water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

2021

SDG6 – NORTHERN CAPE BI-ANNUAL PROGRESS REPORT Jul - Dec 2021

WATER SERVICES, PROJECTS, AND SUPPORT

COMPILED BY: DWS NC - PLANNING AND SUPPORT

2030 NDP
NATIONAL DEVELOPMENT PLAN
Our Future - make it work

Contents

1 BACKGROUND

Since the Sustainable Development Goals (SDGs) were endorsed “without reservations” by all Heads of State, including South Africa, on 25 September 2015, South Africa has embraced the opportunity to deliver on the SDG requirements and improve water security and the service of water and sanitation business to its people.

The SDG goals and targets came into effect on 1 January 2016 and will guide the decisions taken within South Africa over the next fifteen years. The target date for outcomes to be achieved is 2030. The SDG targets are indeed valid for and applicable to South Africa. They are also in line with the Vision 2030 (the National Development Plan) as well as Medium Term Strategic Framework (MTSF) Outcome targets.

The Statistics South Africa (STATSSA) is the focal point for all 17 SDGs in the country. Of these 17 goals to be attained by 2030, there is a dedicated water and sanitation goal, Goal 6, with the objective to ensure access to water and sanitation for all. However, it is acknowledged that water is inherently reflected and/or implied in various other goals. The Deputy Director General: Planning & Information is responsible to oversee the implementation of SDG6 in SA on behalf of the Department and with collaboration with STATSSA. The day-to-day implementation of SDG6 programme is the responsibility of Chief Director: Water Services and Local Water Management. SDG 6 contains 6 sub-goals and 2 sub targets, all focusing directly on water and sanitation services and water resource management, namely:

- 6.1 achieve universal and equitable access to safe and affordable drinking water for all
- 6.2 achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- 6.3 improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
- 6.4 substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
- 6.5 implement integrated water resources management at all levels, including through trans-boundary cooperation as appropriate
- 6.6 by 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes
- 6.a expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling, and reuse technologies
- 6.b support and strengthen the participation of local communities in improving water and sanitation management.

To facilitate the implementation of SDG6 programme the DWS SDG6 Working Group has been established within the Branch Planning & Information. The working group is an overarching forum that provides strategic direction to various task teams of various SDG6 sub-goals. Each task team is therefore expected to develop their own ToR including an action plan on how data specific to its target is going to be collected, processed, analysed, reported, etc. It is also the responsibilities of task teams to develop indicators and monitoring programmes to monitor the achievement of targets of their respective sub-goals and indicators.

2 REGIONAL STRUCTURE

The Northern Cape Regional SDG 6 Task Team has been established within the Branch: Planning & Information, which is led by:

- Chair: Kobus Streuders

2.1 FUNCTIONS OF THE NORTHERN CAPE REGIONAL SDG6 TASK TEAM

There are 4 key functional areas for which this Task Team is responsible. These include

1. Communication with the Sector
2. Supporting the Sector
3. Reporting Regional progress towards achieving SDG 6 by 2030
4. General operational activities pertaining to the Task Team objective

The four functions can be unpacked as follows:

Communication with the Sector

- To communicate with the Water Sector regarding progress of SDG 6.
- Provide a linkage to other similar work in both the national sector and international representative.

Supporting the Sector

- The support broadly, involves providing strategic guidance and identifying and implementing special projects contributing to the SGD 6.

- Provide strategic support and recommendations to the sector in terms of how they can close the gaps identified within their respective sub goals.
- Coordinate support activities where possible
- Reporting Regional progress towards achieving SDG6 by 2030
- Develop a reporting framework, implement systems and processes required to report progress regarding achievement of this task team SDG6 target
- Report on progress of this task team annually

General Operations

- To coordinate monthly/quarterly meetings as required with each of the Task Team members to assess progress, challenges, and other points of discussion. Minutes must be maintained accordingly and copied to the Programme Coordinator for information.
- The Task Team Leader to participate on the Quarterly SDG6 Working Group meetings.
- To provide quarterly progress reports to the SDG6 Working Group relating to the Task Team Functions.
- To consider other areas of importance relating to the target as they arise and assess the level of support, if any.
- To review this ToR every year in line with the action plan.
- To implement the Action Plan of the Task Team.

3 PROGRESS REPORT

3.1 MUNICIPAL SERVICES AND VULNERABILITY

The Department of Human Settlements, Water and Sanitation, and the Directorate: Water Services Planning perform an annual round of Municipal Strategic Self Assessments (MuSSA). The MuSSA is a multiple-choice questionnaire which is filled in online at http://ws.dwa.gov.za/mussa/. It provides vitally important information that reflects not only the state of the municipal water and sanitation business, but also the state of the institution itself. This in turn gives insight to all sector partners, which include DWS, the Department of Cooperative Governance and Traditional Affairs (via integration with the Back-2-Basics Programme), National Treasury, The Planning Commission / Office of the Presidency, and the South African Local Government Association (SALGA). By leveraging the MuSSA as a strategic tool, it is possible for the municipality to manage your water and sanitation vulnerabilities, which allows for the provision of targeted support to the municipality by DWS and sector partners, as well as access to existing funding structures.

By tracking your MuSSA status, incorporating the vulnerabilities into Municipal Risk Registers and taking the appropriate corrective actions, municipalities can better manage water and sanitation services. Eighteen business attributes are measured, ranging from water and sanitation services provision, financial asset management to skill levels of personnel.

The vulnerability of a municipality is then classified between Low to Extreme. The table below show the vulnerability of Northern Cape Municipalities for the past three assessments. From 2019/20 to 2020/21, the number of municipalities in the Extreme Vulnerability category has decreased from 15 to 14.

Table 1: Breakdown of the varying service levels encountered throughout the province.

Northern Cape MuSSA Vulnerability 2018 - 2020									
	Vulnerability	No of WSAs				Percentage			
		2018	2019	2020	2021	2018	2019	2020	2021
	Extreme	14	15	14	9	54	58	54	35
	High	7	8	9	6	27	31	35	23
	Moderate	4	3	3	3	15	12	12	12
	Low	0	0	0	8	0	0	0	31
	No Data	1	0	0	8	4	0	0	31

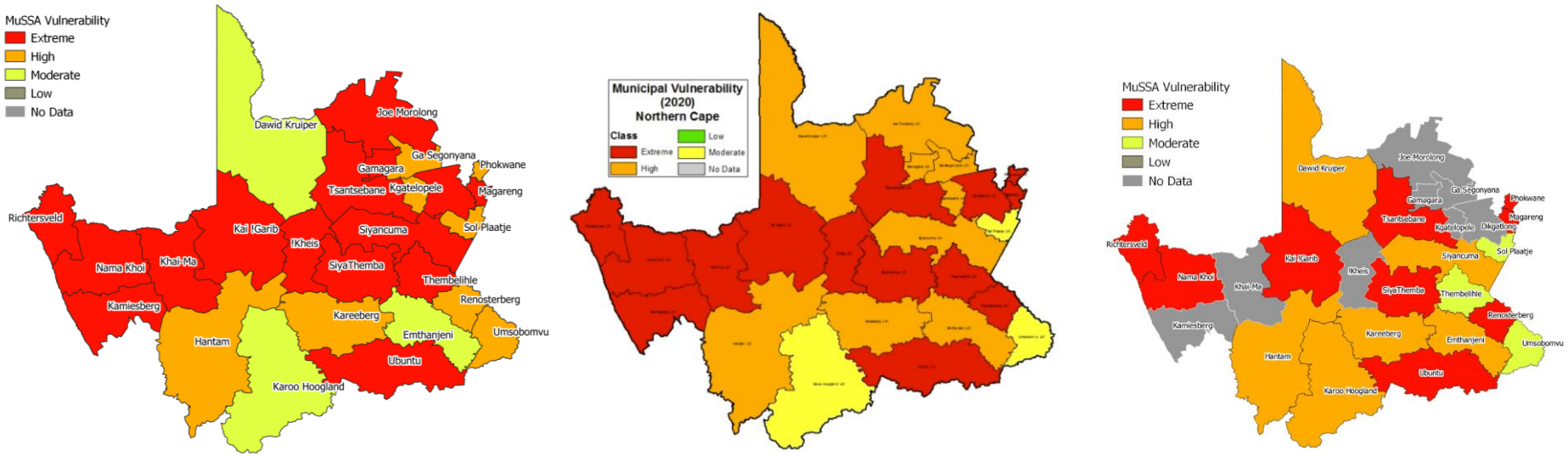

Figure 1: MuSSA for 2019/20 (left) vs 2020/21 (middle) vs 2021/22 (right).

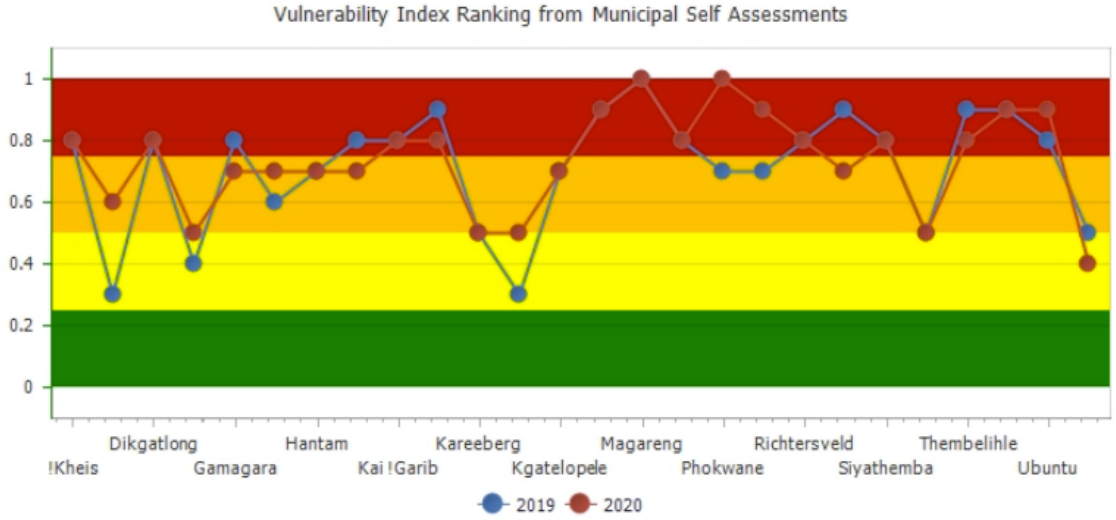

Figure 2: Vulnerability Classification comparison for individual LMs between 2019/20 and 2020/21.

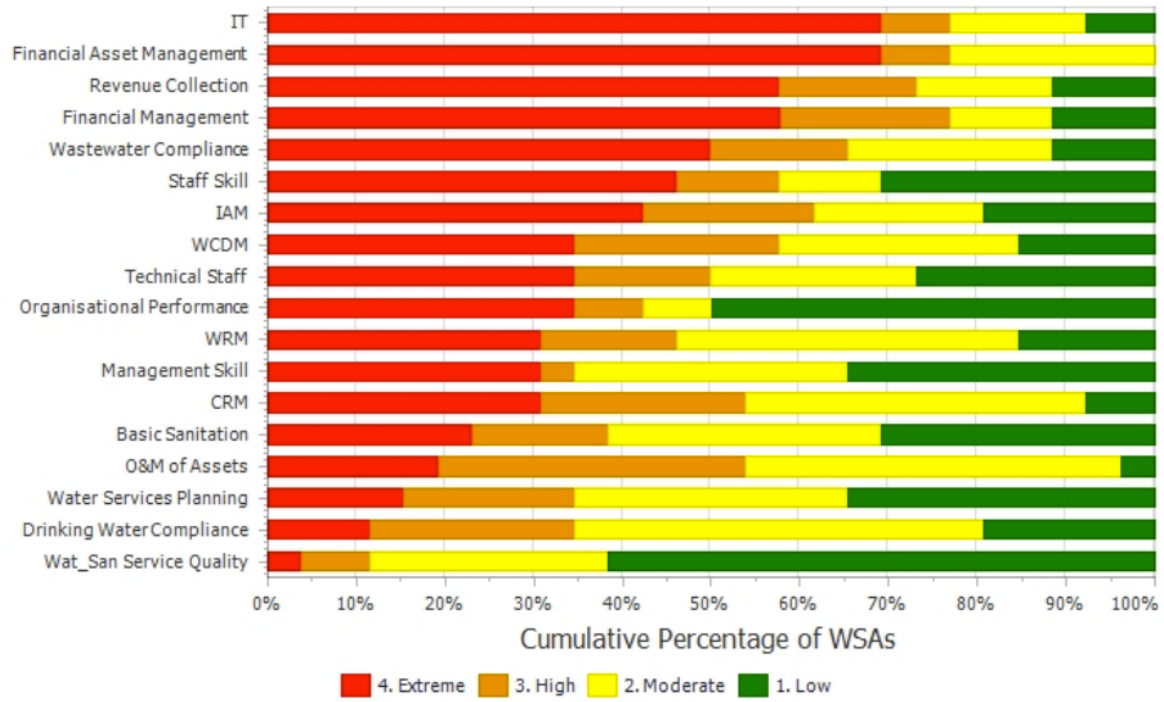

Figure 3: Individual assessment categories arranged from most to least vulnerable.

Important areas to note are:

- ***88.46%** of WSAs are not implementing an up to date and Council adopted water and sanitation services plan (e.g., WSDP)*
- ***84.62%** WSAs indicate that they are reliant on grant funding for >75% of their capital expenditure*
- ***84.62%** of WSAs do not invest adequately in asset renewal, with <75% of asset renewal investment as percentage of depreciation costs*
- ***38.46%** of WSAs indicate that money is owed to major/critical service providers (e.g., ESKOM, water board) on at least a quarterly basis*
- ***65.38%** of WSAs indicate a net deficit from water services activities; this could be due to 80% of WSAs noting a revenue collection rate less than 70% of that billed.*
- ***92.31%** of WSAs have not developed, approved, and implemented an ICT Technology Master Plan that addresses current and future IT infrastructure requirements.*

- ***53.85%*** *of WSAs indicate that <90% of customers have a functional, reliable, and safe water supply system (with sufficient quantity and flow, good quality and minimal interruptions)*
- ***80.77%*** *of WSAs indicate that their Infrastructure Asset Management Plan is not appropriate*
- ***57.69%*** *of WSAs indicate that <90% of customers have a functional reliable, dignified, and safe sanitation system (with minimal blockages resulting in overflows that impact on the environment)*
- ***53.85%*** *of WSAs do not have technical support staff that have the correct skills/qualifications and experience as per job description requirements (<75% of requirements)*
- ***76.92%*** *of WSAs indicate inadequate implementation of IAM plan outcomes (<75% outcomes being addressed). This is largely due to limited budget allocations, with 90% of WSAs indicating inadequate budget.*
- ***53.85%*** *of WSAs indicate that they do not have sufficient water and sewerage/sanitation network operations and repair staff/plumbers (<75% as per requirements)*
- ***34.62%*** *of WSAs indicate that they have not adequately implemented a detailed plan and program to provide safe sanitation for all households (i.e., <75% implementation)*
- ***65.38%*** *of WSAs note that Extreme and/or Highly Vulnerability MuSSA Business Aspects are not effectively included into their Corporate Risk Register.*
- ***69.23%*** *of WSAs indicate serious sanitation programme underfunding (<75% of required budget)*
- ***88.46%*** *of WSAs indicate non-revenue water >30%, while 100% of WSAs indicate non-revenue water >20%*
- ***61.54%*** *of WSAs indicate that they are not implementing appropriate intervention programmes to reduce NRW (<75% as per requirements)*
- ***46.15%*** *WSAs indicate that <75% of required funds have been made available to address issues identified through wastewater and environmental risk management processes (e.g., wastewater risk abatement planning)*
- ***73.08%*** *of WSAs indicate that Water Treatment Works are either already over capacity or rapidly approaching capacity (>90% of total design capacity)*
- ***96.15%*** *of WSAs indicate that they are not disposing/reusing all their sludge in accordance with licence conditions/guidelines*
- ***61.54%*** *of WSAs indicate that required corrective actions/remedial measures to address water system risk identified through water safety planning have not been implemented (i.e., <75% implementation)*
- ***73.08%*** *of WSAs indicate that required corrective actions/remedial measures to address wastewater system risk identified through wastewater risk abatement planning have not been implemented.*
- ***46.15%*** *of WSAs indicate inadequate provision of required water and conservation water demand management related data to the regulator.*
- ***96.15%*** *of WSAs indicate that they do not have an approved water resilience policy in place (which includes optimisation of existing water resources, diversifying supply to increase water security, and optimisation of the "water mix"*

3.2 SDG 6.1 – SAFE DRINKING WATER FOR ALL

The Northern Cape Water Services Infrastructure Database (NCWSID) has been under development of the past decade. A detailed geospatial service model of has been developed via:

- Capturing of as-built diagrams from completed projects as implemented by DWS and MIG.
- Engagements with consultants implementing municipal projects.
- Obtaining yearly updated stand information from the Surveyor General's office.
- Groundwater surveys
- Annual municipal desktop surveys of the level of service rendered on a per stand level.

In its current form, the NCWSID consists of a Virtual Private Server (VPS) running in the cloud. The core of the system is the Dockerized PostgreSQL database, extended with geospatial functionality using PostGIS. From the database service, a GeoServer instance is used to perform map rendering. User level interactions are managed a Django web application, which is served through NGiNX. Direct connection to the database allows using stand-alone packages like QGIS and the in-house SpatialViewer.

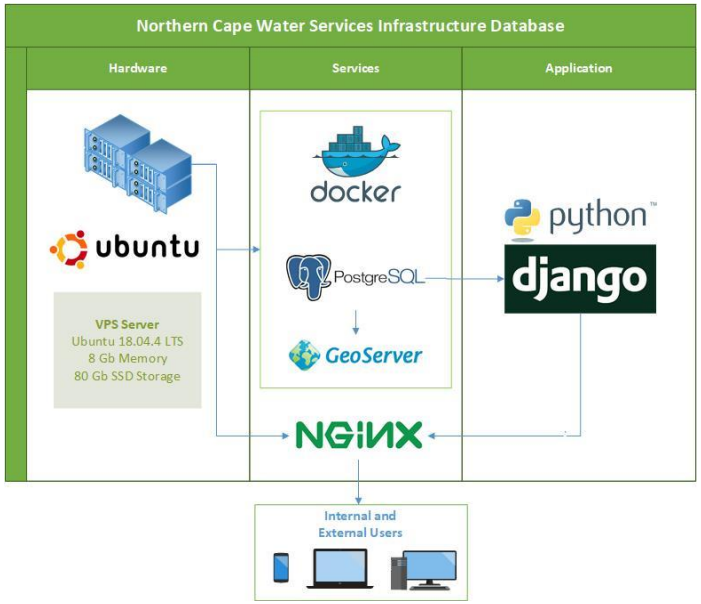

Figure 4: The NCWSID configuration in its latest form.

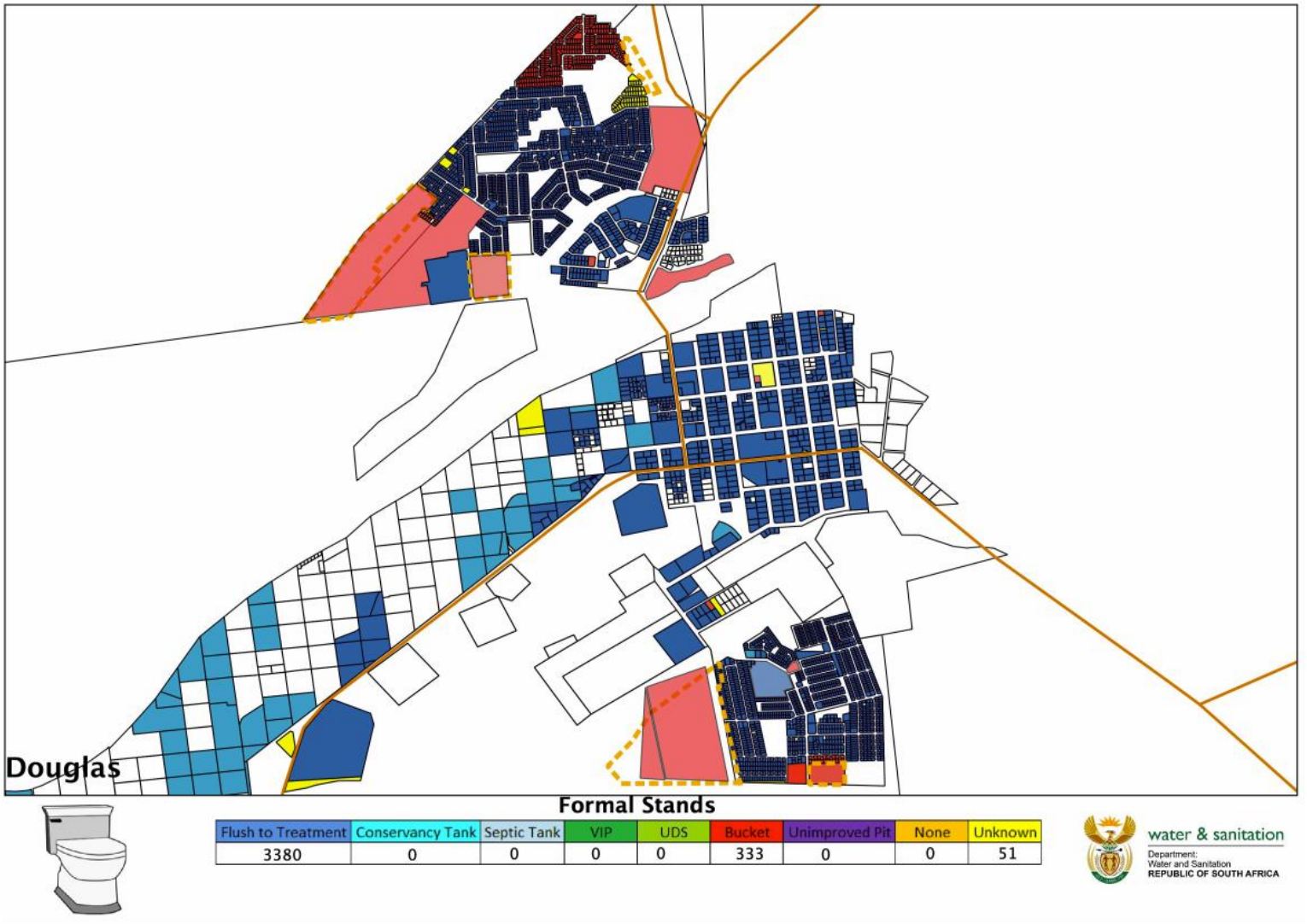

Figure 5: Example of Sanitation Level of Service Maps produced – Siyancuma LM, Douglas.

Using the regional Water Services Infrastructure Database, the Northern Cape Department of Water and Sanitation performs yearly updates of the levels of service in each municipality.

The process involves:

1. Creating a detailed map showing the water and sanitation services rendered for each settlement in the Northern Cape. The total map count reaches approximately 1800. See example in Figure 5.
2. The created maps are forwarded to Local Municipalities for inputs and updates.
3. The updated maps are returned to the department, where it is processed, and the database is then updated.
4. The updated database is then used to produce the regional backlog model.

The regional backlog model breaks down the water and sanitation services provided on a per household level in each settlement within the Northern Cape. The model distinguishes between formal and informal stands. Formal stands are areas that have been surveyed by the Surveyor General's office and are thus eligible for municipal services. Informal stands have not been surveyed and are not fully eligible for formal municipal services.

Table 2: Breakdown of the varying service levels encountered throughout the province.

Water Services	Below RDP	Sanitation Services	Below RDP
House Connection	No	Flush to Treatment	No
Yard Connection	No	Conservancy Tank	No
Communal Standpipe closer than 200m from household	No	Septic tank	No
Communal Standpipe greater than 200m from household	Yes	UDS (Urine drainage system)	No
Communal Handpump	Yes	VIP (Ventilated Improved Pit)	No
No Water	Yes	Unimproved Pit	Yes
		Bucket System	Yes
		No Service	Yes

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Table 15 breakdowns of the most recent levels of service are given. Of importance in determining the appropriate response to any resurgence are those areas with No Service, Interim Service and Communal Standpipes greater than 200m from households. In some areas the number of communal standpipes within a 200m radius of households should also be considered, as connections in these areas are more prone to vandalism and hence more frequent service interruptions.

From the backlog model there are 6 564 unserved households on informal stands and 11 441 unserved households on formal stands.

Table 14 and

Table *15* breakdowns of the most recent levels of service are given. Of importance in determining the appropriate response to any resurgence are those areas with No Service, Interim Service and Communal Standpipes greater than 200m from households. In some areas the number of communal standpipes within a 200m radius of households should also be considered, as connections in these areas are more prone to vandalism and hence more frequent service interruptions.

From the backlog model there are **5 905** unserved households on informal stands and **10 883** unserved households on formal stands. Backlogs are being addressed via the implementation of infrastructure projects, as well as integrated planning with the MIG office of Cogstha. The projects of the region were prioritized as shown below to maximize the impact on backlogs

Table 3: Water Service Model on Formalized Stands

District	Municipality	House Connection	Yard Connection	Communal Standpipe	Communal>200m	None	Unknown	Serviced	Backlog	% Served
Frances Baard	Dikgatlong	7 389	694	438	-	-	2	8 521	2	99.98
	Magareng	2 071	3 441	-	-	1 200	27	5 512	1 227	81.79
	Phokwane	12 175	672	2 110	-	630	9	14 957	639	95.90
	Sol Plaatje	48 237	1 371	1 901	-	-	224	51 509	224	99.57
John Taolo Gaetsewe	Ga Segonyana	6 580	1 942	12 529	-	1 286	30	21 051	1 316	94.12
	Gamagara	15 416	346	1 018	-	163	42	16 780	205	98.79
	Joe Morolong	1 120	325	20 740	-	1 270	35	18 828	1 305	80.15
Namakwa	Hantam	3 289	950	-	-	9	-	4 239	9	99.79
	Kamiesberg	1 587	1 064	164	-	119	23	2 815	142	95.20
	Karoo Hoogland	1 465	899	-	-	26	-	2 364	26	98.91
	Khai-Ma	1 529	744	5	-	230	3	2 278	233	90.72
	Nama Khoi	8 712	3 263	236	-	148	302	12 211	450	96.45
	Richtersveld	2 702	659	2	-	7	19	3 363	26	99.23
Pixley ka Seme	Emthanjeni	7 668	645	-	-	14	2	8 313	16	99.81
	Kareeberg	1 737	398	-	-	-	-	2 135	-	100.00
	Renosterberg	2 585	3	52	-	288	-	2 640	288	90.16
	SiyaThemba	3 407	720	209	-	42	-	4 336	42	99.04
	Siyancuma	5 959	580	257	-	93	51	6 796	144	97.93
	Thembelihle	2 047	10	189	-	107	33	2 246	140	94.13
	Ubuntu	3 983	2	-	-	-	1	3 985	1	99.97
	Umsobomvu	6 276	867	144	-	1	1	7 287	2	99.97
ZF Mgcawu	!Kheis	1 278	1 221	292	-	-	-	2 791	-	100.00
	Dawid Kruiper	17 218	2 942	1 938	-	2 269	94	22 098	2 363	90.34
	Kai !Garib	4 388	2 365	459	-	1 954	126	7 212	2 080	77.62
	Kgatelopele	3 371	-	285	-	3	-	3 656	3	99.92
	Tsantsabane	8 027	10	150	-	-	-	8 187	-	100.00
Total		**180 216**	**26 133**	**43 118**	**-**	**9 859**	**1 024**	**246 110**	**10 883**	**94.53**

Table 4: Water Service Model in Informal Areas

District	Municipality	House Connection	Yard Connection	Communal Standpipe	None	Unknown	Serviced	Backlog	% Served
Frances Baard	Dikgatlong	632	620	4 246	127	-	5 498	127	98
	Magareng	-	29	567	-	-	596	-	100
	Phokwane	60	-	-	931	-	60	931	6
	Sol Plaatje	100	296	2 008	1 200	-	2 404	1 200	67
John Taolo Gaetsewe	Ga Segonyana	-	1 806	200	1 650	-	2 006	1 650	55
	Gamagara	-	-	200	162	-	200	162	55
	Joe Morolong	-	-	-	1 101	-	-	1 101	-
Namakwa	Hantam	-	40	47	-	-	87	-	100
	Kamiesberg	-	-	-	9	-	-	9	-
	Karoo Hoogland	-	-	89	-	-	89	-	100
	Khai-Ma	-	40	-	-	-	40	-	100
	Nama Khoi	43	-	125	-	-	168	-	100
	Richtersveld	25	15	-	-	-	40	-	100
Pixley ka Seme	Emthanjeni	-	41	500	-	-	541	-	100
	Kareeberg	-	-	196	-	-	196	-	100
	Renosterberg	-	-	191	-	-	191	-	100
	SiyaThemba	-	30	49	-	-	79	-	100
	Siyancuma	14	127	1 144	-	29	1 285	29	98
	Thembelihle	-	-	600	-	-	600	-	100
	Ubuntu	69	261	120	-	-	450	-	100
	Umsobomvu	-	-	370	-	-	370	-	100
ZF Mgcawu	!Kheis	-	-	-	70	-	-	70	-
	Dawid Kruiper	-	117	12	400	-	129	400	24
	Kai !Garib	124	64	129	99	127	317	226	58
	Tsantsabane	220	-	-	-	-	220	-	100
Total		**1 287**	**3 486**	**10 793**	**5 749**	**156**	**15 566**	**5 905**	**72**

The table below indicates the water and sanitation projects in the province ordered by priority. Statuses of the projects are also indicated.

Table 5: List of projects in the Northern Cape organised by priority

Priority	Project	Municipality	Funder	Status (Jul 2021	Status (Dec 2021)
1	Vaal Gamagara BWS	Various	RBIG	Construction	Construction
2	Replacement of Namakwa BWS	Nama Khoi	RBIG	Construction	Construction
3	Loeriesfontein BWS	Hantam	RBIG	Complete	Complete
4	Upgrading of Kameelmond WWTW	David Kruiper	RBIG	Procurement	Construction
5	Postmasburg Bulk water supply	Tsantsabane	RBIG	Planning	Planning
6	Postmasburg Bulk sanitation supply	Tsantsabane	RBIG	Planning	Planning
7	Vanwyksvlei Bulk Water Supply	Kareeberg	RBIG	Construction	Construction
8	Desalination plant in Port Nolloth	Richtersveld	RBIG	Planning	Planning
9	Warrenton WTW upgrade	Magareng	RBIG	Construction	Construction
10	Ritchie BWS	Sol Plaatje	RBIG	Complete	Complete
11	Marydale BWS	Siyathemba	RBIG	Complete	Complete
12	Bulk water supply to De Aar:Development of groundwater	Emthanjeni	WSIG	Planning	Procurement
13	Williston BWS	Karoo Hoogland	RBIG	Complete	Complete
14	Kuruman BWS	Ga-Segonyana	RBIG / SLP	Construction	Complete
15	Kathu BWS (Sesheng)	Gamagara	RBIG / SLP	Planning	Planning
16	Louisvale PS (New)	David Kruiper	RBIG / WSIG	Complete	Complete
17	Louisvale PS (Upgrade)	David Kruiper	RBIG / WSIG	Complete	Complete
18	Kakamas WTW with additional storage capacity	Kai!Garib	RBIG	Planning	Planning
19	Douglas WTW Upgrading	Siyancuma	RBIG	Planning	Planning
20	Britstown Oxidation Ponds	Emthanjeni	RBIG	Complete	Complete
21	Kathu BWS phase 2	Gamagara	RBIG / SLP	Planning	Planning
22	Brandvlei BWS	Hantam	RBIG	Complete	Complete
23	Danielskuil Oxidation ponds	Kgatelopele	RBIG / MIG	Construction	Construction
24	Bulk Wastewater and distribution in Hartswater (WWTW)	Phokwane	WSIG	Construction	Complete
25	Upgrading of the Bulk water in Jan Kempdorp (WTW)	Phokwane	RBIG / WSIG / MIG	Planning	Planning

Priority	Project	Municipality	Funder	Status (Jul 2021	Status (Dec 2021)
26	Refurbishment Kuruman STW & sewage pump station	Ga-Segonyana	WSIG	Complete	Complete
27	Construction of Campbell WWTW	Siyancuma	MIG	Planning	Planning
28	Vaal gamagara SD 4 Rural towns	Joe Morolong	WSIG / MIG	Planning	Planning
29	Garies Desalination & bulkwater	Kamiesberg	MIG	Complete	Complete
30	Linking services - bulk water Lerato Park	Sol Plaatje	MIG	Construction	Construction
31	Linking services - Bulk sanitation Lerato Park	Sol Plaatje	MIG	Construction	Construction
32	Port Nolloth WWTW upgrade	Richtersveld	MIG	Planning	Construction
33	Komaggas upgrading of bulkwater	Nama Khoi	MIG / WSIG	Construction	Construction
34	Upgrading of Dibeng WWTW & Sewer	Gamagara	MIG	Construction	Construction
35	Upgrading of Kathu WWTW phase 2	Gamagara	RBIG	Planning	Planning
36	Gogga pump sewer outfall main	Sol Plaatje	MIG / WSIG	Complete	Complete
37	Upgrading of VIP/UDS to waterborne	Umsobomvu	MIG / WSIG	Construction	Construction
38	Upgrading of Boegoeberg Oxidation	!Kheis	WSIG / MIG	Planning	Planning
39	Ga-Segonyana Rural Sanitation Programme	Ga-Segonyana	WSIG / MIG	Construction	Construction
40	Joe Morolong Rural Sanitation Programme	Joe Morolong	WSIG / MIG	Construction	Construction
41	Melkstroom Bulk water	David Kruiper	MIG	Planning	Planning
42	Melkstroom Bulk sewer	David Kruiper	MIG	Procurement	Construction
43	Kathu BWS phase 3	Gamagara	RBIG	Planning	Planning
44	Hondeklip Bay BWS	Kamiesberg	MIG / WSIG	Complete	Complete
45	Upgrading of sewer pump station in and around Galashewe	Sol Plaatje	MIG / WSIG	Construction	Construction
46	Replacement of West End/Tambo Square sewer outfall main	Sol Plaatje	MIG / WSIG	Planning	Planning
47	Sutherland Bulkwater	Karoo Hoogland	MIG	Complete	Complete
48	Windsorton WWTW upgrade	Dikgatlong	MIG	Construction	Construction
49	Ganspan WWTW & Related Bulk Sewer Infrastructure (MIG 1397)	Phokwane	MIG	Construction	Construction
50	Pampierstad Water	Phokwane	MIG	Procurement	Procurement

3.3 SDG 6.2 – EQUITABLE SANITATION FOR ALL

Table 6: Sanitation Service Model on Formalized Stands

District	Municipality	Flush to treatment	Conservancy Tank	Septic Tank	VIP	UDS	Unknown	Unimproved Pit	Bucket	None	Serviced	Backlog	% Served
Frances Baard	Dikgatlong	3 115	1 838	2 982	254	18	2	-	-	944	8 207	946	89.68
	Magareng	5 443	-	55	-	1 213	27	1	-	-	6 711	28	100.00
	Phokwane	13 515	38	56	2	533	9	-	-	1 443	14 144	1 452	90.74
	Sol Plaatje	48 155	29	9	3	1 342	224	-	-	1 971	49 538	2 195	96.17
John Taolo Gaetsewe	Ga Segonyana	6 586	457	-	4 083	1 236	34	8 448	-	1 523	12 362	10 005	89.03
	Gamagara	13 315	1 409	529	-	1	42	7	-	1 682	15 254	1 731	90.07
	Joe Morolong	448	-	123	7 517	5 349	17	10 069	-	2	13 437	10 088	99.99
Namakwa	Hantam	1 430	1 198	903	649	42	17	-	-	9	4 222	26	99.79
	Kamiesberg	713	278	11	387	1 441	87	-	-	40	2 830	127	98.61
	Karoo Hoogland	801	549	41	-	973	-	-	-	26	2 364	26	98.91
	Khai-Ma	1 155	600	1	432	122	1	-	-	200	2 310	201	92.03
	Nama Khoi	7 144	732	47	1 363	2 169	329	1	2	874	11 455	1 206	92.91
	Richtersveld	2 372	300	57	258	185	146	45	-	26	3 172	217	99.19
Pixley ka Seme	Emthanjeni	7 107	912	61	-	245	2	-	-	2	8 325	4	99.98
	Kareeberg	657	1 193	-	284	-	-	-	-	1	2 134	1	99.95
	Renosterberg	2 254	355	2	-	-	-	-	-	317	2 611	317	89.17
	SiyaThemba	3 265	450	-	469	-	-	-	-	194	4 184	194	95.57
	Siyancuma	4 749	757	1	2	564	51	-	815	1	6 073	867	99.98
	Thembelihle	2 045	178	1	46	-	4	-	-	112	2 270	116	95.30
	Ubuntu	2 406	646	9	-	-	1	-	923	1	3 061	925	99.97
	Umsobomvu	6 224	224	-	839	-	1	-	-	1	7 287	2	99.99
ZF Mgcawu	!Kheis	626	981	7	27	1 004	-	135	-	11	2 645	146	99.59
	Dawid Kruiper	16 778	449	451	1 605	693	86	315	4 470	651	19 976	5 522	96.84
	Kai !Garib	3 680	817	574	483	1 560	137	66	-	1 975	7 114	2 178	78.27
	Kgatelopele	3 374	171	111	-	-	-	-	-	3	3 656	3	99.92
	Tsantsabane	6 209	-	1 067	624	200	-	-	-	-	8 100	-	100.00
Total		**163 566**	**14 561**	**7 098**	**19 327**	**18 890**	**1 217**	**19 087**	**6 210**	**12 009**	**223 442**	**38 523**	**85.29**

Table 7: Sanitation Service Model in Informal Areas

District	Municipality	Flush to treatment	Conservancy Tank	Septic Tank	VIP	UDS	Unknown	Unimproved Pit	Bucket	None	Serviced	Backlog	% Served
Frances Baard	Dikgatlong	192	-	403	2 845	37	-	16	1 950	182	3 477	2 148	61.81
	Magareng	-	-	-	346	-	-	-	-	250	346	250	58.05
	Phokwane	60	-	-	-	-	-	50	-	881	60	931	6.05
	Sol Plaatje	346	-	50	-	-	-	-	868	2 340	396	3 208	10.99
John Taolo Gaetsewe	Ga Segonyana	-	-	-	1 446	-	-	-	-	2 210	1 446	2 210	39.55
	Gamagara	-	-	-	-	-	-	-	-	362	-	362	0.00
	Joe Morolong	-	-	-	-	-	-	-	-	1 101	-	1 101	0.00
Namakwa	Hantam	-	10	-	-	30	-	-	-	47	40	47	45.98
	Kamiesberg	-	-	-	-	-	-	-	-	9	-	9	0.00
	Karoo Hoogland	-	-	-	89	-	-	-	-	-	89	-	100.00
	Khai-Ma	-	-	-	-	40	-	-	-	-	40	-	100.00
	Nama Khoi	43	-	-	-	-	-	-	-	125	43	125	25.60
	Richtersveld	-	-	-	15	-	25	-	-	-	15	25	37.50
Pixley ka Seme	Emthanjeni	-	17	-	-	24	-	-	500	-	41	500	7.58
	Kareeberg	-	-	-	-	-	-	-	196	-	-	196	0.00
	Renosterberg	-	-	-	-	-	-	-	191	-	-	191	0.00
	SiyaThemba	-	-	-	-	-	-	-	79	-	-	79	0.00
	Siyancuma	-	2	14	9	-	-	29	1 260	-	25	1 289	1.90
	Thembelihle	-	-	-	286	100	-	-	-	454	386	454	45.95
	Ubuntu	261	-	46	-	23	-	-	120	-	330	120	73.33
	Umsobomvu	-	-	-	170	-	-	-	200	-	170	200	45.95
ZF Mgcawu	!Kheis	-	-	-	-	-	-	-	-	70	-	70	0.00
	Dawid Kruiper	2	-	-	79	46	-	-	400	2	127	402	24.01
	Kai !Garib	158	-	-	-	68	4	92	117	104	226	317	41.62
	Tsantsabane	-	220	-	-	-	-	-	-	-	220	-	100.00
Total		**1 062**	**249**	**513**	**5 285**	**368**	**29**	**187**	**5 881**	**8 137**	**7 477**	**14 234**	**34.44**

Table 8: Projects aligned with the March 2021 Economic Recovery and Construction Plan and implemented towards reaching SDG6.1 and SDG6.2 goals.

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Construction of Catersridge sewer pumpstation	DWS	Sol Plaatje - Kimberley	20	Long term	Funded	42 501 213	Future demands	Construction of a new outfall sewer line to fast track housing development	Construction
Construction of toilet top structures in Kimberley	DWS	Sol Plaatje - Kimberley	40	Long term	Unfunded	35 433 407	Replacement of old infrastructure	Refurbishment of existing toilets	Procurement
Upgrading of Warrenton WTW	DWS	Magareng - Warrenton	15	Long term	Funded	91 000 000	Future demands	Upgrading of existing water treatment works to meet the future water demand	Construction
Windsorton-Holpan bulk water supply	DWS	Dikgatlong - Windsorton	15	Long term	Funded	45 000 000	Future demands	Upgrading of existing water treatment works to meet the future water demand	Planning
Upgrading of Calvinia WTW	DWS	Hantam - Calvinia	30	Medium term	Funded	30 000 000	Future demands	Upgrading of existing water treatment works to meet the future water demand	Completed
Replacement of Asbestos Cement pipes	DWS	Hantam - Calvinia	15	Medium term	Funded	17 000 000	Replacement of old infrastructure	Replacement of old reticulation to address water losses	Planning

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe (Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	Budget (Funded, Budget required)	Challenges	Intervention needed	PROGRESS
1. Infrastructure investment and delivery									
Calvinia bulk sewer network	DWS	Hantam - Calvina	15	Long term	Funded	25 000 000	High operating cost	Eradication of conservancy tanks	Procurement
Upgrading Nababeep WWTW	DWS	Nama Khoi - Nababeep	60	Long term	Funded	35 980 737	Future demands	Upgrading of existing waste water treatment works and the installation of bulk sewer pump stations	Construction
Upgrading Carolusberg WWTW	DWS	Nama Khoi - Carolusberg	15	Long term	Unfunded	11 000 000	Future demands	Upgrading of existing waste water treatment works to meet future demands	Procurement
Namakwa BWS	DWS	Nama Khoi	70	Long term	Funded	R 1 451 431 169,00	Future demands	Upgrading of bulk water supply	Construction
Upgrading of Upington WWTW	DWS	Dawid Kruiper - Upington	20	Long term	Funded	220 000 000	Future demands	Upgrading of existing waste water treatment works to meet future demands	Construction
Van Wyksvlei bulk water supply	DWS	Kareeberg – Van Wyksvlei	30	Long term	Funded	99 676 142	Future demands	Construction of a new pipeline from Carnarvon to Van Wyksvlei to meet future demands	Construction

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Replacement of VIP to waterborne in Colesberg	DWS	Umsobomvu - Colesberg	30	Medium term	Funded	39 321 061	Health and hygiene	Eradication of dry sanitation.	Construction
Umsobomvu WCDM	DWS	Umsobomvu	10	Medium term	Unfunded	6 000 000	Non-revenue	Installation of meters and replacement of asbestos cement pipes to address water losses	Planning
Refurbishment / upgrading of Noupoort WWTW	DWS	Umsobomvu - Noupoort	15	Long term	Funded	15 000 000	Replacement of old infrastructure	Refurbishment of existing waste water treatment works to address possible pollution	Planning
Upgrading of Prieska WWTW	DWS	Siyathemba - Prieska	20	Long term	Funded	33 692 584	Future demands	Upgrading of existing waste water treatment works to meet future demands	Completed
Upgrading Prieska WTW	DWS	Siyathemba - Prieska	15	Medium term	Funded	10 000 000	Future demands	Upgrading of existing waste water treatment works to meet future demands	Planning
Upgrading of Bongani outfall sewer line	DWS	Siyancuma - Douglas	30	Medium term	Funded	19 000 000	Future demands	Upgrading of outfall sewer line to address housing needs	Construction

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Bucklands BWS	DWS	Siyancuma - Bucklands	15	Medium term	Funded	8 000 000	Water backlogs	Construction of a package plant	Planning
Petrusville bulk sewer network	DWS	Renosterberg – Petrusville	20	Medium term	Unfunded	20 000 000	High operating cost	Eradication of conservancy tanks	Planning
Upgrading and refurbishment of various infrastructure in Petrusville, Vanderkloof and Philipstown	DWS	Renosterberg – Petrusville	15	Short term	Funded	5963711	Replacement of old infrastructure	Upgrading of existing infrastructure	Planning
Vaal Gamagara BWS phase 1	DWS	Gamagara	79	Long term	Funded	1 470 000 000	Future demands	Replacement / upgrading of 50+ year old pipeline	Construction
Vaal Gamagara BWS Phase 2	DWS	Gamagara	100	Long term	Unfunded	10000000000	Future demands	Construction of a new waste water treatment works	Planning
Construction of water supply augmentation in Kagung and West Derby	DWS	Ga-Segonyana – Kagung, West Derby	20	Long term	Funded	18 597 543	Water backlogs	Household water connection	Construction
Extension of Pietbos Water Supply	DWS	Ga-Segonyana - Pietbos	40	Medium term	Funded	12 693 125	Water backlogs	Household water connection	Completed

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Refurbishment of non-functional boreholes and general water infrastructure	DWS	Ga-Segonyana	15	Long term	Funded	16 757 914	Replacement of old infrastructure	Refurbishment of non-functional boreholes	Completed
Maruping and Batlharos bulk water supply Phase 3	DWS	Ga-Segonyana – Maruping, Batlharos	74	Medium term	Funded	27 915 275	Water backlogs	Household water connection	Completed
Magojaneng and Tswelelopele water supply	DWS	Ga-Segonayana - Magojaneng	20	Medium term	Funded	10 540 326	Water backlogs	Household water connection	Planning
Mokalamosane water supply	DWS	Ga-Segonyane - Mokalamosane	20	Medium term	Funded	9 044 566	Water backlogs	Household water connection	Planning
Promise land bulk water supply	DWS	Ga-Segonayana – Promise land	20	Long term	Unfunded	20 361 811	Future demand	Upgrading of bulk water	Planning
Upgrading of internal water supply in Kuruman and Wrenchville	DWS	Ga-Segonyana – Kuruman, Wrenchville	100	Long term	Funded	141 585 552	Replacement of old infrastructure	Installation of meters and replacement of asbestos cement pipes to address water losses	Construction

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Rural Refurbishment	DWS	Joe Morolong	25	Long term	Funded	45 043 565	Replacement of old infrastructure	Refurbishment of non-functional boreholes	Construction
Mmamebe Water Supply	DWS	Joe Morolong - Mmamebe	15	Medium term	Funded	25 858 406	Water backlogs	Household water connection	Construction
Majankeng Water Supply	DWS	Joe Morolong - Majankeng	15	Medium term	Funded	7 982 002	Water backlogs	Household water connection	Construction
Molatswaneng Water Supply	DWS	Joe Morolong - Molatswaneng	15	Medium term	Funded	12 498 522	Water backlogs	Household water connection	Construction
Mentu Water Supply	DWS	Joe Morolong - Mentu	15	Medium term	Funded	7 944 439	Water backlogs	Household water connection	Construction
Gamakgatle water supply	DWS	Joe Morolong - Gamakgatle	15	Medium term	Funded	10 673 005	Water backlogs	Household water connection	Construction
Gamatlong water supply	DWS	Joe Morolong - Gamatlong	15	Medium term	Funded	8 807 440	Water backlogs	Household water connection	Construction

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Gasehunelo wyk 4	DWS	Joe Morolong – Gasehunelo wyk 4	15	Medium term	Funded	4 795 314	Water backlogs	Household water connection	Construction
Dithakong water supply phase 5	DWS	Joe Morolong - Dithakong	15	Medium term	Funded	7 150 413	Water backlogs	Household water connection	Planning
Heiningsvlei - Gamokwane water supply	DWS	Joe Morolong - Heiningsvlei	15	Medium term	Funded	8 631 962	Water backlogs	Household water connection	Planning
Gatshekedi water supply	DWS	Joe Morolong - Gatshekedi	15	Medium term	Funded	9 199 100	Water backlogs	Household water connection	Planning
Resealing of reservoir in Olifantshoek	DWS	Gamagara - Olifantshoek	15	Medium term	Funded	11 297 461	Replacement of old infrastructure	Refurbishment of old infrastructure	Construction
1. Groudwater supply in Olifantshoek: Construction of bulk link line from 6 boreholes to 7ML reservoir : Phase 1	DWS	Gamagara - Olifantshoek	15	Medium term	Funded		Replacement of old infrastructure	Refurbishment of old infrastructure	Construction
Replacement of asbestos Cement pipes in Kathu	DWS	Gamagara - Kathu	40	Medium term	Unfunded	6 425 926	Replacement of old infrastructure	Refurbishment of asbestos cement pipes	Planning

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Khubus water supply	DWS	Richtersveld - Khubus	15	Medium term	Funded	16 900 993	Future demand	Upgrading of water infrastructure to meet future demands	Construction
Refurbishment of MILE 8 boreholes	DWS	Richtersveld – Port Nolloth	10	Medium term	Funded	3 595 189	Future demand	Source development	Completed
Lekkersing water supply	DWS	Richtersveld - Lekkersing	5	Medium term	Funded	887 558	Future demand	Source development	Completed
Lekkersing water supply - phase 2	DWS	Richtersveld - Lekkersing	30	Short term	Funded	921 358	Drought Relief	Source development	Construction
Eksteensfontein water supply	DWS	Richtersveld - Eksteensfontein	5	Medium term	Funded	685 666	Future demand	Source development	Completed
Garies sewer reticulation	DWS	Kamiesberg - Garies	10	Medium term	Funded	2 263 890	Sanitation backlogs	Sanitation backlogs	Construction
Tweerivier water supply	DWS	Kamiesberg - Tweerivier	20	Medium term	Funded	3 048 440	Drought Relief	Source development	Construction
Kamieskroon sewer reticulation	DWS	Kamiesberg - Kamieskroon	10	Medium term	Funded	1 353 620	Sanitation backlogs	Household sewer connections	Construction

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Hondeklip Bay water supply	DWS	Kamiesberg - Hondeklip bay	10	Short term	Funded	11 808 066	Future demand	Source development	Planning
Nourivier water supply	DWS	Kamiesberg - Nourivier	10	Medium term	Funded	3 800 000	Drought Relief	Source development	Construction
Calvinia BWS	DWS	Hantam - Calvinia	50	Long term	Unfunded	183 000 000	Drought Relief	Upgrading of Calvinia bulk water supply for future demands	Construction
Northern wellfield groundwater development	DWS	Hantam - Calvinia	10	Medium term	Funded	10 000 000	Drought Relief	Source development	Construction
Construction of a Waterborne Sewage System for Calvinia	DWS	Hantam - Calvinia	15	Long term	Funded	25000000	High O&M cost	Replace conservancy tanks with sewer reticulation	Procurement
Williston outfall sewer	DWS	Karoo Hoogland - Williston	15	Long term	Funded	9 301 887	Connecting households to sewer network	Household sewer connection	Planning
Suthlerland outfall sewer	DWS	Karoo Hoogland - Suthlerland	20	Long term	Unfunded	16 457 154	Connecting households to sewer network	Household sewer connection	Planning
Fraserburg outfall sewer	DWS	Karoo Hoogland - Fraserburg	15	Long term	Unfunded	8 408 719	Connecting households to sewer network	Household sewer connection	Planning

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Suthlerland emergency bulk water supply	DWS	Karoo Hoogland - Suthlerland	10	Short term	Funded	10 001 136	Drought Relief	Source Development	Construction
Pella internal bulk sewer	DWS	Khai-Ma - Pella	15	Long term	Funded	38 000 000	Non-compliance, pollution	Upgrading of existing waste water treatment works	Planning
Upgrading of Rietfontein oxidation ponds	DWS	Dawid Kruiper - Rietfontein	15	Medium term	Funded	15 000 000	Non-compliance, pollution	Upgrading of existing waste water treatment works	Construction
Installation of water network in informal areas	DWS	Dawid Kruiper - Upington	20	Medium term	Funded	15 000 000	Water backlogs	Installation of water reticulation	Planning
Construction of new Kakamas WWTW	DWS	Kai!Garib - Kakamas	25	Long term	Unfunded	65 000 000	Non-compliance, pollution	Construction of a new waste water treatment works to meet future demands	Planning
Emergency repairs to Kakamas WTW	DWS	Kai!Garib - Kakamas	10	Short term	Funded	6 361 179	Future demands	Repairs and refurbishment of equipment at the water treatment works	Planning
Upgrading of Topline WTW	DWS	!Kheis - Topline	15	Medium term	Unfunded	5 334 629	Future demands	Upgrading of existing water treatment works	Planning

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Upgrading of Brandboom storage	DWS	!Kheis - Brandboom	10	Short term	Funded	5 000 000	Future demands	Upgrading of storage	Construction
Port Nolloth BWS	DWS	Richtersveld – Port Nolloth	20	Long term	Unfunded	110000000	Future demands	Construction of a new bulk water pipeline from the Orange river	Planning
Postmasburg bulk metering	DWS	Tsantsabane - Postmasburg	10	Medium term	Unfunded	5 589 621	Non-revenue	Installation of bulk meters to improve water conservation and demand management	Planning
Postmasburg WWTW	DWS	Tsantsabane - Postmasburg	30	Long term	Unfunded	369 198 732	Future demands	Construction of a new waste water treatment works to meet future demands	Planning
Refurbishment of Danielskuil sewer pumpstations	DWS	Kgatelopele - Daniëlskuil	10	Medium term	Funded	13000000	Replacement of old infrastructure	Refurbishment of existing old sewer pumpstations	Completed
Eradication of Conservancy tanks and connection to municipal sewer network	DWS	Kgatelopele - Daniëlskuil	22	Long term	Funded	40 282 076	High operation costs	Eradication of conservancy tanks	Construction
Postmasburg BWS	DWS	Tsantsabane - Postmasburg	30	Long term	Unfunded	200 000 000	Future demands	Source development and upgrading of storage capacity	Planning

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Carnarvon AC pipe replacement	DWS	Kareeberg - Carnarvon	25	Medium term	Funded	16 449 592	Replacement of old infrastructure	Replacement of asbestos cement pipes to address water losses	Construction
Loxton AC pipe replacement	DWS	Ubuntu – Loxton	20	Medium term	Funded	10 000 000	Replacement of old infrastructure	Replacement of asbestos cement pipes	Completed
Victoria west bulk sewer network	DWS	Ubuntu – Victoria West	25	Medium term	Unfunded	20 000 000	High operation costs	Eradication of conservancy tanks	Planning
Victoria west WCDM	DWS	Ubuntu – Victoria West	10	Short term	Funded	4 000 000	Lack of revenue	Installation of smart meters, telemetry system	Planning
Easiflush toilets and AC Pipe replacement	DWS	Thembelihle	15	Long term	Funded	27 506 063	Sanitation backlogs	Construction of low flush toilets and replacement of asbestos cement pipes	Construction
Campbell BWS	DWS	Siyancuma – Campbell	15	Long term	Unfunded	16 000 000	Future demands	Upgrading of bulk water	Planning
Douglas BWS	DWS	Siyancuma – Douglas	15	Long term	Unfunded	77 603 758	Future demands	Upgrading of existing water treatment works and storage capacity	Planning
De Aar BWS	DWS	Emthanjeni – De Aar	15	Long term	Funded	33 658 639	Future demands	Upgrading of bulk water	Procurement

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Emergency Repairs to sewer pumpstations and Homevale WWTW in Kimberley	DWS	Sol Plaatje – Kimberley	10	Long term	Unfunded	18 500 000	Emergency repairs	Repairs and refurbishment of equipment at the waste water treatment works	Planning
Jan Kempdorp WTW	DWS	Phokwane – Jan Kempdorp	15	Long term	Unfunded	25 000 000	Future demands	Upgrading of existing water treatment works and storage capacity	Planning
Pampierstad internal sewer	DWS	Phokwane – Pampierstad	15	Long term	Funded	26 987 015	Future demands	Upgrading of existing sewer pumpstations and outfall sewer line	Construction
Emergency repairs to the WWTW and surrounding pumpstations	DWS	Magareng	10	Short term	Funded	5 000 000	Emergency repairs	Pollution	Planning
Dikgatlong VIP toilets	DWS	Dikgatlong	20	Long term	Funded	60 003 480	Sanitation backlogs	Construction of dry sanitation toilets	Construction
Bulk water supply augmentation in Dikgatlong	DWS	Dikgatlong	26	Long term	Funded	124 382 298	Future demands	Upgrading of bulk water supply	Planning

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Groundwater supply in Olifantshoek: Construction of bulk water link line from 6 boreholes to 7ML reservoir : Phase 2	DWS	Gamagara - Olifantshoek	21	Medium term	Funded	8 127 610	Replacement of old infrastructure	Replacement of old asbestos cement pipeline	Construction
Kathu BWS	DWS	Gamagara - Kathu	20	Long term	Unfunded	500 000 000	Future demands	Upgrading of bulk water supply	Planning
Klipfontein Evaporation ponds	DWS	Kamiesberg - Klipfontein	15	Medium term	Funded	4 191 244	Replacement of old infrastructure	Repair and refurbishment of existing evaporation ponds	Construction
Kheis Evaporation ponds	DWS	Kamiesberg - Kheis	15	Medium term	Funded	1 384 358	Replacement of old infrastructure	Repair and refurbishment of existing evaporation ponds	Construction
Dikhing water supply	DWS	Joe Morolong - Dikhing	15	Medium term	Funded	10 849 121	Water backlogs	Installation of water reticulation	Planning
Bojelapotsane water supply	DWS	Joe Morolong - Bojelapotsane	15	Short term	Unfunded	7 043 192	Water backlogs	Installation of water reticulation	Planning

Project name / Intervention	Implementing department	Location	Number of job opportunities	Timeframe		Budget	Challenges	Intervention needed	PROGRESS
				(Short term – 6 months, Medium term – 12 - 18 months, Long term – 18 months +)	Funded / unfunded	(Funded, Budget required)			
1. Infrastructure investment and delivery									
Bush Buck water supply	DWS	Joe Morolong - Bush Buck	15	Short term	Unfunded	11 772 219	Water backlogs	Installation of water reticulation	Planning
Metsimantsi Wyk 3, 4, & 6	DWS	Joe Morolong - Metsimantsi	15	Short term	Unfunded	26 848 423	Water backlogs	Installation of water reticulation	Planning
Heiso water supply	DWS	Joe Morolong - Heiso	15	Medium term	Funded	10 173 155	Water backlogs	Installation of water reticulation	Planning
Geelboom water supply	DWS	Ga-Segonyana - Geelboom	15	Short term	Unfunded	11 284 474	Water backlogs	Installation of water reticulation	Planning
Kuruman bulk sewer	DWS	Ga-Segonyana - Kuruman	100	Long term	Unfunded	850 000 000	Future demands	Construction of a new wastewater treatment works	Planning

Bucket Eradication Programme

The programme was introduced to eradicate existing buckets ablutions. Nine local municipalities were identified with a total number of 8161 buckets ablutions. To date 8 municipalities have benefited from the programme and 7565 bucket ablutions have been eradicated. The remaining 596 ablutions form part of the ongoing Campbell BEP. The contractor's appointment was approved by the bid adjudication committee in December 2021. HDA is to issue an appointment letter and contract. Estimated project amount: R 47 384 852.00. After completing the eradication of 8161 buckets, there are still an approximately 8720 (formal and informal) buckets remaining.

District	Municipality	Formal	Informal
Pixley ka Seme	Siyancuma	333	1128
Pixley ka Seme	Renosterberg	0	191
ZF Mgcawu	Dawid Kruiper	4470	0
Namakwa	Nama Khoi	167	0
Frances Baard	Sol Plaatje	0	2431
Total		**4970**	**3750**

The remaining buckets can only be eradicated once the bulk infrastructure is in place. Projects that are link to the latter is seen below:

Project	Municipality	Funder	Project cost	Status
Refurbishment / Upgrading of Douglas WTW	Siyancuma	WSIG	R 96 504 027	Procurement
Upgrading of Douglas WWTW	Siyancuma	MIG	R 39 089 258	Planning
Refurbishment / Upgrading of Upington WWTW	Dawid Kruiper	RBIG	R 309 320 702	Construction
Upgrading of Nababeep bulk sewer	Nama Khoi	WSIG	R 40 702 698	Construction

Refurbishment / Upgrading of Carolusberg WWTW	Nama Khoi	WSIG	R11 506 518	Construction
Uprading of Gogga bulk Sewer Line	Sol Plaatje	WSIG	R 25 000 000	Completed
Kimberley BWS	Sol Plaatje	TBC	R 3 655 523 837	Planning

3.4 SDG 6.3 – WATER QUALITY

The regional office monitors both surface and groundwater quality. Surface water monitoring consist of the River Eco Monitoring of three (3) rivers, the Chemical and Microbiological Monitoring programme of twenty-three points (23) in the Lower Orange and Lower Vaal Water Management Areas, and the Waste Discharge Monitoring of twenty-five (25) points. The Groundwater Quality Monitoring Programme is performed on sixty (60) points.

Table 9: Water Quality Monitoring in the Northern Cape.

Monitoring Classification	Number of monitoring points targeted for 2021/22	Number of points visited in 2021/22	Challenges	Solutions
Number of Waste Discharge Points Monitored to assess water resource quality	Q1: 3 Q2: 1 LO 15 LV	Q1: 3 Q2: 1 LO 13 LV	1. Expiration of Lab Contract. 2. In Homevale, Barkley West and Lichtenberg there was no discharge as the wastewater treatment works were not functioning.	1. Quotes to be sourced. ToR compiled and Log-1's with SCM. 2. Matter referred to regulation.

Groundwater Quality Monitoring	Q1: 55 Q2: 0 Q3: 60 Q4: 0	Q1: 0 Q2: 32 Q3: 0	New contract for ZQMs not yet in place as old contract expired on 02 September 2021	Monitoring to be done in beginning of Q4. Monitoring on track and target to be reached.
River Ecostatus Monitoring Programme (REMP)/ Biomonitoring	LO:1 River (15 Monitoring points), LV: 2 Rivers/ 11 points	Orange: 1 River/ 15 points conducted Vaal: 2 Rivers /11 points	-	-
Number of sampling points monitored to assess surface water resource quality	Q1 LO 1 River (12 Monitoring points), LV 2 Rivers /16 points Q2 1 River (18 Monitoring points) and 16 Point for Lower Vaal	Q1: Lower Orange (12 points) Q2: 34 Non-cumulative for LO and LV	No personnel to conduct sampling in LV in Q1	Appointments completed

3.4.1 MUNICIPAL WATER QUALITY STATUS

We had nice rains last year and beginning of this year, which was good thing and curse for us. Due to runoff collection, most of our old plants could not purify the water to SANS 241 standard. We also saw big improvement of our underground borehole systems water quality and quantity. Most of our challenges are due to:

1- Old infrastructure that couldn't cope with the demand and drastic change in surface water quality
2- Poor planning from our WSA

3- Lack of qualified personnel to operate and to maintain the infrastructure
4- Demand versus supply
5- Poor prioritisation when coming to infrastructure needed
6- Lack of Monitoring and Evaluation of Project Implementation
7- Lack of capacity from DWS to regulate compliance and to enforce
8- Lack of direction and recycling of priority list
9- Lack of O&M budget from the WSA
10- Lack of supervision at our plants
11- Lack of funding for new infrastructure
12- Lack of By-Laws and fear of enforcing By-Laws
13- Lack of cost reflective tariffs
14- Dependency on grants by our WSA

Water Treatment works

The priority list of water supply systems that have challenges was shared in the previous Biannual Progress Report in July 2021. Blue Drop Systems completed with Performance Assessment Tool in September October 2021. All systems were assessed and will be reported by March 2022 (see table below).

Institution	Systems	Supply System Demographic	WTW	Maintenance Teams	Water Quality compliance	Capital Projects	Report BDRR	BDRR	Completed	%	
!Kai! Garib Local Municipality	15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	100.00	
!Kheis Local Municipality	7	7/7	7/7	7/7	7/7	7/7	7/7	7/7	7/7	100.00	
Dawid Kruiper	17	17/17	17/17	17/17	17/17	17/17	17/17	17/17	17/17	100.00	
Dikgatlong Local Municipality	17	17/17	17/17	17/17	17/17	17/17	17/17	17/17	17/17	100.00	
Emthanjeni Local Municipality	3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	100.00	
Gamagara Local Municipality	4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	100.00	
Ga-Segonyana Local Municipality	22	22/22	22/22	22/22	22/22	22/22	22/22	22/22	22/22	100.00	
Hantam Local Municipality	6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	100.00	
Joe Morolong Local Municipality	24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	24/24	100.00	
Kamiesberg Local Municipality	16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	100.00	
Kareeberg Local Municipality	3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	100.00	
Karoo Hoogland Local Municipality	3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	100.00	
Kgatelopele Local Municipality	4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	100.00	
Khai-Ma Local Municipality	4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	100.00	
Magareng Local Municipality	4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	100.00	
Nama Khoi Local Municipality	15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	15/15	100.00	
Phokwane Local Municipality	3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	100.00	
Renosterberg Local Municipality	3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	100.00	
Richtersveld Local Municipality	5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	100.00	
Siyancuma Local Municipality	4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4	100.00	
Siyathemba Local Municipality	3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	100.00	
Sol Plaatjie Local Municipality	2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	100.00	
Thembelihle Local Municipality	2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	100.00	
Tsantsabane Local Municipality	6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	100.00	
Ubuntu Local Municipality	5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	100.00	
Umsobomvu Local Municipality	3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	100.00	
Regional Total	200								200/200	100.00	

Wastewater Treatment Works

The situation of wastewater treatment works (WWTW) is considerably worse than the WTWs. A total of 79 WWTWs where assessed through the Green Drop Certification Programme of which only 22 works received a risk rating < 50%. A total of 57 WWTWs received a risk rating > 50%. The department is busy compiling a detail assessment on each wastewater treatment works in the province and the report should be finalised by March 2022.

Risk Category					
District	**<50%**	**50-<70**	**70-<90%**	**90-100%**	**Number of WWTWs**
Frances Baard	0	3	4	3	10
John Taolo Gaetsewe	2	0	1	5	8
Namakwa	8	2	7	3	20
Pixley ka Seme	3	8	4	10	25
ZF Mgcawu	9	3	2	2	16
Grand Total	**22**	**16**	**18**	**23**	**79**

% Deviation = CRR/CRR(max) TREND	90 – 100% Critical risk WWTPs
	70 - <90% High Risk WWTPs
	50-<70% Medium risk WWTPs
	<50% Low Risk WWTPs

Urgent emergency funding is required to upgrade and / or refurbish dysfunctional wastewater treatment works along the Vaal and Orange River.

Vaal River:

Municipality	WWTW	Project Cost	Shortfall
Magareng	Warrenton	R 33 587 729	R 24 230 687
Siyancuma	Douglas	R 39 089 258	R 39 089 258
Dikgatlong	Barkly West	R 6 000 000	R 6 000 000
Sol Plaatje	Kimberley (Homevale)	R 25 800 000	R 23 800 000

Phokwane	Pampierstad	R 15 000 000	R 15 000 000
Phokwane	Jan Kempdorp	R 30 000 000	R 30 000 000
Total		**R 149 476 987**	**R138 119 945**

Orange River:

Municipality	WWTW	Project Cost	Shortfall
Renosterberg	Vanderkloof	R 1 702 000	R 0
Thembelihle	Hopetown	R 20 166 588	R 0
Siyathemba	Prieska	R 33 692 584	R 0
!Kheis	Boegoeberg	R 10 000 000	R 10 000 000
Dawid Kruiper	Upington	R 309 320 702	R 66 135 749
Kai!Garib	Keimoes	R 66 500 000	R 66 500 000
Kai!Garib	Kakamas	R 94 600 000	R 94 600 000
Total		**R 535 981 874**	**R 237 235 749**

3.5 SDG 6.4 – WATER USE EFFICIENCY

3.5.1 VALIDATION AND VERIFICATION STATUS

The Northern Cape region is responsible for the Lower Vaal and Lower Orange CMA's (see Map)

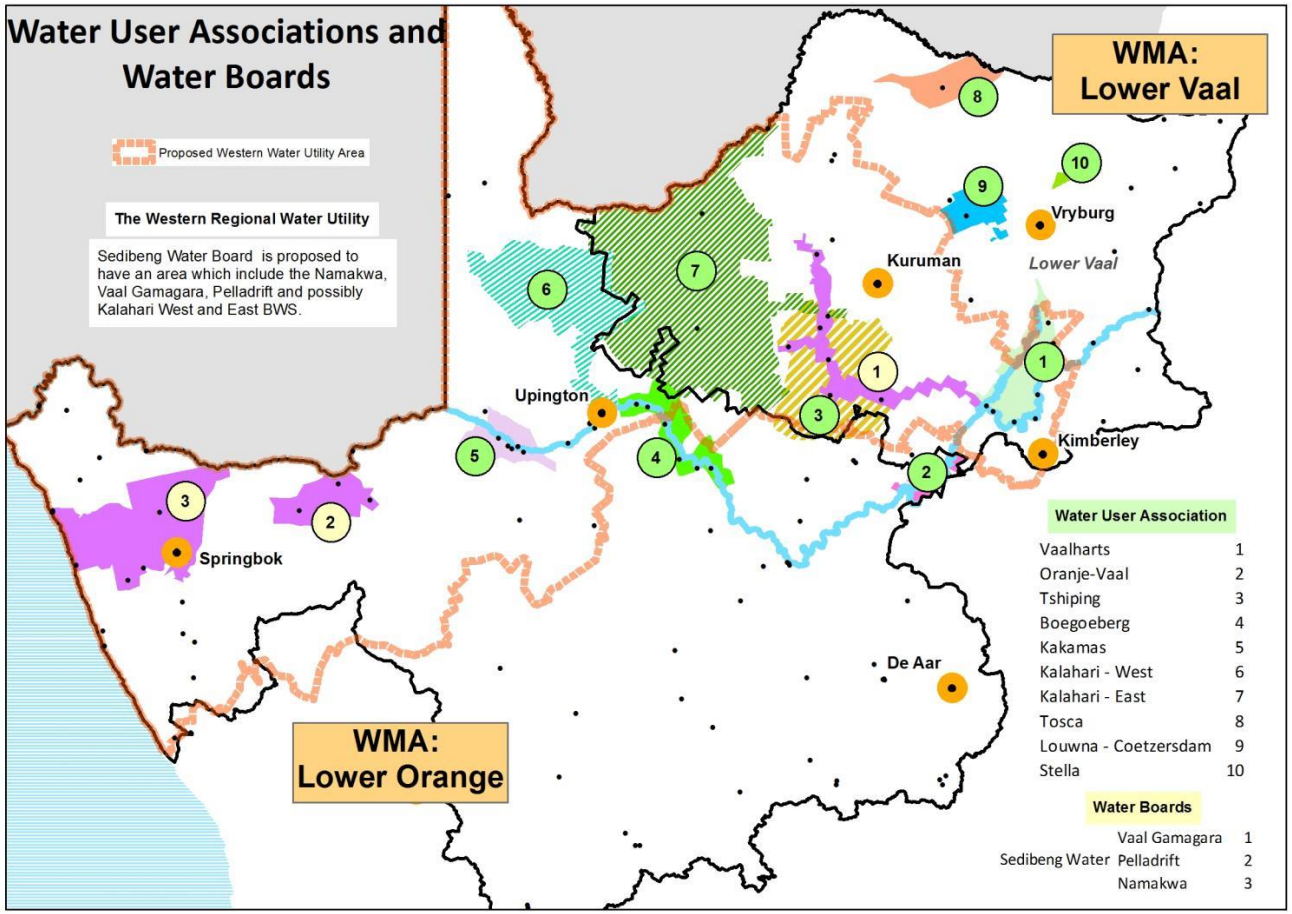


Figure 6: Water Management Areas in the Northern Cape.

3.5.2 LOWER VAAL

3.5.2.1 Background

Schoeman en Venote was originally appointed to conduct the V&V in the Lower Vaal WMA. DMT was appointed in 2017 to finalise the remaining 3867 properties. Unfortunately, due to unforeseen circumstances DMT's contract were terminated and left the department no choice but to continue with the V & V project without PSP assistance.

Overall Status

Scope of work: 1 703 water users to be verified and validated by DWS

- Validation letters generated: 1 703 (100%)
- Validation letters responded to by water users: 947
- From 947 responses received, 678 (72%) agreed with the validation results and 269 (28%) did not agree

- Percentage of water users responded to validation letters 56%
- Total number of validation letters not responded to by water users: 756
- Percentage of water users that did not respond to validation letters 44%
- Percentage of water users that did not agree to validation letters 16%

Progress: 40%

Scope of work: 2164 water users to be verified by DWS

- Total number of properties verified: 2164 of which 133 falls within Lower Vaal WMA and 2031 are within the Vaalharts WUA area
- Out of the 2031 of Vaalharts, 100 Section 33 letters need to be reprinted as the quota needs to be changed from 9140 m^3/ha/a to 8155 m^3/ha/a

Progress to date 95%

3.5.3 LOWER ORANGE

Validation of existing lawful use in water management areas (WMAs) within the catchment

- Validation Status [Section 35(1)]
- Total number of properties Validated: 976
- Number of properties validated: 976 (100%)

Verification of existing lawful use in water management areas (WMAs) within the catchment Lower Orange)

- Verification Status [Section 35(4)]
- Total number of properties to be verified: 976
- Only 48 agreed to verification process. (5%)?
- Total Verification letter need to be re-generated and distributed: 928 (95%)
- Verification Status [Section 33]
- Number of properties verified: 6169 (96%)
- Number of properties to be verified: 163 (4%) Onseepkans (108 completed), Vanwyksvlei Irrigation board

Challenges

- Poor attendance by water users during stakeholder engagements
- Non-collection of V&V letters which results in the increasing number of return to sender mails
- Difficulty in accessing properties for hand delivery of letters due to safety concerns as well as restricted access
- Lawyers and / or consultant applying on behalf of the water user (delay in verification process as they always request extensions
- Lack of fully Equipped section 35 office (shortage of staff)
- Water users not responding to V & V letters

Proposed solutions

- Engage farmers unions and WUAs and other forums to ensure stakeholder participation
- Updated contact details of water users on the WARMS system
- Involvement of CME
- Hiring of officials who will focus mainly on V & V
- To finalise the outstanding 29% of verification for the lower Vaal
- Internal staff members (Lower Vaal) currently be utilised to assist with V&V

3.5.4 HISTORICALLY DISADVANTAGED INDIVIDUALS (HDIs) - PROGRESS

3.5.4.1 LOWER ORANGE

3.5.4.1.1 BACKGROUND

On the Orange & Fish / Sundays rivers, 12 000 ha irrigation water was allocated. This was 12 000 ha to promote emerging commercial farmer development. In 1998 Honourable Minister Kadar Ashmal allocated 4000 ha (15000 m^3/ha) in the Lower Orange or 60 Mm^3/annum. Provincial Government championed the process for allocation in support of emerging commercial farmer development. Water rights is used as catalyst for empowerment of HDI in the Agricultural sector. The Orange River Emerging Famers Development Program (OREFDP) was initiated to formulate a strategy for allocation, settlement of emerging commercial farmers and provision of support.

From 2012, water use licenses were issued. To date 47.6 Mm3 was allocated to 18 projects to irrigate 3337 ha along the lower Orange River. The balance of 12.4 Mm3 or 663 ha was earmarked for the Namakwaland area on request of DLRAR. Water allocations are made through the Co-ordinating Committee on Agricultural water (CCAW) between DWS and DLRAR

The Transformation Charter and sector code enterprise score on AgriBEE scorecard require the following targets: Ownership (general ownership 25% + 1% land), Management control (Board > 50% & Executive 40%), Employment equity (senior 60%, middle 75%, junior 80%), Skills development (spend 2% of leviable + 5% learner/internships), preferential procurement (B-BBEE 70% of total), enterprise development (spend 3% net profit after tax), Socio Economic Development (spend 1% net profit after tax). These are the set requirements for CCAW on OREFDP projects, but since the 18 projects were allocated, criticism has been expressed that these projects do not meet WAR.

Currently, WAR in the irrigations sector is reflected by table below. There is a total of 8 662 ha or 117 Mm^3 allocated to HDI's. This represents 16% of the available water. To reach the set target of 30% HDI allocation in the irrigation sector, more than 10 000 ha or 172 Mm^3/a will have to be allocated by 2030.

Lower Orange WMA (irrigation)	**Area (ha)**	**Volume (Mm^3/a)**
Total Water Availability for irrigation	63 109	818
Commercial white farmers	54 448	700
Allocated/reserved for HDIs	8 662	117
Possible allocation for HDIs (NVD)	1 000	15
% Allocated for HDIs	16%	16%
Required for HDIs to reach 30%	9271	112

The Northern Cape has a target of 4 000 ha on the Orange River to be allocated in the next 3 years.

The follow interventions were proposed to achieve the target.

Short term interventions:

- The NC regional office has a 100 Mm3/annum allocation on the Orange river as discretional releases from the Vanderkloof Dam for downstream use in cases of downstream low flow. This presents a possible 6666 ha irrigation at 15000m3/ha. Although the need for this water has proven to be valuable over the last 7 years the total volume has only been depleted in 2018/19. The depletion was due to poor management and communication.

Year	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Discretional allocation (Mm^3/a)	100	100	100	100	100	100	100
Balance unused water (Mm^3/a)	57,4	62,6	45,2	68,0	100,0	-9.4	65,6

- The region therefore proposes that this discretional release volume be reduced to 40 Mm^3/annum and the balance of 60 Mm3/annum (approximately 4000 ha) be made available for additional allocation along the Orange River. The additional 4000 ha should be ring-fenced for HDI allocation through the Directorate Water Resource Planning or ORRS and made available to the Northern Cape Province DWS office for allocation on recommendation from OREFDP and CCAW.

Medium term Interventions:

- Plan and implement WCWDM in the domestic and irrigation water use sectors. Targeted savings of 6 Mm^3/annum for the domestic/industrial water use sector (excluding Bloemfontein) and 5% of total water use in the irrigation water use sector need to be achieved not later than 2020; (The total savings on 5% on 63109 ha could be 3155ha.
- The introduction of a mechanism whereby water saved through water use efficiency, especially in agriculture, can be made available to other water users in the system.
- Limit operational losses through real time monitoring of river flows in the Orange and Vaal rivers to maximise the beneficial use of the spillages from the Vaal River.

Long term interventions:

- Utilising a greater portion of Vanderkloof Dam's storage capacity by lowering the minimum operating level in the dam. This measure will require pumping infrastructure which has to be in place by 2022. If a decision is made to implement the Ecological Preferred EWR during this planning horizon, the following actions are also required sooner: (a) The Vanderkloof Dam should be operated at a lowering Minimum Operating Level (MOL). (b) The yield of the system should be increased by approximately 137 million m3/annum or approx. 9000 ha.
- Commission the Vioolsdrift Dam at the decided date for alternative EWR implementation.

3.5.4.2 LOWER VAAL

3.5.4.2.1 BACKGROUND

Equitable access to water through Water Allocation Reform requires a balanced approach between authorization of HDI applications within acceptable water resource limitations, water assurance and water availability. The NWRS (2014) set the target that by 2030, 30% of water allocated should be with HDI. We are currently behind on this target.

Water for Domestic, Industrial, and mining is available, but limited water is available for agricultural irrigation on the Vaal and Harts rivers or catchments.

Lower Vaal WMA (Irrigation)	**Area (ha)**	**Volume (m^3)**
Total Water Availability	68 600	627 000 000
Commercial HAI water users	54 578	483 417 710
Allocated/reserved for HDIs	13 594	129 064 890
Possible allocation for HDIs Uptake by HDIs Spitskop Dam Feasibility Study (1 200ha) and 360 ha ELU Majeng – Harts River	1 560	14 258 400
% Allocated for HDIs	20%	21%
HDI allocation needed 2020 to 2030	6 986	59 035 110

Within the above constraints the RWUAAC propose the following decision criteria:

- The water will be allocated to applicants with an 80-100% black ownership, who will then ensure that other targets are met.
- Water allocation be limited to 100 ha or 1 000 000 m3/a per applicant to allow more HDI's to enter; and
- The use of this allocation should be within three (3) years of licence issuance. Failure of which will result in the automatic withdrawal of the authorisation and subsequent re-allocation of the water.

The follow interventions were proposed to achieve the target:

Short term interventions:

- Expediting the finalization of Verification and Validation Process.
- The eradication of the unlawful water use is an essential strategy that has to be implemented in order to rectify the current deficit (negative water balance) in the Vaal River System.
- The Lower Vaal is heavily dependent on Agricultural activities with most mines and industries utilise groundwater for water supply. The re-allocation of water reserved for industrial and mining use for Agricultural water use.

- Implement Water Conservation and Water Demand Management measures to reduce losses and reduce the agriculture irrigation demand by at least 15%. On the Vaal River this can create a saving of 94M m3/a or potential area of 10 290ha.
- Implementation and enforcement of Water Conservation and Water Demand Management targets/benchmarks for Water Use Associations/Government Irrigation Schemes.
- Review all existing authorisations and the immediate withdrawal of allocations that are not utilised.

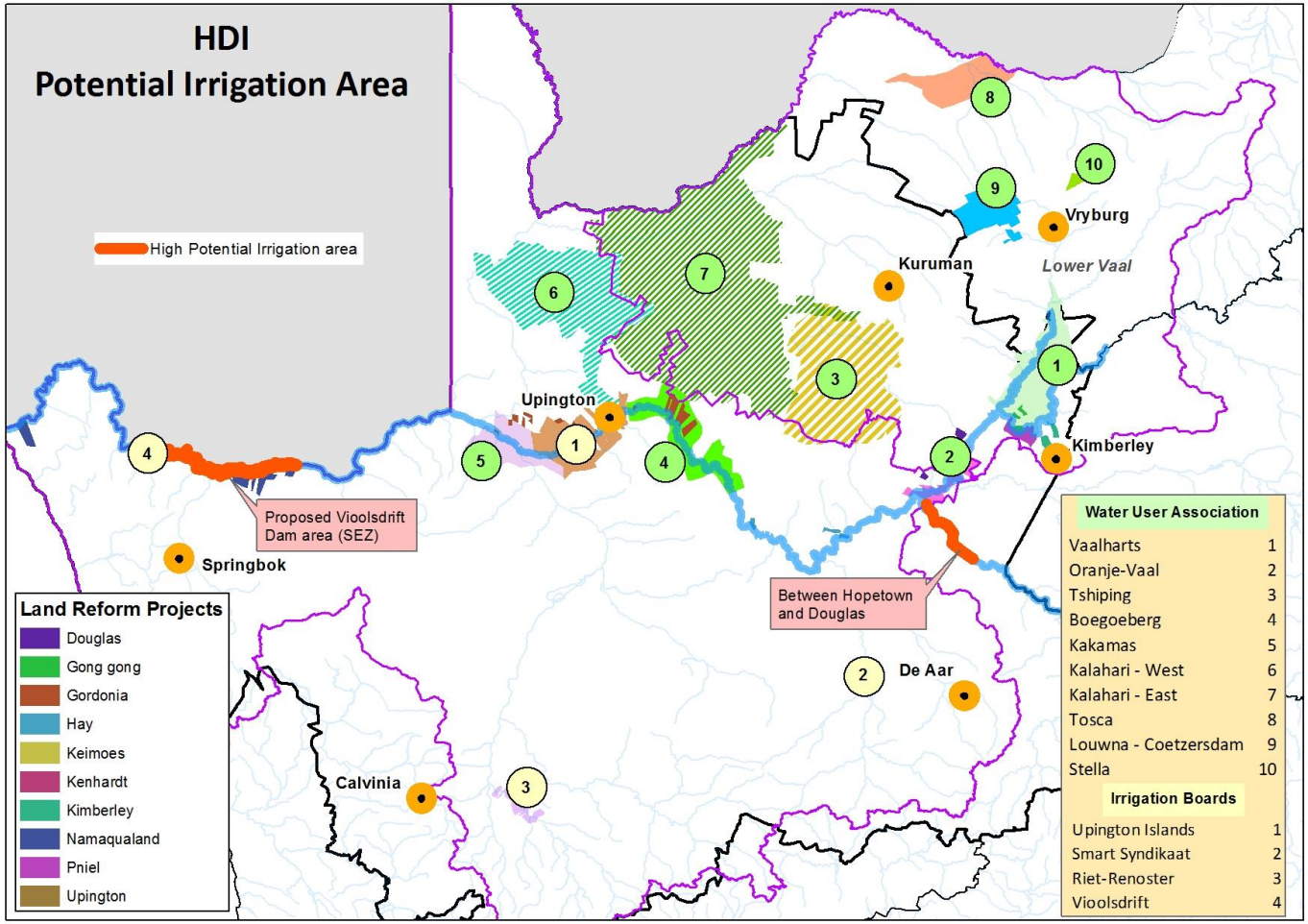
Medium term interventions:

- The savings of water from Verification and Validation and WC/WDM be calculated for an additional 4 000ha is to be ring fenced on the Vaal River for HDI allocation through IVRS. CME activates will eradicate unlawful water use to contribute to water use regulation and water resource health, but will not contribute to allocable water.

Long term interventions:

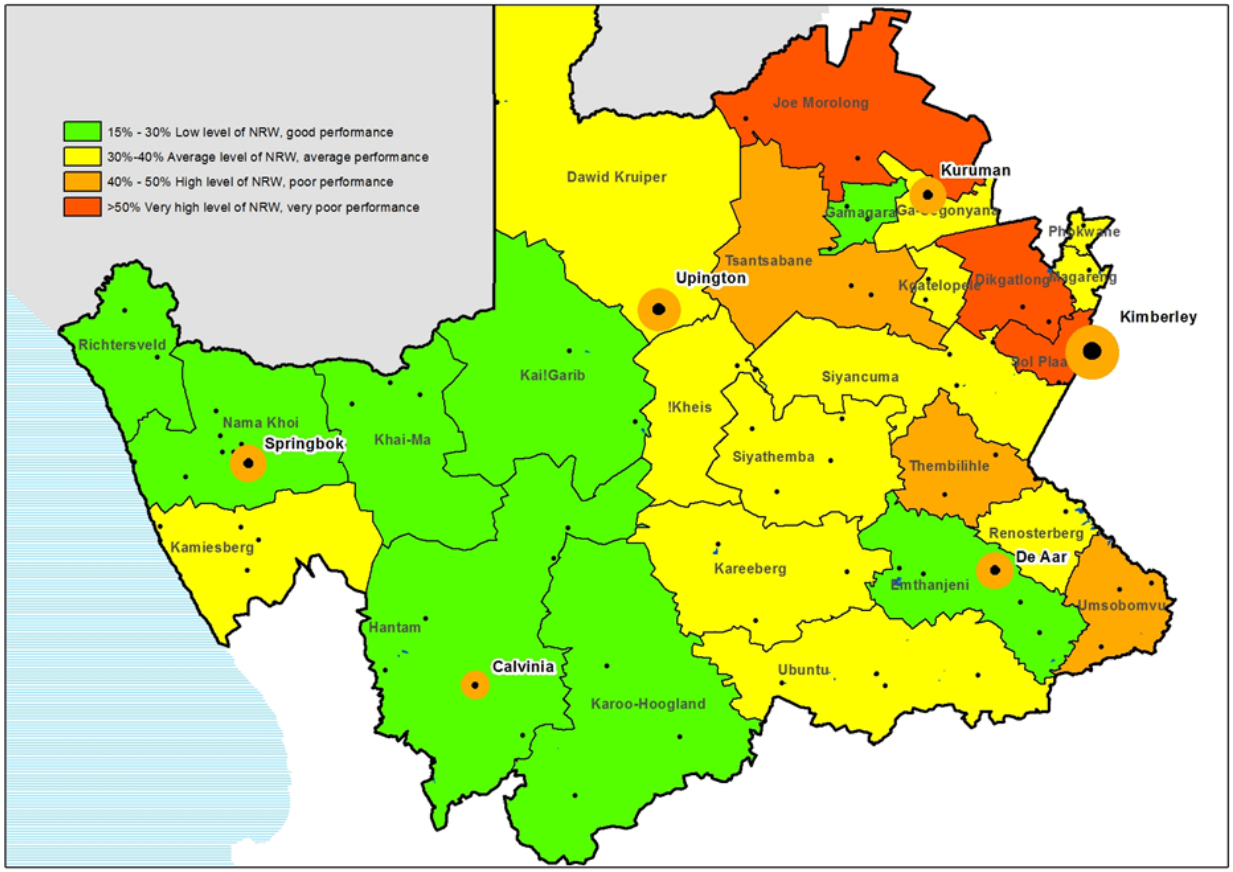
- Compulsory licensing for the Agricultural Irrigation sector on the Lower Vaal river

If the require water becomes available after approval and implementation of the above-mentioned interventions, the Northern Cape has identified two potential irrigation areas along the Orange River as seen in the map below.



3.5.5 MUNICIPAL NON-REVENUE WATER

The level of non-revenue water (NRW) and water losses in the Northern Cape is unacceptably high and political and technical interventions will be required to ensure a reduction of water wastage. Although good progress has been made in Emthanjeni and Ubuntu in reducing NRW and water losses, significant funding is still required to maintain the reductions and to achieve further improvements. Without intervention, most of the proposed augmentation projects will feed the leaks and are unlikely to improve water availability. Non-revenue water and water losses are summarized per LM below:



What was done since 2013/14 relating to WCDM:

Municipality	NRW	Total meters of pipeline installed for prepaid metering	Total pre-paid meters installed	Total meters of Asbestos Cement pipes replaced to decrease water loss
Joe Morolong	>50%	192 390	826 (200m standpipes)	0
Ga-Segonyana	30% – 40%	120 863	368 (200m standpipes)	14095
Gamagara	15% - 30%	4419	284 (erf connections)	0
Kgatelopele	30% – 40%	0	0	5690
Ubuntu	30% – 40%	0	281 (erf connections)	7289
Umsobomvu	40% - 50%	0	0	3001
Thembelihle	40% - 50%	0	0	13100
Dawid Kruiper	30% – 40%	0	28 (200m standpipes)	0
Hantam	15% - 30%	0	800 (erf connections)	0
Total		**317 672**	**2 587**	**43 175**

3.6 SDG 6.5 – INTEGRATED WATER RESOURCE MANAGEMENT

Water resource monitoring consists of the measurement and monitoring of surface and groundwater resources. Surface water levels and flows are measured in forty-eight (48) flow monitoring stations, eleven (11) dams, fifteen (15) evaporation stations and sixteen (16) current gauging stations.

Table 10: Surface and Groundwater Quantity Monitoring

Monitoring Classification	Number of monitoring points targeted for 2021/22	Number of points visited in 2020/22	Challenges	Solutions

Groundwater Level Monitoring	Q1: 355 Q2: 355 Q3: 355	Q1: 297 Q2: 342 Q3: 277	8 not done due to bees and gates locked.	16 Boreholes to be closed due to collapse.
Surface Water Flow Monitoring – Hydrology Visits to sites (48) monitored for surface water levels and flows	Q1: 48 Q2: 89 Q3: 78	Q1: 58 Q2: 95 Q3: 72		
Monitoring of dam levels Visits to 11 dams.	Q1: 12 Q2: 21 visits Q3: 18	Q1: 11 Q2: 22 Q3: 11		
Monitoring of evaporation sites	97 visits to 15 stations Q1: 20 Q2: 26 Q3: 25	Q1:18 Q2: 22 Q3: 11	Stations were temporarily closed as discussed on the Technical, Network and CODAQ meeting held on 16/09/2021	
Monitoring of gauging stations	Q1: 4 Q2: 4 Q3: 4	Q1: 0 Q2: 8 Q3: 6		

3.7 SDG 6.6 – PROTECTING THE ECOSYSTEM

3.7.1 Enforcement on WWTW discharge and Pump stations

Table 11: Summary of enforcement actions on WWTW discharge and pump stations.

Number	Name of WTW	Discharge to and impact on Water Resource	Responsible Official	Volume (Ml/d)	Flow (m^3/s)	Flow (l/s)	Remarks
1	Vryburg	Dry Harts River	Mathe	15	0,17	173,61	Requested Court Order stop pollution
2	Homevale	Kamferdam	Van Dyk	48	0,56	555,56	Requested Court Order stop pollution
3	Barkley West	Vaal River	Damane	3	0,03	34,72	Requested Court Order stop pollution
4	Lichtenburg	Harts River	Shipalane	16			Stop pollute Action Plan
5	Kathu	Re-use Sishen Mine, discharge to stormwater	Van Dyk	3,6	0,04	41,67	Sufficient compliance monitor
6	Danielskuil	Discharge to dolomite aquifer	Damane	0,72	0,01	8,33	Sufficient compliance monitor
7	Upington	Orange River	Tshivandek	16	0,19	185,19	Monitor Action plan
8	Vanderkloof	Seepage to river	Maphuma	0,18	0	2,08	Stop pollute Action Plan
9	Kuruman	Vlei re-used, dolomite aquifer	Van Dyk	4	0,05	46,3	Stop pollute Action Plan
10	Hartswater	Stormwater canal into Harts River	Jenkins	2	0,02	23,15	Stop pollute Action Plan
11	Schweizer Reineke	Harts River	Msimango	9	0,1	104,17	Stop pollute Action Plan
12	Bloemhof	Vaal River	Mathe	5,6	0,06	64,81	Sufficient compliance monitor
13	Christiana	Vaal River	Mathe	3,5	0,04	40,51	Sufficient compliance monitor
14	Ottosdal	Dry Harts River	Msimango	3	0,03	34,72	Sufficient compliance monitor
15	Warrenton	Vaal River	Van Dyk	2	0,02	23,15	Sufficient compliance monitor

16	Postmasburg	Artificial Wetlands	Van Dyk	4,8	0,06	55,56	Sufficient compliance monitor
17	Kakamas	Orange river	Tshivandek	2	0,02	23,15	Sufficient compliance monitor
18	Beaconsfield	Paardeberg's vlei	Baptiste	8	0,09	92,59	Sufficient compliance monitor
19	Nababeep	Discharge to stream	Tshivandek	2	0,02	23,15	
20	Jan Kempdorp	Tributary of the Harts River	Baptiste	2,7	0,03	31,25	Sufficient compliance monitor
21	Pampierstad	Harts River	Msimango	4	0,05	46,3	Sufficient compliance monitor
22	Phillipstown	Discharge to stream	Maphuma	0,31	0	3,59	Sufficient compliance monitor
23	OCC Nababeep	Discharge to stream	Cloete	2			
24	Garies	Discharge to stream	Cloete				
25	Kommaggas	Discharge to stream	Cloete				
26	Okiep	Discharge to stream	Cloete				
27	Concordia	Discharge to stream	Cloete				
				139,41	**1,61**	**1613,5**	

Water Use Licence Authorization

CATEGORY	Number of Licenses	COMMENTS
Initial assessment	53	Initial assessment
Quality check post WUAAAC	6	Awaiting final decision
Awaiting Civil design review	4	Request made to Branch Head to request additional civil engineering capacity
Awaiting geohydrology review	9	Being reviewed by internal specialists. Within 30 day review period

Awaiting Mine water review	1	Being reviewed by internal specialists. Within 30 day review period
Awaiting In-Stream Water Use review	3	Being reviewed by internal specialists. Within 30 day review period
Awaiting NWRP comments	4	Being reviewed by internal specialists. Within 30 day review period
Outstanding information from Applicants	9	Applicants given timeframes to respond
Final assessment	20	Finalising assessment and awaiting information from client
Awaiting decision (HO)	2	
TOTAL	**111**	

What caused the backlog?

- Lack of acknowledgment of the Mandate of the Departments
- Inadequate capacity (numbers and skills)
- Employee turnover of officials in Northern Cape which lead to and Incomplete documentation from applicants
- Delayed inputs from Head Office/ other Directorates (Geo and Civil and Mine and Industrial Water Quality)
- Inadequate assistance to HDI's.
- Low Staff Morale
- Poor / Lack inter- Directorate Communication/Partnerships
- WULA Managers Legitimacy
- Discipline/Professional

- Lack Batho Pele Consciousness/Orientation / Customer Focus

What is the response?

- Acknowledged and Talk to everyone about the challenges and how we wish to change things
- Awareness Creation on the Mandate/ Imperatives of WULA interconnectedness
- Acknowledge the realities and appreciate the efforts/sacrifices by everyone
- Work on retention of officials
- Communicate/ build relations with Head Office/ other Directorates (Geo and Civil and Mine and Industrial Water Quality) : Results are bearing fruits
- Dedicated assistance to HDI's
- Genuinely deal with the Staff challenges / Problem solving/ Professionalism
- Harmonize inter- Directorate Communication/Partnerships (Dismantle them and us)
- WULA Managers Legitimacy – Through system/Professionalism/A
- Consequence Management/ Code of Conduct / just ask everyone to do their job
- Lack Batho Pele Consciousness/Orientation

3.8 SDG 6.A – INTERNATIONAL COOPERATION

3.8.1 Construction of the Vioolsdrifts Dam

3.8.1.1 Purpose

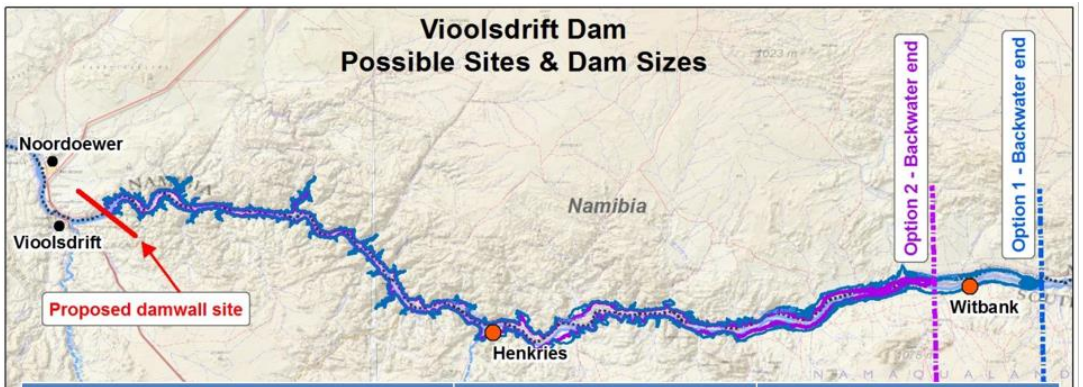
1. Replace loss in yield due to Lesotho Highlands Water Project Phase 2 (LHWP-2) (Polihali Dam from 2024) & transfers to Vaal River System.

2. Supply projected growth in Orange River System water requirements, especially large-scale Namibian irrigation developments in Lower Orange River.
3. Compensate for impact of implementing Reserve on Orange River System yield (planned 2024).
4. Provide re-regulation storage on Lower Orange River - allow releases to correct seasonal flow distribution in accordance with Reserve & riverine Ecological Water Requirements (EWRs) on Lower Orange River.
5. Update the water requirement projections in Orange River System;
6. Determine optimum site and size for NVD;
7. Finalise purpose and timing of NVD for re-regulation, for larger storage and/or for both in single/phased approach;
8. Determine timing and most appropriate development option after NVD;
9. Conduct feasibility study on selected NVD site and size to ensure technical, financial, operational and institutional feasibility; and
10. Conduct Environmental Impact Assessment (EIA) to ensure environmental and social feasibility.

Figure 7: Vioolsdrift Dam Proposed Site and Waterways.

3.8.1.2 PROGRESS:

The NVD Study, initiated by the Permanent Water Commission (PWC) in 2015 was planned for completion by 2017. In 2016 the consultant recommended that the optimal dam would be of a size of 2,800 million m^3 in storage capacity (73 m in height). PWC had no reason to object and accepted the recommendation. By 2017, the study was almost complete. At that time the Preliminary Reserve was determined by RSA's Department of Water and Sanitation, suggesting that the above dam size may be unacceptable from environmental perspective. Based on the latter, DWS proposed and recommended a 35 - 41 m in height damwall, which Namibia objected. Namibia recommended the 73 m damwall. Negotiations between RSA and Namibia is still ongoing.



Option	Option 1	Option 2
Implementation/commissioning	2024	2024
NVD height to full supply level (FSL)	73.5 m	35 m
NVD capacity	2 800 million m^3	300 million m^3
Yield benefit @ 2024	666 million m^3/a	297 million m^3/a
Implementation date of next scheme (Verbeeldingskraal Dam)	2045 (21 years after NVD)	2028* (4 years after NVD)
Unit Reference Value (URV)	R 0.62/m^3	R 0.54/m^3

3.9 SDG 6.B – COMMUNITY PARTICIPATION

Table 12: The list of IGR structures in the Northern Cape Water Sector.

PROVINCIAL	DISTRICT	LOCAL	PROGRAMS	FREQUENCY	ACHIVED	CHALLENGES/ RECOMMENDATIONS
COMMUNITY DEVELOPMENT AND TRAINING (DEPT EDUCATION)	ENVIRONMENTAL EDUCATION FORUM	SKILLS DEVELOPMENT FORUMS	Borehole Pump Operators	QUARTERLY	0	Training on going
			Vision 2020	QUARTERLY	20 school visited	
			WoL monitoring meetings	QUARTERLY	0	No commitment by local municipalities with absorbing the graduated. Presented at Requested interventions from the Premier's

4 OVERALL PROGRESS TOWARDS REACHING THE 2030 GOALS IN THE PROVINCE

4.1 SDG 6.1 & 6.2 Completed Projects

4.1.1 WSIG projects since 2017/8

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Richtersveld	Namakwa	Lekkersing, Eksteensfontein and Kuboes Water Supply	2017/18	R6 015 388	2500	0	0	5		0	0	0	0	0	0	0
Kamiesberg	Namakwa	Refurbishment and Upgrading of Leliefontein, Tweerivier and Spoegrivier water supply	2017/18	R3 995 244	8000	0	6	4		0	0	0	0	0	0	0
Nama Khoi	Namakwa	Augmentation of Rooiwal Bulk supply	2017/18	R2 907 775	0	1	1	0		0	1	0	0	0	0	0
Nama Khoi	Namakwa	Refurbishment of Concordia Reservoir	2017/18	R47 5 266	0	0	1	0		0	0	0	0	0	0	0
Nama Khoi	Namakwa	Water Augmentation to Fonteintjie Water Supply	2017/18	R1 776 180	700	0	1	0		0	0	0	0	0	0	0
Karoo Hooglan d	Namakwa	Williston: Upgrading of bulk water supply	2017/18	R3 997 980	1800	0	0	2		0	0	0	0	0	0	0
Khai-Ma	Namakwa	Upgrading of existing reticulation network: Pofadder	2017/18	R5 131 993	6000	0	0	0		0	0	0	0	0	0	0

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Kai!Garib	ZF Mgcawu	Refurbishment of Kakamas Waste Water Treatment works	2017/18	R7 771 895	0	0	0	0		0	0	1	0	0	0	0
Kai!Garib	ZF Mgcawu	Refurbishment of Cillie Reservoir	2017/18	R1 952 473	0	0	1	0		0	0	0	0	0	0	
Dawid Kruiper	ZF Mgcawu	Installation of Communal Standpipes (Jurgenskamp, Kalksloot, Leerkrans, Karos)	2017/18	R1 992 013						28						
Dawid Kruiper	ZF Mgcawu	Augmentation of Noenieput water supply	2017/18	R5 186 430	91000	0	0	0		0	0	0				
Dawid Kruiper	ZF Mgcawu	Augmentation of Welkom Water Supply	2017/18	R889 879												
!Kheis	ZF Mgcawu	Refurbishment of the Groblershoop Water Purification Works	2017/18	R9 211 314												
Tsantsabane	ZF Mgcawu	Maremane Bulk Water Supply and Reticulation	2017/18	R4 372 380	200	1	1	0		0	0	0	0	0	0	0
Kgatelopele	ZF Mgcawu	Replacement of AC pipes in Danielskuil	2017/18	R3 988 141	2600	0	0	0		0	0	0	0	0	0	0
Ubuntu	Pixley ka Seme	Victoria West: External Water Supply: Development of Boreholes	2017/18	R4 736 415	0	0	1	2		0	0	0	0	0	0	0
Kareeberg	Pixley ka Seme	Refurbishment of Vosburg Reservoir and AC pipes	2017/18	R4 363 287	3177	0	1	0		0	0	0	0	0	0	0

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Umsobomvu	Pixley ka Seme	Colesberg: Replacement of Internal Bulk pipeline	2017/18	R4 000 000	3001	0	0	0		0	0	0	0	0	0	0
Emthanjeni	Pixley ka Seme	Refurbishment of De Aar Boreholes	2017/18	R5 300 000	0	0	0	6		0	0	0	0	0	0	0
Emthanjeni	Pixley ka Seme	Installation of Sewer Reticulation and Pumpstations for Britstown	2017/18	R9 984 810	0	0	0	0		0	0	0	10369	2	0	0
Renosterberg	Pixley ka Seme	Upgrading of Vanderkloof Waste Water Treatment Works	2017/18	R9 950 018	0	0	0	0		0	0	1	0	0	0	0
Thembelihle	Pixley ka Seme	Construction of Eaziflush Toilets in Hopetown and Strydenburg	2017/18	R4 501 076	0	0	0	0		0	0	0	0	0	0	362
Sol Plaatje	Frances Baard	Replacement/Refurbishment of Outfall Sewer line	2017/18	R25 000 000	0	0	0	0		0	0	0	6006	0	0	0
Hantam	Namakwa	Calvinia: Upgrading of Bulk Supply	2017/18	R1 796 388	0	0	0	9		0	0	0	0	0	0	0
Hantam	Namakwa	Brandvlei: Upgrading of Bulk Supply	2017/18	R2 393 690	2500	0	0	2			0	0	0	0	0	0
Phokwane	Frances Baard	Magogong Station Bulk Water Supply	2017/18	R5 531 028	0	1	1	2		0	1	0	0	0	0	
Phokwane	Frances Baard	Refurbishment of Jan Kempdorp Sewage Pumping Stations	2017/18	R2 273 474	0	0	0	0		0	0	0	0	4	0	0
Phokwane	Frances Baard	Refurbishment of Jan Kempdorp Waste Water Treatment Works	2017/18	R19 353 836	0	0	0	0		0	0	1	0	0	0	0

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Richtersveld	Namakwa	Port Nolloth Water Supply	2018/19	R5 000 000	20500	1	0	0		0	0	0	0	0	0	0
Nama Khoi	Namakwa	Emergency Refurb – Nababeep WWTW	2018/19	R5 000 000	0	0	0	0		0	0	1	0	0	0	0
Kamiesberg	Namakwa	Hondeklip Bay Water Supply	2018/19	R4 224 195	7500	0	1	0		0	0	0	0	0	0	0
Kamiesberg	Namakwa	Refurb of Kheis and Klipfontein Desalination Plants	2018/19	R1 564 545	0	0	0	0		0	2	0	0	0		0
Kamiesberg	Namakwa	Kharkams Borehole Development	2018/19	R3 797 952	12000	0	0	3		0	0	0	0	0	0	0
Hantam	Namakwa	Groundwater Exploration in Calvinia and Brandvlei	2018/19	R7 500 000	2500	0	0	56		0	0	0	0	0	0	0
Karoo Hooglan d	Namakwa	Williston: Upgrade of bulk water supply phase 2	2018/19	R4 467 952	4450	0	0	2		0	0	0	0	0	0	0
Karoo Hooglan d	Namakwa	Fraserburg: Upgrading of Bulk Water Rising Main From Borehole 1, Borehole 2 and Borehole 3	2018/19	R4 500 000	4100	0	0	0		0	0	0	0	0	0	0
Khai-Ma	Namakwa	Refurb of Sewer PS in Pofadder	2018/19	R2 500 000	0	0	0	0		0	0	0	0	2	0	0
Khai-Ma	Namakwa	Onseepkans Water supply	2018/19	R2 500 000	1000	0	0	0		0	1	0	0	0	0	0
Phokwane	Frances Baard	Refurbishment / Upgrade of Hartswater WWTW	2018/19	R53 025 208	0	0	0				0	1	0	0	0	0

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Dikgatlong	Frances Baard	Refurbishment of Barkly west Sewer Pumpstations	2018/19	R3 914 603	0	0	0	0		0	0	0	0	4	0	0
Dikgatlong	Frances Baard	Upgrading of water supply system to bufferzone area	2018/19	R3 956 177	1900	0	0	0		0	0	0	0	0	0	0
Magareng	Frances Baard	Magareng Water Supply Management	2018/19	R5 000 000	0	2	1	2		0	0	0	0	0	0	0
Kai!Garib	ZF Mgcawu	Refurb of sewer pumpstations and clear water reservoirs Kakamas	2018/19	R4 969 752	0	0	0			0	0	0	1560	1	0	0
Dawid Kruiper	ZF Mgcawu	Construction of Louisvale Sewer PS (new)	2018/19	R9 869 607	0	0	0	0		0	0	0	1000	1	0	0
Kgatelopele	ZF Mgcawu	Refurbishment of Sewer PS in Danielskuil	2018/19	R13 051 506												
Kgatelopele	ZF Mgcawu	Replacement of AC Pipes in Danielskuil	2018/19	R5 176 556	3090	0	0	0		0	0	0	0	0	0	0
Siyancuma	Pixley ka Seme	Breipal Sewer Pump station	2018/19	R7 000 000	0	0	0			0	0	0	0	1	0	
Siyathemba	Pixley ka Seme	Refurbishment / upgrade of Prieska WWTW	2018/19	R33 692 584								1				
Thembelihle	Pixley ka Seme	Construction of storage reservoir, low flush toilets and AC pipes replacement	2018/19	R6 202 323	13400	0	1	0		0	0	0	0	0	0	250
Emthanjeni	Pixley ka Seme	Installation of Sewer Reticulation and Pumpstations for Britstown Phase 2	2018/19	R9 377 655	0	0	0	0		0	0	0	3273	0	0	159

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Renosterberg	Pixley ka Seme	Replacement of Philipstown Outfall Sewer	2018/19	R5 424 952	0	0	0	0		0	0	0	904	0		0
Kareeberg	Pixley ka Seme	Carnarvon Sewer Connection	2018/19	R1 058 935	0	0	0	0		0	0	0	299	0	0	0
Kareeberg	Pixley ka Seme	Refurbishment / Replacement of AC pipes Phase2 in Vosburg	2018/19	R3 493 804	3696	0	0	3		0	0	0	0	0	0	0
Ubuntu	Pixley ka Seme	Victoria West Water Infrastruction refurbishment	2018/19	R4 000 000	3000	0	1	0		0	0	0	0	0	0	0
Umsobomvu	Pixley ka Seme	Upgrading of Khayelitsha Sewer Network - Phase 1	2018/19	R10 000 000												196
Dawid Kruiper	ZF Mgcawu	Refurbishment of Louisvale Sewer PS	2019/20	R10 119 239	0	0	0	0		0	0	0	1800	1	0	0
Ga-Segonyana	John Taolo Gaetsewe	Seven Miles Water Supply Phase 2	2017/18	R22 168 379	14100		1	3		58						
Ga-Segonyana	John Taolo Gaetsewe	Mokala-Mosesane Water Supply	2017/18	R10 897 272	11700		0	0		25					0	
Joe Morolong	John Taolo Gaetsewe	Dithakong Water Supply	2017/18	R15 767 840	7500		1	0		0					0	
Joe Morolong	John Taolo Gaetsewe	Loopeng / Slough Water Supply Project	2017/18	R9 457 255	11708		0	0		98					0	
Joe Morolong	John Taolo Gaetsewe	Gasese Water Supply	2017/18	R13 589 014	11600		1	2		59					0	

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Gamagara	John Taolo Gaetsewe	Deben reticulation	2017/18	R14 357 000	10750	0	0	0	450	0	0	0	0	0	0	0
Gamagara	John Taolo Gaetsewe	Augmentation of Deben Bulk water	2017/18	R5 643 000												
Joe Morolong	John Taolo Gaetsewe	Lotlhakajaneng Water Supply	2018/19	R12 787 787	10000		1	1		34					0	
Joe Morolong	John Taolo Gaetsewe	Deurward Water Supply	2018/19	R10 699 361	4400		0	1		45					0	
Joe Morolong	John Taolo Gaetsewe	Dithakong Phase 4	2018/19	R11 000 000	5300		0	3		45					0	
Joe Morolong	John Taolo Gaetsewe	General Refurbishment	2018/19	R12 500 000	0		10	11		0					0	
Ga-Segonyana	John Taolo Gaetsewe	Refurbishment of Kuruman WWTW	2018/19	R24 204 898	0		0	0		0					0	
Ga-Segonyana	John Taolo Gaetsewe	Refurbishment of Mothibistad WWTW	2018/19	R11 004 017	0		0	0		0		1			0	
Ga-Segonyana	John Taolo Gaetsewe	Batlharos Water Source Development	2018/19	R13 255 855								1				
Gamagara	John Taolo	Olifantshoek - Development of	2018/19	R11 387 743	7730					13						

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
	Gaetsewe	1300 stands - water supply														
Gamagara	John Taolo Gaetsewe	Olifantshoek - Groundwater Exploration	2018/19	R6 919 800												
Joe Morolong	John Taolo Gaetsewe	Mentu Water supply	2019/20	R7 998 978	2360		1	2		12					0	
Joe Morolong	John Taolo Gaetsewe	Kokfontein water supply phase 2	2019/20	R13 384 616												
Joe Morolong	John Taolo Gaetsewe	Mmamebe water supply phase 2	2019/20	R25 856 406												
Joe Morolong	John Taolo Gaetsewe	Majanking water supply	2019/20	R7 982 003												
Joe Morolong	John Taolo Gaetsewe	Molatswaneng water supply	2019/20	R7 498 523	2945		1	1		6					0	
Joe Morolong	John Taolo Gaetsewe	Rusfontein Wyk 8 Refurb	2019/20	R2 040 832	0		1	2		0					0	
Joe Morolong	John Taolo Gaetsewe	Penryn Refurb	2019/20	R1 500 000	0		4	1		0					0	
Joe Morolong	John Taolo Gaetsewe	Cassel Refurb	2019/20	R1 900 003	0		0	2		0					0	

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Joe Morolong	John Taolo Gaetsewe	Klipham Refurb	2019/20	R1 497 558	0		0	2		0					0	
Joe Morolong	John Taolo Gaetsewe	Majemantso Refurb	2019/20	R1 384 765	0		0	2		0					0	
Ga-Segonyana	John Taolo Gaetsewe	Upgrading of Kuruman and Wrenchville internal water supply	2019/20	R17 859 072	14095		0	0		0					0	
Ga-Segonyana	John Taolo Gaetsewe	Kagung water supply	2019/20	R18 760 679	8400		1	1		31					0	
Ga-Segonyana	John Taolo Gaetsewe	Magojaneng Block D water suppy	2019/20	R20 773 236	11600		0	0		46					0	
Ga-Segonyana	John Taolo Gaetsewe	Mapoteng source development	2019/20	R12 388 822	1000		0	2		0					0	
Ga-Segonyana	John Taolo Gaetsewe	Maruping / Batlharos BWS phase 3	2019/20	R27 915 275	12500		0	0		50					0	
Ga-Segonyana	John Taolo Gaetsewe	Piet Bos Water Supply	2019/20	R12 692 989	7400		1	2		0					0	
Richtersveld	Namakwa	Port Nolloth MILE 8 - Boreholes	2020/21	R3 595 190												
Richtersveld	Namakwa	Lekkersing water supply	2020/21	R88 7 559	1300			3								

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Richtersveld	Namakwa	Eksteenfontein water supply	2020/21	R685 667	1000			4								
Gamagara	John Taolo Gaetsewe	Olifantshoek Reservoir Repair and AC Pipe Replacement	2019/20	R11 297 461	1000		1									
Gamagara	John Taolo Gaetsewe	Kathu / Mapoteng - AC Pipe Replacement	2019/20	R6 425 927	7500											
Gamagara	John Taolo Gaetsewe	Equipping of Boreholes in Deben	2019/20	R10 985 621	20200			5								
Gamagara	John Taolo Gaetsewe	Olifantshoek: Construction of bulk link line from 6 boreholes to 7mL reservoir: Phase 1	2019/20	R11 072 231	4200			5			1					
Gamagara	John Taolo Gaetsewe	Groundwater exploration in Olifantshoek: Phase 2	2021/22	R3 629 688				5								
Gamagara	John Taolo Gaetsewe	Groundwater supply in Olifantshoek: Construction of water bulk line from 6 boreholes to 7ML reservoir: Phase 2	2020/21	R8 127 611	3650			1								
Ga-Segonyana	John Taolo Gaetsewe	Gamopedi water supply	2020/21	R15 000 000	3500		1	2		15						
Ga-Segonyana	John Taolo Gaetsewe	Water Supply Augmentation in Kagung and West Derby	2020/21	R18 597 542	8400		1	1								

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Ga-Segonyana	John Taolo Gaetsewe	Water services Operating subsidy - general refurbishment	2020/21	R16 757 914												
Ga-Segonyana	John Taolo Gaetsewe	Refurbishment of Barnard Ave Pumpstation	2020/21	R4 917 089										1		
Ga-Segonyana	John Taolo Gaetsewe	GaSegonyana - Purchasing of water tanker truck	2020/21	R1 994 299												
Hantam	Namakwa	Upgrading of Calvinia Water Treatment Works	2019/20	R31 778 228							1					
Hantam	Namakwa	Groundwater supply from Northwest - Calvinia	2020/21	R10 000 000	7800			2								
Hantam	Namakwa	Hantam - Installation of prepaid meters and construction of 11kv powerline	2020/21	R9 000 000					800							
Hantam	Namakwa	Water Supply from the Doring Rivr for Calvinia: Feasibility Study	2017/18	R500 000												
Kai!Garib	ZF Mgcawu	Kakamas WWTP & WTP feasibility study	2020/21	R2 000 000												
Kamiesberg	Namakwa	Hondeklip Bay Water Supply	2018/19	R5 089 845	8500	1	1									
Kamiesberg	Namakwa	Refurbishment of Kheis and Klipfontein Desalination Plants	2018/19	R881 193							2					

WSA	DM	Project Name	Year started	Project Cost	Water supply pipeline (m)	Water Pump stations	Reservoirs (nr)	Boreholes (equipped/drilled/ Refurbished)	Nr of meters	Nr of standpipes	Water Treatment Works constructed / Refurbished (nr)	Waste Water Treatment Works constructed / Refurbished (nr)	Sewer pipeline (m)	Sewer Pump stations	Nr of toilets installed (Dry Sanitation)	Nr of toilets installed (Waterborne)
Kamiesberg	Namakwa	Tweerivier water reticulation	2020/21	R3 048 441												
Kareeberg	Pixley ka Seme	Bonteheuwel Water Supply in Carnarvon	2018/19	R1 200 000	400	1										
Kgatelopele	ZF Mgcawu	Refurbishment of Danielskuil Sewer Pumpstations	2019/20	R13 051 506										10		
Nama Khoi	Namakwa	NamaKhoi-Purchase of water tanker	2020/21	R2 078 525												
Siyancuma	Pixley ka Seme	Upgrading of Bogani outfall sewer	2019/20	R19 507 786									3000			
Siyathemba	Pixley ka Seme	Prieska WWTW - additional works	2020/21	R4 057 683												
Ubuntu	Pixley ka Seme	Extensions of sewer and water infrastructure for 40 stands in Richmond	2019/20	R4 346 368									300			
Ubuntu	Pixley ka Seme	Upgrading of Outfall Sewer Line, Sewage Pumps and Pump Station in Richmond	2017/18	R86 2 500									250			
Ubuntu	Pixley ka Seme	Upgrading of bulk water supply and replacment of asbestos water pipelines in Loxton	2020/21	R10 185 320	7289				281							

4.1.2 Completed RBIG projects since FY 2016/17

WSA	DM	ProjNme	Year Completed	Project Cost
Dawid Kruiper	ZF Mgcawu	Kalahari East Pipeline phase 1	2016/17	R 155 700 000
Sol Plaatje	Frances Baard	Ritchie BWS	2018/19	R 48 230 000
Karoo Hoogland	Namakwa	Williston BWS	2018/19	R 27 000 000
Siyathemba	Pixley ka Seme	Marydale BWS	2018/19	R 8 831 109
Hantam	Namakwa	Loeriesfontein BWS	2018/19	R 114 743 779
Hantam	Namakwa	Brandvlei BWS	2019/20	R 136 400 719
Emthanjeni	Pixley ka Seme	Britstown oxidation ponds	2019/20	R 24 551 623
TOTAL				R 515 103 246

5 COVID 19 IMPACT

The recent Coronavirus (COVID-19) pandemic was declared a national disaster by the Minister of Cooperative Governance and Traditional Affairs and announced by the President of the Republic of South Africa as a national state of disaster.

The Minister of Human Settlements, Water and Sanitation has since established a National Water and Sanitation COVID-19 Command Centre to facilitate a coordinated joint response to community needs to prevent water cut across all spheres of Government.

The purpose of the National Water and Sanitation Command Centre is to coordinate and facilitate emergency interventions on water and sanitation to ensure access to basic water and sanitation during the COVID-19 pandemic. It promotes efficiencies through centralised bulk procurement of goods and services to benefit from economies of scale. It also serves as a clearing house of all blockages affecting service delivery within and amongst the various spheres of Government in the Sector. This intervention does not in any way take away powers and functions of the Department and Municipalities. It is however complementing service in terms of inter-governmental relation service's delivery model at local level.

Rand Water as the Implementing Agent on behalf of the Department and Convener of the NDCC, through the COVID 19 Funding made available by the Department. To date 884 water tanks have been provided to municipalities throughout the Northern Cape Province.

The Department of Water and Sanitation in the Northern Cape's main focus during the pandemic, and its possible resurgence, is to ensure that an adequate supply of potable water is available to communities during this period.

5.1 MONITORING INDICATORS

The region's response was determined by:

1. Alerts and notifications as issued by the Provincial Department of Health[1] and the severity thereof.
2. Water services backlogs, i.e. high-density informal areas, and medium-density informal areas.
3. Water availability considerations, including:
    a. Drought – Surface and groundwater related,
    b. Service delivery issues and interruptions and low-density informal areas,
4. Water quality considerations, including:
    a. Contamination of surface water,
    b. Contamination of groundwater,
    c. Contamination of potable water,
5. Hotspots and high traffic areas.
    a. Health and hygiene awareness,
    b. Community education and awareness,
6. Availability of infrastructure, including:
    a. Current infrastructure projects (WSIG and RBIG) in the area.
    b. Possibilities of connecting emergency water provision interventions to existing water reticulation infrastructure.
7. Requests for assistance from Local Municipalities.

5.2 The Northern Cape Backlog Model

Using the regional Water Services Infrastructure Database, the Northern Cape Department of Water and Sanitation performs yearly updates of the levels of service in each municipality.

The process involves:

5. Creating a detailed map showing the water and sanitation services rendered for each settlement in the Northern Cape. The total map count reaches approximately 1800.
6. The created maps are forwarded to Local Municipalities for inputs and updates.
7. The updated maps are returned to the department, where it is processed, and the database is then updated.
8. The updated database is then used to produce the regional backlog model.

[1] *COVID-19 Resurgence Plan, Department of Health, Northern Cape, 26 October 2020: "A COVID-19 alert is defined as approximately 10% to 20% increase of the average incidence of COVID-19 cases (using a 7-day moving average) within a defined geographic area (e.g. ward, district, province)."*

The regional backlog model breaks down the water and sanitation services provided on a per household level in each settlement within the Northern Cape. The model distinguishes between formal and informal stands. Formal stands are areas that have been surveyed by the Surveyor General's office and are thus eligible for municipal services. Informal stands have not been surveyed and are not fully eligible for formal municipal services.

Table 13: Breakdown of the varying service levels encountered throughout the province.

Water Services	Below RDP	Sanitation Services	Below RDP
House Connection	No	Flush to Treatment	No
Yard Connection	No	Conservancy Tank	No
Communal Standpipe closer than 200m from household	No	Septic tank	No
Communal Standpipe greater than 200m from household	Yes	UDS (Urine drainage system)	No
Communal Handpump	Yes	VIP (Ventilated Improved Pit)	No
No Water	Yes	Unimproved Pit	Yes
		Bucket System	Yes
		No Service	Yes

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Table *15* breakdowns of the most recent levels of service are given. Of importance in determining the appropriate response to any resurgence are those areas with No Service, Interim Service and Communal Standpipes greater than 200m from households. In some areas the number of communal standpipes within a 200m radius of households should also be considered, as connections in these areas are more prone to vandalism and hence more frequent service interruptions.

From the backlog model there are 6 564 unserved households on informal stands and 11 441 unserved households on formal stands.

Table 14: Water Service Model on Formalized Stands

District	Municipality	Communal Standpipe	Communal >200m	House Connection	No Service / Interim Service	Unknown	Yard Connection	Backlogs	Households Serviced	Households	%Serviced
Frances Baard	Dikgatlong	438	0	7389	0	2	694	2	8521	8523	99.98
	Magareng	0	0	2058	1200	27	3441	1227	5499	6726	81.76
	Phokwane	2110	0	11478	630	9	672	639	14260	14899	95.71
	Sol Plaatje	1901	0	48170	0	219	1165	219	51236	51455	99.57
John Taolo Gaetsewe	Ga Segonyana	12529	0	6580	1286	30	1942	1316	21051	22367	94.12
	Gamagara	1018	0	14470	158	1	346	159	15834	15993	99.01
	Joe Morolong	17383	3357	1000	1270	35	325	4662	18708	23370	80.05
Namakwa	Hantam	0	0	3289	0	0	950	0	4239	4239	100.00
	Kamiesberg	164	0	1578	75	23	1064	98	2806	2904	96.63
	Karoo Hooglan	0	0	1465	8	0	899	8	2364	2372	99.66
	Khai-Ma	5	0	1529	33	3	734	36	2268	2304	98.44
	Nama Khoi	236	0	8712	31	195	3263	226	12211	12437	98.18
	Richtersveld	2	0	2688	7	5	578	12	3268	3280	99.63
Pixley ka Seme	Emthanjeni	0	0	7632	1	1	645	2	8277	8279	99.98
	Kareeberg	0	0	1737	0	0	398	0	2135	2135	100.00
	Renosterberg	52	0	2539	0	0	3	0	2594	2594	100.00
	SiyaThemba	209	0	3407	2	0	714	2	4330	4332	99.95
	Siyancuma	257	0	5572	24	51	358	75	6187	6262	98.80
	Thembelihle	189	0	2030	33	4	9	37	2228	2265	98.37
	Ubuntu	0	0	3980	0	1	2	1	3982	3983	99.97
	Umsobomvu	144	0	6260	1	1	850	2	7254	7256	99.97
ZF Mgcawu	!Kheis	292	0	1277	0	0	1209	0	2778	2778	100.00
	Dawid Kruiper	1778	0	17045	2020	41	2940	2061	21763	23824	91.35
	Kai !Garib	459	0	4387	594	60	2349	654	7195	7849	91.67
	Kgatelopele	285	0	3321	3	0	0	3	3606	3609	99.92
	Tsantsabane	150	0	7386	0	0	10	0	7546	7546	100.00

Table 15: Water Service Model in Informal Areas

District	Municipality	Communal Standpipe	Communal >200m	House Connection	No Service / Interim Service	Unknown	Yard Connection	Backlogs	Households Serviced	Households	%Serviced
Frances Baard	Dikgatlong	575	0	0	82	0	0	82	575	657	87.52
	Phokwane	0	0	0	1081	0	0	1081	0	1081	0.00
	Sol Plaatje	1140	0	0	1710	0	0	1710	1140	2850	40.00
Namakwa	Hantam	47	0	0	0	0	0	0	47	47	100.00
	Kamiesberg	0	0	0	0	0	0	0	0	0	100.00
	Karoo Hoogland	89	0	0	0	0	0	0	89	89	100.00
	Khai-Ma	0	0	0	0	0	47	0	47	47	100.00
	Nama Khoi	125	0	0	0	0	0	0	125	125	100.00
	Richtersveld	0	0	1	0	0	15	0	16	16	100.00
John Taolo Gaetsewe	Ga Segonyana	0	0	0	1600	0	530	1600	530	2130	24.88
	Gamagara	200	0	0	0	0	0	0	200	200	100.00
	Joe Morolong	0	0	0	1101	0	0	1101	0	1101	0.00
Pixley ka Seme	Kareeberg	130	0	0	10	0	0	10	130	140	92.86
	Renosterberg	107	0	0	0	0	0	0	107	107	100.00
	Siyancuma	518	0	0	16	0	0	16	518	534	97.00
	Thembelihle	500	240	0	0	0	30	240	530	770	68.83
	Ubuntu	0	0	5	0	0	0	0	5	5	100.00
	Umsobomvu	0	0	1	0	0	0	0	1	1	100.00
ZF Mgcawu	!Kheis	80	0	0	20	0	0	20	80	100	80.00
	Dawid Kruiper	128	0	0	604	0	64	604	192	796	24.12
	Kai !Garib	0	100	0	0	0	0	100	0	100	0.00

5.3 Water Availability Considerations

In the Northern Cape, the inherently low level of rainfall, its variability and inconsistency have become more frequent in the last three decades and it has, in most instances, led to recurring bouts of droughts in certain parts of the province. This is especially case in the western, northern, and central parts of the province.

Whilst there has been a return to normal rainfall patterns throughout most of South Africa, below average rainfalls are still being experienced in the western regions. In the Northern Cape this specifically translates to areas within the Namakwa and Pixley ka Seme District Municipalities.

The Northern Cape has 439 towns of which 72% (316) are reliant solely on groundwater. A further 26% rely on surface water and the remaining 2% rely on both surface and groundwater.

Groundwater level monitoring has indicated a decline in groundwater levels in all five the districts within the Northern Cape. Declines have been observed in Barkley West and Kimberley in the Frances Baard District, in Kuruman and Sishen in John Taolo Gaetsewe, in Groenwater and Postmasburg in ZF Mgcawu, in Griekwastad and De Aar in Pixley ka Seme and severe declines in Fraserburg, Sutherland, Nourivier and Port Nolloth in Namakwa.

As most towns in the Northern Cape are reliant on groundwater, the Department regularly perform surveys of the number of functional boreholes used for potable water in the province. This is in addition to its normal groundwater monitoring. From January to April 2020, the department as engaged local municipalities and contracted water service providers (WSPs), as well as consultants to determine the number of non-functional boreholes in the province.

Table 16: The number of non-functional boreholes in the Northern Cape.

Municipality	BOREHOLE STATUS							
	Non-functional	Reason						
		Dried up	Vandalised	No Diesel	Electrical problem	Pump motor problem	Contaminated	Not equipped
Karoo Hoogland	3	3						
Richtersveld	10	2			1	3	1	3
Nama Khoi	6	5				1		
Hantam	30	3				1		26
Kamiesberg	45	45						
Khai-Ma	N/A							
Namakwa	**94**	**58**	**0**	**0**	**1**	**5**	**1**	**29**
Dawid Kruiper	3	3						
KaiGarib								
!Kheis	6	6						
Tsantsabane	1					1		
Kgatelopele	1					1		
ZF MgCawu	**11**	**9**	**0**	**0**	**0**	**2**	**0**	**0**
Joe Morolong	222	76	45		1	89	11	
Gamagara	6		2		3	1		
Ga-Segonyana	18	4	2			9	3	
JTG	**246**	**80**	**49**	**0**	**4**	**99**	**14**	**0**
Phokwane								
Magareng	2					1	1	
Sol Plaatje								
Dikgatlong								
Frances Baard	**2**	**0**	**0**	**0**	**0**	**1**	**1**	**0**
Thembelihle	3	3						
Renosterberg	3					3		
Umsobomvu	12				3	7		2
Ubuntu	19	1			1			17
Kareeberg	6	3					3	
Siyathemba	7	6				1		
Siyancuma	29	12				12		5
Emthanjeni	39	19			7	7	3	3
Pixley ka Seme	**118**	**44**	**0**	**0**	**11**	**30**	**6**	**27**
Grand Total	**471**	**191**	**49**	**0**	**16**	**137**	**22**	**56**

5.4 Hotspot Selection and Tank Locations

During the first wave of COVID-19 the criteria discussed in the three preceding sections were used to compile a preliminary list of hotspots and tank as shown in Figure 8. Table 17 lists the local municipalities within the Northern Cape, showing the households on formal and informal stands, the number of backlogs and the number of non-functional boreholes. This was then used as a basis for deploying the number of procured tanks (770).

The two main driving factors affecting the installation of tanks are thus the number of backlogs and the severity of drought, which is in part reflected, but not described in total, by the number of non-functional boreholes. The last two columns in the table show the number of backlogs relative to the number of tanks installed, and the number of non-functional boreholes per tank installed, respectively. The backlogs per tank figure is inclusive of both formal and informal backlogs. This then allows us to effectively illustrate in which regions the drought played a more important role as opposed to the number of water service backlogs. This is illustrated in **Error! Reference source not found.**, where backlogs and non-functional boreholes are represented as percentages. The line indicates the total percentage of tanks allocated to the affected area.

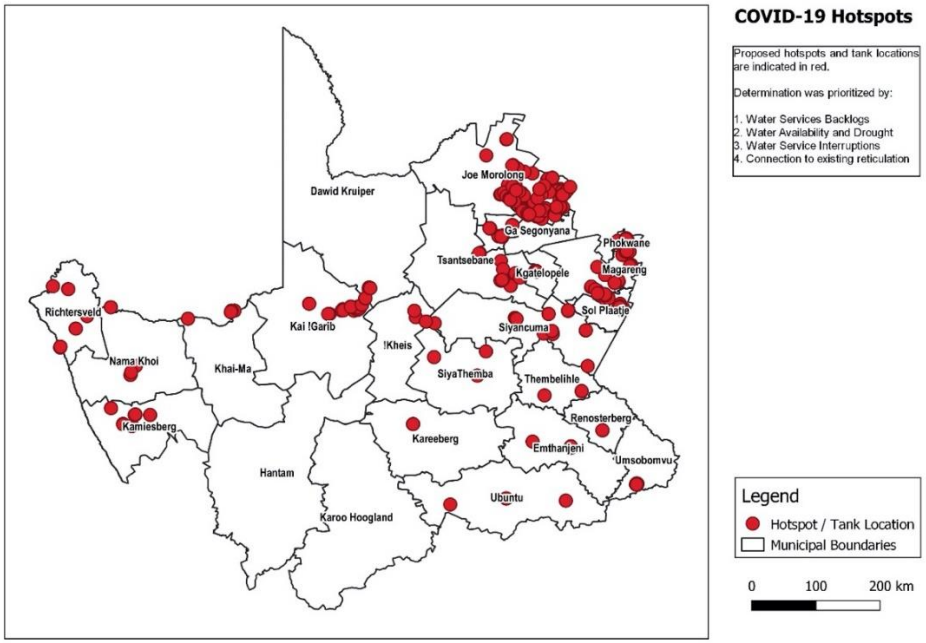

Figure 8: Covid-19 Emergency Water Tank Locations Proposed

During the first wave water tanks in municipalities were filled via tankers. In the majority of the tankering was facilitated via Rand Water and Sedibeng Water as Implementing Agents. In the remaining cases, tanks were filled by the corresponding local municipalities. Municipalities were however warned in July and August 2020 that funding for tankering would not continue indefinitely and a more sustainable source should be found. Hence, to ensure continued water provision and the sustainability of the water tanks, it was deemed imperative to connect water tanks to existing or new reticulation or find funding sources for the continuation of tankering. An allowance was made to Local Municipalities to use 20% of their DWS infrastructure grant funding to connect emergency water tanks supplied during COVID-19 lockdown to a nearby source or to continue tankering of water.

In preparation for a second wave and the regional office of the Department of Water and Sanitation will then prioritize the sustainability of the provided water tanks to ensure continued availability of water to affected communities. **The tankering of water was extended until 5 January 2020 by the Department to ensure adequate water availability during the festive period and during a possible second wave of COVID-19. The continued tankering in being implemented by Sedibeng Water.**

Table 17: Proposed number of hotspots / tanks as determined by backlogs and drought.

District / Municipality	Hotspots Estimated	Households Formal	Backlogs Formal	Households Informal	Backlogs Informal	Non-functional Boreholes	Number of tanks installed	Backlogs per tank	Non-functional Boreholes per tank
Frances Baard	**175**	**81603**	**2087**	**4588**	**2873**	**2**	**248**	**20.00**	**0.01**
Dikgatlong	47	8523	2	657	82	-	61	1.38	-
Magareng	5	6726	1227	-		2	31	39.58	0.06
Phokwane	30	14899	639	1081	1081	-	51	33.73	-
Sol Plaatje	93	51455	219	2850	1710	-	105	18.37	-
John Taolo Gaetsewe	**241**	**61730**	**6137**	**3431**	**2701**	**246**	**353**	**25.04**	**0.70**
Ga Segonyana	82	22367	1316	2130	1600	18	82	35.56	0.22
Gamagara	50	15993	159	200	0	6	50	3.18	0.12
Joe Morolong	109	23370	4662	1101	1101	222	221	26.08	1.00
Namakwa	**48**	**27536**	**380**	**324**	**0**	**94**	**48**	**7.92**	**1.96**
Hantam		4239	0	47	0	30	0	0.00	-
Kamiesberg	18	2904	98	0	0	45	18	5.44	2.50
Karoo Hoogland		2372	8	89	0	3	0	0.00	-
Khai-Ma	10	2304	36	47	0	-	10	3.60	0.00
Nama Khoi	8	12437	226	125	0	6	8	28.25	0.75
Richtersveld	12	3280	12	16	0	10	12	1.00	0.83
Pixley ka Seme	**90**	**37106**	**119**	**1557**	**266**	**118**	**93**	**4.14**	**1.27**
Emthanjeni	8	8279	2	0	0	39	8	0.25	4.88
Kareeberg	7	2135	0	140	10	6	7	1.43	0.86
Renosterberg	4	2594	0	107	0	3	4	0.00	0.75
Siyancuma	37	4332	2	534	16	29	38	0.47	0.76
SiyaThemba	6	6262	75	0	0	7	6	12.50	1.17
Thembelihle	4	2265	37	770	240	3	5	55.40	0.60
Ubuntu	8	3983	1	5	0	19	9	0.11	2.11
Umsobomvu	16	7256	2	1	0	12	16	0.13	0.75
ZF Mgcawu	**141**	**45606**	**2718**	**996**	**724**	**11**	**142**	**24.24**	**0.08**
!Kheis	10	2778	0	100	20	6	10	2.00	0.60
Dawid Kruiper	20	23824	2061	796	604	3	22	121.14	0.14
Kai !Garib	45	7849	654	100	100	-	45	16.76	0.00
Kgatelopele	15	3609	3	0	0	1	15	0.20	0.07
Tsantsebane	50	7546	0	0	0	1	50	0.00	0.02
Grand Total	**695**	**253581**	**11441**	**10896**	**6564**	**471**	**884**	**20.37**	**0.53**

5.5 RESPONSE

The regional response focused on three main areas as outlined in this section.

5.5.1 Emergency Water Provision

Objectives:

1. Ensuring the sustainable provision of water to communities.
2. Sufficient water infrastructure to ensure provision of potable water.

Actions:

To ensure the successful implementation the following actions have been identified for this intervention:

1. Continual monitoring of tank connection project progress via existing project management structures within the region.
2. Ensure sufficient raw water availability through ground- and surface water monitoring.
3. Provide groundwater management assistance to municipalities experience groundwater shortages.
4. Reprioritization of funding (WSIG, RBIG) to address infrastructure shortfalls.
5. Continuation of implementation of drought relief.

To date 884 water tanks have been provided to municipalities throughout the Northern Cape Province. During a possible resurgence, the department will focus on ensuring that the supplied water tanks remain a sustainable source of potable water. To achieve this, it will be necessary to connect the provided water tanks to municipal reticulation networks.

Table 18 lists the municipalities that received water tanks and the planned number of tanks to be connected to reticulation. Currently, 43 tanks have been connected.

Table 18: The list of municipalities that received water tanks via drought relief or Rand Water COVID-19 funding and the progress with regards to the connection thereof to reticulation networks.

Municipality	Total Storage Tanks		Status	Total Tanks Planned To Be Connected By Own Or MIG	Total Tanks Planned To Be Connected Through WSIG / RBIG	Total Tanks Planned To Be Connected Through Construction Unit	Total Tanks Already Connected
	Sedibeng Water	Rand Water					
Richtersveld	12	0	Procurement	0	12	0	0
Nama Khoi	0	8	Complete	8	0	0	8
Kamiesberg	18	0	Planning	0	18	0	0
Hantam	0	0	N/A	N/A	N/A	N/A	N/A
Khai Ma		10	Complete	10	0	0	10
Karoo Hoogland	0	0	N/A	N/A	N/A	N/A	N/A
Ubuntu	9	0	Planning	0	9	0	0
Kareeberg	7	0	Planning	0	7	0	0
Emthanjeni	0	8	Construction	8	0	0	2
Thembelihle	5	0	No Plan	5	0	0	0
Renosterberg	0	4	Construction	4	0	0	0
Umsobomvu	0	16	Planning	16	0	0	9
Siyathemba	0	6	Complete	6	0	0	6
Siyancuma	4	34	Planning	0	0	38	0
Kai!Garib	0	45	Planning	8	50	0	8
Kgatelopele	15	0	Planning	15	0	0	0
!Kheis	0	10	Planning	0	10	0	0

Tsantsabane	0	50	Procurement	50	0	0	0
Dawid Kruiper	0	22	Planning	22	0	0	0
Sol Plaatje	105	0	Planning	0	0	105	0
Magareng	31	0	Planning	0	31	0	0
Dikgatlong	9	52	Planning	61	0	0	0
Phokwane	51	0	Planning	51	0	0	0
Joe Morolong	89	132	Procurement	0	221	0	0
Ga-Segonyana	63	19	Procurement	0	82	0	0
Gamagara	0	50	Planning	0	50	0	0
TOTAL	**418**	**466**		**264**	**490**	**143**	**43**

5.6 COMMON CHALLENGES AND WAY FORWARD

Common challenges:

MUNICIPALITY	NATURE OF CHALLENGE	INTERVENTIONS
ALL MUNICIPALITIES	Inadequate bulk water supply Poor water metering Inadequate reticulation network Vandalism and theft of infrastructure, leading to high water loss Lack of proper O&M Procurement planning Institutional instability	On-going maintenance of existing boreholes, drilling boreholes Upgrade of different WTW to on additional capacity required Upgrade of pump station. Implementation of Bulk Water Scheme Implementing the Water Loss Management Project
	Dilapidated Wastewater treatment facilities Non-functional sewer pump stations and sewer spillages Water debt owed to Sedibeng Water leading to water pressure reduction Non enforcement of bylaws governing the quality of industrial effluent (e.g. Abattoirs) discharged in the WWTW	Upgrade of sewer network, sewer bulk line and pump stations Ongoing engagements with Sedibeng Water to resolve payment of historic debt.

Way Forward:

- Augment support to local municipalities to complete infrastructure projects by appointing additional technical staff within the region.
- Improve regulation of water users to ensure compliance to water quantity and quality.
- Better Coordination on WULA assessments.
- WULA Ongoing awareness creation to external stakeholders.
- Public awareness and campaigns through ward councillors and ward committee to curb the vandalism and theft of municipal assets