

#### 4.4.1 Water Supply Network

- (1) The desired standards of service for the water supply system are detailed in Tables 4.4.1.1 and 4.4.1.2.
- (2) Livingstone Shire Council aims to provide reticulated potable water supply to the consumer to meet the demands imposed upon it by both the consumers and the fire-fighting requirements.
- (3) It is acknowledged that in some cases, due to local circumstances, the desired standards of service may not be met. In these situations, water supply trunk infrastructure aims to meet the standards to the greatest degree practicable.

**Table 4.4.1.1 - Water Supply Network Design Criteria**

Design criteria	Measure
Average Day (AD) Demand	500 litres per equivalent person per day (L/EP/Day)
Maximum Day (MD) Demand	1.9 x average day (AD)
Maximum Hour (MH) Demand	1/12 x maximum day (MD)
One (1) equivalent tenement (ET)	2.7 equivalent persons (EP)
Minimum Service Pressure	<ul style="list-style-type: none"> <li>22 metres head at the centroid of the residential lot during normal diurnal flow in the reticulation non-trunk network</li> <li>for trunk network to be a minimum 1-meter head at all times</li> </ul>
Desirable Upper Service Pressure	50 metres head at the centroid of the residential lot during normal diurnal flow in the reticulation non-trunk network
Maximum Service Pressure	<ul style="list-style-type: none"> <li>80 meters head at the centroid of the residential lot in the reticulation non-trunk network</li> <li>90 meters for the trunk network</li> </ul>
Fire Fighting Pressure	12 metres minimum in the reticulation non-trunk water supply network
Fire Flow for residential area in the reticulation non-trunk network	15 litres per second for a duration of two (2) hours at minimum pressure of 120 kilopascals (kPa)
Fire Flow for industrial/commercial area in the reticulation non-trunk network	30 litres per second for a duration of four (4) hours at minimum pressure of 120 kilopascals (kPa)
Pipeline design maximum velocity	two (2) metres per second (1.5m/sec desirable for optimum energy useage)
Reservoir Capacity	one (1) Maximum Day for the supply zone
Trunk Water Main sizing	<ul style="list-style-type: none"> <li>Average Day (AD) supply to Trunk Dams</li> <li>Maximum Day (MD) supply to Reservoirs</li> <li>Maximum Hour (MH) supply to reticulation</li> </ul>

**Table 4.4.1.2 – Water Supply Network Desired Standards of Service**

Reliability/continuity of supply	The water supply system has been designed to provide water twenty-four (24) hours a day seven (7) days a week, but under certain	<ul style="list-style-type: none"> <li>Livingstone Shire Planning Scheme</li> <li>Section 3 and table 3.1 FRW Strategic Asset Management Plan 22/11/2012</li> <li><i>Water Supply (Safety and Reliability) Act</i></li> </ul>
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	circumstances, Livingstone Shire Council may need to interrupt or limit this service so that essential repair and maintenance work can be carried out.	<ul style="list-style-type: none"> <li>• Compliance with the requirements of the System Leakage Management Plan for the Rockhampton Region</li> <li>• Capricorn Municipal Development Guidelines</li> </ul>
Adequacy of supply	The objective of the water supply system is to provide to the consumer a reticulated potable water supply to meet the demands imposed upon it by both the consumer and firefighting requirements.	<ul style="list-style-type: none"> <li>• Livingstone Shire Planning Scheme</li> <li>• Water Development Code and Planning Scheme Policy – Livingstone Shire Planning Scheme</li> <li>• Capricorn Municipal Development Guidelines</li> <li>• <i>Water Supply (Safety and Reliability) Act</i></li> <li>• Compliance with the requirements of the System Leakage Management Plan for the Rockhampton Region</li> </ul>
Quality of supply	Livingstone Shire Council will ensure that the water quality is generally in accordance with recognised standards that safeguards community health.	<ul style="list-style-type: none"> <li>• Australian Drinking Water Quality Guidelines issued by the National Health and Medical Research Council</li> <li>• Section 3 table 3.2 FRW Strategic Asset Management Plan 22/11/2012</li> </ul>
Environmental impacts	The environmental impacts of the water supply network are minimised in accordance with community expectations.	<ul style="list-style-type: none"> <li>• Livingstone Shire Planning Scheme</li> <li>• Compliance with the requirements of the <i>Environmental Protection Act 1994</i></li> <li>• <i>Water Supply (Safety and Reliability) Act</i></li> </ul>
Pressure and leakage management	The water supply network is monitored and managed to maintain the reliability and adequacy of supply and to minimise environmental impacts.	<ul style="list-style-type: none"> <li>• Livingstone Shire Planning Scheme</li> <li>• Compliance with the requirements of the System Leakage Management Plan for the Rockhampton Region</li> <li>• <i>Water Supply (Safety and Reliability) Act</i></li> </ul>
Infrastructure design/ planning standards	Design of the water supply network will comply with established guidelines, codes and standards.	<ul style="list-style-type: none"> <li>• Capricorn Municipal Development Guidelines – Design Specifications and Standard Drawings</li> <li>• Water Reticulation Code of Australia WSA 03-1999</li> <li>• Department of Natural Resources and Mines Planning Guidelines for Water Supply and Sewerage March 2005</li> </ul>