasonal flu – winter season;
 - Public Transport hubs and means.

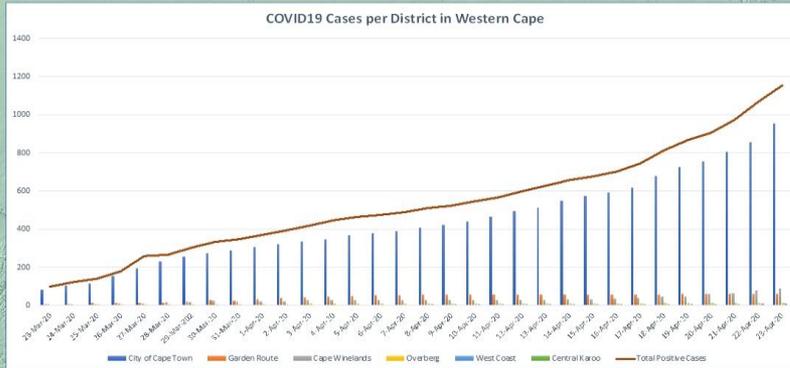


Covid 19 response:

- The DoTP Spatial Data Office devised a plan to guide the process flow and data acquisition.
- The Technical Support Team (TST) consisted of a GISc Technologist based at the WCDMC and the Director of the Municipal Performance Monitoring Directorate, who was seconded to provide guidance and support.
- The TST was responsible for creating CoVID 19 case maps, which formed part of the daily situation report disseminated to provincial stakeholders, including District Municipal Managers and Heads of the District Disaster Management Centres.
- In addition to case maps, the Technical Support Team also fulfilled ad hoc requests for A0 maps from various role-players, e.g., safety and security high- and medium-risk schools for SAPS and hospitals across the Province for SANDF, both used for decision-making related to resource deployment.

CoVID 19 case maps

CONFIRMED COVID-19 CASES WITHIN DISTRICTS - 22 APRIL 2020 @ 5PM



Total Cases:

1153

Unallocated:

29

Deaths:

25

DISTRICT

- Cape Winelands
- Central Karoo
- City of Cape Town
- Garden Route
- Overberg
- West Coast

9

West Coast DM

89

Cape Winelands DM

954

Overberg DM

12

Garden Route DM

60

Central Karoo DM

0

Date: 23 April 2020

Data Source: Dept of Health



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The COVID 19 dashboard

The CoVID 19 dashboard allowed stakeholders to visualize and query CoVID 19 case data at a Sub-district level and analyze trends in relation to other pieces of crucial information.

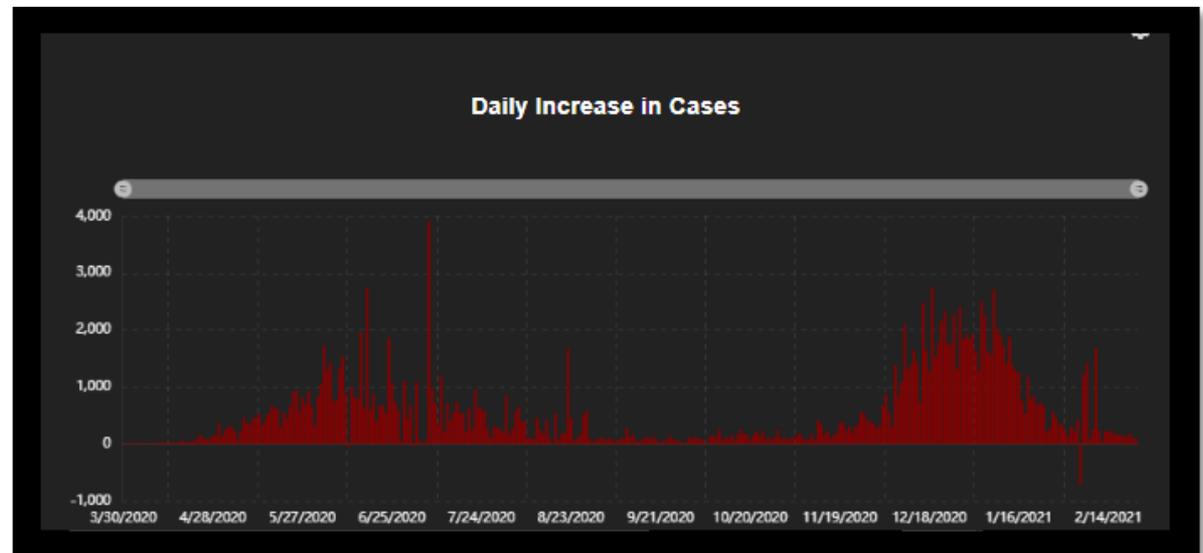
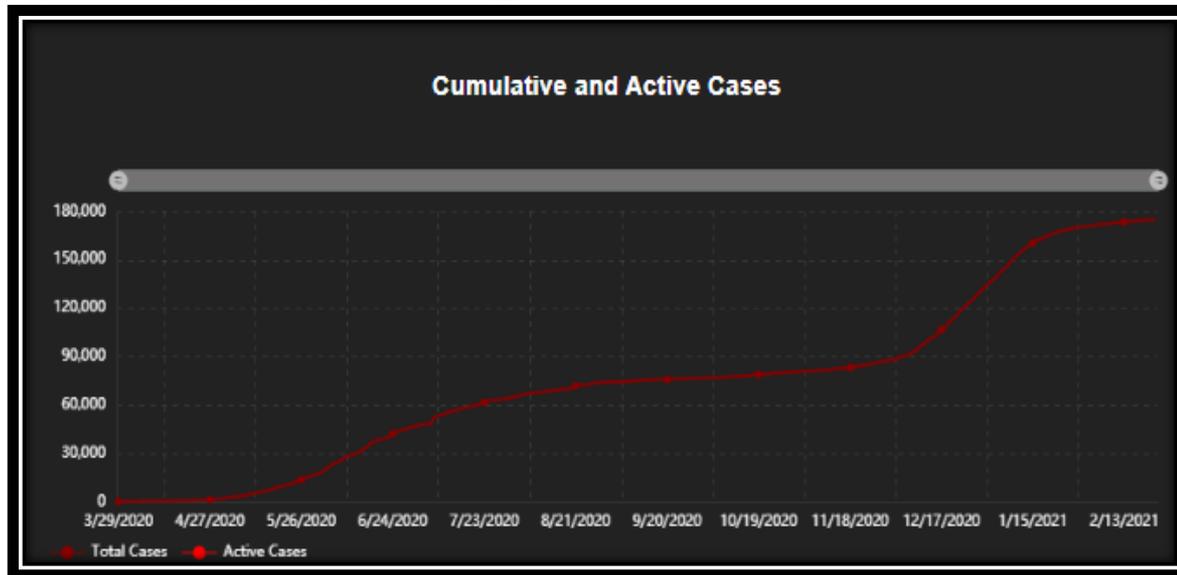
Datasets: the C-19 dashboard contains the following spatial data sets:

- Isolation and Quarantine sites
- Road blocks
- Feeding sites
- Boundaries (District and Local Municipalities)
- Informal Settlements (Metro and Non-Metro)
- CoVID 19 Vulnerability Index (Ward level)
- CoVID 19 case data at Sub-district level (Metro and Non-Metro).

The CoVID 19 dashboard- Overview



The CoVID 19 dashboard : *Trends*



The CoVID 19 dashboard: *layer list*

- Metro Sub Districts Current Cases
- Local Municipalities Current Cases
- Localities and Informal Settlements
- Level 1 Quarantine and Isolation Facilities
- Other Level Quarantine and Isolation Facilities
- DSD Feeding Sites
- Roadblocks
- City of Cape Town Informal Settlements
- Non Metro Informal Settlements
- COVID Vulnerability Index



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Information Management System: UNITI



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Background – I/T Systems

- DM Act requires the implementation of an information system for a disaster management centre.
- This information system is to assist with the management of information concerning disasters and act as a repository of information, to analyse information, manage databases etc.
- System should be aligned to NDMC information system

Timeline:

- Disaster Management Information System 2002 - 2009 GEMC3 and satellite connectivity.(Disaster Management Information System 2009-2010 UNITI [pilot])
- 2011 - 2018 Numerous engagements with NDMC (2016 – NDMC rolled out Situation Reporting System)
- 2018 – WCDMC started to actively research and investigate options and commenced with IT Scoping document.

Background - UNITI

- January 2020 the WCDMC appointed “Spinning your Web” to implement the “UNITI” Disaster Management Information and Communication System.
 - Training scheduled for (February/March 2020): Covid Activation on 15 March.
 - Decision taken to utilise UNITI during the activation of the centre for COVID-19.
 - Customisation and development of the functionality happened on the go.
- **UNITI: also utilised by:**
 - DTPW – Red Dot Transportation System.
 - DoH – Quarantine and Isolation Management
 - All District DM Centres – COVID-19 response



UNITI Software as an Enabler

The PDMC software was able to integrate, and was compatible with all District Disaster Management Systems.

Situation reporting:

🏠 Update by Franquin Petersen on Wed, 03-06-2020 at 12:11 for West Coast District Municipality
🖨️ Print 👁️ View Full Report

Location	West Coast District Municipality	<div style="border: 1px solid #ccc; padding: 5px;"> <p>📄 Summary for Communicable Diseases</p> <p>B <i>I</i> ☰ ☷ “</p> <p>The following actions and activities are currently being undertaken by the District in response to COVID-19:</p> <p>Sanitising of schools that have participated in the feeding of learners over these past weeks.</p> <p>Attending to enquiries from Local Municipalities</p> <p>SAPS to deploy more staff to assist with roadblocks – SANDF to assist</p> <p>Chrysalis volunteers called up to assist Local Municipalities – Maximum of 20 volunteers per Local Municipality.</p> <p>⚙️ Settings for Communicable Diseases</p> <p><input checked="" type="checkbox"/> Include this general update in the report</p> <p><input type="checkbox"/> Include the original content from the update</p> </div>
Category	General Update	
Description	West Coast District - Head of Centre (HoC) Reporting	
Situation Report	<p>Situation Notes:</p> <ol style="list-style-type: none"> 1. Cluster Reports being received from some of the Local Municipalities. 2. Information still fragmented (Coming from all clusters) <p>Co – ordinating Structure:</p> <ul style="list-style-type: none"> • All clusters are requested to provide JOC updated reports. All engagements done virtually. • Teleconference • Video Conference • Email, WhatsApp etc. • Limiting access to people – only allowing WCDM EMT. 	
Outstanding Actions	<p>West Coast Disaster Management (HoC)</p> <ul style="list-style-type: none"> • Obtaining supplies from Service providers, • No contact Thermometers (<i>Delivered</i>) 	
	West Coast Disaster Management (HoC)	

UNITI Software as an Enabler

Repository of information/data management:

Documents

Browse folders and files

 Manage

 Add Folder

 Upload File

Files

Proposed Notice of Release from Quarantine <small>Circular</small>	Shannon McGluwa	Thu, 30-04-2020 at 07:04			
Regulation on Fines <small>application/pdf</small>	Veliswa Tukulula	Sat, 09-05-2020 at 04:47			
Guidelines to Response outbreak teams on how to advise patients and contacts who have children-FINAL. <small>application/vnd.openxmlformats-officedocument.wordprocessingml.document</small>	Mandeladile Sopete	Tue, 16-06-2020 at 11:46			
Event Safety Council Re-Opening Guidelines version 1 <small>application/pdf</small>	Mandeladile Sopete	Tue, 16-06-2020 at 12:05			

Folders

SRS - NDMC	Shireen Kolbee	Fri, 04-09-2020 at 13:27		
COVID-19 2020	Fazlin Ganief	Fri, 04-09-2020 at 16:02		

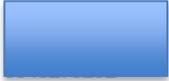
UNITI Software as an Enabler

Queries were tracked and escalated/actioned:

#909	Francisco Daams 20-06-2020 1:	Lisa Burgess Telephone	Francisco Daams Resolved	Enquiry for essential service business owners (based in Cape Town with office in Johannesburg) children to	Dear Ms Burgess As telephonically discussed:	
#910	Nceba Kwela 22-06-2020 1:	Bangile Thukuthezi Emailed	Mandy Thomas Resolved	Hi Colin. I'm Bangile from LT site B Khayelitsha ward 93 cape town, I'm a community	The matter was refer for the attention of the City of Cape Town DRM Dr J Minnie of CoCT-DRM	
#912	Nceba Kwela 22-06-2020 1:	LE Moolman Emailed	Select Contact Resolved	Good morning, My sister and I are from Namibia and we came on a	Message escalated for the attention of S Nondo	
#911	Nceba Kwela 22-06-2020 1:	Shannon McGluwa Emailed	Wayne Smith Resolved	Good afternoon colleagues, Kindly see attached results for Mrs Roman and kindly	DOH has dealt with this query (Mark)	

UNITI Software as an Enabler

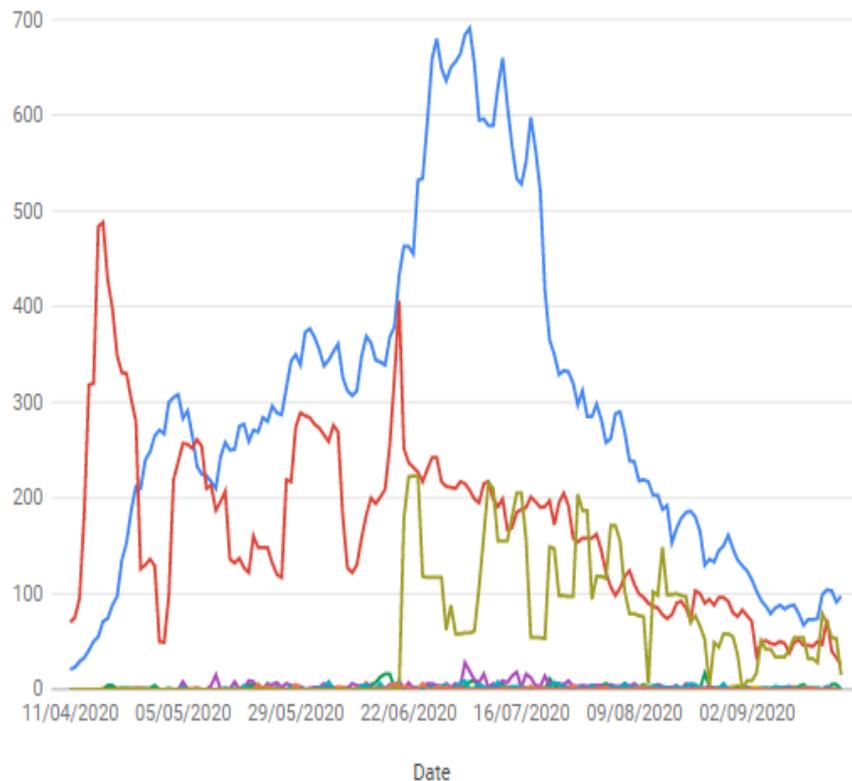
Quarantine and Isolation:

#12033	 No Email Address	Houw Hoek Hotel (24) WCG Department of Transport and Public Works 22-09-2020 to 01-10-2020 ✔ Transport Request #544 - Collected	<input type="checkbox"/>
#12025	 No Email Address	Gansbaai Boarding Lodge WCG Department of Transport and Public Works 22-09-2020 to 30-09-2020 🚗 Transport Request #541 - Requested	<input type="checkbox"/>
#12017	 No Email Address	Du Kloof Lodge - Paarl (ROOM 6) WCG Department of Transport and Public Works 22-09-2020 to 01-10-2020	Patient Already @ facility <input type="checkbox"/>
#12015	 No Email Address	Reeds Country Lodge WCG Department of Transport and Public Works 22-09-2020 to 01-10-2020 🚗 Transport Request #536 - Requested	<input type="checkbox"/>
#12013	 not provided	Ye Olde Thatch Guest House (Isolation) WCG Department of Transport and Public Works 22-09-2020 to 27-09-2020	Isolation No dietary requirements No space in Swartberg change to Ye Olde Thatch Beaufort West <input type="checkbox"/>

UNITI Software as an Enabler

Quarantine and Isolation:

Affected Persons
by status per day



Age

Date	In Isolation	In Quarantine	Under Investigation	Released	Pending Isolation	Pending Quarantine	Cancelled	Repatriation - Quarantine
11/04/2020	21	70	0	0	0	0	0	0
12/04/2020	23	75	0	0	0	0	0	0
13/04/2020	29	95	0	0	0	0	0	0
14/04/2020	33	183	0	0	0	0	0	0
15/04/2020	41	318	0	0	0	0	0	0
16/04/2020	50	320	0	0	0	0	0	0
17/04/2020	55	484	0	0	0	0	0	0
18/04/2020	71	488	1	0	0	0	0	0
19/04/2020	74	428	1	4	0	0	0	0

Opportunities

- CoVID 19 has provided the Centre an opportunity to roll out UNITI with confidence. The activation of the Centre tested the software on all platforms namely: functionality, ease to change, stability, level of confidentiality, user friendliness etc.
- The relationships built through intergovernmental spatial data forums facilitated and accelerate the data acquisition process between the local and provincial role-players.

Challenges

- The amount of data and information that is “all over the show” how do we create a “one stop data shop” for the Province?
- Mapping requests from role-players were not always accompanied by the necessary data i.e GPS co-ordinates, which delayed the mapping process.
- Situation Reporting System of the NDMC created duplicated reporting for the Province.

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Thank you