

MMM Bulk Water Programme (MBWAP)

Water Services Development Plan

Report No. 305-7 (Revision 02)

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MANGAUNG BULK WATER PROGRAMME

Water Services Development Plan (WSDP)

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EXECUTIVE SUMMARY

The Water Services Authority (WSA) is tasked with the preparation of a formal water services development plan (WSDP) that contains information on the physical attributes of the area, the socio-economic attributes, existing infrastructure and water use, and provides a long-term water services plan with a five-year implementation plan.

The WSDP is part of the Integrated Development Plan (IDP) of a WSA, and should be prepared as part of the IDP preparation process.

This report gives an overview of the following:

- Background;
- Objectives;
- Scope of the Study;
- Methodology; and
- Conclusions

The key outcomes of the Water Services Development Plan report forms part of the Mangaung Bulk Water Augmentation Programme (MBWaP) as it influences and informs the short-, medium-, and long-term planning of Bloemfontein's water sources and distribution. The main activities and progress with regards to the five-year WSDP process will be addressed in the report.



List of Abbreviations

MBWaP	Mangaung Bulk Water Augmentation Programme
MMM	Mangaung Metropolitan Municipality
WCDM	Water Conservation Demand
WSDP	Water Services Development Plan
WSA	Water Services Authority



1. INTRODUCTION

1.1 Background

In terms of Section 11 of the Water Services Act 1997, all Water Services Authorities (WSAs) have a duty to progressively provide efficient, affordable, economical and sustainable access to water services. For this purpose, water services include both water supply and sanitation provision. To assist in the implementation of this duty, the WSA is also tasked with the preparation of a formal water services development plan (WSDP) that contains information on the physical attributes of the area, the socio-economic attributes, existing infrastructure and water use, and provides a long-term water services plan with a five-year implementation plan.

The WSDP is part of the Integrated Development Plan (IDP) of a WSA, and should be prepared as part of the IDP preparation process. The IDP is developed for every elected municipal council for their 5 year term. The current five year period is 2017-2022 and the submission of the WSDP report will thus require continuous revision and updating across this period.

1.2 Objectives

The main objective of the WSDP process is to fill the gap between where we are now (*status quo*) and where we want to be in the future. The key targets of the plan are thus to:

- Ensure the future provision of basic and higher levels of appropriate, affordable and sustainable water services whilst addressing the issue of free basic water and sanitation to indigent customers.
- Ensure that water resources are protected and sustainably managed.
- Ensure that the water services infrastructure and service are properly managed and maintained through appropriate institutional arrangements.

1.3 Scope of the Study

The Department of Water and Sanitation have developed guidelines, and a web-based system for all WSAs to utilise in the development of WSDPs. This system provides a standardised format for capturing water services information on a spatial geodatabase, as well as assessing, strategizing, as well as detailing the planned water services projects.

The system has been in use since 2010 but changes to the system were initiated in 2016. The system still works on an underlying geodatabase, and data from the previous system was carried through to the new system.

The water and sewer Master Plans are the base planning documents for the WSDP. All the data, plans, strategies and projects gathered during the Master Plan tasks are uploaded into the DWS online WSDP System. The structure of the Master Plan is such that it is in full alignment with the DWS WSDP requirements, and will form the basis of the WSDP.

Master Planning in terms of water and sanitation services for Mangaung Metropolitan Municipality was previously executed for Bloemfontein and hence does not farm part of the immediate scope of the WSDP process but the outcomes of the respective masterplans were utilised to inform the project planning process of the WSDP.



One of the key shortcomings identified is that Master Planning documents have only been prepared for Bloemfontein (sewer and water) and Thaba Nchu (water), neglecting future planning for Botshabelo, Wepener, Dewetsdorp, Vanstadensrus and Soutpan. In order for the entire Municipality's planning to be confirmative across the various towns/entities, the Master Planning for these towns have been identified as a gap which should ideally be addressed as part of the five-year WSDP process. Master Planning for these towns have thus been listed as separate projects which MMM will need to incorporate as part of their planning.

In addition to all of the tasks that form part of the master planning process, the DWS WSDP system requires:

- An assessment of <u>each data element</u> in terms of quality and quantity of data. There are a vast number of such data elements to assess, and the limiting factor is the speed of the DWS system in opening each field, and saving each field.
- 2. The development of five year strategies to close the gaps identified. The master planning process identifies projects and priorities for 5, 10 and 15 year horizon. In order to complete the WSDP, the first 5 years' worth of projects need to be unpacked further, with objectives, KPIs and annual targets to be set for each of the business areas.

The development of strategies and the setting of objectives, KPI's and annual targets is a process which will require continuous refinement and development. In order to initialise the process a draft list of all MMM's identified current and future projects is included in Annexure A. The projects contained in Annexure A merely focuses on the identified projects as extracted from several planning documents available and does not address the prioritisation in terms of the 5, 10, and 15 year horizon as this will be addressed as a further phase to the WSDP.

1.4 Methodology

The approach in initiating this WSDP five-year process, subject to further development and refinement, is thus as follows:

- As the scope of the study was merely at desktop level all information pertaining to all sectors of WSDP planning which could supplement the process of completing and verifying the captured water services information on the spatial geodatabase had to be obtained. This included all existing Master Planning documentation, Water Conservation and Demand Management (WCDM) Strategies, existing water balances, Geographic Information System (GIS) data regarding all water services infrastructure, asset management registers and condition assessment reports where available.
- 2. The validity of the collected data had to be verified parallel to the review of the information previously uploaded on the spatial geodatabase. Based on the available data obtained the spatial geodatabase was updated and revised where new information was available. The updated spatial geodatabase was then submitted to the data custodian for review and mass uploading onto the web-based WSDP.
- 3. In addition to this identified projects also had to be updated on the projects geodatabase with information pertaining to cost, demand horizons, intervention horizons, problem definition, strategic importance and a vast amount of additional fields requiring assessment. In terms of completing the projects geodatabase the planning is very limited to projects where formal



funding was already assigned- this implies that several projects have been identified but can't be included as part of the WSDP as no funding has been assigned to the specific project and first needs to go through the various approval processes and hence a collaboration between the various sectors is required in order for strategic projects to be appropriately prioritised. For the purposes of the WSDP a complete list of identified projects were formulated with the existing projects geodatabase utilised as basis and all additional projects emanating from the water and sewer masterplans for Bloemfontein, WCDM strategies and other applicable strategic documents were also listed in terms of preliminary demand horizons. Refer to Annexure A for a summary of the identified projects for both water and sanitation services as part of the process for completing the projects geodatabase.

- 4. As Mangaung Metropolitan Municipality is the Water Services Authority, the information of water and sewer infrastructure as managed by the Water Service Provider, Bloem Water, also had to be obtained and reviewed for inclusion in the greater MMM's planning. One of the most critical delays experienced is due to the lack of Bloem Water's cooperation to supply the necessary technical data required for this WSDP process. This issue has been escalated to other stakeholders and in particular, the Department of Water and Sanitation, in order to obtain external assistance in obtaining Bloem Water's cooperation in data sharing as this is in an ultimate requirement for the successful completion of the WSDP.
- 5. The process which follows the upload of the geodatabase is the verification process where each data element has to be assessed in terms of the quality and quantity of data and this step will only be finalised in a later phase.

2. CONCLUSIONS

In completing the planning and implementation time-frames of projects it is evident that the planning is very limited to projects where formal funding was already assigned- this implies that several projects have been identified but can't be included as part of the WSDP as no funding has been assigned to the specific project and first needs to go through the various approval processes and hence a collaboration between the various sectors is required in order for strategic projects to be appropriately prioritised.

For the purposes of the WSDP a complete list of identified projects were formulated with the existing projects geodatabase utilised as basis and all additional projects emanating from the water and sewer masterplans, WCDM strategies and other applicable strategic documents were also utilised to inform MMM's preliminary project planning. Refer to Annexure A for a summary of the identified projects for both water and sanitation services for Mangaung Metropolitan Municipality.

One of the key shortcomings identified is that Master Planning documents have only been prepared for Bloemfontein (sewer and water) and Thaba Nchu (water), neglecting future planning for Botshabelo, Wepener, Dewetsdorp, Vanstadensrus and Soutpan. In order for the entire Municipality's planning to be confirmative across the various towns/entities, the Master Planning for these towns have been identified as a gap which should ideally be addressed as part of the five-year WSDP process. Master Planning for these towns have thus been listed as separate projects which MMM will need to incorporate as part of their planning.



As Mangaung Metropolitan Municipality is the Water Services Authority, the information of water and sewer infrastructure as managed by the Water Service Provider, Bloem Water, also had to be obtained and reviewed for inclusion in the greater MMM's planning. One of the most critical delays experienced is due to the lack of Bloem Water's cooperation to supply the necessary technical data required for this WSDP process. This issue has been escalated to other stakeholders and in particular, the Department of Water and Sanitation, in order to obtain external assistance in obtaining Bloem Water's cooperation in data sharing as this is in an ultimate requirement for the successful completion of the WSDP.



Appendix A

Water Services Development Plan (WSDP)

Preliminary Project Planning List

	Project Info Source	Project Name	Project Description	Proje	ated Total ect Cost tl. VAT)
1	DWS: Projects GDB & MMM Current Projects and Budget & Drought Relief Fund Projects	Maselspoort Water Treatment Works (WTW) Upgrade & Refurbishment: Phase 1 (Conventional Treatment - to 60Ml/day)	Contract 1- Plant A: Filters, Washwater sump (Contract W1515)	R 3	34 407 500
2	DWS: Projects GDB & MMM Current Projects and Budget	Maselspoort Water Treatment Works (WTW) Upgrade & Refurbishment: Phase 2 (Advanced Treatment - to 70MI/day)	Centract 2 - Plant A: Interworks, Low Lift PS, Post Chlorination, Dzone, GAC Filter, Ultra Filtration, Access Road (W1515A) Centract 3 - Plant B: Bulk Elec, SCADA, Low Lift PS, Ozone, GAC Fitration, Ultra Filtration (W1515B) Cantract 4 - Plant A: Liquid Oxygen (Lou) Procurrent and Supply Centracts 5 - Plant A: Ganular Artivated Carlon (GAC) Procurents at a Supply	R 33	36 606 520
3	DWS: Projects GDB & MMM Current Projects and Budget	Maselspoort Water Treatment Works (WTW) Upgrade & Refurbishment: Phase 3 (Conventional Treatment - to 137MI/day)	Contract 6 - Plant A & B: Clarifiers, Pre-Chlorination, RGS Filters, Wash Water Sump	R 6	61 037 500
4	DWS: Projects GDB & MMM Current Projects and Budget	Maselspoort Water Treatment Works (WTW) Upgrade & Refurbishment: Phase 4 (Conventional Treatment - to 137Ml/day)	Contract 7 - Plant A & B: Ozone, GAC Filtration, Hydrogen Peroxide, Clearwater Tank, DAF, Sludge, Access Road Contract 8 - Plant A & B: Ozone, GAC Filtration, Ultra Filtration, DAF, Sludge, Post Chlorination	R 46	69 937 500
5	DWS: Projects GDB & MMM Current Projects and Budget DWS: Projects GDB & MMM Current	Maselspoort Re-Use Pipeline: Phase 1A	NE WWTW To Mockes Dam - 45MI/day	R 8	84 520 000
6	Projects and Budget DWS: Projects GDB & MMM Current	Maselspoort Re-Use Pipeline: Phase 1B	NE WWTW To Mockes Dam - 45MI/day		09 125 000
7	Projects and Budget DWS: Projects GDB	Maselspoort Re-Use Pipeline: Phase 2 Chlorination - Installation at Uitkyk (Bloemwater)	Bloemspruit WWTW to NE WWTW - 22.5Ml/day Chlorination - Installation at Uitkyk (Bloemwater)		36 880 000 3 000 000
10	DWS: Projects GDB DWS: Projects GDB	Chlorination - In line monitoring (Bloemwater) Mangaung RBIG Phase 4 to 4	Chlorination - In line monitoring (Bloernwater) Mangaung RBIOF PhJ Upgrade WWJUpgrade Maselspoort pumpstation, Ph2 Construct new bulk pipeline/new reservoir Naval Hill, Ph3 Upgrade pipeline to Longridge/JHP P/S/ New reservoir at Brandkop/Longridge, Ph4 Upgrade Nov-Transfer Scheme	R 40	1 300 000
11	DWS: Projects GDB	Replacement of asbestos pipes and drilling and equipping three new boreholes in Wepener	Upgrade Noto-Transfer Schme The project sull reliant the following: Replacing 11km of asbestori pipes to uPVC medium pressure pipelenine in Vegener - Drilling of three new boreholes that have been sited from a recent study and equipping them Uma a total of 1300m obeline. The project will enait the following: Replacing 5.5km of asbestos pipes to uPVC medium pressure pipelines - The project will enait the following: Replacing 5.5km of asbestos pipes to uPVC medium pressure pipelines -	R	7 656 000
12	DWS: Projects GDB	Replacement of asbestos pipes and equipping a borehole in Dewersdorp	equipping an existing borehole - Lying a total of 300m of pipeline from borehole to the existing 0.5MI water tank	R	4 416 500
	DWS: Projects GDB DWS: Projects GDB	Botshabelo 8ML Reservoir Rising main - Rehab/upgrade capacity of Welbedaght supply	Construction of an 8ML concrete reservoir, access road and control chamber. Steel Pipeline from Leeuwkop to Brandkop (33.7km)		48 000 00 66 800 00
15	DWS: Projects GDB DWS: Projects GDB	Naledi LM Borehole Development Morojaneng/Dewetsdorp: Elevated tank and interlinking pipeline	Construction of 3 new boreholes - Thapelong, Construction of 3 new boreholes - Dewetsdorp, Construction of 3 new boreholes - Weepener Morojaneng/Dewetsdorp: Elevated tank and interlinking pipeline	R	902 80
17	DWS: Projects GDB	Dewetsdorp:150 hholds due to dysfunctional Raw sewerage pump station	Dewetsdorp: 150 households due to dysfunctional Raw sewerage pump station (RSPS).	R	2 000 001
19	DWS: Projects GDB DWS: Projects GDB	Rustfontein: Pump set installation - Additional pump set Pump sets-Service of Welbedacht pump sets, switchgear	Pump set installation - Additional pump set at Rustfontein Pump sets - Service of Welbedacht pump sets and switchgear		10 960 000
	DWS: Projects GDB DWS: Projects GDB	Altitude valves - Service of all Bermad valves Dewetsdorp Scheme 2	Altitude valves - Service of all Bermad valves Construction of the connection line from the BloemWwater supply line inc power supply upgrade	R	8 000 000
	DWS: Projects GDB	Refurbishment of Sewer Systems: Refurbishment for a period of 3 years	Refurbishment of wwtw, Refurbishment of bulk sewer pipes, Refurbishment of Vista Park sewer		20 000 000
23	DWS: Projects GDB	Soutpan: Upgrading of bulk water supply and treatment works (297) - reservoir, water treatment plant, pumpisation	Soutpan: Upgrading of bulk water supply and treatment works (297) - reservoir, water treatment plant, pumpstation		22 010 016
24	WCDM Strategy	Water System Management: Integration and Optimisation - Telemetry and SCADA	Based on feasibility study report Intrusive investigation and renaic of the 20km x 2. Maselsonort feeder lines as per Dec 2015 proposed scope of		14 000 000
	MMM Drought Relief Fund Projects	Maselspoort Bloemfontein Rising Main Condition Assessment and Leak Detection and Repair	Intrusive investigation and repair of the 20km x 2. Maselspoort feeder lines as per Dec 2015 proposed scope of works.	R	1 100 000
	MMM Drought Relief Fund Projects	Old and New Arboretum Reservoir Leak Repair	Reservoir leak detection and sealant	_	
27	MMM Drought Relief Fund Projects MMM Drought Relief Fund Projects &	Hamilton Park Pump Station Refurbishment Bulk Supply Meters Audit, Verification Study, Calibration and Installation	Refurbishment of old pumpset and pipework (As per PED report) Study and Field Assessment to identify, locate bulk supply meter positions and installations		18 327 000
	WCDM Strategy MMM Drought Relief Fund Projects	Bulk Supply Meters Location, Replacement, Calibration and Installation of	Execution of the study recommendation		8 000 000
	DWS: Projects GDB & Drought Relief	Control Meters Pressure and Network Zone Management (including auditing of valves and PRV	Pressure Management Programme and PRV Commissioning		
30	Fund Projects & WCDM Strategy DWS: Projects GDB & Drought Relief	Commissioning)	Network Zoning and Zoning Meters and Management of Meter Zones (SANS 10306:2010) Illegal Consumption Reduction Programme: Identification of largest illegal consumption zones.		11 700 000
31	Fund Projects & WCDM Strategy	Pro-Active Leak Detection & Repair Programme	Service connections and pipelines including visible and non visible leaks.	R 2	22 125 75
	MMM Drought Relief Fund Projects	Purchase of leak detection devices, tools, equipment & vehicles	Service connections and pipelines including visible and non visible leaks.		15 000 000
33	MMM Drought Relief Fund Projects MMM Drought Relief Fund Projects &	Refurbishment Infrastructure (Pipelines)	Hoofweg, Maroela, Slabbert	R 2	21 000 000
	WCDM Strategy & MMM Current Projects and Budget MMM Drought Relief Fund Projects &	Condition Assessment Programme Development (Phased Approach)	Desktop study, focussing on critical areas, non-intrusive and determine value for money pipe replacement		10 000 000
35	WCDM Strategy MMM Drought Relief Fund Projects &	Pipe Replacements	Design and execution of identified pipe replacements (following phase a) Review of billing programme. Implementation of automated and billing programme in support to finance.	R 1	15 000 000
36	WCDM Strategy	Meter Monitoring & Top Consumer ID (Billing Programme)	Top Consumers ID and Meter Monitoring Programme	R	6 166 759
37	MMM Drought Relief Fund Projects & WCDM Strategy MMM Drought Relief Fund Projects &	Installation of meters on unmetered connections and metering of informal settlements	Installation of Meters on Unmetered Connections and New Connections including informal settlements		15 317 044
38	WCDM Strategy MMM Drought Relief Fund Projects &	Prepaid Programme (Automated meters)	Installation of prepaid meters Domestic Meter Replacement and Relocations	R 1	11 007 374
39	WCDM Strategy	Replace Water Meters	Large Meter Replacements Communal Stand Meter Installations and Replacement	R	7 815 600
40	MMM Drought Relief Fund Projects & WCDM Strategy MMM Drought Relief Fund Projects &	Consumer Awareness and Education Programmes	Public awarenes campaign, school visits, media etc (similar to previous successfull program)		5 000 000
41	WCDM Strategy	Fire hydrants (Auditing, locking and repair etc)	Audit, identify the required required to prevent illegal abstraction and repair leaking fire hydrants		1 000 000
42	MMM Current Projects and Budget	REFURBISHMENT OF SEWER SYSTEMS - Bloemfontein WATERBORNE SANITATION(LEANER SHIPS)	REFURBISHMENT OF SEWER SY WATERBORNE SANITATION/LEA	R 2 P	25 000 000
_	MMM Current Projects and Budget	REFURBISHMENT OF WWTW'S	REFURBISHMENT OF WWTW'S	R 1	10 000 000
45	MMM Current Projects and Budget				
		EXTENSION BOTSHABELO WWTW	EXTENSION BOTSHABELO WWTW	R 55	
46	MMM Current Projects and Budget	EKTENSION BOTSHABELO WWTW EKTENSION THBA NCHU WWTW (SELOSESHA)	EXTENSION BOTSHABELO WWTW EXTENSION THBA NCHU WWTW		56 600 000
				R 12	56 600 000 26 500 000
47	MMM Current Projects and Budget	D/TENSION THBA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAIN SEWER	EXTENSION THEA NOHU WWTW Sterlwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAIN SEWER	R 12 R 17	56 600 000 26 500 000 75 000 000
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47 48 49 50 51 52	MMM Current Projects and Budget MMM Current Projects and Budget MMM Current Projects and Budget MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN BOTSH	EXTENSION THBA NGHU WWTW Sterkwater WWTW Phase 3: GWI, Mechanical and Electrical RAYTON MAIN SEWER WATERDORNE SANI INTER BULK SERV IN MMMM WATERDORNE SANI INTER BULK SERV IN BOTSH	R 12 R 17 R 2 R 3 R 3	56 600 000 26 500 000 75 000 000 20 610 280 34 455 010 30 046 030 61 288 450 500 00
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47 48 49 50 51 52 53 54 55	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAIN SEWER WATEBOORKE SANI INTER BULK SERV IN MMMM WATERBORKE SANI INTER BULK SERV IN BOTSH WATERBORKE SANI INTER BULK SERV IN THABA REFURBISHMENT SEVER SYSTEMS IN SOUTPAN REFURBISHMENT SYSTEMS VAN STADENSRUS REFURB OF SEWER SYSTEMS VAN STADENSRUS	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 2: Civil, Mechanical and Electrical RAYTON MAN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN BOTSH WATERBORNE SANI INTER BULK SERV IN THABA REFURBISHMENT SEWER SYSTEMS IN SOUTAN EFURB SEVER SYSTEMS SUM STADENSRUS REFURB OF SEWER SYSTEMS IN WEPENER	R 12 R 17 R 2 R 3 R 3 R 6 R R R R	56 600 00 26 500 00 75 000 00 20 610 28 34 455 01 30 046 03 61 288 45 500 00 500 00 7 798 46 500 00
47 48 49 50 51 52 53 54 55 56	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3. Civil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORKE SANI INTER BULK SERV IN MMMM WATERBORKE SANI INTER BULK SERV IN BOTSH WATERBORKE SANIT INTER BULK SERV IN THABA REFURBISHENT SEVER SYSTEMS SOUTPAN REFURBISHENT SYSTEMS VAN STADENSRUS REFURB OF SEWER SYSTEMS IN WEPENER REFURB OF SEWER SYSTEMS IN DE WETSDORP	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 2: Civil, Mechanical and Electrical RAYTON MAIN SEWER WATEBOORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MADA REFURBISHMET SUBVERSTEIN IN SOUTPAN REFURBISHMET SUBVER SYSTEMS IN SOUTPAN REFURB OF SEWER SYSTEMS IN WEPPINER REFURB OF SEWER SYSTEMS IN WEPPINER REFURB OF SEWER SYSTEMS IN WEPPINER	R 12 R 17 R 2 R 3 R 3 R 6 R 6 R 7 R 7 R 7 R 7 R 7 R 7 R 7 R 7 R 7 R 7	56 600 00 26 500 00 75 000 00 20 610 28 34 455 011 30 046 03 51 288 45 500 00 500 00 7 798 464 500 00 55 000 00
47 48 49 50 51 52 53 54 55 56 57 58	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN BOTSH WATERBORNE SANI INTER BULK SERV IN BOTSH EFFURBISHMENT SEWER SYSTEMS IN SOUTPAN REFURB SEWER SYSTEMS VIN STADENSRUS REFURB OF SEWER SYSTEMS IN DE WETSDORP REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bloemfontein	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 3: Ovil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MMMM RATEBORNE SANI INTER BULK SERV IN MMMM REFURBORMENT SEWER SYSTEMS IN SOUTPAN REFURBORMENT SEWER SYSTEMS IN SOUTPAN REFURB OF SWER SYSTEMS IN SOUTPAN REFURB OF SWER SYSTEMS IN MEEPENE REFURBORMENT OF WATER SUPPLY SYSTEMS - Bloenfontein	R 12 R 17 R 2 R 3 R 3 R 3 R 3 R 3 R 3 R 3 R 3 R 3 R 3	56 600 000 26 500 000 75 000 000 20 610 28 34 455 011 30 046 03 61 288 45 500 00 500 00 7 798 464 500 00 55 000 00 1 000 000 1 000 000
47 48 49 50 51 52 53 54 55 56 57 58 59	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NOHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3. Civil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMMM WATERBORNE SANI INTER BULK SERV IN BOTSH WATERBORNE SANI INTER BULK SERV IN BOTSH REFURBSOR SANIT INTER BULK SERV IN THABA REFURBSOR SANIT INTER BULK SERV IN THABA REFURBSOR SEVER SYSTEMS IN SOUTPAN REFURB OF SEVER SYSTEMS IN SOUTPAN REFURBSOR SEVER SYSTEMS IN WEPENER REFURBSOR SEVER SYSTEMS IN WEPENER REFURBSOR SEVER SYSTEMS IN WEPENER REFURBSOR MENT OF WATER SUPPLY SYSTEMS - Bochabelo REFURBSORMENT OF WATER SUPPLY SYSTEMS - Wepener	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 3: Ovil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MMMM RATERBORNE SANI INTER BULK SERV IN MMMM REFURBORNE SANI INTER BULK SERV IN THABA REFURBORNENT SEWER SYSTEMS IN SOUTPAN REFURBORSER SYSTEMS IN SOUTPAN REFURBORSER SYSTEMS IN WEPENER REFURBOR SEWER SYSTEMS IN WEPENER REFURBORMENT OF WATER SUPPLY SYSTEMS - Bloenfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - MEDIORE	R 17 R 17 R 2 R 3 R 3 R 4 R R R R R R R R R R R R R R R R R R	56 600 00000 26 500 000 000 000 000 000 000 000 000 00
47 48 49 50 51 52 53 54 55 56 57 58 59 60	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MANN SEWER WATEBOORKE SANI INTER BULK SERV IN MMMM WATERBORKE SANI INTER BULK SERV IN BOTSH WATERBORKE SANI INTER BULK SERV IN HADA REFURBSHMENT SEVER SYSTEMS IN SOUTPAN REFURBS OF SEVER SYSTEMS IN SOUTPAN REFURBS OF SEVER SYSTEMS IN DE WETSDORP REFURBSONENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBSHMENT OF WATER SUPPLY SYSTEMS - Bothabelo REFURBSHMENT OF WATER SUPPLY SYSTEMS - Wepener REFURBSHMENT OF WATER SUPPLY SYSTEMS - Wepener REFURBSHMENT OF WATER SUPPLY SYSTEMS - Wepener REFURBSHMENT OF WATER SUPPLY SYSTEMS - Wepener	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MANN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN BOTSH WATERBORNE SANI INTER BULK SERV IN BOTSH WATERBORNE SANI INTER BULK SERV IN BOTSH RATURBORNE SANI INTER BULK SERV IN HABA REFURBS SEVER SYSTEMS IN KOUTDAN REFURBS OF SEWER SYSTEMS IN KOPENER REFURB OF SEWER SYSTEMS IN DE WETSOORP REFURBSIMMENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBSHMENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBSHMENT OF WATER SUPPLY SYSTEMS - MEDIA	R 17 R 17 R 2 R 3 R 3 R 6 R R R R R R R R R R	56 600 000 000 000 000 000 000 000 000 0
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NOHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3. Civil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMMM WATERBORNE SANI INTER BULK SERV IN BOTSH WATERBORNE SANI INTER BULK SERV IN BOTSH REFURBSOR SANIT INTER BULK SERV IN THABA REFURBSOR SANIT INTER BULK SERV IN THABA REFURBSOR SEVER SYSTEMS IN SOUTPAN REFURB OF SEVER SYSTEMS IN SOUTPAN REFURBSOR SEVER SYSTEMS IN WEPENER REFURBSOR SEVER SYSTEMS IN WEPENER REFURBSOR SEVER SYSTEMS IN WEPENER REFURBSOR MENT OF WATER SUPPLY SYSTEMS - Bochabelo REFURBSORMENT OF WATER SUPPLY SYSTEMS - Wepener	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 3: Ovil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MMMM RATERBORNE SANI INTER BULK SERV IN MMMM REFURBORNE SANI INTER BULK SERV IN THABA REFURBORNENT SEWER SYSTEMS IN SOUTPAN REFURBORSER SYSTEMS IN SOUTPAN REFURBORSER SYSTEMS IN WEPENER REFURBOR SEWER SYSTEMS IN WEPENER REFURBORMENT OF WATER SUPPLY SYSTEMS - Bloenfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - MEDIORE	R 17 R 17 R 2 R 3 R 3 R 6 R R R R R R R R R R R R	56 600 000 000 000 000 000 000 000 000 0
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 61 62	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3. Civil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORKE SANI INTER BULK SERV IN MMMM WATERBORKE SANI INTER BULK SERV IN BOTSH WATERBORKE SANI INTER BULK SERV IN THABA REFURBISHENT SKERR SYSTEMS IN SOUTPAN REFURB OF SEWER SYSTEMS IN SOUTPAN REFURB OF SEWER SYSTEMS IN WEPENER REFURB OF SEWER SYSTEMS IN DE WETSDORP REFURBISHENENT OF WATER SUPPLY SYSTEMS - Bolomfontein REFURBISHENENT OF WATER SUPPLY SYSTEMS - Bolomfontein REFURBISHENT OF WATER SUPPLY SYSTEMS - Bolomfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bolomfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bolomfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Devetudorp REFURBISHMENT OF WATER SUPPLY SYSTEMS - Devetudorp	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 2: Civil, Mechanical and Electrical RAYTON MAIN SEWER WATEBOORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MMAMM RATERBORNE SANI INTER BULK SERV IN MABAR REFURBIS SANIT BITER BULK SERV IN THABA REFURBISHENT SERVEN SIS OUTPAN REFURB OF SEWER SYSTEMS IN WEPENER REFURB OF MATER SUPPLY SYSTEMS - Bloemfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Negener REFURBISHMENT OF WATER SUPPLY SYSTEMS - Dewetsdorp REFURBISHMENT OF WATER SUPPLY SYSTEMS - VANIAD REFURBISHMENT OF WATER SUPPLY SYSTEMS - VANIAD REFURBISHMENT OF WATER SUPPLY SYSTEMS - Dewetsdorp REFURBISHMENT OF WATER SUPPLY SYSTEMS - VANIAD REFURBISHMENT OF WATER SUPPLY SYSTE	R 17 R 17 R 2 R 3 R 3 R 3 R 6 R R R R R R R R R R R R R R R R R	556 600 000 000 000 000 000 000 000 000
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical BAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN BOTSH WATERBORNE SANI INTER BULK SERV IN BOTSH REFURBSHENT SEWER SYSTEMS IN SOUTPAN REFURBS SERVER SYSTEMS IN WEPENER REFURB OF SEWER SYSTEMS IN WEPENER REFURBSONEENT OF WATER SUPPLY SYSTEMS - Boemfontein REFURBSHENT OF WATER SUPPLY SYSTEMS - Wanstadensrus REFURBSHENT OF WATER SUPPLY SYSTEMS - Devestdorp REFURBSHMENT OF WATER SUPPLY SYSTEMS - Devestdorp REFURBSHMENT OF WATER SUPPLY SYSTEMS - Vanstadensrus REFURBSHMENT OF WATER SUPPLY SYSTEMS - Vanstadensrus	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 3: Ovil, Mechanical and Electrical BAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MADA REFURBSHENT SEWER SYSTEMS SIN SOUTPAN REFURBSON SANIT WER NUM STADEKRUS ESFURB OF SEWER SYSTEMS IN WEPPINER REFURB OF SEWER SYSTEMS IN WEPPINER REFURB OF SEWER SYSTEMS IN DE WETSOORP REFURBIONENT OF WATER SUPPICY SYSTEMS - Bloemfontein REFURBIONENT OF WATER SUPPICY SYSTEMS - Devectoorp REFURBIONENT OF WATER SUPPICY SYSTEMS - Soutpan	R 17 R 17 R 2 R 3 R 3 R 3 R 6 R R R R R R R R R R R R R R R R R	556 600 000 26 500 000 20 610 288 45 500 000 500 000 500 000 500 000 500 000 1 000 000 1 0000 1 0000 1 0000 1 0000 1 0000 1 0000 1 0000 1 0000 1 000
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical BAYTON MAIN SEWER WATERBORKE SAN INTER BULK SERV IN MMMM WATERBORKE SAN INTER BULK SERV IN BOTSH WATERBORKE SAN INTER BULK SERV IN BOTSH WATERBORKE SANS INTER BULK SERV IN THABA REFURBISHMENT SEWER SYSTEMS IN SOUTPAN REFURB SEVER SYSTEMS IN WEPENER REFURB SEVER SYSTEMS IN WEPENER REFURB SEVER SYSTEMS IN DE WETSDORP REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bloemfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Thaba Nchu REFURBISHMENT OF WATER SUPPLY SYSTEMS - Soutpan REFURBISHMENT OF WATER SUPPLY SYSTEMS - SOUT	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 3: Gvil, Mechanical and Electrical BAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN THABA REFURBISHMENT SEWER SYSTEMS SIN SOUTPAN REFURBISHMENT SEWER SYSTEMS IN WEPPINER REFURBISHMENT OF WATER SUPPINY SYSTEMS - Bloenfontein REFURBISHMENT OF WATER SUPPINY SYSTEMS - Noveldop REFURBISHMENT OF WATER SUPPINY SYSTEMS - Vanitadetisrus REFURBISHMENT OF WATER SUPPINY SYSTEMS - Soulpan BOTSHABELO INTERNAL BULK WATER[PPELNE]	R 12 R 17 R 2 R 3 R 4	556 600 000 775 000 000 200 610 288 45 300 46 03 30 000 500 000 1 000 000 1 000 000 1 000 000 1 000 000
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN BOTSH WATERBORNE SANI INTER BULK SERV IN BOTSH REFURBSONE SANI INTER BULK SERV IN THABA REFURBSONE SANI THER BULK SERV IN THABA REFURBSONE STATEMS IN DEVENTR REFURBSONE SYSTEMS IN DEVENTR REFURBSONENT OF WATER SUPPLY SYSTEMS - Bloenfontein REFURBSONENT OF WATER SUPPLY SYSTEMS - Bloenfontein REFURBSONENT OF WATER SUPPLY SYSTEMS - Botshabelo REFURBSONENT OF WATER SUPPLY SYSTEMS - Botshabelo REFURBSONENT OF WATER SUPPLY SYSTEMS - WEIGHONE REFURBSONENT OF WATER SUPPLY SYSTEMS - WEIGHONE REFURBSONENT OF WATER SUPPLY SYSTEMS - Soutpan REFURBSONENT OF WATER SUPPLY SYSTEMS -	EXTENSION THBA NCHU WWTW Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAIN SEWER WATERBORNE SANI INTER BULK SERV IN MMMMM WATERBORNE SANI INTER BULK SERV IN MMMMM RATERBORNE SANI INTER BULK SERV IN MMMMM RATERBORNE SANI INTER BULK SERV IN TMABA ESFURBSIMENT SEWER SYSTEMS IN SOUTPAM REFURBSEMENT SEWER SYSTEMS IN SOUTPAM REFURB SEVER SYSTEMS IN WEPENER REFURB CSEWER SYSTEMS IN WEPENER REFURBSEMENT OF WATER SUPPLY SYSTEMS - Bolemfontein REFURBSEMENT OF WATER SUPPLY SYSTEMS - Wepener REFURBSEMENT OF WATER SUPPLY SYSTEMS - Wepener REFURBSEMENT OF WATER SUPPLY SYSTEMS - Ventatedorpus REFURBSEMENT OF WATER SUPPLY SYSTEMS - Soutpan BOTSHABELO NTERNAL BULK WATER(PPELNE) WATER NETWORKS TO STANDS	R 11 R 2 R 3 R 3 R 6 R R R R R R R R R R R R R R R R R R	56 600 000 000 26 500 000 000 000 20 610 28 455 0110 28 455 010 500 000 000 000 500 000 000 000 500 000 000 000 1 000 0000 000 1 000 000 000 000 1 000 000 000 000 1 000 000 000 000 1 000 000 000 000 2 000 000 000 2 000 000 000
47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical BAYTON MAIN SEWER WATERBORKE SANI INTER BULK SERV IN MMMM WATERBORKE SANI INTER BULK SERV IN BOTSH WATERBORKE SANI INTER BULK SERV IN THABA REFURBISHMENT SERVER SYSTEMS IN SOUTPAN REFURBISHMENT SERVER SYSTEMS IN SOUTPAN REFURBISHMENT SERVER SYSTEMS IN DE WETSDORP REFURBISHMENT OF WATER SUPPLY SYSTEMS - Botshabelo REFURBISHMENT OF WATER SUPPLY SYSTEMS - Soutpan REFURBISHMENT OF WATER SUPPLY SYSTEMS - Develtdorp REFURBISHMENT OF WATER SUPPLY SYSTEMS - Soutpan BOTSHABLION TERNAL BULK WATER (IPPLINE) WATER NETWORKS TO STANOS NALEDI: REFURB OF WATER SUPPLY SYSTEMS SOUTPAN: REFURB OF WATER SUPPLY SYSTEMS SOUTPAN: REFURB OF WATER SUPPLY SYSTEMS MASELSPOORT WATER SUPPLY SYSTEMS	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 3: Oxil, Mechanical and Electrical RAYTON MAIN SEWER WATEBOORE SANI INTER BULK SERV IN MMMM WATEBOORE SANI INTER BULK SERV IN MMMM WATEBOORE SANI INTER BULK SERV IN MMMM RATEBOORE SANI INTER BULK SERV IN MAMMA RATEBOORE SANI INTER BULK SERV IN THABA REFURBENHENT SEWER SYSTEMS IN SOUTAN REFURB OF SEWER SYSTEMS IN WEPENER REFURB OF SEWER SYSTEMS IN WEPENER REFURB OF SEWER SYSTEMS IN WEPENER REFURB OF SEWER SYSTEMS IN DE WETSOORP REFURBISHMENT OF WATER SUPPLY SYSTEMS - Boenfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Soutpan BOTSHABLEN REFUR SUER SUFFLY SYSTEMS - Soutpan BOTSHABLEN NET OF WATER SUPPLY SYSTEMS - Soutpan BOTSHABLEN NET OF WATER SUPPLY SYSTEMS - Soutpan BOTSHABLEN NET OF WATER SUPPLY SYSTEMS SUUTTAR: REFURB OF WATER SUPPLY SYSTEMS SUERS SUERS OF SOUTPAN	R 12 R 17 R 2 R 3 R 3 R 6 R 8 R 17 R 17 R 17 R 17 R 17 R 17 R 18 R 19 R 19 R 10 R 10	56 600 00000 26 500 0000 27 5000 0000 20 610 288 45 500 00 500 00 500 00 7 798 466 61 288 45 500 00 500 00 7 798 466 1 000 000 1 000 000 1 000 000 1 000 000 2 000 000 1 0000 1 0000 1
477 488 499 500 511 522 533 544 555 566 577 588 599 600 611 622 633 644 655 666 667 668	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAIN SEWER WATEBOORKE SANI INTER BULK SERV IN MMMM WATERBORKE SANI INTER BULK SERV IN BOTSH WATERBORKE SANI INTER BULK SERV IN HORSH REFURBS SANIT INTER BULK SERV IN THABA REFURBS SANIT INTER BULK SERV IN THABA REFURBS OF SEVER SYSTEMS IN SOUTPAN REFURBS OF SEVER SYSTEMS IN MEPENER REFURB OF SEVER SYSTEMS IN DE WETSDORP REFURBSONENT OF WATER SUPPLY SYSTEMS - Biotenfontein REFURBSONENT OF WATER SUPPLY SYSTEMS - Bothabelo REFURBSONENT OF WATER SUPPLY SYSTEMS - Bothabelo REFURBSONENT OF WATER SUPPLY SYSTEMS - Devetsdorp REFURBSONENT OF WATER SUPPLY SYSTEMS - Soutadensus REFURBSONENT OF WATER SUPPLY SYSTEMS - SOUTAALE SUPPLY	EXTENSION THBA NOHU WWTW Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MAN SEWER WATEBOORNE SANI INTER BULK SERV IN MMMM WATEBOORNE SANI INTER BULK SERV IN BOTSH REFURBS OF SAVER SYSTEMS IN SOUTPAN REFURBS OF SAVER SYSTEMS IN SOUTPAN REFURB OF SAVER SYSTEMS IN BOTSH REFURB OF SAVER SYSTEMS IN BOTSH REFURB OF SAVER SYSTEMS IN BOTSH REFURBSHMENT OF WATEB SUPPLY SYSTEMS - Bloemfontein REFURBSHMENT OF WATEB SUPPLY SYSTEMS - Develsdorp REFURBSHMENT OF WATEB SUPPLY SYSTEMS - Develsdorp REFURBSHMENT OF WATEB SUPPLY SYSTEMS - Soutpan BOTSHABLO INTERNAL BULK WATER(IPPELINE) WATEB NETBORNES TO STANDS NALEDI. REFURB SOF WATEB SUPPLY SYSTEMS - SOUTPAN	R 12 R 17 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1	56 600 00000 26 500 000 0000 20 610 288 455 011 30 46 033 34 455 011 288 455 500 000 500 000 7 798 466 500 000 7 798 466 1 000 000 1 000 000 1 000 000 550 00 000 500 000 500 000 2 000 000 2 000 000 1 000 000 500 0000 500 000 500 0000 500 0000
477 488 499 500 511 522 533 544 555 566 577 588 599 600 611 622 633 644 655 666 677 688 699	MMM Current Projects and Budget MMM Current Projects and Budget	EXTENSION THEA NCHU WWTW (SELOSESHA) Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MANN SEWER WATEBOORKE SANI INTER BULK SERV IN MMMMM WATERBORKE SANI INTER BULK SERV IN BOTSH WATERBORKE SANI INTER BULK SERV IN MOTABA REFURBSHMENT SEVER SYSTEMS IN SOUTPAN REFURBS OF SEVER SYSTEMS IN SOUTPAN REFURBS OF SEVER SYSTEMS IN DE WETSDORP REFURBSON FOR WATER SUPPLY SYSTEMS - Biotemfontein REFURBSHMENT OF WATER SUPPLY SYSTEMS - Biotemfontein REFURBSHMENT OF WATER SUPPLY SYSTEMS - Bothabelo REFURBSHMENT OF WATER SUPPLY SYSTEMS - Develtdorp REFURBSHMENT OF WATER SUPPLY SYSTEMS - Soutpan BEFURBSHMENT OF WATER SUPPLY SYSTEMS - Soutpan REFURBSHMENT OF WATER SUPPLY SYSTEMS - Soutpan BEFURBSHMENT OF WATER SUPPLY SYSTEMS - SOUTPAN REFURBSHMENT OF WATER SUPPLY SYSTEMS - SOUTPAN REFURBSHMENT OF WATER SUPPLY SYSTEMS - SOUTPAN REFURBSHMENT OF WATER SUPPLY SYSTEMS - SOUTPAN REFURB ON TERNAL BULK WATER(PIPELINE) WATER NETWORKS TO STANDS DALED: REFURB OF WATER SUPPLY SYSTEMS - SOUTPAN: REFURB OF WATER SUPPLY SYSTEMS SOUTPAN: REFURB OF WATER SUPPLY SYSTEMS - SOUTPAN MASELSFOOTT WATER RUPPLY CARE FOR USAFINITION () MASELSFOOTT WATER RUPPLY SYSTEMS - SOUTPAN MASELSFOOTT WATER RUPPLY SYSTEMS - SOUTPAN MASELSFOOTT WATER RUPPLY SYSTEMS - SOUTPAN SOUTPAN: REFURB OF WATER SUPPLY SYSTEMS	EXTENSION THEA NOHU WWTW Sterkwater WWTW Phase 3: Civil, Mechanical and Electrical RAYTON MANN SEVER WATERBORNE SANI INTER BULK SERV IN MMMM WATERBORNE SANI INTER BULK SERV IN MOMMM WATERBORNE SANI INTER BULK SERV IN INTABA REFURBOR SANI INTER BULK SERV IN THABA REFURBISHMENT SEVER SYSTEMS IN SOUTPAN REFURB OF SEVER SYSTEMS IN MEPONER REFURB OF SEVER SYSTEMS IN MEPONER REFURBOR OF SWER SYSTEMS IN DE WETSOORP REFURBISHMENT OF WATER SUPPLY SYSTEMS - Bloenfontein REFURBORMENT OF WATER SUPPLY SYSTEMS - Bloenfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Boonfontein REFURBISHMENT OF WATER SUPPLY SYSTEMS - Soutpan BOTSHABLD IN FREMAL BULK WATERPIELEPIEL WATER REFURB OF WATER SUPPLY SYSTEMS - Vandademuna REFURBISHMENT OF WATER SUPPLY SYSTEMS - Soutpan BOTSHABLD ON KERR SUPPLY SYSTEMS - Soutpan BOTSHABLD OF WATER SUPPLY SYSTEMS - SOUTPAN : SOUTPAN : REFURB OF WATER SUPPLY SYSTEMS - SOUTPAN : SOUTPAN : REFURB OF WATER SUPPLY SYSTEMS - SOUTPAN : SOUTPAN : REFURB OF WATER SUPPLY SYSTEMS - SOUTPAN : SOUTPAN : REFURB OF WATER SUPPLY SYSTEMS - SOUTPAN : SOUTPAN : REFURB OF WATER SUPPLY SYSTEMS - SOUTPAN : SOUTPAN : REFURB OF WATER SUPPLY SYSTEMS - SOUTPAN : SOUTPAN : REFURB OF WATER SUPPLY SYSTE	R 12 R 17 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1 R 1	56 600 00000 75 000 00000 70 000 00000 70 000 00000 70 000 00000 50 000 1000 00000 1000 00000 1000 0000 1000 000 1000 0000 1000 00000 1000 0000 1000 0000 100000 100000 100000 100000 100000 100000 100000 100000 1000000 1000000 1000000 10000000 100000000
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74	Water Masterplan	Brandkop New Reticulation Pipeline to Connect Brandkop Reservoir to New Brandkop Reservoirs as supplementary storage/supply	Brandkop New Reticulation Pipeline to Connect Brandkop Reservoir to New Brandkop Reservoirs as supplementary storage/supply	R	49 945 733
75	Water Masterplan	New Distribution Zones: Brandkop New Reticulation Pipeline	New Infrastructure Required to Incorporate New Distribution Zones: i.e. Water will not be supplied directly from Welbedacht Reservoir anymore but from the new Brandkop Reservoirs Network Upgrades to Incorporate New Uschnutoin Zones: I.e. Water will not be supplied directly from	R	13 718 886
76	Water Masterplan	New Distribution Zones: Brandkop Reticulation Pipeline Upgrades	Network of logitates in uncapitate Veter advances and and an advances in the veter veter veter in this de supprese unclession nome. The veter ve	R	7 695 178
	Water Masterplan	New Distribution Zones: Brandkop New Reticulation Pipeline	from Weibedacht Keservoir anymore but from the new Brandoop Keservoirs. Inis can be completed in a third place as these areas will still be able to receive water from the existing infrastructure as long as the first phase has been implemented. The new infrastructure is still required for the necessary capacity increases and unnorwed network distribution	R	6 101 833
	Water Masterplan Water Masterplan	Brandkop New Reticulation Pipeline - Long-Term Brandkop New Reticulation Pipeline - Long-Term Extensions to Reach Future	Brandkop New Reticulation Pipeline - Long-Term Brandkop New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansions	R	24 462 336 3 533 851
80	Water Masterplan	Gariep New Bulk Pipeline - Critical	Critical to address future demand and to supply water to Longridge Reservoirs and corresponding redefined	R	107 711 877
81	Water Masterplan	Longridge New Bulk Pipeline Critical and connecting pipework with new Longridge Reservoir No. 4 (30ME) and Longridge Reservoir No. 5 (30ME)	Critical to address increased demand of Longridge Reservoir distribution zones.	R	106 863 061
82	Water Masterplan	Longridge New Reticulation Pipeline - Long-Term	Critical to address increased demand of the northern Longridge Reservoir distribution zones. New route and	R	12 992 876
83	Water Masterplan	Longridge New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansions	increased capacity of distribution pipeline. Can be incorporated in a separate phase and is not dependant on the completion of L1. Supplies the northern Lonaridee Reservoir distribution zone.	R	6 462 059
84	Water Masterplan	Longridge New (Ø300mm) Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansions.	Large diameter (Ø300mm) reticulation pipeline. Supplies the southern Longridge Reservoir distribution zone.	R	15 466 856
85	Water Masterplan	New Distribution Zones: Groenviel New Connecting Bulk Pipeline with new Groenviel Reservoir No. 1 (21M8)	New Infrastructure Required to Incorporate New Distribution Zones: Le. Installation of new bulk supply pipeline in order to incorporate network redistribution for the new Goenwie Reservoir No.1 to get water from Webdockth. This redistribution will ensure that the Goenwie Neor north-easter additibution zone is not supplied from the Rayton Tower anymore but from Webdackt via Goenwie Reservoir No.2.	R	56 766 272
86 87	Water Masterplan Water Masterplan	Groenvlei New Reticulation Pipeline - Short-Term Groenvlei New Reticulation Pipelines - Long-Term Extensions to Reach Future	New Infrastructure Required to supply future developments. Can be incorporated in a next phase given that Gr1.1 is completed.	R	14 627 709 1 962 063
88	Water Masterplan	Development Expansions New Distribution Zones: Groenvlei Reticulation Pipeline Upgrades	Network Upgrades to Incorporate New Distribution Zones: i.e. The Groenviel lower north-eastern distibution	R	3 124 675
89	Water Masterplan	New Distribution Zones: New Groenviel Reservoir No. 2 (21M8)	Jame to not be supplied from the Rayton Tower anymore but from Webbedaht via Greenvie Reservoir No.1. New Inforstructure Repaired to incorpose Heem Distribution Socies: Lei Installation of Deve Goenviel Reservoir No.2 awhold will receive water from Webbedaht. This redistribution will ensure that the Greenviel north- western and south-western distribution zones are not supplied directly from Webbedaht Reservoir anymore but from Webbedaht and Soroenviel Reservoir No.2. This redistribution will further ensure that a portion of the Greenviel distribution zone is not supplied from the Rayton Tower anymore but from Webbedaht via Greenviel Reservoir No.2.	R	38 383 235
90	Water Masterplan	New Distribution Zone: Groenvlei New Reticulation Pipeline	New Infrastructure Required to Incorporate New Distribution Zones: Le. Incorporate network change and installation of new reticulation pipelines in order for the Groenviel north-western distibution zone to not be supplied directly from Welbedacht Reservoir anymore but from Welbedacht via Groenviel Reservoir No.2.	R	3 508 376
91	Water Masterplan	New Distribution Zones: Groenvlei Reticulation Pipeline Upgrades	Network Upgrudes to Incorporate New Distribution Zones, i.e. The Groenviel north-western distribution zone to not be supplied directly from the Welbeddacht Reservoir anymore but from Welbeddacht via Groenviel Reservoir No. This can be consequented in as scoold phase as these areas will still be able to receive water from the existing infrastructure as long as the first phase has been implemented. The upgrade in network is required for the necessary acquired vincenses to accouncidable invested bemand.	R	1 739 381
92	Water Masterplan	New Distribution Zones: Groenvlei Reticulation Pipeline Upgrades and A Small Section of New Connecting Reticulation Pipeline	review to objective in a Automatication of new currents in proceedings of proteins of under plane there and a solution of the particle of the Granum Head and the La Thirty in the the targeted in the target and the solution of the solution of the Granum Head and the solution of the solution of the plane has been implemented. The ungrade in new term of the existing indicatoructure as long as the first plane has been provided in the ungrade in the term of the existing indicatoructure as long as the first plane has been provided in the ungrade in the term of the registration of the the excession (categories the accession data and the under the ungrade in the term biothylation and and the uncorporate relevance thange and network the version of the uncorporate network in the under the uncorporate relevance thange and network the uncorporation of the uncorporate network thange and network and the uncorporate network is required to the uncorporate network thange and network the uncorporation of the uncorporate network thange and network and the uncorporate network is required to the uncorporate network thange and network and the uncorporate network is required to the uncorporate network thange and network and the uncorporate network is required to the uncorporate network thange and network and the uncorporate network is required to the uncorporate network thange and network and the uncorporate network is required to the uncorporate network thange and network and the uncorporate network than a solution to the term of the uncorporate network thange and network and the uncorporate network the uncorporate network thange and network and the uncorporate network the uncorporate network than a solution to the uncorporate network thange and network and the uncorporate network thange and the uncorporate network thange and network the uncorporate	R	10 276 457
93	Water Masterplan	New Distribution Zones: Groenvlei Reticulation Pipeline Upgrades	upgrades in order for a portion of the Groenviel distibution zone to not be supplied from the Rayton Tower anymore but from Welbedacht via Groenviel Reservoir No.2.	R	587 085
94	Water Masterplan	Groenvlei New Reticulation Pipelines - Long-Term Extensions to Reach Future Development Expansions	Can be incorporated in a separate phase depending on the development programme in the area.	R	1 001 278
95	Water Masterplan	New Distribution Zone: Groenvlei New Reticulation Pipeline	New Infrastructure Required to Incorporate New Distribution Zones: Le. Incorporate network change and installation of new reticulation pipelines: in order for a portion of the Groenviel distribution some to not be supplied directly from Welbedacht anymore but from Welbedacht via Groenviel Reservoir No.2.	R	1 150 872
96	Water Masterplan	New Distribution Zones: Groenvlei New Reticulation Pipeline	New Infrastructure Required to Incorporate New Distribution Zones: i.e. Incorporate network change and installation of new reticulation pipelines in order for the Groenviei south-western distibution zone to not be supplied directly from Welbedacht Reservoir anymore but from Welbedacht via Groenviei Reservoir No.2.	R	5 775 393
97	Water Masterplan	New Distribution Zones: Groenvlei Reticulation Pipeline Upgrades	Network Upgrades to incorporate New Distribution Zones: i.e. incorporate network change and network upgrades in order for the Groenbeit south-western distibution zone to not be supplied directly from Welbedacht Reservoir anymore but from Welbedacht via Groenvlei Reservoir No.2.	R	7 609 410
98	Water Masterplan	Groenvlei New Reticulation Pipeline - Long-Term	New Infrastructure Required to accommodate future developments. The new development will get water from Welbedacht via Groenvlei Reservoir No.2	R	2 932 685
99 100	Water Masterplan Water Masterplan	Groenvlei Reticulation Pipeline Upgrades to Accommodate Increase in Demand Groenvlei New Reticulation Pipelines - Long-Term Extensions to Reach Future	Increase capacity.	R	6 218 519 5 401 143
		Development Expansions	Can be incorporated in a separate phase depending on the development programme in the area. New Infrastructure Required to Incorporate New Distribution Zones: i.e. Incorporate network change and	к	
101	Water Masterplan Water Masterplan	New Distribution Zones: Heuwelsig Tower New Reticulation Pipeline New Distribution Zones: Naval Hill New Reticulation Pipeline	Installation of new reticulation pipeline in order for the Heuwekijs (Tower distibution zone to not be supplied from the Ravion Tower anymore 14 from the Heuwekijs Tower. New Infrastructure Required to Incorporate New Distribution Zones. The 700mm diameter pipeline has already been installed. Critical to make the connection for the distribution zones to receive water from the new Naval	R	369 755
	Water Masterplan	New Distribution Zones: Naval Hill New Bulk Pipeline and connecting pipework with new Naval Hill Reservoir No. 2 (35ME) and Naval Hill Reservoir No. 3 (130ME)	<u>Intervences</u> . New Instanticute requires to incorporate New Unstitution Zones. Network reduction to ensure that the Navai Nill upper north-western distribution zone (Lillywale, Wild Cillew and De Kooff) to not be supplied from Pertagon Park Reservoir argumere but from Massingouri via time we Navai Nill Reservoir No. 2 or No.3. This will further ensure that the Navai IIII northern distribution zone (Stratherm, Ricchwood and Oubol to not be supplied from the Partagon Park Reservoir anymore but from Massingouri via the Navai IIII Reservoir supplied from the Partagon Park Reservoir anymore but from Massingson via the new Navai IIII Reservoir	R	233 236 014
104	Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline with Naval Hill Balancing Reservoir (3M8)	New infrastructure Required to Incorporate New Distribution Zones: i.e. Incorporate network change and installation of new reticulation pipelines in order for the Naval Hill upper north-western distibution zone (Lillyvale, Wild Olive and De Klool) to not be supplied from Pentagon Park Reservoir anymore but from Masetsoport via the new Naval Hill Reservoir No.2 or No.3.	R	129 831 584
105	Water Masterplan	New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades	Network upgrades to incorporate New Justimution Jones I.e. Ine Nava Imin northern (ptrateary, Nuclewood and Ouboi) distilution Jone to not be upgible from the Persiden Jones Net Reservoir Amyrone but from Massingoor Va Ithe new Naval IIII Reservoir No.2 or No.3. This can be completed in a second phase as there are said Ittill be able to receive water from the existing informationaria end and the site of the phase has been implemented. The upgrade in network is required for the necessary capacity increases to accommodate compared famated.	R	5 843 000
106	Water Masterplan Water Masterplan	Naval Hill New Reticulation Pipeline - Long-Term Naval Hill New Reticulation Pipeline - Short-Term	New Infrastructure Required to accommodate future development areas from the SDF. New Infrastructure Required to accommodate possible short-term development based on development capacity analyses applications. The new development will get water from Maselspoort via the Naval Hill	R	1 486 466
108	Water Masterplan	Naval Hill New Reticulation Pipeline - Long-Term	Reservoirs New Infrastructure Required to accommodate future development areas from the SDF.	R	7 203 345
109	Water Masterplan	Naval Hill New Reticulation Pipeline - Cadastral Backlog	New reticulation pipelines required to accommodate Lakeside Development listed as a possible short-term development already captured on the latest cadastral information. New Infrastructure Required to Incorporate New Distribution Zones: Le. Incorporate network change and	R	10 625 336
110	Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline	Installation of new reticulation pipelines in order for the Naval Hill south-eastern distibution zone to not be supplied from Hamilton Park Reservoir anymore but from Maselspoort via the new Naval Hill Reservoir No.2 or No.3.	R	1 953 007
111	Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline	New Infrastructure Required to Incorporate New Distribution Zones: i.e. Incorporate network change and installation of new reticulation pipelines in order for the Naval Hill north-eastern distibution zone to not be supplied from Maselspoort directly anymore but from Maselspoort via the new Naval Hill Reservoir No.2 or No.3. A new reticulation connection on all also allow for the airport to not be supplied from Maselspoort directly.	R	7 757 822
			anymore but from Maselspoort via the new Naval Hill Reservoir No. 2 or No. 3.		
	Water Masterplan	New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades	anymore but from Maselspoort wit the new Yakol Hill Reserved: YA. 2 or YA. 3. Methends Liggrades to incomporte New Distribution Zones: L. The Naval Hill moth-eastern distribution tame to not be supplied from Maselspoort directly anymore but from Maselspoort wite the new Yakol Hill Reserved No. 2 or No.3. The Hill Science of the server to not be supplied from Maselspoort directly anymore but from Maselspoort with the new Yakol Hill Reserved No. 2 or YAO.3. This can be completed in a second place as these areas will still be able to receive water from the existing instructure as ito gas to the first hase has been implemented. The upgrade in network is required for the necessary capacity increases to accommodate increased demand.	R	32 082 449
112	Water Masterplan Water Masterplan	New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades New Distribution Zones: Naval Hill New Reticulation Pipeline (For Short-Term Developments)	anymore but from Maselspoort with the new Yakoli HIII Reservciv No. 2 or No. 3. Network Upgrades to Incorporate New Distribution Zones Le. The Naval HIII north-eastern distibution zone to not be supplied from Maselspoort directly anymore but from Maselspoort with the new Yakoli HIII Reservcir No. 2 e No.3. This will also allow for the airport to not be supplied from Maselspoort directly anymore but from Maselspoort directly anymore but from Maselspoort with the new Yakoli HIII Reservcir No. 2 e No.3. This will also allow for the airport to not be supplied from Maselspoort directly anymore but from Maselspoort the new Yakoli HIII Reservcir No. 2 or No.3. This can be completed in a second phase as these areas will all be able to receive water from the existing infrastructure as long as the first phase habe been increased demand. New Hindstructure Required to Incorporate New Distribution Zones: Le. Incorporate network change and installation of new reticulation ppelines in order for the Naval HIII north-eastern distribution and Estore area to not be supplied from Maselspoort directly anymore but from Maselspoort with the new Naval HIII on the new Yakoli HIII north-eastern distribution zones: Le. Incorporate network thange and Installation of new reticulation ppelines in order for the Naval HIII north-eastern distribution and Estore	R	32 082 449 7 542 713
112 113 114	Water Masterplan Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline (For Short-Term Developments) New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades (For Short- Term Developments)	ammore but from Maselspoort wit the new Yaxol Hill Reservcir No. 2 or No. 3. Network Lignarke to Incomposite New Ordinution Zones: L. The Naval Hill moth-eastern distlibution zone to not be supplied from Maselspoort directly amymore but from Maselspoort wite the new Yaxol Hill Reservcir No. 2 or No.3. This will also allow for her herport to note be supplied from Maselspoort directly amymore but from Maselspoort via the new Naval Hill Reservcir No. 2 or No.3. This can be completed in a second place as these areas will state allow for here there from the existing instructure as ito gas the first place has been implemented. The upgrade in network is required for the necessary capacity increases to accommodate increased demaid. New Infrastructure Required to Incorporate New Distribution Zones: Le Incorporate network change and installation of new reclustom ppelines in order for the Naval Hill Inth-the section distribution and Estorie	R R	7 542 713 8 407 156
112 113 114 115	Water Masterplan Water Masterplan Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline (For Short-Term Developments) New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades (For Short- Term Development Short) Naval Hill New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansions	ammore but from Maselspoort with the new Naval HIII Reservciv No. 2 or No. 3. Network Upgrades to Incorporate New Distribution Zones Le. The Naval HIII month-eastern distribution zone to not be supplied from Maselspoort directly ammore but from Maselspoort with the new Naval HIII Reservcir No. 2 or No.3. This will also allow for the amport to not be supplied from Maselspoort directly ammore but from Maselspoort and the new Valval HIII Reservcir No. 2 or No.3. This can be compared to the new Valval HIII Reservcir No.2 or No.3. This can be compared in the support of the new Valval HIII Reservcir No.2 or No.3. This can be compared in the support of the new Valval HIII Reservcir No.2 or No.3. This can be compared in the support of the support of the support of the new Naval HIII Reservcir Masel Statistical Compared in the North Statistical Compared and Statistical Compared New Infrastructure Resource to Incorporate New Distribution Zones: Le Incorporate network charge and Installation of new reluxal HIII Reservcir Valval HIII north-eastern distribution zone and Estoire ana to the supplied from Naselspoort directly anymore but from Maselspoort via the new Naval HIII Reservcir Upgrades to Incorporate New Distribution Zones: Le Incorporate network charge and Interview reluxalston policies in order for the Naval HIII onthe-astern distribution zone and Estoire ana to not be supplied from Naselspoort directly anymore but from Maselspoort via the new Naval HIII Reservcir Upgrades to Incorporate New Distribution Zones: Le Incorporate network charge and Interview relixalston policies in order for the Naval HIII onthe-astern distribution zone and Estoire are not ob be we relixalston directions and Statistica to not be then the Naval HIII onthe-astern distribution zone and Estoire are not be Note the supplice for the Naval HIII onthe-astern distribution zone and Estoire are not be then the supplice for Naval HIII onthe-astern distribution zone and Estoire are not nothe Note Nore Naval HIIII Northe-Astern	R R R R	7 542 713 8 407 156 26 631 119
112	Water Masterplan Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline (For Short-Term Developments) New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades (For Short- Term Developments) Naval Hill New Reticulation Pipeline - Long-Term Extensions to Reach Future	ammore but from Maselspoort with the new Naval HIII Reservciv No. 2 or No. 3. Network Liggrades to incorporate New Distribution Zones I.e. The Naval HIII north-eastern distribution zone to not be supplied from Maselspoort directly ammore but from Maselspoort via the new Naval HIII Reservcir No. 2 or No.3. This will also allow for the airport to not be supplied from Maselspoort directly ammore but from Maselspoort directly ammore but from the easting infrastructure as long as the first place has been implemented. The use place in networks is equivalent from Maselspoort via the new Naval HIII Reservcir New Infrastructure Reserve to Incorporate New Distribution Zones: Le Incorporate network charge and Installation of new reclusion pipelines in order for the Naval HIII Reservcir via the new Naval HIII Network Liggrades Is Incorporate New Distribution Zones: Le Incorporate network charge and mustalitation of New reflocations in order to the Naval HIII on the sater distribution and Estoire ane to the supplied from Maselspoort directly anymore but from Maselspoort via the new Naval HIII Network Upgrades Is Incorporate New Distribution Zones: Le Incorporate network charge and mustalisation of Nava reflectuation pipelines and off or the Naval HIII on the sater distribution and Estoire and the wrecticuation pipelines in order for the Naval HIII on the sater distribution and Estoire supplied from Maselspoort directly anymore but from Maselspoort via the new Naval HIII Network Upgrades to Incorporate New Distribution Zones: Le. The Pentagon Park distribution no.2 or No.3.	R R R R	7 542 713 8 407 156
112 113 114 115 116	Water Masterplan Water Masterplan Water Masterplan Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline (For Short-Term Developments) New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades (For Short- Term Developments) Naval Hill New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expanded Naval Hill Reticulation Pipeline Upgrades New Distribution Zones: Pentagon Park Reticulation Pipeline Upgrades	ammore but from Maselspoort wit the new Yaxel HIII Reserved: No. 2 or No. 3. Network Lignates to incomporte New Distribution Zones: L. The Nual HIII north-eastern distribution zone to not be supplied from Maselspoort directly amymore but from Maselspoort via the new Yaxel HIII Reserved No. 2 or No.3. This is allow for the import to not be supplied from Maselspoort directly amymore but from Maselspoort via the new Nual HIII Reserved No. 2 or No.3. This can be completed in a second place as these areas will stall back to receive water from the existing instructure as ito gas as the first place has been implemented. The upgrade in network is required for the necessary capacity increases to accommodate increased demaid. New Infrastructure Required to Incorporate New Distribution Zones: Le incorporate network change and installation of new reclusion papelines in order for the Navie HIII north-eastern distribution zone and Estoire area to be supplied from Maselspoort directly amymore but from Maselspoort via the new Naval HIII network distribution to the Supplied from Navel HIII north-eastern distribution zone and Estoire area to not be supplied from Navelspoort directly amymore but from Maselspoort via the new Naval HIII network distribution papelines in order for the Naval HIII north-eastern distribution zone and Estoire area to not be supplied from Maselspoort directly anymore but from Maselspoort via the new Naval HIII Reserved No.2 or No.3.	R R R R R	7 542 713 8 407 156 26 631 119 25 483 802
112 113 114 115 116 117 118 119	Water Masterplan Water Masterplan Water Masterplan Water Masterplan Water Masterplan Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline (For Short-Term Developments) New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades (For Short- Term Developments) Naval Hill New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansion Naval Hill Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansions New Distribution Zones: Pentagon Park Reticulation Pipeline Upgrades Development Expansions Development Expansions Development Expansions New Distribution Zones: Reticulation Pipeline Upgrades New Distribution Zones: Reticulation Pipeline Upgrades New Distribution Zones: Restront Tower Bulk Pipeline Upgrades and Increase in	anymore but from Masekpoort wit the new Yaxol HIII Reservoir No. 2. TNo. 3. Network Upgrades to Incorport Rever Dorthonion Zones: Line Navol HIII north-existen distibution zone to not be supplied from Masekpoort directly anymore but from Masekpoort wit the new Yaxol HIII Reservoir No. 2 or No.3. This will also allow for the import to note be supplied from Masekpoort directly anymore but from Masekpoort via the new Naval HIII Reservoir No. 2 or No.3. This can be completed in a second phase as these areas will all bail bot for the import from the existing infrastructure as log as the first phase has been implemented. The upgrade in Incorporate New Distribution Zones: Lin Incorporate network change and implantiation of new reclusion pipelines in order for the Naval HIII Inorth-existen distribution zone and Esistin rates to not be supplied from Masekspoort directly anymore but from Masekspoort via the new Naval HIII Review (Dygrades to Incorporate New Distribution Zones: Lin Incorporate network change and Marking (Dygrades to Incorporate New Distribution Zones: Line Incorporate New Intil Medivel Upgrades to Incorporate New Distribution Zones: Line Incorporate New Naval HIII Review (Dygrades to Incorporate New Distribution Zones: Line Neropart Review Change and Installation new reclusion pipelines in order for the Naval HIII north-existen distribution zone and Estoire area to not be supplied from Masekpoort directly anymore but from Masekpoort via the new Naval HIII Reservor No.2 or No.3. Network Upgrades to Incorporate New Distribution Zones: Line. The Pentagon Park distribution zone to not be supplied from the Heuversitg Tower anymore but from Pentagon Park Reservork. Network Upgrades to Incorporate New Distribution Zones: Line. Incorporate network change and installation of network Upgrades to Incorporate New Distribution Zones: Line. Incorporate network change and installation of network Upgrades to Incorporate New Distribution Zones: Line. Incorporate network change and installation of new	R R R R R R R	7 542 713 8 407 156 26 631 119 25 483 802 2 875 853
112 113 114 115 116 117 118	Water Masterplan Water Masterplan Water Masterplan Water Masterplan Water Masterplan	New Distribution Zones: Naval Hill New Reticulation Pipeline (For Short-Term Developments) New Distribution Zones: Naval Hill Reticulation Pipeline Upgrades (For Short- Term Development) Naval Hill Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expensions Naval Hill Reticulation Pipeline Upgrades New Distribution Zones: Pentagon Park Reticulation Pipeline Upgrades Pentagon Park New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expensions Pentagon Park Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expensions Pentagon Park Reticulation Pipeline Upgrades	ammore but from Maselspoort wit the new Yaxal HIII Reserved: No. 2 or No. 3. Network Lignards to Incomporta New Distribution Zones: Le. The Naval HIII north-extern distribution zone to not be supplied from Maselspoort directly amymore but from Maselspoort via the new Yaxal HIII Reserved No. 2 or No.3. This all solal low for the supprison to the supplied from Maselspoort directly amymore but from Maselspoort via the new Naval HIII Reserved No.2 or No.3. This can be completed in a second place as these areas viail static all back to receive water from the existing instructure as ito gas the first place has been implemented. The upgrade in through the Naval HIII Reserved No.2 or No.3. This can be completed in a second place as intrastation of new reclusions ppellens on order for the Naval HIII north-existen distribution zone and Estore areas do used the Supprison of interty anymore but from Maselspoort via the new Naval HIII Reserved No.2 or No.3. This can be supplied from Maselspoort directly anymore but from Maselspoort directly anymore but from Maselspoort as the new Naval HIII new reclusions ppellens in order for the Naval HIII north-existent distribution zone and Estore area to not be supplied from Maselspoort directly anymore but from Maselspoort via the new Naval HIII new reclusions ppellens or directly anymore but from Maselspoort via the new Naval HIII Reserved No.2 area. The Naval HIII north-existent distribution zone and Estore area to not be supplied from Maselspoort directly anymore but from Maselspoort via the new Naval HIII Reserved No.2 area. The Naval HIII north-existent distribution zone to not be supplied from Maselspoort directly anymore but from Maselspoort via the new Naval HIII Reserved No.2 area. The Naval HIII north-existent distribution zone to not be supplied from Maselspoort directly anymore but from Persigon Park distribution zone to not be supplied from the Heuweisig Tower anymore but from Persigon Park Reservoir. Network Upgrades to Incorporate New Distribution Zo	R R R R R R R	7 542 8 407 26 631 25 483 2 875 2 448 1 995

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122	Water Masterplan	Rayton Tower New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansions	New infrastructure required for additional capacity to accommodate possible short-term development based	R	817 640
123	Water Masterplan	Rodenbeck New Reticulation Pipeline to Accommodate Increase in Demand	on development capacity analyses applications. Network upgrades required for additional capacity to accommodate possible short-term development based on	R	16 179 740 6 448 217
124	Water Masterplan	Rodenbeck Reticulation Pipeline Upgrades to Accommodate Increase in Demand	development capacity analyses applications. New infrastructure and rerouting of pipelines required for additional capacity and improved network	к	6 448 217
125	Water Masterplan	Rodenbeck New Reticulation Pipeline to Accommodate Increase in Demand	distribution to accommodate possible short-term development based on development capacity analyses applications. New Infrastructure Required to Accommodate increase in demand in this area and connecting reticulation	R	8 799 497
126	Water Masterplan	Slypsteenberg New Connecting Bulk Pipeline with new Slypsteenberg Reservoir No. 2 (6M®) and New Connecting Reticulation Pipeline	network to connect old network to the new Slypsteenberg Reservoir No. 2.	R	15 370 298
127	Water Masterplan	Slypsteenberg New Reticulation Pipeline Slypsteenberg Reticulation Pipeline Upgrades to Accommodate Increase in	New infrastructure required to accommodate increase in demand and ensure a shortened supply route and extended network distribution	R	8 418 422
128	Water Masterplan	Slypsteenberg Reticulation Pipeline Upgrades to Accommodate Increase in Demand Slypsteenberg New Reticulation Pipeline - Long-Term Extensions to Reach Future	Increase capacity.	R	4 387 245
129	Water Masterplan	Stypsteenberg wew Reticulation Pipeline - Long-Lerm Extensions to Reach Puture Development Expansions	New Infrastructure Required to Incorporate New Distribution Zones: i.e. Construction of new Springfield	R	1 510 799
130	Water Masterplan	New Distribution Zones: Springfield New Bulk Pipeline with New Springfield Reservoir No. 1 (45M8).	Reservoir No. 1, incorporation of network change and installation of new bulk supply pipelines from Welbedacht towards the new Springfield Reservoirs No. 1, 2, and 3. This network redistribution will ensure that the Springfield distribution zone no longer receives water from either the Naval Hill or Rodenbeck Reservoirs but from the new Springfield Reservoirs.	R	203 782 283
131	Water Masterplan	New Distribution Zones: Springfield New Reticulation Pipelines with New Springfield Reservoir No. 2 (35MB) (For Short-Term Developments)	New Infrastructure Required to incorporate New Distribution Zones: Le. Incorporate network change and installation of new recituation pipelines in order for the Springlifed north-western distubion zone (NB Noda) Development Phase 8) to not be supplied from the Naval Hill Reservoir anymore but from Webedacht via theme Springlifed Reservoir No. 2. This enservoir nets/strubtion will also ensure that the Springlifed south-western distubion zone is not supplied from the Rodenbeck Reservoir anymore but from Webedacht via the new Springlifed Reservoir No. 2.	R	112 113 414
132	Water Masterplan	New Distribution Zones: Springfield New Reticulation Pipelines (For Short-Term Developments)	New Infrastructure Required to Incorporate New Distribution Zones: i.e. Incorporate new infrastructure in order for the Springfield north-western distibution zone to not be supplied from the Naval Hill Reservoir	R	9 603 349
133	Water Masterplan	New Distribution Zones: Springfield Reticulation Pipeline Upgrades (For Short-	anvmore but from Welbedacht via the new Serianfield Reservoir No. 2. Network Upgrades to Incorporate New Distribution Zones: i.e. Incorporate network upgrades in order for the Springfield north-western distibution zone to not be supplied from the Naval Hill Reservoir anymore but from	R	50 582 055
		Term Developments)	Welbedacht via the new Springfield Reservoir No. 2. New Infrastructure Required to Incorporate New Distribution Zones: i.e. Incorporate new infrastructure in		
134	Water Masterplan	New Distribution Zones: Springfield New Reticulation Pipelines (For Short-Term Developments)	order for the Springfield south-western distibution zone to not be supplied from the Rodenbeck Reservoir anymore but from Welbedacht via the new Springfield Reservoir No. 2.	R	37 989 623
135	Water Masterplan	New Distribution Zones: Springfield Reticulation Pipeline Upgrades (For Short- Term Developments)	Network Upgrades to Incorporate New Distribution Zones: i.e. Incorporate network upgrades in order for the Springfield south-western distibution zone to not be supplied from the Rodenbeck Reservoir anymore but from Welbedacht via the new Sprindfield Reservoir No. 2.	R	116 322 384
136	Water Masterplan	New Distribution Zones: Springfield New Reticulation Pipelines with New Springfield Reservoir No. 3 (35ME) (For Short-Term Developments)	Intersection via une inter administration between in the second in two lower infrastructure Required to increased New Distribution Zones: i.e. Construction of new Springfield Reservoir No. 3, incorporation of network change and installation of new reticulation pipelines in order for the existing Springfield south-eastern distribution et on tor be supplied from neither the Nava Hill or Rodenbeck Reservoirs anymore but from Webedacht via the new Springfield Reservoir No. 3.	R	71 571 404
137	Water Masterplan	New Distribution Zones: Springfield New Reticulation Pipelines (For Short-Term Developments)	New Infrastructure Required to incorporate New Distribution Zones: i.e. incorporate new infrastructure in order for the Springfield south-eastern distibution zone to not be supplied from neither the Naval Hill or Rodenbeck Reservoirs anymore but from Welbedacht via the new Springfield Reservoir No.3.	R	3 206 456
138	Water Masterplan	New Distribution Zones: Springfield Reticulation Pipeline Upgrades	Network Upgrades to Incorporate New Distribution Zones: i.e. Incorporate network upgrades in order forthe Springfield south-eastern distibution zone to not be supplied from neither the Naval Hill or Rodenbeck Reservoirs anymore but from Welbedacht via the new Springfield Reservoir No.3.	R	3 509 607
139	Water Masterplan	Springfield New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansions	Can be incorporated in a separate phase depending on the development programme in the area.	R	8 592 232
140	Water Masterplan	Springfield New Reticulation Pipeline - Long-Term Extensions to Reach Future Development Expansions Welbedacht New Reticulation Pipeline - Short-Term Extensions to Reach Future	Can be incorporated in a separate phase depending on the development programme in the area.	R	7 680 238
141	Water Masterplan	Welbedacht Reticulation Pipeline - Short-Term Extensions to Keach Future Development Expansions Welbedacht Reticulation Pipeline Upgrades to Accommodate Increase in	Can be incorporated in a separate phase depending on the development programme in the area. Network upgrades required for additional capacity to accommodate possible short-term development based on	R	3 111 562
142	Water Masterplan	Demand (For Short-Term Developments)	Network upgrades required for additional capacity to accommodate possible short-term development cased on development capacity analyses applications. Can be incorporated in a separate phase depending on the development programme in the area. Project	R	10 880 550
143	Water Masterplan	Welbedacht New Reticulation Pipeline - Extensions to Reach Future Development Expansions	Includes the installation of a new short reticulation parallel pipeline connection for future maintenance	R	1 415 099
144	Water Masterplan	Welbedacht Reticulation Pipeline Upgrades to Accommodate Increase in Demand	purposes. Increase capacity.	R	3 917 786
145	Sewer Masterplan	Upgrade of Bainsvlei WWTW to accommodate an additional 40MI/day	Upgrade of Bainsvlei WWTW to accommodate an additional 40MI/day	R	487 025 000
146	Sewer Masterplan	Future Bainsvlei rising main (400mm, 1.2km) and pump station Future reticulation pipelines for new developments within the Bainsvlei WWTW	Future Bainsvlei rising main (400mm, 1.2km) and pump station Future reticulation pipelines for new developments within the Bainsvlei WWTW catchment (150-250mm,	R	17 000 000
147	Sewer Masterplan	catchment (150-250mm, Length ± 13km) Future bulk pipelines for new developments within the Bainsvlei WWTW	Length ± 13km) Future bulk pipelines for new developments within the Bainsvlei WWTW catchment (Various diameters, Length	R	15 700 000
148	Sewer Masterplan	catchment (Various diameters, Length ± 30km)	± 30km)	R	78 900 000
149 150	Sewer Masterplan Sewer Masterplan	Upgrade of Welvaart WWTW to accommodate an additional 32Ml/day Existing pipeline upgrades in the Welvaart catchment area (700-800mm,	Upgrade of Welvaart WWTW to accommodate an additional 32Ml/day Existing pipeline upgrades in the Welvaart catchment area (700-800mm, ±0.7km)	ĸ	320 000 000
150	Sewer Masterplan	±0.7km) Future reticulation pipelines for new developments within the Welvaart WWTW	Existing pipeline upgrades in the weivaart catchment area (700-800mm, 50.7 km) Future reticulation pipelines for new developments within the Welvaart WWTW catchment (150-250mm,	ĸ	6 800 000
151	Sewer Masterplan	catchment (150-250mm, Length ± 5.6km) Future bulk pipelines for new developments within the Welvaart WWTW	Length ± 5.6km) Future bulk pipelines for new developments within the Welvaart WWTW catchment (Various diameters,	R	37 100 000
	Sewer Masterplan	catchment (Various diameters. Length ± 14km) Upgrade of North-Eastern WWTW to accommodate an additional 89MI/day	Length ± 14km) Upgrade of North-Eastern WWTW to accommodate an additional 89MI/day	R	890 000 000
154	Sewer Masterplan	Existing pipeline upgrades in the North-Eastern catchment area (700-800mm,	Existing pipeline upgrades in the North-Eastern catchment area (700-800mm, ±13km)	R	60 800 000
155	Sewer Masterplan	±13km) Future North-Eastern rising mains (Various diameters, ±3.3km) and pump	Future North-Eastern rising mains (Various diameters, ±3.3km) and pump stations	R	20 000 000
156	Sewer Masterplan	stations Future reticulation pipelines for new developments within the North-Eastern WWTW catchment (150-250mm, Length ± 82km)	Future reticulation pipelines for new developments within the North-Eastern WWTW catchment (150-250mm, Length ± 82km)	R	97 400 000
157	Sewer Masterplan	Future bulk pipelines for new developments within the North-Eastern WWTW catchment (Various diameters. Length ± 30.5km)	Future bulk pipelines for new developments within the North-Eastern WWTW catchment (Various diameters, Length + 20 Skm)	R	88 430 000
158	Sewer Masterplan	Upgrade of Sterkwater WWTW to accommodate an additional 10MI/day	Upgrade of Sterkwater WWTW to accommodate an additional 10MI/day	R	100 000 000
159	Sewer Masterplan	Existing reticulation pipeline upgrades in the Sterkwater catchment area (150- 250mm, ±4.4km)	Existing reticulation pipeline upgrades in the Sterkwater catchment area (150-250mm, ±4.4km)	R	5 300 000
160	Sewer Masterplan	Existing bulk pipeline upgrades in the Sterkwater catchment area (Various diameters. ±5.9km)	Existing bulk pipeline upgrades in the Sterkwater catchment area (Various diameters, ±5.9km)	R	22 300 000
161	Sewer Masterplan	Future reticulation pipelines for new developments within the Welvaart WWTW catchment (150-250mm, Length ± 6.2km)	Future reticulation pipelines for new developments within the Welvaart WWTW catchment (150-250mm, Length ± 6.2km)	R	7 400 000
162	Sewer Masterplan	Upgrade of Bloemdustria WWTW to accommodate an additional 28.6MI/day	Upgrade of Bloemdustria WWTW to accommodate an additional 28.6MI/day	R	286 000 000
163	Sewer Masterplan	Existing bulk pipeline upgrades in the Bloemdustria catchment area (Various diameters, ±6.7km)	Existing bulk pipeline upgrades in the Bloemdustria catchment area (Various diameters, ±6.7km)	R	24 800 000
164	Sewer Masterplan	Future reticulation pipelines for new developments within the Bloemdustria WWTW catchment (150-250mm, Length ± 18.2km) Enture hulk evolution for a conditional programment within the Bloemdustria WANTW	Future reticulation pipelines for new developments within the Bloemdustria WWTW catchment (150-250mm, Length ± 18.2km) Extract hull requirer for new developments within the Bloemdustria MNTML established (Moriour dispector)	R	21 741 600
165	Sewer Masterplan	Future bulk pipelines for new developments within the Bloemdustria WWTW catchment (Various diameters, Length ± 3.5km)	Future bulk pipelines for new developments within the Bloemdustria WWTW catchment (Various diameters, Length ± 3.5km)	R	7 896 800
166	Sewer Masterplan Critical Outstanding Studies and	Future Bloemdustria rising mains (Various diameters, ±2.6km) and pump stations	Future Bloemdustria rising mains (Various diameters, ±2.6km) and pump stations	R	11 820 398
167	Planning Identified Critical Outstanding Studies and	Thaba Nchu Water Masterplan	Revise and Update Thaba Nchu Water Masterplan	R	229 025
168	Planning Identified Critical Outstanding Studies and	Thaba Nchu Water and Sewer Infrastructure Condition Assessment	Thaba Nchu Water and Sewer Infrastructure Condition Assessment	R	4 000 000
169	Planning Identified Critical Outstanding Studies and	Thaba Nchu Sewer Masterplan	Develop Thaba Nchu Sewer Masterplan	R	231 416
170	Planning Identified Critical Outstanding Studies and	Botshabelo Water Masterplan	Develop Botshabelo Water Masterplan	R	231 416
171	Planning Identified Critical Outstanding Studies and	Botshabelo Water and Sewer Infrastructure Condition Assessment	Botshabelo Water and Sewer Infrastructure Condition Assessment	R	4 000 000
172	Planning Identified Critical Outstanding Studies and	Botshabelo Sewer Masterplan Dewetsdorp Water Masterplan	Develop Botshabelo Sewer Masterplan Develop Dewetsdorp Water Masterplan	R	231 416 148 324
173	Planning Identified Critical Outstanding Studies and			R R	148 324
	Planning Identified	Dewetsdorp Water and Sewer Infrastructure Condition Assessment	Dewetsdorp Water and Sewer Infrastructure Condition Assessment	R	151 387
175	Critical Outstanding Studies and	Dewetsdoro Sewer Masterplan	Develop Dewetsdorp Sewer Masterplan		151 387
	Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and	Dewetsdorp Sewer Masterplan Wepener Water Masterplan	Develop Devetsdorp Sewer Masterplan Develop Wepener Water Masterplan	R	
175	Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and			R	2 000 000
175 176	Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and	Wepener Water Masterplan	Develop Wepener Water Masterplan	R R R	
175 176 177	Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and	Wepener Water Masterplan Wepener Water and Sewer Infrastructure Condition Assessment	Develop Wepener Water Masterplan Wepener Water and Sewer Infrastructure Condition Assessment	R	2 000 000
175 176 177 178	Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified	Wepener Water Masterplan Wepener Water and Sewer Infrastructure Condition Assessment Wepener Sewer Masterplan	Develop Wepener Water Masterplan Wepener Water and Sewer Infrastructure Condition Assessment Develop Wepener Sewer Masterplan	R R	2 000 000 151 387
175 176 177 178 179	Critical Dutstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Critical Outstanding Studies and Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified Critical Outstanding Studies and Planning Identified	Wepener Water Masterplan Wepener Water and Sewer infrastructure Condition Assessment Wepener Sewer Masterplan Vanstadensrus Water Masterplan	Develop Wepener Water Masterplan Wepener Water and Sewer Infrastructure Condition Assessment Develop Wepener Sewer Masterplan Develop Vanstadensrus Water Masterplan	R R R	2 000 000 151 387 151 387
175 176 177 178 179 180	Critical Outstanding Studies and Planning Lidentified Critical Outstanding Studies and Planning Lidentified	Wegener Water Masterplan Wegener Water and Sewer Infrastructure Condition Assessment Wegener Sewer Masterplan Vanstadensrus Water Masterplan Vanstadensrus Water and Sewer Infrastructure Condition Assessment	Develop Wepener Water Masterplan Wepener Water and Sewer Infrastructure Condition Assessment Develop Wepener Sewer Masterplan Develop Vanstadensrus Water Masterplan Vanstadensrus Water and Sewer Infrastructure Condition Assessment	R R R	2 000 000 151 387 151 387 2 000 000
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