



**Reservoir Storage (2055)**

| Reservoir Name      | Supply Areas   | Reservoir Size (ML) | Reservoir Elevation (MSL) |
|---------------------|--|---------------------|---------------------------|
| Command Reservoir 1 | WARD 2, WARD 3, WARD 4 & WARD 5 and (Dangerehoek & Rock Cliff) | 11.00               | 1850                      |
| Command Reservoir 2 | WARD 2 & WARD 3  | 4.00                | 1105                      |

**BOREHOLE RESERVOIRS (2055)**

| Reservoir Name      | Supply Areas         | Reservoir Size (ML) | Reservoir Elevation (MSL) |
|---------------------|----------------------|---------------------|---------------------------|
| Supply Reservoir 13 | WARD 5 (Rock Cliff)  | 0.30                | 2105                      |
| Supply Reservoir 14 | WARD 4 (Dangerehoek) | 0.30                | 1916                      |

**SUPPLY RESERVOIRS (2055)**

| Reservoir Name      | Supply Areas  | Reservoir Size (ML) | Reservoir Elevation (MSL) |
|---------------------|---|---------------------|---------------------------|
| Supply Reservoir 1  | WARD 2 & WARD 3 and (Blakana, Maung, Tlankeng, Eng, Sibonono, Mngalagale, Qobosheane, Manti, Henge, Lower Taba, Taba Mission, Sibonono) | 3.50                | 1769                      |
| Supply Reservoir 2  | WARD 2 (Blakana, Gumba-Gumba, Hingathe, Mayeni Gona)  | 2.50                | 1650                      |
| Supply Reservoir 3  | WARD 2 (Blakana, Mayeni, Ngweneng, Dales, Nel, Mbebi)   | 1.00                | 1680                      |
| Supply Reservoir 4  | WARD 4 (Moko, Jules, Daweni)  | 0.50                | 1563                      |
| Supply Reservoir 5  | WARD 4 (Springanspoort, Boomkops, Fort Hook, Blikana, Luuzeni)  | 0.80                | 1720                      |
| Supply Reservoir 6  | WARD 5 (Mhono Skakheini)  | 0.30                | 1530                      |
| Supply Reservoir 7  | WARD 5 (Mngunya Sibakani)   | 0.30                | 1789                      |
| Supply Reservoir 8  | WARD 5 (Mngunya Sibakani, Kwagalo, Kaafedone, Mbitsheni, Mafafu, Zingungu, Pambona, Mafu, Nkulu, Mvoti)                                 | 0.50                | 1610                      |
| Supply Reservoir 9  | WARD 4 (Empheyan White City, Trappan)   | 0.40                | 1623                      |
| Supply Reservoir 10 | WARD 4 & WARD 5 (Springanspoort, Boomkops)  | 0.70                | 1630                      |
| Supply Reservoir 11 | WARD 4 (Mankwato Dam)   | 0.60                | 1762                      |

**Gravity Pipeline Class (2055)**

| Link Name                | Pipe Flow (m <sup>3</sup> /h) | Pipe Length (m) | Pipe Diameter (mm) | Pressure Class (Bar) |
|--------------------------|-------------------------------|-----------------|--------------------|----------------------|
| C RES 1-M02              | 0.121                         | 6700            | 500                | s                    |
| N02-CRES 1               | 0.081                         | 6700            | 400                | s                    |
| C RES 2-M07              | 0.036                         | 2077            | 250                | 25                   |
| C RES 2-S RES 6          | 0.013                         | 715             | 160                | 16                   |
| S RES 6 - SPRINGANSPOORT | 0.013                         | 5470            | 160                | s                    |
| N07-M04                  | 0.023                         | 2320            | 250                | 25                   |
| N04-S RES 7              | 0.005                         | 2385            | 110                | 25                   |
| N04-M05                  | 0.007                         | 2155            | 200                | s                    |
| N02-M06                  | 0.017                         | 705             | 200                | s                    |
| N06-S RES 8              | 0.006                         | 4025            | 110                | s                    |
| N06-S RES 9              | 0.011                         | 6735            | 160                | s                    |
| C RES 2-M05              | 0.038                         | 2935            | 315                | 25                   |
| N05-S RES 10             | 0.009                         | 697             | 160                | 25                   |
| N010-M011                | 0.003                         | 2955            | 250                | s                    |
| N011-S RES 11            | 0.016                         | 110             | 200                | s                    |
| N011-M06                 | 0.005                         | 2055            | 160                | 25                   |
| N08-M09                  | 0.009                         | 6545            | 160                | 25                   |
| N06-S RES 12             | 0.009                         | 12540           | 160                | s                    |
| C RES 2-S RES 1          | 0.082                         | 13075           | 400                | 16                   |
| S RES 1-M01              | 0.080                         | 3070            | 400                | 20                   |
| N01-S RES 2              | 0.063                         | 2678            | 315                | 20                   |
| N01-M02                  | 0.031                         | 3739            | 250                | 25                   |
| N02-M03                  | 0.031                         | 6794            | 250                | s                    |
| N03-S RES 3              | 0.021                         | 1042            | 200                | s                    |
| N03-S RES 4              | 0.010                         | 3030            | 160                | s                    |
| DAM-RAI-W RES 1          | 0.172                         | 645             | 500                | 6                    |

**Rising Main Sizes (2055)**

| Rising Main       | Total Demand (ML/S) | Pipe Flow (ML/S) | Static Head (MSL) | Pipe Length (m) | Pipe Diameter (mm) | Pressure Head (Bar) | System Head (m) |
|-------------------|---------------------|------------------|-------------------|-----------------|--------------------|---------------------|-----------------|
| WTW - CRES 1      | 7.432               | 0.109            | 355               | 7190            | 400                | s                   | 348.302         |
| WTW-BPS - S RES 5 | 0.219               | 0.006            | 38                | 4000            | 100                | s                   | 35.246          |

**GENERAL NOTES:**

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS

**LEGEND**

**PROPOSED SERVICES**

**PRESSURE / SUPPLY ZONES**

**SCHEME BOUNDARY**

**BULK PIPELINE**

110mm Ø PIPELINE

160mm Ø PIPELINE

200mm Ø PIPELINE

250mm Ø PIPELINE

315mm Ø PIPELINE

355mm Ø PIPELINE

400mm Ø PIPELINE

500mm Ø PIPELINE

600mm Ø PIPELINE

**RISING MAIN**

100mm Ø PIPELINE

200mm Ø PIPELINE

300mm Ø PIPELINE

400mm Ø PIPELINE

**RESERVOIRS**

**SUPPLY RESERVOIRS**

**COMMAND RESERVOIRS**

**RAW WATER RESERVOIRS**

**EXISTING WATER INFRASTRUCTURE**

**WATER RETICULATION**

**BULK WATER SUPPLY**

**RESERVOIR**

**BOREHOLE**

**REVISIONS**

| No | Date       | Drawn                                     | Checked | Appr |
|----|------------|---|---------|------|
| C  | 09/10/2025 | PRELIMINARY DESIGN, WITH LOCATION REVISED | WV      | LN   |
| B  | 20/10/2025 | PRELIMINARY DESIGN, WITH LOCATION REVISED | WV      | LN   |
| A  | 30/09/2025 | PRELIMINARY DESIGN                        | WV      | LN   |

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Department of Water and Sanitation  
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Reviewed by: W.VOELZANG

**Project**

**TELLE / BLIKANA BULK WATER SUPPLY SCHEME**

**Description**

**PROPOSED BULK PIPELINE LAYOUT PLAN**

Scale: 1:50 000 (A0) Date: SEPT 2025

Project No: J42104 / LP001 / C

ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK.

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ON ORIGINAL

0 10 20 30 40 50 60 70 80 90 100m

**Telle River BMS - Supply Areas Consumption**

| WARD         | CLUSTE R NO.      | Households                            | AREA            | Unaccounted for |         | Peak Demand |         | 2055 Average |         | 2055 Design |  |  |
|--------------|-------------------|---------------------------------------|-----------------|-----------------|---------|-------------|---------|--------------|---------|-------------|--|--|
|              |                   |                                       |                 | (M/day)         | (M/day) | (M/day)     | (M/day) | (M/day)      | (M/day) |             |  |  |
| WARD 2       | 1                 | Sesonyu                               | 636.22          | 1.20            | 1127.07 | 10.87       | 13.04   |              |         |             |  |  |
|              | 1                 | Sibonono SP                           | 160.96          | 1.20            | 193.04  | 1.96        | 2.23    |              |         |             |  |  |
|              | 1                 | Palmshoek SP                          | 227.50          | 1.20            | 265.12  | 2.75        | 3.30    |              |         |             |  |  |
|              | 2                 | Mngalagale SP                         | 85.74           | 1.20            | 78.88   | 0.78        | 0.91    |              |         |             |  |  |
|              | 2                 | Gona SP                               | 74.27           | 1.20            | 80.13   | 0.88        | 1.03    |              |         |             |  |  |
|              | 2                 | Maung SP                              | 424.78          | 1.20            | 508.73  | 4.62        | 5.49    |              |         |             |  |  |
|              | 2                 | Nalagaha SP                           | 156.99          | 1.20            | 188.39  | 1.82        | 2.18    |              |         |             |  |  |
|              | 2                 | Gumba-Gumba SP                        | 52.61           | 1.20            | 60.07   | 0.68        | 0.70    |              |         |             |  |  |
|              | 3                 | Rhooval SP                            | 84.83           | 1.20            | 101.80  | 0.98        | 1.16    |              |         |             |  |  |
|              | 4                 | Makuya SP                             | 50.25           | 1.20            | 60.30   | 0.58        | 0.70    |              |         |             |  |  |
|              | 4                 | Dales Nek SP                          | 24.48           | 1.20            | 29.25   | 0.28        | 0.34    |              |         |             |  |  |
|              | 4                 | Mbebi SP                              | 52.10           | 1.20            | 52.52   | 0.60        | 0.72    |              |         |             |  |  |
| 4            | Mbebi SP          | 62.13                                 | 1.20            | 74.85           | 0.72    | 0.88        |         |              |         |             |  |  |
| 4            | Nyongwen SP       | 75.84                                 | 1.20            | 82.77           | 0.41    | 0.50        |         |              |         |             |  |  |
| INSTITUTIONS |                   | St. Michael's Clinic                  | 17.42           | 1.00            | 17.42   | 0.20        | 0.20    |              |         |             |  |  |
|              |                   | St. Michael's Junior Secondary School | 13.83           | 1.00            | 13.83   | 0.16        | 0.16    |              |         |             |  |  |
|              |                   | Nalagaha Junior Secondary School      | 5.81            | 1.00            | 5.81    | 0.07        | 0.07    |              |         |             |  |  |
|              |                   | Ux-Gona Junior Secondary School       | 1.19            | 1.00            | 1.19    | 0.01        | 0.01    |              |         |             |  |  |
|              |                   | Makale Junior Secondary School        | 13.53           | 1.00            | 13.53   | 0.16        | 0.16    |              |         |             |  |  |
|              |                   | St. Teresa Senior Secondary School    | 23.89           | 1.00            | 23.89   | 0.28        | 0.28    |              |         |             |  |  |
|              |                   | Sibonono Junior Secondary School      | 35.90           | 1.00            | 35.90   | 0.42        | 0.42    |              |         |             |  |  |
|              | WARD 3            | 1                                     | Mbebi SP        | 118.01          | 1.20    | 141.61      | 1.37    | 1.64         |         |             |  |  |
|              |                   | 1                                     | Henge SP        | 79.87           | 1.20    | 94.41       | 0.91    | 1.08         |         |             |  |  |
|              |                   | 1                                     | Lower Telle SP  | 56.76           | 1.20    | 68.11       | 0.68    | 0.79         |         |             |  |  |
|              |                   | 1                                     | Taba Mission SP | 52.18           | 1.20    | 52.25       | 0.50    | 0.72         |         |             |  |  |
|              |                   | 1                                     | Sibonono SP     | 62.62           | 1.20    | 71.45       | 0.69    | 0.83         |         |             |  |  |
| 1            |                   | Qobosheane SP                         | 40.30           | 1.20            | 48.36   | 0.47        | 0.56    |              |         |             |  |  |
| 2            |                   | Mngalagale SP (1.2.3)                 | 226.07          | 1.20            | 271.29  | 2.62        | 3.14    |              |         |             |  |  |
| 3            |                   | Henge SP                              | 89.19           | 1.20            | 103.79  | 1.06        | 1.26    |              |         |             |  |  |
| 3            |                   | Tlankeng SP                           | 57.62           | 1.20            | 68.43   | 0.66        | 0.79    |              |         |             |  |  |
| 4            |                   | Era SP                                | 60.64           | 1.20            | 72.05   | 0.70        | 0.84    |              |         |             |  |  |
| 4            |                   | Tlankeng SP                           | 87.99           | 1.20            | 114.48  | 1.12        | 1.36    |              |         |             |  |  |
| 4            |                   | Mpoko                                 | 35.20           | 1.20            | 42.24   | 0.41        | 0.49    |              |         |             |  |  |
| 4            | Musong SP         | 17.42                                 | 1.00            | 17.42           | 0.20    | 0.20        |         |              |         |             |  |  |
| INSTITUTIONS |                   | Palmshoek Clinic                      | 17.42           | 1.00            | 17.42   | 0.20        | 0.20    |              |         |             |  |  |
|              |                   | Musong Clinic                         | 17.42           | 1.00            | 17.42   | 0.20        | 0.20    |              |         |             |  |  |
|              |                   | Tlankeng Senior Primary School        | 13.07           | 1.00            | 13.07   | 0.15        | 0.15    |              |         |             |  |  |
|              |                   | Era Junior Secondary School           | 4.29            | 1.00            | 4.29    | 0.05        | 0.05    |              |         |             |  |  |
|              |                   | Hoboseng Junior Secondary School      | 0.80            | 1.00            | 0.80    | 0.00        | 0.00    |              |         |             |  |  |
|              |                   | Makale Primary School                 | 11.89           | 1.00            | 11.89   | 0.13        | 0.13    |              |         |             |  |  |
|              |                   | Musong Junior Secondary School        | 19.73           | 1.00            | 19.73   | 0.23        | 0.23    |              |         |             |  |  |
|              |                   | Qobosheane Junior Secondary School    | 36.23           | 1.00            | 36.23   | 0.42        | 0.42    |              |         |             |  |  |
|              |                   | Taba Junior Secondary School          | 81.11           | 1.00            | 81.11   | 0.71        | 0.71    |              |         |             |  |  |
|              |                   | Tlankeng Senior Secondary School      | 137.15          | 1.00            | 137.15  | 1.59        | 1.59    |              |         |             |  |  |
|              | WARD 4            | 3                                     | Empheyan        | 81.83           | 1.20    | 98.31       | 0.95    | 1.14         |         |             |  |  |
|              |                   | 3                                     | White City SP   | 76.12           | 1.20    | 91.34       | 0.88    | 1.06         |         |             |  |  |
| 3            |                   | Trappan                               | 59.84           | 1.20            | 71.81   | 0.69        | 0.83    |              |         |             |  |  |
| 4            |                   | Komkulu SP                            | 51.13           | 1.20            | 61.35   | 0.59        | 0.71    |              |         |             |  |  |
| 4            |                   | Naloni SP                             | 50.76           | 1.20            | 60.83   | 0.59        | 0.71    |              |         |             |  |  |
| 4            |                   | Makuma SP                             | 51.39           | 1.20            | 61.67   | 0.59        | 0.71    |              |         |             |  |  |
| 4            |                   | Mbang SP                              | 25.43           | 1.20            | 30.52   | 0.29        | 0.35    |              |         |             |  |  |
| 4            |                   | Mankwato SP                           | 192.04          | 1.20            | 192.04  | 1.88        | 2.28    |              |         |             |  |  |
| 5            |                   | Nofanda SP                            | 26.78           | 1.20            | 34.53   | 0.33        | 0.40    |              |         |             |  |  |
| 5            |                   | Blen SP                               | 35.46           | 1.20            | 42.96   | 0.41        | 0.49    |              |         |             |  |  |
| 5            |                   | Mhono SP                              | 44.62           | 1.20            | 53.94   | 0.52        | 0.62    |              |         |             |  |  |
| 1            |                   | Julie                                 | 89.23           | 1.20            | 107.08  | 1.03        | 1.24    |              |         |             |  |  |
| 1            | Daweni            | 31.07                                 | 1.20            | 38.12           | 0.37    | 0.44        |         |              |         |             |  |  |
| 1            | Springanspoort SP | 41.62                                 | 1.20            | 49.95           | 0.48    | 0.58        |         |              |         |             |  |  |
| 2            | Boomkops SP       | 45.37                                 | 1.20            | 55.24           | 0.57    | 0.69        |         |              |         |             |  |  |
| 6            | Dangerehoek SP    | 26.62                                 | 1.20            | 31.11           | 0.33    | 0.39        |         |              |         |             |  |  |
| 6            | Namengane SP      | 21.21                                 | 1.20            | 25.45           | 0.25    | 0.29        |         |              |         |             |  |  |
| INSTITUTIONS |                   | Bebeza Senior Primary School          | 0.80            | 1.00            | 0.80    | 0.00        | 0.00    |              |         |             |  |  |
|              |                   | Qobosheane Junior Secondary School    | 16.36           | 1.00            | 16.36   | 0.19        | 0.21    |              |         |             |  |  |
|              |                   | Dangerehoek Junior Secondary School   | 4.75            | 1.00            | 4.75    | 0.06        | 0.06    |              |         |             |  |  |
|              |                   | Kwabo Primary School                  | 35.51           | 1.00            | 35.51   | 0.41        | 0.41    |              |         |             |  |  |
|              |                   | Makuma Junior Secondary School        | 23.83           | 1.00            | 23.83   | 0.27        | 0.27    |              |         |             |  |  |
|              |                   | Namengane Senior Primary School       | 0.80            | 1.00            | 0.80    | 0.00        | 0.00    |              |         |             |  |  |
|              |                   | Makale Senior Primary School          | 0.80            | 1.00            | 0.80    | 0.00        | 0.00    |              |         |             |  |  |
|              |                   | Mbang Primary Junior School           | 0.80            | 1.00            | 0.80    | 0.00        | 0.00    |              |         |             |  |  |
|              |                   | Penhook Senior Primary School         | 0.40            | 1.00            | 0.40    | 0.00        | 0.00    |              |         |             |  |  |
|              |                   | Stamwene Senior Secondary School      | 45.21           | 1.00            | 45.21   | 0.52        | 0.52    |              |         |             |  |  |
|              |                   | Attervale Junior Secondary School     | 0.80            | 1.00            | 0.80    | 0.00        | 0.00    |              |         |             |  |  |
|              |                   | Mabale Junior Secondary School        | 27.26           | 1.00            | 27.26   | 0.32        | 0.32    |              |         |             |  |  |
| WARD 5       | 1                 | Sibakani                              | 30.86           | 1.20            | 37.17   | 0.36        | 0.43    |              |         |             |  |  |
|              | 1                 | Blikana SP                            | 83.25           | 1.20            | 99.80   | 0.96        | 1.16    |              |         |             |  |  |
|              | 1                 | Mbebi                                 | 18.13           | 1.20            | 21.75   | 0.21        | 0.25    |              |         |             |  |  |
|              | 1                 | Luzini                                | 49.63           | 1.20            | 59.56   | 0.57        | 0.69    |              |         |             |  |  |
|              | 1                 | Sibonono                              | 44.35           | 1.20            | 53.22   | 0.51        | 0.62    |              |         |             |  |  |