



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Enquiries: T Ntili
Telephone: 082 803 3204
Reference: 6/2/2/6

NATIONAL COUNCIL OF PROVINCES

FOR WRITTEN REPLY

QUESTION NO 215

DATE OF PUBLICATION IN INTERNAL QUESTION PAPER: 31 MARCH 2023
(INTERNAL QUESTION PAPER NO. 9)

215. Mr M A P De Bruyn (Free State: FF Plus) to ask the Minister of Water and Sanitation:

- (1) Whether, with reference to his reply to Question 2 on 24 March 2023, he will provide the Rand value of water losses as indicated; if not, what is the position in this regard; if so, what are the relevant details;
- (2) (a) what actions are being taken to (i) manage such water losses and (ii) rectify the infrastructure and (b) what are the timelines involved in this regard?

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MINISTER OF WATER AND SANITATION

(1) The rand value of water losses in the Mangaung Metropolitan Municipality are indicated in the table below:

| Town/ area of supply | Water losses per annum | Rand Value of water losses |
|----------------------|------------------------|----------------------------|
| Bloemfontein | 98 520 | R 1 191 106.80 |
| Botshabelo | 33 355 | R 403 261.95 |
| Thaba Nchu | 5 824 | R 70 412.16 |
| Wepener | 267 | R 3 228.03 |
| Dewetsdorp | 1 146 | R 13 855.14 |
| Vanstadensrus | 163 | R 1 970.67 |
| Soutpan | 319 | R 3 856.71 |

(2)(a)(i) Mangaung is taking action to (i) manage water losses as detailed below:

- Pressure and Network Zone Management Audit and PRV commissioning where the largest concentration of burst pipes occurs and other areas
- Replacement of water meters and metering of unmetered sites
- Supply, delivery, and installation of prepaid water meters for Mangaung Metropolitan Municipality to increase revenue collection
- Engineering Services is continuously working to have all installed meters registered on the billing system
- Pipe replacement, Pressure and Network Zone Management projects are currently being implemented
- Engineering Services and Finance Directorate are continuously addressing challenges emanating from meters that are not read

(ii) Remedial actions taken by the Mangaung to repair the infrastructure and curb water losses include the following:

- The Refurbishment of Water Supply System project to replace dilapidated pipes in the Mangaung Municipality is being implemented to curb water losses.
- Review of Water Conservation and Water Demand/Management Strategy and identification of seventeen (17) strategies to be implemented over a 10 year period.

(b) The municipality has indicated that the estimated budget required to implement the seventeen (17) strategies have been identified for the reduction of Non-Revenue Water

(b) The budget required to implement the seventeen (17) strategies for the reduction of Non-Revenue Water (NRW) is estimated at R 3.19 billion. However, the annual Urban Settlement Development Grant (USDG) allocated does not meet the funding requirements. Therefore, implementation of the plan will be done over a period of 10 years as indicated in **Annexure A**.

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DRAFT REPLY: RECOMMENDED/ ~~NOT RECOMMENDED~~/ AMENDED



DR SEAN PHILLIPS
DIRECTOR GENERAL
DATE: 25/04/23



DRAFT REPLY: APPROVED/ NOT APPROVED/ AMENDED



MR SENZO MCHUNU, MP
MINISTER OF WATER AND SANITATION
DATE: 28/04/23

ANNEXURE A: TIMELINES, COST & PROJECTED WATER SAVINGS: FROM 10 YEAR WATER CONSERVATION & DEMAND MANAGEMENT PLAN: 17 STRATEGIES

| Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|--|------------------------------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|-------------|-------------------|---------------------------------------|
| 1 Strategy RL1: Pressure and Network Zone Management | | R11,276,320 | R11,276,320 | R11,276,320 | R1,650,000 | R1,650,000 | R1,650,000 | R1,650,000 | R1,650,000 | R1,650,000 | R1,650,000 | R45,378,960 | | | |
| 1 RL1.1: Pressure and Network Zone Management for a Period of Three Years (Initial Installation and Commissioning) | 3 | R 11,276,320 | R 11,276,320 | R 11,276,320 | | | | | | | | R33,828,960 | None | R 11,276,320 | -2,069,550 |
| 2 RL1.2: Pressure and Network Zone Management for a Period of Three Years (Annual maintenance and servicing) | 3 | | | | R 1,650,000 | R 1,650,000 | R 1,650,000 | | | | | R4,950,000 | 1 | R 1,650,000 | -2,069,550 |
| 3 RL1.3: Pressure and Network Zone Management for a Period of Three Years (Annual maintenance and servicing) | 2 | | | | | | | R 1,650,000 | R 1,650,000 | | | R3,300,000 | 2 | R 1,650,000 | -2,069,550 |
| 4 RL1.4: Pressure and Network Zone Management for a Period of Three Years (Annual maintenance and servicing) | 2 | | | | | | | | | R 1,650,000 | R 1,650,000 | R3,300,000 | 3 | R 1,650,000 | -2,069,550 |

| Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|---|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|-------------|-------------------|---------------------------------------|
| 2 Strategy RL2: Pro-Active Leak Detection and Repair | | R8,470,000 | R8,470,000 | R8,470,000 | R8,470,000 | R8,470,000 | R8,470,000 | R8,470,000 | R8,470,000 | R8,470,000 | R8,470,000 | R84,700,000 | | | |
| 5 RL2.1: Leak Detection and Repair for a Period of Three Years (Internal Operational Capacity Review, Procurement of Tools and Equipment and Procurement of Contractor for Reactive Leak Repairs) | 3 | R 8,470,000 | R 8,470,000 | R 8,470,000 | | | | | | | | R25,410,000 | None | R 8,470,000 | -619,871 |
| 6 RL2.2: Pro-Active Leak Detection and Repair Programme for a Period of Three Years (Systemised Approach Proactive Leak Detection and Repair) | 3 | | | | R 8,470,000 | R 8,470,000 | R 8,470,000 | | | | | R25,410,000 | E, A | R 8,470,000 | -619,871 |
| 7 RL2.3: Pro-Active Leak Detection and Repair Programme for a Period of Two Years (Systemised Approach Proactive Leak Detection and Repair) | 2 | | | | | | | R 8,470,000 | R 8,470,000 | | | R16,940,000 | 6 | R 8,470,000 | -619,871 |
| 8 RL2.4: Pro-Active Leak Detection and Repair Programme for a Period of Two Years (Systemised Approach Proactive Leak Detection and Repair) | 2 | | | | | | | | | R 8,470,000 | R 8,470,000 | R16,940,000 | 7 | R 8,470,000 | -619,871 |

| Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|--|------------------------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--|-------------|-------------------|---------------------------------------|
| 3 Strategy RL3: Maselspoort Upgrade Phase 1: Maselspoort Rising Main River Crossing and | | R35,200,000 | R0 | R0 | R0 | R0 | R0 | R0 | R0 | R0 | R0 | R35,200,000 | | | |
| 9 RL3.1: Maselspoort Upgrade Phase 1: Maselspoort Rising Main River Crossing and Refurbishment of Pipeline | 1 | R 35,200,000 | | | | | | | | | | R35,200,000 | None | R 35,200,000 | -1,460,000 |

| Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|--|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|-------------|-------------------|---------------------------------------|
| 4 Strategy RL4: Pipe Replacement Project | | R4,395,460 | R4,395,460 | R6,149,804 | R4,395,460 | R4,395,460 | R4,395,460 | R4,395,460 | R4,395,460 | R4,395,460 | R4,395,460 | R45,708,940 | | | |
| 10 RL4.1: Identification and Prioritisation of High-Risk Pipelines Based on Operational Institutional Knowledge and Field Measurements. Replacement of High Risk Pipelines in Bloemfontein (8km) | 2 | R 4,395,460 | R 4,395,460 | | | | | | | | | R8,790,919 | None | R 4,395,460 | -20,086 |
| 11 RL4.2: Replacement of High Risk Pipelines in Bloemfontein (11km) | 2 | | | R 4,395,460 | R 4,395,460 | | | | | | | R8,790,919 | 10 | R 4,395,460 | -25,682 |
| 12 RL4.3: Replacement of High Risk Pipelines in Thaba Nchu and Botshabelo (2.3km) | 1 | | | R 1,754,344 | | | | | | | | R1,754,344 | 11 | R 1,754,344 | -5,596 |
| 13 RL4.4: Replacement of High Risk Pipelines in Bloemfontein (11km) | 2 | | | | | R 4,395,460 | R 4,395,460 | | | | | R8,790,919 | 12 | R 4,395,460 | -25,682 |
| 14 RL4.5: Replacement of High Risk Pipelines in Bloemfontein (11km) | 2 | | | | | | | R 4,395,460 | R 4,395,460 | | | R8,790,919 | 13 | R 4,395,460 | -25,682 |
| 15 RL4.6: Replacement of High Risk Pipelines in Bloemfontein (11km) | 2 | | | | | | | | | R 4,395,460 | R 4,395,460 | R8,790,919 | 14 | R 4,395,460 | -25,682 |

ANNEXURE A: TIMELINES, COST & PROJECTED WATER SAVINGS: FROM 10 YEAR WATER CONSERVATION & DEMAND MANAGEMENT PLAN: 17 STRATEGIES

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact | |
|---|--|------------------------------------|--------|--------|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|-------------|-------------------|---------------------------------------|---------|
| 5 | Strategy RL5: Leak Repairs: Plumbing Leaks | | R0 | R0 | R0 | R14,223,859 | R14,223,859 | R14,223,859 | R14,057,192 | R14,057,192 | R14,057,192 | R14,057,192 | R98,900,344 | | | | |
| | 16 RL5.1: Identification and Prioritisation of Formerly Disadvantaged Areas According to Income Types for Routine Leak Repair Programmes Targeted Routine or Domestic Leak Repairs Programme- Bloemfontein | 3 | | | | R 4,852,397 | R 4,852,397 | R 4,852,397 | | | | | R14,557,192 | 1 | R | 4,852,397 | -12,384 |
| | 17 RL5.2: Targeted Routine or Domestic Leak Repairs Programme- Botshabelo | 3 | | | | R 4,685,731 | R 4,685,731 | R 4,685,731 | | | | | R14,057,192 | 1 | R | 4,685,731 | -12,384 |
| | 18 RL5.3: Targeted Routine or Domestic Leak Repairs Programme- Thaba Nchu | 3 | | | | R 4,685,731 | R 4,685,731 | R 4,685,731 | | | | | R14,057,192 | 1 | R | 4,685,731 | -12,384 |
| | 19 RL5.4: Targeted Routine or Domestic Leak Repairs Programme- Bloemfontein | 2 | | | | | | | R 4,685,731 | R 4,685,731 | | | R9,371,461 | 16, 17, 18 | R | 4,685,731 | -12,384 |
| | 20 RL5.5: Targeted Routine or Domestic Leak Repairs Programme- Botshabelo, Thaba Nchu | 2 | | | | | | | R 4,685,731 | R 4,685,731 | | | R9,371,461 | 16, 17, 18 | R | 4,685,731 | -12,384 |
| | 21 RL5.6: Targeted Routine or Domestic Leak Repairs Programme- Dewetsdorp, Wepener, Vanstadensrus and Soutpan | 2 | | | | | | | R 4,685,731 | R 4,685,731 | | | R9,371,461 | 16, 17, 18 | R | 4,685,731 | -12,384 |
| | 22 RL5.7: Targeted Routine or Domestic Leak Repairs Programme- Bloemfontein | 2 | | | | | | | | | R 4,685,731 | R 4,685,731 | R9,371,461 | 19, 20, 21 | R | 4,685,731 | -12,384 |
| | 23 RL5.8: Targeted Routine or Domestic Leak Repairs Programme- Botshabelo, Thaba Nchu | 2 | | | | | | | | | R 4,685,731 | R 4,685,731 | R9,371,461 | 19, 20, 21 | R | 4,685,731 | -12,384 |
| | 24 RL5.9: Targeted Routine or Domestic Leak Repairs Programme- Dewetsdorp, Wepener, Vanstadensrus and Soutpan | 2 | | | | | | | | | R 4,685,731 | R 4,685,731 | R9,371,461 | 19, 20, 21 | R | 4,685,731 | -12,384 |

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact | |
|---|---|------------------------------------|-------------|------------|-------------|-------------|-------------|-------------|--------|--------|--------|---------|--|-------------|-------------------|---------------------------------------|--|
| 6 | Strategy RL6: Valve Audit and Valve Replacement and Refurbishment Programme | | R5,044,067 | R5,044,067 | R11,200,112 | R15,100,754 | R10,970,729 | R1,550,441 | R0 | R0 | R0 | R0 | R48,910,169 | | | | |
| | 25 RL6.1: Bloemfontein: Phase 1- Valve Audit, Condition Assessment and Update of Map Books for Operational And Maintenance Purposes. Preparation of detailed valve replacement and refurbishment programme based on outcome of valve audit. | 2 | R 5,044,067 | | | | | | | | | | R10,088,133 | None | R | 5,044,067 | |
| | 26 RL6.2: Botshabelo: Phase 1- Valve Audit, Condition Assessment and Update of Map Books for Operational And Maintenance Purposes. Preparation of detailed valve replacement and refurbishment programme based on outcome of valve audit. | 1 | | | R 3,875,146 | | | | | | | | R3,875,146 | None | R | 3,875,146 | |
| | 27 RL6.3: Thaba Nchu, Dewetsdorp, Wepener, Vanstadensrus and Soutpan: Phase 1- Valve Audit, Condition Assessment and Update of Map Books for Operational And Maintenance Purposes. Preparation of detailed valve replacement and refurbishment programme based on outcome of valve audit. | 1 | | | | R 5,680,466 | | | | | | | R5,680,466 | None | R | 5,680,466 | |
| | 28 RL6.4: Bloemfontein: Phase 2- Valve Replacement and Valve Refurbishment Programme (Dependent on outcome of valve audit) | 3 | | | R 7,324,966 | R 7,324,966 | R 7,324,966 | | | | | | R21,974,898 | 25 | R | 7,324,966 | |
| | 29 RL6.5: Botshabelo: Phase 2- Valve Replacement and Valve Refurbishment Programme (Dependent on outcome of valve audit) | 2 | | | | R 2,095,322 | R 2,095,322 | | | | | | R4,190,644 | 26 | R | 2,095,322 | |
| | 30 RL6.6: Thaba Nchu, Dewetsdorp, Wepener, Vanstadensrus and Soutpan: Phase 2- Valve Replacement and Valve Refurbishment Programme (Dependent on outcome of valve audit) | 2 | | | | | R 1,550,441 | R 1,550,441 | | | | | R3,100,882 | 27 | R | 1,550,441 | |

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact | |
|---|---|------------------------------------|--------|--------|--------|-----------|--------|--------|--------|--------|--------|---------|--|-------------|-------------------|---------------------------------------|--|
| 7 | Strategy AL1: Standpipe Audit and Disconnection of Standpipes in Areas with Formal | | R0 | R0 | R0 | R475,893 | R0 | R0 | R0 | R0 | R0 | R0 | R475,893 | | | | |
| | 32 AL1.1: Standpipe Audit and Disconnection of Standpipes in Areas with Formal Reticulation | 1 | | | | R 475,893 | | | | | | | R475,893 | None | R | 475,893 | |

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|---|---|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|-------------|-------------------|---------------------------------------|
| 8 | Strategy AL2: Replacement of Water Meters | | R50,450,791 | R70,557,579 | R70,557,579 | R20,106,788 | R20,106,788 | R40,102,597 | R19,995,808 | R28,010,267 | R23,861,858 | R23,861,858 | R253,085,688 | | | |
| | 33 AL2.1: Meter Replacement Programme in Bloemfontein for Phase 1 and 2 (13 309 meters) | 2 | R 50,450,791 | R 50,450,791 | R 50,450,791 | | | | | | | | R100,901,582 | None | R 50,450,791 | |
| | 34 AL2.2: Meter Replacement Programme in Botshabelo for Phase 1-4 (24 335 meters) | 3 | | R 20,106,788 | R 20,106,788 | R 20,106,788 | R 20,106,788 | R 20,106,788 | | | | | R60,320,364 | 26 | R 20,106,788 | |
| | 35 AL2.3: Meter Replacement Programme in Thaba Nchu for Phase 1-4 (6 270 meters) | 2 | | | | | | R 19,995,808 | R 19,995,808 | | | | R39,991,617 | 27 | R 19,995,808 | |
| | 36 AL2.4: Meter Replacement Programme in Bloemfontein for Phase 3 and 4 (13 716 meters) | 2 | | | | | | | | R 23,861,858 | R 23,861,858 | R 23,861,858 | R47,723,715 | 28 | R 23,861,858 | |
| | 37 AL2.5: Meter Replacement Programme in Dewetsdorp, Wepener and Vanstadensrus for Phase 1-4 (550 meters) | 1 | | | | | | | | R 4,148,409 | | | R4,148,409 | 28 | R 4,148,409 | |

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|---|---|------------------------------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|-------------|-------------------|---------------------------------------|
| 9 | Strategy AL3: Billed Metered Consumption Audit, Digitisation and Automisation | | R1,815,000 | R1,815,000 | R1,815,000 | R605,000 | R605,000 | R605,000 | R605,000 | R605,000 | R605,000 | R605,000 | R9,680,000 | | | |
| | 38 AL3.1: Billed Metered Consumption Audit, Implementation of Digitisation and Automisation of Billing System for a period of three (3) years | 3 | R 1,815,000 | R 1,815,000 | R 1,815,000 | | | | | | | | R5,445,000 | None | R 1,815,000 | |
| | 39 AL3.2: Annual maintenance and continued improvement of billing system for a period of three (3) years | 3 | | | | R 605,000 | R 605,000 | R 605,000 | | | | | R1,815,000 | 38 | R 605,000 | |
| | 40 AL3.3: Annual maintenance and continued improvement of billing system for a period of three (2) years | 2 | | | | | | | R 605,000 | R 605,000 | | | R1,210,000 | 39 | R 605,000 | |
| | 41 AL3.4: Annual maintenance and continued improvement of billing system for a period of three (2) years | 2 | | | | | | | | | R 605,000 | R 605,000 | R1,210,000 | 40 | R 605,000 | |

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|----|---|------------------------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|-------------|-------------------|---------------------------------------|
| 10 | Strategy SIV1: SCADA & Telemetry (Including Installation of Bulk Check Meters) | | R54,014,400 | R605,000 | R605,000 | R605,000 | R605,000 | R605,000 | R605,000 | R605,000 | R605,000 | R605,000 | R59,459,400 | | | |
| | 42 SIV1.1: SCADA & Telemetry including installation of bulk check meters | 1 | R 54,014,400 | | | | | | | | | | R54,014,400 | None | R 54,014,400 | |
| | 43 SIV1.2: Operation and Maintenance of SCADA & Telemetry for a Period of Three (3) Years | 3 | | R 605,000 | R 605,000 | R 605,000 | | | | | | | R1,815,000 | 42 | R 605,000 | |
| | 44 SIV1.3: Operation and Maintenance of SCADA & Telemetry for a Period of Three (3) Years | 3 | | | | | R 605,000 | R 605,000 | R 605,000 | | | | R1,815,000 | 43 | R 605,000 | |
| | 45 SIV1.4: Operation and Maintenance of SCADA & Telemetry for a Period of Three (3) Years | 3 | | | | | | | | R 605,000 | R 605,000 | R 605,000 | R1,815,000 | 44 | R 605,000 | |

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|----|---|------------------------------------|--------------|---------------|---------------|---------------|--------|--------|--------|--------|--------|---------|--|-------------|-------------------|---------------------------------------|
| 11 | Strategy SIV2: Maselspoort Treatment Upgrades and Refurbishment | | R90,434,783 | R261,739,130 | R474,782,609 | R167,826,087 | R0 | R0 | R0 | R0 | R0 | R0 | R994,782,609 | | | |
| 46 | SIV2.1: Maselspoort Treatment Upgrades: Phase 1 (45Mℓ to 130Mℓ/day), including filter wash water recovery | 2 | R 90,434,783 | R 38,260,870 | | | | | | | | | R128,695,652 | None | R 64,347,826 | |
| 47 | SIV2.2: Maselspoort Treatment Upgrades: Phase 2 (60Mℓ/day) - Advance process | 2 | | R 223,478,261 | R 306,956,523 | | | | | | | | R530,434,783 | None | R 265,217,391 | |
| 48 | SIV2.3: Maselspoort Treatment Upgrades: Phase 3 (70Mℓ/day) - Advance Process | 2 | | | R 167,826,087 | R 167,826,087 | | | | | | | R335,652,174 | None | R 167,826,087 | |

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|----|---|------------------------------------|--------------|--------------|--------------|--------------|--------|--------|--------|--------|--------|---------|--|-------------|-------------------|---------------------------------------|
| 12 | Strategy SIV3: Water Re-Use | | R20,869,565 | R45,217,391 | R133,043,478 | R108,695,652 | R0 | R0 | R0 | R0 | R0 | R0 | R307,826,087 | | | |
| 49 | SIV3.1: Maselspoort Water Re-Use (Pump Station and Rising Main) | 3 | R 20,869,565 | R 45,217,391 | R 38,260,870 | | | | | | | | R104,347,826 | None | R 34,782,609 | |
| 50 | SIV3.2: Maselspoort Water Re-Use (Gravity Line to Mockes) | 2 | | | R 73,913,043 | R 51,304,348 | | | | | | | R125,217,391 | None | R 62,608,696 | |
| 51 | SIV3.3: Maselspoort Water Re-Use (Gravity Line to NEWWTW) | 2 | | | R 20,869,565 | R 57,381,304 | | | | | | | R78,260,870 | None | R 39,130,435 | |

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|----|--|------------------------------------|-----------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|--|-------------|-------------------|---------------------------------------|
| 13 | Strategy SIV4: Consumer Awareness & Education Programme | | R726,000 | R2,057,000 | R2,057,000 | R2,057,000 | R968,000 | R968,000 | R968,000 | R968,000 | R968,000 | R968,000 | R12,705,000 | | | |
| 52 | SIV4.1: Community Awareness & Education: Development and Implementation of Leak Reporting Platform Open to General Public (This should include an automated process whereby leaks for repair can be assigned to Contractors by MMM) | 1 | R 726,000 | | | | | | | | | | R726,000 | None | R 726,000 | |
| 53 | SIV4.2: Community Awareness & Education: Public Awareness Programmes and Extensive Schools Programme for a Period of Three (3) Years | 3 | | R 1,089,000 | R 1,089,000 | R 1,089,000 | | | | | | | R3,267,000 | None | R 1,089,000 | |
| 54 | SIV4.3: Continued Implementation and Roll-Out of Public Leak Reporting Platform, develop database to inform pipe replacement or valve replacement programmes, and associated leak repair instructions to Contractors for a Period of Three (3) Years | 3 | | R 968,000 | R 968,000 | R 968,000 | | | | | | | R2,904,000 | 52 | R 968,000 | |
| 55 | SIV4.4: Continued Implementation and Roll-Out of Public Leak Reporting Platform, develop database to inform pipe replacement or valve replacement programmes, and associated leak repair instructions to Contractors for a Period of Three (3) Years | 3 | | | | | R 968,000 | R 968,000 | R 968,000 | | | | R2,904,000 | 54 | R 968,000 | |
| 56 | SIV4.5: Continued Implementation and Roll-Out of Public Leak Reporting Platform, develop database to inform pipe replacement or valve replacement programmes, and associated leak repair instructions to Contractors for a Period of Three (3) Years | 3 | | | | | | | | R 968,000 | R 968,000 | R 968,000 | R2,904,000 | 55 | R 968,000 | |

ANNEXURE A: TIMELINES, COST & PROJECTED WATER SAVINGS: FROM 10 YEAR WATER CONSERVATION & DEMAND MANAGEMENT PLAN: 17 STRATEGIES

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|----|--|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|-------------|-------------------|---------------------------------------|
| 14 | Strategy BMC1: Metering of Unmetered Sites | | R31,883,500 | R31,883,500 | R40,150,825 | R18,074,375 | R31,718,133 | R31,718,133 | R31,718,133 | R29,165,033 | R29,165,033 | R29,165,033 | R304,641,700 | | | |
| | 56 BMC1.1: Metering of Unmetered Sites-Botshabelo Meter Installations (10 540 meters) | 2 | R 31,883,500 | R 31,883,500 | | | | | | | | | R63,767,000 | None | R 31,883,500 | |
| | 57 BMC1.2: Metering of Unmetered Sites-Thaba Nchu Meter Installations (5 975 meters) | 2 | | | R 18,074,375 | R 18,074,375 | | | | | | | R36,148,750 | 56 | R 18,074,375 | |
| | 58 BMC1.3: Metering of Unmetered Sites-Dewetsdorp, Wepener, Vanstadensrus and Soutpan Meter Installations (3 649 meters) | 1 | | | R 22,076,450 | | | | | | | | R22,076,450 | 56 | R 22,076,450 | |
| | 59 BMC1.4: Metering of Unmetered Sites-Bloemfontein Meter Installations Phase 1 (15 728 meters) | 3 | | | | | R 31,718,133 | R 31,718,133 | R 31,718,133 | | | | R95,154,400 | 57 | R 31,718,133 | |
| | 60 BMC1.5: Metering of Unmetered Sites-Bloemfontein Meter Installations Phase 2 (14 462 meters) | 3 | | | | | | | | R 29,165,033 | R 29,165,033 | R 29,165,033 | R87,495,100 | 58 | R 29,165,033 | |

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|----|---|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|-------------|-------------------|---------------------------------------|
| 15 | Strategy BMC2: Prepaid Programme (Installation of Automated Meter Readers) - | | R5,082,000 | R5,082,000 | R4,840,000 | R4,840,000 | R4,840,000 | R4,840,000 | R4,840,000 | R4,840,000 | R4,840,000 | R4,840,000 | R48,884,000 | | | |
| | 61 BMC2.1: Identifying Bad Debt Consumers and Prioritisation Programme for Prepaid Meter Installations Prepaid Meter Installations for a Period of Two (2) Years (2000 prepaid meter) | 2 | R 5,082,000 | R 5,082,000 | | | | | | | | | R10,164,000 | None | R 5,082,000 | |
| | 62 BMC2.2: Prepaid Meter Installations for a Period of Two (2) Years (2000 prepaid meter installations) | 2 | | | R 4,840,000 | R 4,840,000 | | | | | | | R9,680,000 | 61 | R 4,840,000 | |
| | 63 BMC2.3: Prepaid Meter Installations for a Period of Two (2) Years (2000 prepaid meter installations) | 2 | | | | | R 4,840,000 | R 4,840,000 | | | | | R9,680,000 | 62 | R 4,840,000 | |
| | 64 BMC2.4: Prepaid Meter Installations for a Period of Two (2) Years (2000 prepaid meter installations) | 2 | | | | | | | R 4,840,000 | R 4,840,000 | | | R9,680,000 | 63 | R 4,840,000 | |
| | 65 BMC2.5: Prepaid Meter Installations for a Period of Two (2) Years (2000 prepaid meter installations) | 2 | | | | | | | | | R 4,840,000 | R 4,840,000 | R9,680,000 | 64 | R 4,840,000 | |

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|----|--|------------------------------------|--------|--------|-------------|--------|--------|--------|--------|--------|--------|---------|--|-------------|-------------------|---------------------------------------|
| 16 | Strategy BMC3: Indigent Consumption Policy Assessment and Implementation | | R0 | R0 | R1,210,000 | R0 | R0 | R0 | R0 | R0 | R0 | R0 | R1,210,000 | | | |
| | 66 BMC3.1: Indigent Consumption Policy Assessment and Implementation | 1 | | | R 1,210,000 | | | | | | | | R1,210,000 | None | R 1,210,000 | |

ANNEXURE A: TIMELINES, COST & PROJECTED WATER SAVINGS: FROM 10 YEAR WATER CONSERVATION & DEMAND MANAGEMENT PLAN: 17 STRATEGIES

| | Defined Projects | Estimated Project Duration (Years) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Total Estimated Project Cost (Excl. VAT) | Predecessor | Annual Assignment | Annual Water Balance Parameter Impact |
|----|--|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|-------------|-------------------|---------------------------------------|
| 17 | Strategy BMC4: Reticulation Backlogs and Metering of Sites | | R101,796,582 | R98,650,285 | R102,018,080 | R88,589,138 | R74,475,090 | R73,675,231 | R73,675,231 | R73,675,231 | R73,675,231 | R73,675,231 | R833,905,331 | | | |
| 67 | BMC4.1: Addressing backlogs-Bloemfontein: Providing water reticulation in Rodenbeck and metering of sites (264km, 13 501 households) | 5 | R 74,475,090 | R 74,475,090 | R 74,475,090 | R 74,475,090 | R 74,475,090 | | | | | | R372,375,448 | None | R | 74,475,090 |
| 68 | BMC4.2: Addressing backlogs-Bloemfontein: Providing water reticulation in JB Mafora, Kopanong and Mangaung SP areas and metering of sites (261km, 13 356 households) | 5 | | | | | | R 73,675,231 | R 73,675,231 | R 73,675,231 | R 73,675,231 | R 73,675,231 | R368,376,156 | 67 | R | 73,675,231 |
| 69 | BMC4.3: Dewetsdorp Water & Sewerage Reticulation for Extension 8 and metering of sites (8.4km, 307 households) | 1 | R 18,293,620 | | | | | | | | | | R18,293,620 | None | R | 18,293,620 |
| 70 | BMC4.4: Addressing backlogs-Thaba Nchu: Providing water reticulation in Bultfontein 4 and metering of sites (5.21km, 270 households) | 1 | R 9,027,873 | | | | | | | | | | R9,027,873 | None | R | 9,027,873 |
| 71 | BMC4.5: Addressing backlogs-Thaba Nchu: Providing water reticulation in Ratau (West) and metering of sites (5.64km, 246 households) | 1 | | R 10,530,022 | | | | | | | | | R10,530,022 | 70 | R | 10,530,022 |
| 72 | BMC4.6: Addressing backlogs-Thaba Nchu: Providing water reticulation in Moroka Ext and metering of sites (5.04km, 199 households) | 1 | | R 8,422,347 | | | | | | | | | R8,422,347 | 70 | R | 8,422,347 |
| 73 | BMC4.7: Addressing backlogs-Thaba Nchu: Providing water reticulation in Selosessa and metering of sites (2.84km, 166 households) | 1 | | R 5,222,827 | | | | | | | | | R5,222,827 | 70 | R | 5,222,827 |
| 74 | BMC4.8: Addressing backlogs-Wepener: Providing water reticulation in Wepener Kanana (South) and metering of sites (2.05km, 117 households) | 1 | | | R 4,883,721 | | | | | | | | R4,883,721 | 73 | R | 4,883,721 |
| 75 | BMC4.9: Addressing backlogs-Botshabelo: Providing water reticulation in Botshabelo L (East) and metering of sites (0.72km, 96 households) | 1 | | | R 1,756,101 | | | | | | | | R1,756,101 | 73 | R | 1,756,101 |
| 76 | BMC4.10: Addressing backlogs-Thaba Nchu: Providing water reticulation in Thubisi and metering of sites (7.25km, 96 households) | 1 | | | R 12,434,815 | | | | | | | | R12,434,815 | 73 | R | 12,434,815 |
| 77 | BMC4.11: Addressing backlogs-Thaba Nchu: Providing water reticulation in Bultfontein 5 and metering of sites (5.71km, 75 households) | 1 | | | R 8,468,354 | | | | | | | | R8,468,354 | 73 | R | 8,468,354 |
| 78 | BMC4.12: Addressing backlogs-Botshabelo: Providing water reticulation in Botshabelo L (West) and metering of sites (0.46km, 61 households) | 1 | | | | R 1,115,856 | | | | | | | R1,115,856 | 77 | R | 1,115,856 |
| 79 | BMC4.13: Addressing backlogs-Thaba Nchu: Providing water reticulation in Station view and metering of sites (2.57km, 56 households) | 1 | | | | R 4,067,358 | | | | | | | R4,067,358 | 77 | R | 4,067,358 |
| 80 | BMC4.14: Addressing backlogs-Wepener: Providing water reticulation in Wepener Kanana (North) and metering of sites (1.18km, 52 households) | 1 | | | | R 2,646,246 | | | | | | | R2,646,246 | 77 | R | 2,646,246 |
| 81 | BMC4.15: Addressing backlogs-Thaba Nchu: Providing water reticulation in Ratau (East) and metering of sites (3.69km, 40 households) | 1 | | | | R 6,284,589 | | | | | | | R6,284,589 | 77 | R | 6,284,589 |
| | | | R423,878,467 | R546,792,732 | R868,175,808 | R455,715,005 | R175,028,056 | R182,803,720 | R160,579,824 | R166,441,183 | R162,292,774 | R162,292,774 | R3,187,874,121 | | | |