

CHANGES TO D12 – SEWERAGE DESIGN

This document outlines significant change (not all changes) to Rev K Jul 2018 Version

Clause numbers listed are as per the most recent document unless specified otherwise.

Clause	Change																
D12.04.04 (Table)	New wording for pipe bedding material: <i>Pipe bedding material shall be coarse bedding sand or other Local Government approved source. In the absence of any specific approval the following specifications shall apply.....</i>																
D12.06.01 (Table)	Updated for Gladstone, Livingstone and Maranoa Table D12.06.01 Sewer Reticulation Network Analysis Software <table border="1"> <thead> <tr> <th>Council</th> <th>Software Used</th> </tr> </thead> <tbody> <tr> <td>Banana Shire</td> <td></td> </tr> <tr> <td>Central Highlands Regional</td> <td></td> </tr> <tr> <td>Gladstone Regional</td> <td>InfoSWMM</td> </tr> <tr> <td>Isaac Regional</td> <td></td> </tr> <tr> <td>Livingstone Shire</td> <td>SWMM</td> </tr> <tr> <td>Maranoa Regional</td> <td>SEWERGEMS</td> </tr> <tr> <td>Rockhampton Regional</td> <td>SEWERGEMS</td> </tr> </tbody> </table>	Council	Software Used	Banana Shire		Central Highlands Regional		Gladstone Regional	InfoSWMM	Isaac Regional		Livingstone Shire	SWMM	Maranoa Regional	SEWERGEMS	Rockhampton Regional	SEWERGEMS
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D12.09.01 (Table)	New MINIMUM DROP THROUGH CHAMBER table added <i>Table D12. Error! No text of specified style in document..01 Minimum Drop through Chamber</i> <table border="1"> <thead> <tr> <th>Angle</th> <th>Minimum Drop through Chamber (mm) *</th> </tr> </thead> <tbody> <tr> <td>90 - 112°</td> <td>40</td> </tr> <tr> <td>112 - 125°</td> <td>40</td> </tr> <tr> <td>125 - 140°</td> <td>40</td> </tr> <tr> <td>140 - 150°</td> <td>20</td> </tr> <tr> <td>150 - 170°</td> <td>20 (Y Pattern)</td> </tr> <tr> <td>Straight</td> <td>20</td> </tr> </tbody> </table>	Angle	Minimum Drop through Chamber (mm) *	90 - 112°	40	112 - 125°	40	125 - 140°	40	140 - 150°	20	150 - 170°	20 (Y Pattern)	Straight	20		
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D12.09.08	Changes to Discharge Chambers requirements as follows: Table D12.09.08 Discharge Access Chambers <table border="1"> <thead> <tr> <th>Local Government</th> <th>Discharge Access Chamber Requirements</th> </tr> </thead> <tbody> <tr> <td>Banana Shire</td> <td rowspan="4">Fabricated polyethylene type or approved equivalent with integral benching, bottom, top, access neck and pipe stubs; OR Concrete epoxy coated (Parchem or equivalent products).</td> </tr> <tr> <td>Central Highlands Regional</td> </tr> <tr> <td>Gladstone Regional</td> </tr> <tr> <td>Isaac Regional</td> </tr> <tr> <td>Livingstone Shire</td> <td>Fabricated polyethylene type or approved equivalent with integral benching, bottom, top, access neck and pipe stubs. Concrete epoxy coated (Parchem or equivalent products) may be used for refurbishing existing concrete access chambers only.</td> </tr> <tr> <td>Maranoa Regional</td> <td>Fabricated polyethylene type or approved equivalent with integral benching, bottom, top, access neck and pipe stubs; OR Concrete epoxy coated (Parchem or equivalent products)</td> </tr> </tbody> </table>	Local Government	Discharge Access Chamber Requirements	Banana Shire	Fabricated polyethylene type or approved equivalent with integral benching, bottom, top, access neck and pipe stubs; OR Concrete epoxy coated (Parchem or equivalent products).	Central Highlands Regional	Gladstone Regional	Isaac Regional	Livingstone Shire	Fabricated polyethylene type or approved equivalent with integral benching, bottom, top, access neck and pipe stubs. Concrete epoxy coated (Parchem or equivalent products) may be used for refurbishing existing concrete access chambers only.	Maranoa Regional	Fabricated polyethylene type or approved equivalent with integral benching, bottom, top, access neck and pipe stubs; OR Concrete epoxy coated (Parchem or equivalent products)					
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D12.10.01 (Table)	Amendments to rising main material type as set out in the following table			
	Table D12.10.01 Sewer Main & Fitting Material Type			
	Local Council	Gravity Mains – 150mm and 225mm	Gravity Mains 300mm and greater	Rising Mains
	Banana Shire	PVC RRJ in 3m lengths	To be determined by Sewerage Service Provider	PVC Class PN 16 or DI PN35
	Central Highlands Regional	PVC RRJ in 3m lengths		PVC Class PN 16 or DI PN35
	Gladstone Regional	PVC RRJ in 3m lengths	Ductile Iron PN35 (Tyton Extreme or equivalent)	PVC Class PN 16 Ductile Iron PN35 (Tyton Extreme or equivalent) PE 100 PN12.5
	Isaac Regional	PVC RRJ in 3m lengths	To be determined by Sewerage Service Provider	PVC Class PN 16 or DI PN35
	Livingstone Shire	PVC RRJ in 3m lengths		PVC Class PN 16 or DI PN35 or PE 100 PN12.5
Maranoa Regional	PVC RRJ in 3m lengths	PVC Class PN 16 or DI PN35 or PE 100 PN12.5		
Rockhampton Regional	PVC RRJ in 3m lengths	PVC Class PN 16 or DI PN35		
D12.12.08	TRENCHES & EXCAVATIONS section amended to remove specific control requirements and the following clauses have been added.			
	D12.01.01. Control measures shall meet current environmental requirements.			
	D12.12.08 <i>Where approved by the relevant authority, under boring under paving, kerb and gutter or other improved surfaces in lieu of trenching, backfilling shall be so carried out as to restore full support to those surfaces. The Contractor shall remain responsible for the repair of the improved surfaces, if subsequently damaged due to subsidence, until the end of the Defects Liability Period.</i>			
D12.09.04	Lampholes now approved by MRC.			
	Table D12.09.04 Approved use of maintenance shafts and Lampholes			
	Local Council	Maintenance Shafts	Lampholes	
	Banana Shire	Not Approved	Not Approved	
	Central Highlands Regional	Approved*	Approved	
	Gladstone Regional	Not Approved	Not Approved	
	Isaac Regional	Not Approved	Not Approved	
	Livingstone Shire	Approved*	Approved	
	Maranoa Regional	Not Approved	Approved	
Rockhampton Regional	Not Approved	Approved		

D12.09.05	Precast Conical Chamber bases now approved by MRC Table D12.09.05 Use of Precast Conical Access Chamber Bases	
	Local Government	Precast Conical Access Chamber Bases
	Banana Shire	Not approved
	Central Highlands Regional	Approved
	Gladstone Regional	Not approved
	Isaac Regional	Not approved
	Livingstone Shire	Approved
	Maranoa Regional	Approved
	Rockhampton Regional	Approved
D12.13	Multiple changes have been made to LAYING AND JOINTING OF PIPES section.	
D12.15	Multiple changes to PROPERTY CONNECTION BRANCH & POINT OF CONNECTION	
D12.16.05, 07, 08, 10	Clauses added to BACKFILL AND COMPACTION section regarding backfill and compaction around risers and precast chambers in particular.	
D12.20.02 (Table)	New WET WELL INTERNAL DIAMETER table added D12.01.01. Table D12.20.02 Wet Well Internal Diameter	
	Local Government	Minimum wet well internal diameter (mm)
	Banana Shire	TBA
	Central Highlands Regional	TBA
	Gladstone Regional	3000
	Isaac Regional	TBA
	Livingstone Shire	2400
	Maranoa Regional	2400
Table D12.20.04	Well washers now required for all CMDG Local Governments	
D12.20.18	New wording regarding odour assessment Vent poles or proprietary odour units must be provided, <i>if required as a result of the odour assessment, and approved by the Sewerage Service Provider.</i>	

D12.20.20	Amendments to Emergency storage requirements as per following table and notes.		
	Table D12. Error! No text of specified style in document..02 Emergency Storage		
	Local Government	Emergency Storage Requirement	Calculation method for Emergency Storage Capacity
	Banana Shire	4 hours Average Dry Weather Flow (4xADWF) #1	Volume of wet well plus upstream network capacity (pipes and access chambers) below overflow level.
	Central Highlands Regional		
	Gladstone Regional	4 hours Average Dry Weather Flow based on the design capacity of the pump station (4xADWF)#.2,3 For Upgrades To Existing Pump Stations: If the Sewerage Service Provider determines that the above requirement would be financially or socially onerous (ie due to large land acquisitions being required), then 4 hours Average Dry Weather Flow of the immediate gravity catchment (4xADWF)#.4,5 may be accepted.	Volume of wet well or other immediate upstream emergency storage devices between the duty pump start level and the overflow level. Upstream network capacity is excluded.
Isaac Regional	4 hours Average Dry Weather Flow (4xADWF) #1	Volume of wet well plus upstream network capacity (pipes and access chambers) below overflow level.	
Livingstone Shire			
Maranoa Regional			
Rockhampton Regional			
	<p>#1. <i>An absolute minimum of two hours Average Dry Weather Flow (2xADWF) emergency storage may be provided subject to completion of a satisfactory risk assessment and subject to provision of an on-site generator Secondary Power Supply</i></p> <p>#2. <i>A risk assessment must be approved by the Sewerage Service Provider and must be cognisant of sensitive public health and environmental duty of care legislative responsibilities, quality of electricity supply and operational plant of the relevant Sewerage Service Provider.</i></p> <p>#3. <i>Pump stations with larger flows (duty pump capacity is more than 50L/s) shall be provided with an on-site Secondary Power Supply, even if it complies with emergency storage capacity. Pump stations of less than 45 kW shall not be provided with standby generators unless the duty pump capacity is more than 50L/s. For pump stations less than 45kW alternative secondary power supplies such as UPS may be considered.</i></p> <p>#4. <i>All major upgrades to existing pump stations are to meet these criteria. An upgrade to an existing pump station is considered major when the upgrade will involve expenditure in excess of whichever is greater of either:</i></p> <ul style="list-style-type: none"> • <i>70% of the replacement value of pump station (as documented in the Council asset management system); or</i> • <i>\$164,000 (note that this figure is relevant as of 1 January 2015 and will increase by 3% as of 1 January thereafter or until the EHP code is reviewed).</i> <p>#5. <i>Existing pump station refers to pump stations constructed prior to 1 January 2012.</i></p>		
D12.23.02	<p>New clause in Control and Telemetry Design</p> <p><i>A radio desk top survey must be conducted at the developers cost to determine the best signal path for the telemetry communication to occur.</i></p>		

D12.25	Sewer inspection requirements amended per following table.				
	Table D12.25.01 Inspection Requirements for Completed Sewer				
	Local Government	Method of Inspection for Completed Sewer Mains			
	Banana Shire	Visual inspection			
	Central Highlands Regional	CCTV and visual inspection			
	Gladstone Regional	CCTV and visual inspection			
	Isaac Regional	Visual inspection / CCTV if required by Council			
	Livingstone Shire	Visual inspection / CCTV if required by Council			
	Maranoa Regional	CCTV and visual inspection			
Rockhampton Regional	Visual inspection / CCTV if required by Council				
D12.27	Testing requirements have been amended for GRC				
	Table D12. Error! No text of specified style in document..03 Testing Requirements for Gravity Sewer				
	Local Government	Low Pressure Air Testing of gravity Sewer Mains	Hydrostatic Testing of Gravity Sewer Mains	NATA Accreditation	Vacuum testing for Gravity sewer mains as per AS 2566
	Banana Shire	Approved	Approved	No	Not Approved
	Central Highlands Regional	Approved	Approved	No	Not Approved
	Gladstone Regional	Approved	Approved	Yes	Approved
	Isaac Regional	Approved	Approved	No	Not Approved
	Livingstone Shire	Approved	Approved	Yes*	Approved
	Maranoa Regional	Approved	Approved	No	Not Approved
	Rockhampton Regional	Approved	Approved	No	Not Approved
* provided the entire contributing network is tested.					

D12.28	Amendments to access chamber testing requirements as per table below		
	Table D12. Error! No text of specified style in document.. 04 Testing of Access Chambers		
	Local Government	Method of testing of Access Chambers	NATA Accreditation
	Banana Shire	Hydrostatic testing in accordance with the procedure outlined below.	No
	Central Highlands Regional		
	Gladstone Regional	Vacuum Testing in accordance with AS 2566 OR Hydrostatic testing in accordance with the procedure outlined below.(Vacuum to be utilised in locations of high water table)	Yes
	Isaac Regional	Vacuum Testing in accordance with AS 2566 OR Hydrostatic testing in accordance with the procedure outlined below.	Yes
	Livingstone Shire		
Maranoa Regional	Hydrostatic testing in accordance with the procedure outlined below.	No	
Rockhampton Regional	Vacuum Testing in accordance with AS 2566 OR Hydrostatic testing in accordance with the procedure outlined below.(Vacuum to be utilised in locations of high water table)	Yes	
D12.33	SEWERAGE NETWORK DOCUMENTATION various minor amendments		
D12.34	PUMPING STATION DOCUMENTATION various amendments including <i>Pump Station Operating Condition Report must be provided to the Sewerage Service Provider during the Development Application submission phase. The report shall address all the activities and conditions referenced in Department of Environment and Heritage Protection guidelines - Model Operating Conditions ERA 63 - Sewage Treatment.</i>		
D12.37	PURCHASE SPECIFICATIONS references and numbering updated		