

4.4.2 Sewerage Network

- (1) The desired standards of service for the sewerage system are detailed in Tables 4.4.2.1, 4.4.2.2 and 4.4.2.3.
- (2) Livingstone Shire Council aims to provide reticulated sewerage to the consumer to meet the demands imposed upon it by the consumers and the Environmental Protection Agency.
- (3) The objective of the sewerage system is to transport sewage from domestic, commercial and industrial properties using gravity flow pipes and where this is uneconomical, by pumping to the treatment plant.
- (4) It is acknowledged that in some cases, due to local circumstances, the desired standards of service may not be met. In these situations, sewerage trunk infrastructure aims to meet the standards to the greatest degree practicable.

Table 4.4.2.1 – Sewerage Network Design Criteria

Design criteria	Measure
One (1) equivalent person (EP)	200 litres per equivalent person per day (L/EP/day)
One (1) equivalent tenement (ET)	2.7 equivalent person (EP)
Average Dry Weather Flow (ADWF)	540 litres per equivalent tenement per day (L/ET/day)
Peak Dry Weather Flow (PDWF)	2.5 x Average Dry Weather Flow (ADWF)
Wet Weather Flow (WWF)	Five (5) x Average Dry Weather Flow (ADWF)
Sewage pump station emergency storage	Four (4) hours minimum
Total sewage pump station capacity	Wet Weather Flow or Five (5) x Average Dry Weather Flow (ADWF) minimum
Gravity Main Flow Capacity	75% of full depth at Wet Weather Flow (WWF) capacity
Gravity Main Minimum velocity at Peak Dry Weather Flow (PDWF)	0.7 m/sec at Peak Dry Weather Flow (PDWF) capacity
Gravity Main Maximum velocity at wet weather flow (WWF)	2 m/sec at Wet Weather Flow (WWF) capacity
Rising main minimum scouring velocity	0.7 m/sec at Peak Dry Weather Flow (PDWF) capacity
Rising main maximum velocity	<ul style="list-style-type: none"> 1.5m/sec for new trunk sewer rising mains at Wet Weather Flow (WWF) capacity 2 m/sec for augmentation of existing trunk sewer rising mains at Wet Weather Flow (WWF) capacity
Planning Horizon	<ul style="list-style-type: none"> Ultimate for reticulation (non-trunk) network 20 years for trunk gravity mains, trunk sewage pump stations, trunk sewer rising mains, trunk effluent pressure mains
Odour Protection	<ul style="list-style-type: none"> Required for new trunk sewage pump stations where initial loadings cause long detention times Not required for augmented sewage pump stations
Air Release and Air Scour	<ul style="list-style-type: none"> Air Venting in all gravity sewer mains at locations of excessive turbulence – particularly where a steep (super-critical flow) meets a flat section (sub-critical flow), and discharge chambers Air scours on rising mains where air lock is a risk

Table 4.4.2.2 – Treated water quality

Criteria	Measure
Biological Oxygen Demand (BOD)	Less than 20 milligrams per litre
Dissolved Oxygen (DO)	Greater than 6 milligrams per litre
Suspended Solids (SS)	Less than 30 milligrams per litre
pH	6.5 – 7.5
Free chlorine residual	Less than 0.7 milligrams per litre

Table 4.4.2.3 – Sewerage Network Desired Standards of Service

Reliability	<p>Livingstone Shire Council is to provide prompt, courteous and effective sewerage services to its customers.</p> <p>Staff make every effort to ensure the sewerage system operates adequately and with minimal disruption.</p>	<ul style="list-style-type: none"> Livingstone Shire Planning Scheme Section 3.2 and tables 3.3 to 3.5 Fitzroy River Water Strategic Asset Management Plan 22/11/2012
Quality of treatment	<p>Livingstone Shire Council uses every effort to continue to operate the sewerage system efficiently and effectively, ensuring the highest value for effluent is received for all sewerage treatment plants.</p> <p>The quality of treatment ensures the health of the community, the safe and appropriate level of treatment and proper disposal of treated effluent.</p>	<ul style="list-style-type: none"> Compliance with the requirements of the <i>Environmental Protection Act 1994</i> Tables 2.15 to 2.18 Fitzroy River Water Strategic Asset Management Plan 22/11/2012
Environmental impacts	<p>Livingstone Shire Council uses every effort to continue to operate the sewerage system efficiently and effectively and minimise sewage overflows and interruptions. The environmental impacts of the sewerage network are minimised in accordance with community expectations.</p>	<ul style="list-style-type: none"> Livingstone Shire Planning Scheme Compliance with the requirements of the <i>Environmental Protection Act 1994</i>
Effluent reuse	<p>Livingstone Shire Council reuses effluent wherever possible.</p>	<ul style="list-style-type: none"> Compliance with the requirements of the <i>Environmental Protection Act 1994</i> Queensland Water Recycling Guidelines – December 2005
Infrastructure design/ planning standards	<p>Design of the sewerage network will comply with the established guidelines, codes and standards.</p>	<ul style="list-style-type: none"> Capricorn Municipal Development Guidelines – Design Specifications and Standard Drawings Sewerage Reticulation Code of Australia

		<p>WSA 03-1999</p> <ul style="list-style-type: none"> • Department of Natural Resources and Mines Planning Guidelines for Water Supply and Sewerage March 2005 • <i>Water Supply (Safety and Reliability) Act</i>

