7.4.6 World’s View Reservoir Upgrade

<table>
<thead>
<tr>
<th>Planning No.</th>
<th>105.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project No.</td>
<td></td>
</tr>
<tr>
<td>Project Status</td>
<td>Planning (as at January 2011)</td>
</tr>
</tbody>
</table>

**Project Description**

World’s View Reservoir is located to the north-west of the Pietermaritzburg Central Business District and is the primary storage facility on the ‘61 Pipeline (Figure 7.11). It was constructed in 1996 when the supply to the ‘61 Pipeline was transferred from D.V. Harris WTP to the then newly constructed Midmar WTP. The reservoir was originally constructed to break the Midmar WTP system head, so as not to damage the lower sections of the old ‘61 Pipeline, which were originally designed (1979) for the head from the D.V. Harris WTP. It thus serves as both a break pressure and balancing storage facility. The reservoir currently has two square 40 Ml compartments (24.5 m x 24.5 m) and is supplied from Midmar WTP.

The current demand through the World’s View Reservoir is 138 Ml/day. With increased demand predicted on the reservoir once the Western Aqueduct is commissioned, it is expected that the current reservoir capacity will amount to less than 12 hours of storage. At this stage it will be required that the total storage in the ‘61 system be increased to accommodate the additional demand. An additional 50 Ml storage at World’s View Reservoir may be required at this stage, although, this storage requirement could be delayed with the upgrade of the Umlaas Road Reservoir Complex.

Key information on this project is summarised in Table 7.12.

**Table 7.12 Project information: World’s View Reservoir Upgrade.**

<table>
<thead>
<tr>
<th>Project Components:</th>
<th>New 50 Ml reservoir.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity:</td>
<td>50 Ml.</td>
</tr>
</tbody>
</table>

**Institutional Arrangements**

Umgeni Water will build, own, operate and maintain all water supply infrastructure pertaining to this project.

**Beneficiaries**

The upgrade of World’s View Reservoir would benefit all downstream consumers served by the ‘61 Pipeline system. The beneficiaries are primarily the eThekwini and Msunduzi municipalities, but also include consumers within the Mkambathini Local Municipal areas of Umgungundlovu District Municipality.

**Implementation**

The construction duration of this project is anticipated to be two years. The total cost is anticipated to be R92 million at 2010 prices.
Figure 7.11 General layout of the World’s View reservoir upgrade.

Legend
- UIV Pipeline

Source:
Umgeni Water (Infrastructure, Dams, Rivers)

Original Scale on A4 at 1:5,000
7.4.7 '61 Pipeline: ED2 to Richmond Off-Take

<table>
<thead>
<tr>
<th>Planning No.</th>
<th>105.9</th>
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</thead>
<tbody>
<tr>
<td>Project No.</td>
<td>UI26A</td>
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<tr>
<td>Project Status</td>
<td>Construction (as at January 2011)</td>
</tr>
</tbody>
</table>

**Project Description**

Water demand in the Greater Pietermaritzburg/Edendale area and in eThekwini Municipality’s Outer West area has continued to increase significantly over recent years. This trend has increased the operational loading of the ‘61 Pipeline to the extent that the D.V. Harris off-take to World’s View Reservoir and the ‘61 Pipeline between World’s View Reservoir and the ED2 node has been duplicated. These measures will increase the available throughput of the system. The Richmond pipeline together with the current implementation by eThekwini of their WA (Section 5.2.1) and the corresponding load transfer from the Durban Heights WTP onto the Umlaas Road Reservoir will result in the ‘61 Pipeline System from ED2 to Umlaas Road not having sufficient capacity to meet these new demands. Hence, further augmentation of this section of the ‘61 System is required.

The augmentation of the ED2 to Richmond off-take section (Figure 7.12) of the ‘61 Pipeline through the Slangspruit area of Edendale is required to accommodate growing demands in the southern areas of Edendale (ED4), to make provision for the supply to the proposed Richmond Pipeline and to relieve the current bottleneck being experienced in this section of the system to Umlaas Road. This pipeline will augment the existing 800 mm diameter steel pipeline between the existing ED2 off-take and the proposed Richmond off-take. Where feasible, the new pipeline will run parallel to and within the same servitude as the existing pipeline. Key information on this project is summarised in Table 7.13.

**Table 7.13 Project information: ED2 to ED4 Pipeline.**

<table>
<thead>
<tr>
<th>Project Components</th>
<th>4 000 m long section of 1 100 mm nominal diameter steel pipeline.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>164 Ml/day.</td>
</tr>
</tbody>
</table>

**Institutional Arrangements**

Umgeni Water will own, operate and maintain the ‘61 Pipeline System infrastructure and will sell potable water from this system to The Msunduzi Municipality, eThekwini Municipality and Umgungundlovu District Municipality as per existing bulk water supply agreements.

**Beneficiaries**

While Edendale’s housing developments will be the immediate direct beneficiaries, the extension forms part of the upgrading to ensure that the maximum flow available can pass through the ‘61 System. These beneficiaries from this are primarily The Msunduzi and eThekwini Municipalities, but also include consumers within the Mkhambathini Municipal area of Umgungundlovu District Municipality. The Richmond Municipality will also benefit once the Richmond Pipeline is implemented.

**Implementation**

The construction duration of this project is anticipated to be two years. The total cost is anticipated to be R105 million at 2010 prices.
Figure 7.12 General layout of the ED2 to Richmond Offtake

Legend
- Purple: UW Pipeline
- Yellow: Proposed Pipeline

Source:
KZN Department of Transport (Roads)
Umguneli Water (Infrastructure, Dams, Rivers)

Original Scale on A4 at 1:20,000
7.4.8 ’61 Pipeline: Richmond Off-Take to Umlaas Road

<table>
<thead>
<tr>
<th>Planning No.</th>
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</thead>
<tbody>
<tr>
<td>Project No.</td>
<td>UI25B</td>
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<tr>
<td>Project Status</td>
<td>Design (as at January 2011)</td>
</tr>
</tbody>
</table>

Project Description

Water demand in the Greater Pietermaritzburg/Edendale area and in eThekwini Municipality’s Outer West area has continued to increase significantly over recent years. This trend has increased the operational loading of the ’61 Pipeline to the extent that the ’61 Pipeline between the D.V. Harris off-take and World’s View Reservoir and World’s View Reservoir and the ED2 node has been duplicated. These measures will increase the available throughput of the system. The current implementation by eThekwini of their Western Aqueduct (Section 5.2.1) and the corresponding load transfer from the Durban Heights WTP onto the Umlaas Road Reservoir will result in the ’61 Pipeline System from ED2 to Umlaas Road not having sufficient capacity to meet these new demands. Hence, further augmentation of this section of the ’61 System is required. The section between ED2 and the Richmond off-take is in construction and is discussed in Section 7.4.7.

The existing 800 mm diameter pipeline between Richmond off-take and Umlaas Road has several constrictions (down to 600 mm and 400 mm diameter) along its length that restrict its throughput considerably. Notwithstanding these restrictions, the 800 mm diameter pipeline only has a design capacity of 87 Ml/day (at 2 m/s). In order to accommodate a portion of the planned Western Aqueduct load shift until such time as the proposed Mkomazi Water Project (Sections 4.4.4 and 7.2.1) comes on line, it will be necessary to both remove all the constrictions in the existing pipeline and install a 13 km section of new pipeline between the Richmond off-take and the Umlaas Road Reservoir Complex (Section 5.2.1). It has been proposed that a 1 100 mm nominal diameter steel pipeline be constructed, but the limited availability of water upstream of the Richmond off-take may mean that a smaller pipeline in eventually installed. The proposed augmentation from Richmond off-take to Umlaas Road is shown in Figure 7.13.

Key information on this project is summarised in Table 7.14.

Table 7.14 Project information: Richmond off-take to Umlaas Road Pipeline.

<table>
<thead>
<tr>
<th>Project Components:</th>
<th>13 km of 1 100 mm diameter pipeline.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity:</td>
<td>164 Ml/day.</td>
</tr>
</tbody>
</table>
Figure 7.13 General layout of the Richmond offtake to Umlaas Rd Pipeline.

Legend:
- **UW Reservoir**
- **UW Pump Station**
- **Reservoir (Other)**
- **UW Pipeline**
- **Proposed Pipeline**

Source:
- KZN Department of Transport (Roads)
- Umgeni Water (Infrastructure, Dams, Rivers)

Original Scale on A4 at 1:80,000
Institutional Arrangements

Umgeni Water will own, operate and maintain the ’61 Pipeline System infrastructure and will sell potable water from this system to the Msunduzi Municipality, eThekwini Municipality and Umgungundlovu District Municipality as per existing bulk water supply agreements.

Beneficiaries

The augmentation will primarily benefit the eThekwini Municipality and allow for a partial load shift from the Western Aqueduct. Consumers within the Msunduzi and the Mkhambathini Municipal area of Umgungundlovu District Municipality will also benefit.

Implementation

It is expected to take two years to construct this project at an estimated cost of R 178 million at 2010 prices.