

## 7. Water Balance

This section views water services holistically taking account of the amount of water abstracted, supplied to consumers, lost in processing and returned to the resource in order to understand the functioning of the water supply system and ensure a balanced cycle for future sustainability. The overall idea is that what is taken out of the system must be returned to the system.

ZDM has initiated a reporting system whereby all Water Services Providers (WSP's) in the district have to provide certain prescribed operational information to the municipality on a monthly basis. Included in the information is water abstraction volumes, treatment volumes, consumer metered and billed volumes and effluent volumes at the sewage works. This information will eventually be used to compile a more comprehensive and accurate water balance for the district.

Unfortunately there is currently insufficient information related to internal losses and inflows into the sewage works to complete a comprehensive water balance. However, an attempt was made to produce a first order water balance with figures from data that was available at the time, as indicated below:

**Table 7.1 (a): First order water balance for district**

DESCRIPTION	% LOSSES	MI/d	MI/year
Estimated bulk water abstracted		77.99	28 446
Estimated bulk water purchased from others		-	-
<b>Estimated bulk water treated</b>		<b>77.99</b>	<b>28 446</b>
Estimated losses during treatment	10%	7.8	2 844.6
Estimated physical water losses during distribution	15%	11.69	4 266.9
<b>Estimated volume of water supplied to consumers</b>	<b>75%</b>	<b>58.49</b>	<b>21 334.5</b>
Estimated influent at wastewater works	60%	27.9	10 184
Estimated losses during treatment	10%	4.7	1 697
<b>Estimated effluent discharged to source</b>		<b>14.0</b>	<b>5 092</b>
<b>Balance (discharge - abstraction)</b>		<b>-48.1</b>	<b>-17 538</b>