

CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES

2023 MEETING 9 MINUTES

Venue: GRC Offices in Calliope
Date and Time: 16th November 2023 at 10:00 am

Item	Item																																	
1	Welcome Open 10am Attendance: In person: Richard Bywater (MCE), Todd Lisle (MCE), Brendan Fuller (GRC), Jamie McCall (RRC), Grant Vaughan (RRC), Allen Chen (LSC), Scott McDonald (GRC), Teams: Gary Carlyle (IRC), Michael Stanton (IRC), Sarah Banda (CHRC), Jon Ashman (LSC), Jarvis Black (MRC), Frank Nastasi (IRC), Nathan Garvey (BSC)																																	
2	Apologies: Chris Hegarty (MCE), Frans Krause (GRC), Anthony Lipsys (BSC), Cameron Hoffman (MRC)																																	
3	True and correct record of minutes from previous meeting Refer Attachment A <u>M2023.09 Resolution:</u> That the minutes of the meeting held via Teams on 6 th October 2023 be formally adopted.																																	
4	Terms of reference and Budget																																	
5	Outstanding items from the previous meeting This includes items which were not fully resolved at the previous meeting or items not considered due to time constraints. <table><tr><th>Item number</th><th>Item</th><th>Proponent</th></tr><tr><td>M10.5.1</td><td>D6 Site regrading – consider retaining wall issue</td><td>LSC</td></tr><tr><td>M22.04.01</td><td>Review of Reference documents in all Specifications</td><td>BSC</td></tr><tr><td>M23.01.06</td><td>C224 – Open Drains</td><td>GRC</td></tr><tr><td>M23.02.02</td><td>D11 Water Supply Network -D11.07.02 and Table D.11.07.02 Minimum and Maximum Pressures for Network Design</td><td>LSC</td></tr><tr><td>M23.03.01</td><td>G-020 Updates</td><td>All</td></tr><tr><td>M23.04.02</td><td>GRC Low Pressure Sewer System Drawing</td><td>GRC</td></tr><tr><td>M23.04.04</td><td>CMDG-R-040 Property Access along Bitumen Roads</td><td>CHRC</td></tr><tr><td>M23.06.01</td><td>Minimum Sewer Grades for low EPs</td><td>MCE</td></tr><tr><td>M23.06.02</td><td>Discrepancy between D5 and D1 road stormwater design</td><td>MCE</td></tr><tr><td>M23.06.03</td><td>Addition of gate detail to drawing G-011</td><td>MCE</td></tr></table>	Item number	Item	Proponent	M10.5.1	D6 Site regrading – consider retaining wall issue	LSC	M22.04.01	Review of Reference documents in all Specifications	BSC	M23.01.06	C224 – Open Drains	GRC	M23.02.02	D11 Water Supply Network -D11.07.02 and Table D.11.07.02 Minimum and Maximum Pressures for Network Design	LSC	M23.03.01	G-020 Updates	All	M23.04.02	GRC Low Pressure Sewer System Drawing	GRC	M23.04.04	CMDG-R-040 Property Access along Bitumen Roads	CHRC	M23.06.01	Minimum Sewer Grades for low EPs	MCE	M23.06.02	Discrepancy between D5 and D1 road stormwater design	MCE	M23.06.03	Addition of gate detail to drawing G-011	MCE
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	M23.08.01	As constructed information review	MCE	
	M23.08.02	Fire Hydrant Coverage	RRC	
6	New Agenda Items			
	<i>Item number</i>	<i>Item</i>	<i>Proponent</i>	
	M23.09.01	Watermain depth of cover	MCE	
	M23.09.02	CMDG PS-17 Resilient Seated Sluice Valves	MCE	
7	General Business Combine Design and Construction Specifications Into a Single Manual. The potential benefits of combining the design and construction manuals into a single manual was discussed generally. General agreement that this should be done if possible (case by case) similar to Sewer and Water specs. It was agreed that this could be considered in the future as documents are updated.			
8	Next Meeting Next meeting to be Thursday 1st February at 11am via teams.			
9	CMDG Action Register The latest register is Attachment B CMDG Trial Register The latest register is Attachment C Schedule 1 The latest schedule is Attachment D			
10	Meeting closed at 3pm.			

Item No.	Item Details
M10.5.1	<p data-bbox="277 230 911 264">D6 Site Regrading – consider retaining wall issue</p> <p data-bbox="277 315 496 349"><u>M2023.04 Update</u></p> <p data-bbox="277 360 1453 533">Subcommittee meeting on 23rd May. Chris noted that the meeting was productive and outcomes agreed on for most issues. Revised D6 document by GRC used as a basis for the required content and the majority of this will be used in the final document with some details removed. Generally noted that detail has been removed from CMDG where possible to place the responsibility on the designer/ RPEQ engineer as there are many site-specific decisions to be made.</p> <p data-bbox="277 544 1437 645">Also noted that there is no specific legislation for retaining walls and legal outcomes are based on common law so CMDG documentation will be considerate of this when providing any specific direction.</p> <p data-bbox="277 656 1123 689">MCE is to prepare draft D6 document for final review by the committee.</p> <p data-bbox="277 741 496 775"><u>M2023.05 Update</u></p> <p data-bbox="277 786 1394 853">Minutes of the meeting held on 23rd May are attached (Attachment G) along with the draft D6 amended document from that meeting (Attachment H).</p> <p data-bbox="277 909 1437 1081">Post meeting there has been written legal advice received by RRC which effectively states that a building application is required for all retaining walls 1m and over. This includes retaining walls as part of an operational works application. This advice differs from that received by LSC and is different to the stance outlined in the 23rd May meeting minutes. We are currently working through this issue.</p> <p data-bbox="277 1137 1461 1238">Jon to confirm with Greg regarding LSC advice in relation to building approval requirements. MCE to send out legal advice about operational works/ building approval requirements for retaining walls. RRC to make some update to draft D6 document in light of new advice.</p> <p data-bbox="277 1294 496 1328"><u>M2023.06 Update</u></p> <ul data-bbox="277 1339 1461 1843" style="list-style-type: none"> • Allen (LSC) has provided feedback on LSC's original advice confirming that previously retaining walls were defined as not being building works in the Sustainable Planning Act 2009 (superseded), however this reference does not appear to be in the Planning Act 2016. • Whether or not retaining walls require building approval was debated. • LSC and other LGAs still want to have input/ some level of control in relation to the retaining walls and in particular their interaction with services. • Agreement that LGAs have a duty of care to ensure the walls are built to a good standard and that processes (such as building approval) are followed if required. • LSC is still undecided on in relation to BA requirements and will have further discussions internally. • Potential new clause to include in the draft version of D6: <i>A separate building approval application may be required for retaining walls additional to operational works applications. Requirements to be confirmed with the individual LGA.</i> • MCE to review approval requirements for retaining walls in existing road reserve. <p data-bbox="277 1899 496 1933"><u>M2023.07 Update</u></p> <ul data-bbox="277 1944 1426 2000" style="list-style-type: none"> • Potential rewording of draft D6 document needed to remove the reference to the building act forms.

- RRC has further markups/ comments on the draft D6 document. Jamie to send markups to Chris.
- Table of difference to be added to D6 to clearly define LGA default requirements for separate Building Approval application.
- RRC is currently having discussions regarding retaining walls over infrastructure especially in relation to bridging requirements and access of infrastructure under and behind walls.

M2023.08 Update

In progress. RRC comments received and some discussions are underway on how to proceed.

Jamie provided current example of a subdivision where RRC conditioned that building approval was needed for all retaining walls. Building certifier engaged agreed that this was required but not typically completed. Agreed that overall approval/ certificate could be given for all walls on the same application and a copy attached to each lot.

M2023.09 Update

Wording for retaining wall section has been updated based on comments received and further discussions with LSC. LSC are currently reviewing and confirming their requirements for building approval.

Latest draft version of D6 is **Attachment H1**.

M2023.09 Update

- Allen (LSC) advised that part D6.01.14 was the main area of concern, and that LSC would prefer for individual applicants to contact Council to determine requirements.
- Discussed that typically LSC assesses the structural adequacy of proposed retaining walls at the Operational Works Phase, as part of a requirement of their Planning Scheme, and as such Building Approval assessment was not required.
- Advised preference would be to remove LSC from the table and add a note consisting generally of "Contact LGA directly to determine requirements for Building Approval regarding retaining walls".
- LSC will continue to assess against the Planning Scheme but not as part of a Building Approval where the wall does not directly support a building as defined by the *Building Act 1975*.

M2023.09 Resolution

- MCE to update D6 in accordance with the above recommendations and circulate to all LGA's for review.
- Comments/approval from all LGA's to be received by MCE for endorsement of the revised document.

Action By

All

M22.04.01

Review of Reference documents in all SpecificationsM2023.02 Resolution

Decided that review of all documents is to be by the end of July (4 months)

MCE to upload new D9 document within 2 weeks.

M2023.06 Update

All review comments and updates to specifications to be provided as soon as possible to enable MCE to coordinate and collate changes. Outstanding documents are highlighted below.

Specification	Last review and notes	In need of review?	To be reviewed by?	M2023.06 Update
D1 Geometric Road Design	Dec 2022	No	N/A	-
D2 Pavement Design	Dec 2021	Yes	RRC (Grant)	Grant ran through comments (refer Attachments N1–N5). General agreement for majority but committee to review in detail and respond in next two weeks. <u>M2023.08 Update</u> Grant to provide draft document and also address comments from Jamie. In progress.
D3 Structures & Bridges	Apr 2019 – References updated	No		-
D4 Surface Drainage	Aug 2019	Yes	IRC (Michael)	Minor changes to references in document (refer Attachment 9). General agreement but committee to review in detail and respond in next two weeks. Richard has not received comments. Ready to be uploaded.
D5 Stormwater Design	Apr 2023	No		-
D6 Site Regrading	Mar 2012	Yes	RRC (Jamie) and MCE	Refer to item M10.5.1 Per previous agenda item.
D7 Erosion Control & Stormwater Management	Sep 2020 – but review not comprehensive	Yes	RRC (Jamie/Tilak)	Jamie provided summary on recent visit by DES and Water where audits were completed on internal procedures, designs, Civil Ops construction sites, development conditions and development sites. As part of this it was noted that significant changes are required to D7 and C211 to comply with best practices guidelines and the SPP. RRC will draft a new updated D7 document

					<p>combining content from C211. Potential upcoming training to be coordinated by RRC.</p> <p><u>M2023.08 Update</u></p> <p>Jamie confirmed that updates are in progress.</p> <p>Jamie – update regarding requirements for CPESC (or RPEQ with significant demonstrated experience). 40+ people for training.</p> <p>RRC working on draft.</p> <p>IRC looking to add to list for training – MS to provide numbers to JMcC</p>
	D9 Cycleway & Pathway Design	Apr 2023	No		-
	D10 Landscaping (DRAFT)		Yes	RRC (Grant/ Michael Ramsay)	<p>RRC landscape architect has proposed using BCC landscape spec as a basis for the CMDG version. Content to be condensed. Discussion of directly referencing BCC drawings Scott suggested adding to CMDG suite to keep CMDG as a “one stop shop”. Once spec is completed MCE can try to obtain BCC CAD drawings to copy into CMDG drawings.</p> <p><u>M2023.08 Update</u></p> <p>Grant confirmed that RRC landscape architect is currently working on the documents.</p> <p>RRC working on draft.</p> <p>GV to provide post-Christmas.</p> <p>FN to provide comments at draft stage on drought tolerant species.</p> <p>FN to provide species list to RRC/MCE.</p>
	D11 Water Reticulation	Jan 2022	No	CHRC (Sarah)	-
	D12 Sewerage Reticulation	Jan 2022	No	CHRC (Sarah) Noted AS4999 is withdrawn	-

	D13 Small Earth Dams (GRC only)	Apr 2019	Yes REMOVED	GRC (Scott/Brendan)	-
	D14 Floodways (DRAFT)		Yes	RRC (Grant)	<p>Grant located feedback provided in 2017. Need to determine purpose/ aim of document and agree on content. Eg. For LGAs internal use or for developers, cover dams etc?. Grant to review and provide comments for consideration by committee. MCE to review floodway drawings with respect to current practices, D14 and previous queries.</p> <p><u>M2023.08 Update</u></p> <p>MCE to provide draft back to Grant based on documents and information provided. Grant to then review and comment prior to sending out to committee.</p> <p>MCE to provide draft – still in progress. All LGA's to review finalised document.</p> <p>MCE to provide prior to next meeting.</p>
	D15 Driveways	Jun 2018	Yes	BSC (Nathan)	<p>No update.</p> <p><u>M2023.08 Update</u></p> <p>Nathan confirmed that review has been completed and changes are being typed up.</p> <p>NG to provide prior to next meeting.</p>
	<p><u>M2023.07 Update</u></p> <p>Revised version of D4 to be uploaded to website.</p> <p>D7 - Note comments in red in table.</p> <p>D2 - no comments received from committee. Rich to check with Scott if GRC has any comments as many of the changes originated from GRC.</p> <p><u>M2023.08 Update</u></p> <p>No specific comments from GRC on D2. Grant to proceed with updates. Refer to additional comments in table (comments in red).</p> <p><u>M2023.09 Update</u></p> <p>With reference to the subitems shown in M2023.06 update above:</p> <p>D1 Not discussed.</p> <p>D2 Grant Vaughan (RRC) to provide update on comments from Jamie McCall (RRC).</p> <p>D3 Not discussed.</p>				

	<p>D4 No comments received by MCE. Document ready to be uploaded.</p> <p>D5 Not discussed.</p> <p>D6 No comments received by MCE. Document ready to be uploaded.</p> <p>D7 CPESC certification or 'RPEQ with significant demonstrated experience' required. RRC working on a draft. 40+ people for training, with IRC looking to add additional – Michael Stanton (MRC) to provide list to Jamie McCall (RRC).</p> <p>D9 Not discussed.</p> <p>D10 RRC working on a draft. Grant Vaughan (RRC) to provide draft to all LGA's for review prior to end of December. Frank Nastasi (IRC) to provide list of IRC's preferred drought tolerant species to RRC/MCE for incorporation.</p> <p>D11 Not discussed.</p> <p>D12 Not discussed.</p> <p>D13 Not discussed.</p> <p>D14 Draft to be provided by MCE for review by all LGA's. Draft to be provided prior to next meeting.</p> <p>D15 Nathan Garvey (BSC) to provide prior to next meeting.</p> <p><u>Action By</u></p> <p>All</p>
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M23.01.06	<p>C224 – Open Drains</p> <p>Brendan noted that he was looking for table drain information and this construction specification contains the relevant information. A title change was suggested or potentially adding this information to the drainage design specification D5.</p> <p>For discussion.</p> <p style="text-align: center;">CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES</p> <p style="text-align: center;">OPEN DRAINS INCLUDING KERB & GUTTER (CHANNEL)</p> <p style="text-align: center;">C224</p> <p>CONSTRUCTION SPECIFICATION</p> <p><u>M2023.04 Discussion</u></p> <p>Discussions around what should be included in C224 vs D5 as some of the information currently in C224 is more focused on design requirements. Some rewording to the text or titles may be possible to make the requirements for Table Drains more obvious.</p> <p><u>M2023.04 Resolution</u></p> <p>Brendan/ GRC to review document and consider which elements can be moved to D5 and provide feedback/ and updated C224 document.</p> <p><u>M2023.06 Update</u></p> <p>No change to the title required as table drains are cover by open drainage. Other updates in progress by Brendan.</p> <p><u>M2023.07 Update</u></p> <p>In progress. Brendan to send proposed changes to MCE for action/ finalising.</p> <p><u>M2023.08</u></p> <p>Brendan sent comments. MCE to progress updates and moving of design elements from C224 into with D5.</p> <p><u>M2023.09 Update</u></p> <p>In progress. Brendan Fuller (GRC) to action. Richard Bywater (MCE) to provide info to BF.</p> <p><i>Post meeting note. MCE to action changes.</i></p> <p><u>Action By</u></p> <p>MCE</p>
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M23.02.02	<p>D11 Water Supply Network -D11.07.02 and Table D.11.07.02 Minimum and Maximum Pressures for Network Design</p> <p>LSC have been having issues with achieving minimum pressure at house pad on elevated battleaxe blocks. There have been a number of discussions and it is suggested that the text below be included in D11:</p> <p><i>In situations where internal services from the meter to proposed house building pads exceeds a length of 10m (for example battleaxe allotments) it may be necessary for 32 to 50mm polyethylene to be extended from the meter to the building site or the installation of tanks and pumps (both options at the Developers expense). This is to ensure that sufficient pressure is available at the house building pad location. The designer shall make a submission to Council to demonstrate what internal infrastructure is necessary where the internal service from the meter to the house building site will exceed a length of 10m.</i></p> <p>Further background from Chris' email:</p> <p>The design parameters in CMDG are intended to ensure that Council has enough capacity in the system to supply elevated lots. So the design parameters ensure that the infrastructure has the capability to supply water to a higher level than the meter. Owners could usually do this by using larger diameter poly to the house site. In fact in the past I have conditioned for larger diameter poly to extend up a battleaxe handle to the building site to ensure this happens.</p> <p>The service standards are where you outline that Council is obligated to supply the required pressure <u>at the meter</u>. That is, despite what the design standards say Council takes on a lesser obligation when it comes to the customer service standards. Refer to FRW customer service standards below. Note I could not find LSC's customer service standards – do you have something similar?</p> <p>I suggest you would defend Councils position based on your obligation to supply the required pressure only at the meter and at no other point based on customer service standards (despite what the design parameters are).</p> <p>Having said that I think that the situations you have presented below with long internal service lines to building sites does present an issue. This is because the Node level for design at “Finished surface/ street elevation at the main location, building pad level or at the mean lot level, whichever is the highest” does not contemplate it will be a long horizontal distance from the meter to the building pad level. The way for Council to deal with this is to identify such properties at development time and ensure tanks and pump are provided by the Developer if necessary (Tanks and pumps for private maintenance not Council – Councils obligation ends at the meter).</p>
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D11.07.03. A minimum design pressure head for Domestic Demands alone, for each Water Service Provider as presented in Table D11.07.02 Minimum and Maximum Pressures, shall be provided during the MH (maximum hourly maximum day) on third consecutive Maximum Day consumption at the defined building pad level or at the mean lot level, whichever is the highest elevation. For clarity when carrying out water network analysis the node levels must comply with the details in Table D11.07.02.

**Minimum
Pressure
Domestic
Demands**

D11.07.04. The maximum design pressure shall not be exceeded. The maximum desirable design pressure for each local government is outlined in Table D11.07.02. Where, practical, pressure reducing valves or other network design measures shall be utilised to achieve this requirement.

**Maximum
Pressure**

Table D11.07.02 Minimum and Maximum Pressures for Network Design

	Minimum Pressure at the Node	Node Level for Design	Maximum Desirable Pressure	Absolute Maximum Pressure
Banana Shire	22 m	Finished surface/ street elevation at the main location, building pad level or at the mean lot level, whichever is the highest	50 m	80m
Central Highlands Regional	22 m		50 m	80m
Gladstone Regional	25 m (in main)* 20m (in main – constant flow network)		50 m (reticulation network)	80 m
Isaac Regional	22 m		50 m	80m
Livingstone Shire	22 m	Finished surface/ street elevation at the main location, building pad level or at the mean lot level, whichever is the highest	50 m	80m
Maranoa Regional	20 m		50 m	80m
Rockhampton Regional	22 m		50 m	80m

* In all design instances it is required that there is a minimum of 22m at the water meter

Adequacy and Quality of Normal Supply of Water

CSS Reference	Performance Indicator	Potable Water Schemes	
		Rockhampton & Gracemere Water Supply Scheme	Mount Morgan Water Supply Scheme
CSS8	Minimum pressure standard at the water meter (kPa)	220 kPa	220 kPa
CSS9	Minimum flow standard at the water meter	9 L/min	9 L/min
CSS10	Connections with deficient pressure and/or flow (% of total connections)	< 2.5%	< 2.5%
CSS11	Drinking water quality (compliance with industry standard) ¹	> 98%	> 98%
CSS12	Drinking water quality complaints (number per 1,000 connections)	< 5	
CSS13	Drinking water quality incidents (number per 1,000 connections)	< 5	< 5

Suggested resolution

Include proposed text in D11.

In situations where internal services from the meter to proposed house building pads exceeds a length of 10m (for example battleaxe allotments) it may be necessary for 32 to 50mm polyethylene to be extended from the meter to the building site or the installation of tanks and pumps (both options at the Developers expense). This is to ensure that sufficient pressure is available at the house building pad location. The designer shall make a submission to Council to demonstrate what internal infrastructure is necessary where the internal service from the meter to the house building site will exceed a length of 10m.

M2023.05 Discussion

Discussion about responsibility. This is potentially outside of development and a building approval issue. The pipe from the meter is generally not constructed as part of a development MCU/ ROL.

Chris to review proposed wording.

Grant provided an example of a current water pressure issue where the house has been built at the rear of a large sloping block and has pressure issues following construction.

The existing table does cover all scenarios, however location of building pad is open to interpretation. Wording in existing table D11.07.02 could be amended/ improved. Building envelope could be defined at ROL stage.

Richard noted that CMDG is not for defining service standards following development.

M2023.05 resolution

MCE to review existing table and proposed additional wording in line with comments above.

M2023.06 Suggested Resolution

C245.01.01. D11.07.05 In situations where internal services from the meter to proposed house building pads exceeds a length of 10m (for example battleaxe allotments or large rural residential allotments) it may be necessary for larger than 25mm polyethylene pipe to be extended from the meter to the building site and / or the installation of tanks and pumps (both options at the property owners expense). This is to ensure that sufficient pressure is available at the house building pad location. The designer shall make a submission to Council to demonstrate what internal infrastructure is necessary where the internal service from the meter to the building pad location will exceed a length of 10m. **Developers must communicate this information regarding required internal water infrastructure to prospective property owners.**

General agreement with suggested wording. Discussion on acceptable outcomes and methods of passing information to future property owners. MCE to investigate currently accepted methods of communicating information to property owners such as:

- Disclosure plans
- Covenant on plan for water service area (standard service area)
- Property note
- Special water supply agreement – not deemed suitable as this is an agreement between the owner and LGA which would occur after the development and sale of the land.

MCE to investigate and ensure proposed method of conveyance is likely to ensure that property owner receives information when doing their due diligence searches.

Brendan noted the GRC has policy for tanks, pumps etc but this is more in relation to special supply agreements.

M2023.07 Update/ Resolution

Property note/ condition is an option to convey the message. However, there is a still a risk if the potential purchaser doesn't pay for the correct search from Council. This comes under a wider discussion of what is acceptable/ appropriate due diligence.

It was believed that covenants were not an option due to changes in legislation. However, Jamie mentioned an example of a recent covenant for water supply. Jamie to provide covenant to the committee for consideration as this is the preferred option.

Chris to update wording based on review of covenant information.

M2023.08 Update

Example covenant is included as **Attachment L**. The wording in the covenant is circuitous and somewhat confusing. Further discussion is required on the best approach prior to completing the draft wording.

M2023.08 Resolution

	<p>General agreement that covenant is not suitable for this purpose. MCE to check with Carrie (LSC) about whether the property note comes up in a standard search. Jamie to also check search outcomes on RRC's system. Aim is to use a property note to convey the information if searches are successful. MCE will then draft wording.</p> <p><u>M2023.09 update</u></p> <p>MCE confirmed with LSC that it will depend on which search category the property note is associated with. Recently it has been observed that the majority of standard residential sale are only requesting limited searches. Building and Plumbing is a common request so it may be beneficial to add to this category. However, this will need to be decided internally at each LGA.</p> <p><u>M2023.09 Resolution</u></p> <ul style="list-style-type: none"> • Jamie McCall (RRC) advised a basic rates search is occurring prior to sale of land going unconditional, and therefore is being missed. • Jon Ashman (LSC) or Richard Bywater (MCE) to discuss with Carrie from LSC regarding wording required for property note. • To be closed out on addition of the required property note. • MCE to revise D11 to include said note and circulate for review. <p><u>Action By</u></p> <p>MCE</p>
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Standard Drawing CMDG-G-020

Summary of MRC comments:

1. Preference is to retain hazard markers. **Agreed**
2. Remove reference to a proprietary product removed. Instead quote the engineering/technical parameters. Historically they have had big issues with stipulating a proprietary product. **Debate on whether to name specific product on drawings. Significant effort and detail required to create a specification and drawing. General consensus to keep product reference to Aprilla Grids or approved equivalent. Jarvis to confirm with MRC and Sarah to confirm with CHRC.**
3. Is the pre-cast base required in all circumstances? Can it be applied on a case-by-case basis? **Debate on concrete base details and whether it should be specified or left to be determined. Agreed that some level of information should be provided. Agreed that in-situ concrete is also acceptable. Reference to be changed to "Precast or in-situ concrete to footpath standard – refer to standard drawing R-058"**
4. G-020 does not have an abutment detail like G-018 has presumably this is because G-020 users utilise pre-cast units, however the regional areas regularly cast in-situ. Abutment detail required. **The note regarding precast abutment to remain as this item will be specifically designed by the manufacturer to support the grate. – Add note regarding compaction in accordance with C213. Additional thoughts: Cast in-situ abutments would require an RPEQ design to suit the specific grate being used.**
5. There is frequent reference to 'precast' preference for this to be removed. **Precast reference to be removed for slab only.**
6. We are cognisant that some councils have a Grid Policy, so we want the standard drawing to be in line with MRC's existing Grid Policy.
7. For example, we recommend Note 5 is tabulated (widths/traffic counts for each Council). MRC is shown below.

Traffic Volumes	Grid Type Required
Road with greater than 250 vehicles per day	Not permitted
Road with traffic volumes less than 250 but more than 20 vehicles per day	Double grid (8m)
Road less than 20 vehicles	Single grid (4m)

Notwithstanding the above, a double grid may be required, at Council's discretion, irrespective of the above if:

- a.
8. Note 7. Not applicable to MRC. **MRC to be no for both seal parameters in the applicability table.**
 9. Note 6. Possibly tabulated. MRC's loading criteria is below (based on the TMR guide).
Frames and abutments are to be structurally certified for design loads in accordance with AS5100.2-2017 (the Bridge Design Code), including all relevant load factors, dynamic load allowances and deflection limits (i.e. span/600). The particular loads to be applied are as follows:
 - W80 wheel load;
 - A160 axle load;
 - M1600 moving load;
 - S1600 stationary traffic load.

Heavy duty words to be removed from note 6. Consider adding further detail to the note. MCE to check TMR grid requirements and confirm design parameters for the Aprilla Grids. Consider adding additional loading requirements to Note 6.

Local Government	G-018 Applicability	G-020 Applicability
Banana Shire		
Central Highlands Regional		
Gladstone Regional		
Isaac Regional		
Maranoa Regional		
Livingstone Regional		
Rockhampton Regional		

Sarah has asked if width of grid can be specified on the drawing as CHRC does not have a grids policy. For discussion. **LGAs to send grid policies to MCE for collation to determine whether the information can be added to a table on the drawing.**

M2023.06 discussion

Refer to outcomes in red above.

Debate on RPEQ requirements for alternative products to Aprilla. General agreement that it wouldn't be required if a suitable alternative proprietary product is specified.

Potential to remove G-018 entirely if only being used in private property. If retaining G-018 it should require RPEQ certification for the design prior to using on a case-by-case basis. **CHRC to consider and advise if they wish to retain G-018.**

Discussion on liability and insurance for privately owned and maintained grids. Most LGAs have grid policies defining these requirements.

M2023.06 Resolution

Refer to outcomes and actions in red above.

M2023.07 Update

Drawing updates are in progress.

CHRC has confirmed acceptance of G-020. Consideration to be given to retaining G-018 and how this is done, options include keeping as a superseded document or adding to council specific pages.

Rich has been in touch with Aprilla to confirm loading requirements and is waiting to see if they will release their standard drawings.

M2023.08 Update

Aprilla have provided engineering certificates (refer **attachments J1 - 3**) for the grid but are not willing to release drawings as significant design and research has gone into them, previously they have been copied by other organisations.

MCE are progressing updates to G-020.

Standard loading requirements are for 16 tonne axle in accordance with AS 5100. This covers W80, A160, M1600 and S1600 Traffic loads.

MRC has sent comments in relation to G-020 and requested removal of the reference to Aprilla in order to accept G-020 for MRC.

To remove the references to Aprilla we would need to outline the key design parameters to ensure a comparable product.

M2023.08 Resolution

Discussion about options and what to include on the drawings. General agreement to remove Aprilla from drawing. Ed to confirm with GRC that this is acceptable given that the drawing originated from GRC. Loading highlighted above to be included in the drawing notes. Grid and all elements of the supporting structure to be certified by an RPEQ engineer.

BSC is presenting G-020 to Council for consideration. Nathan will confirm adoption or otherwise once a decision has been made.

M2023.09 Update

Drawing changes in progress.

Action By

MCE, GRC, BRC

M23.04.02

GRC Low Pressure Sewer System Drawing

GRC propose a new low pressure sewer system drawing to be included in CMDG (**Attachment F**). LGAs to review and confirm applicability or any required changes.

Complimentary amendments to D12 may also be necessary to stipulate circumstances where Low pressure sewer systems can be used and acceptable design parameters.

For discussion

M2023.07 discussion

- General agreement that it would be good to include a version of the proposed drawing in CMDG as there are circumstances where this may be the only option. Consider adding a note on the drawing and in the spec that it is only for use in specific circumstances with prior approval of the LGA.
- Debate on whether Council or Developer will be installing the system. Agreed that in general it would be the developer and the drawing should be worded as though developer will install.
- Noted that additional clauses/ changes would be required to D12 to confirm requirements and define circumstances when the use of the low-pressure systems would be considered.
- Table of difference required.

M2023.07 resolution

Brendan to send AutoCAD drawing to MCE for updates to be completed.

MCE to make any required changes including formatting (potentially just a pdf markup at this stage) and present at the next meeting.

MCE to prepare draft wording for D12 regarding low pressure sewers.

M2023.08 update

Online literature search summary:

Detailed specifications for a low-pressure sewer system are available for Coffs Harbour. This focusses on the unit itself and not the broader collection network. Online maintenance and operational advice are available from Tamworth. It is noted that both Coffs Harbour and Tamworth maintain all the infrastructure including the pressure sewer unit.

FNQROC mentions these as Unconventional systems and invites detailed design submissions for consideration. (Similar to the approach CMDG will take).

Drawing markup is **Attachment K**.

Proposed wording for new section in D12 - Low pressure sewer systems

Local Governments may consider the use of unconventional low pressure sewer systems for small numbers of properties which cannot be serviced by gravity sewers. Typically, these properties would be at the fringes of the gravity network where the construction of a Local Government owned and operated sewage pumping station would not be economically prudent. Each property served by the low-pressure sewer system will have a prefabricated pit that provides wastewater storage, grinding and pumping in a single self-contained Low Pressure System Unit. A small diameter discharge pipe connects the unit to a boundary kit installed at the property boundary and then to the pressure sewer reticulation in the road reserve. A non-return valve (to prevent backflow from the pressure sewer) and isolation valve is housed in this kit. The unit is wired to the household power

supply and controlled by a small panel located near the unit. Refer to the CMDG standard drawing for the general arrangement.

Property notes (discoverable by rates searches) will identify properties to be served by low pressure sewer systems.

Construction and maintenance responsibilities for the system are as follows:

1. Property owner to construct and maintain the Low-Pressure System Unit including wet well, pumps and electrical infrastructure up to the Boundary Connection Kit The Low Pressure System Unit will typically be provided at the time of dwelling construction and fully constructed and commissioned by the property owner.
2. Local Government (or Developer) to construct and maintain the boundary connection kit and pressure sewer system rising main within the road reserve. At the time of property development the Boundary Connection Kit and low pressure sewer reticulation within the road reserve will be designed and installed by the developer

A consulting engineers report for the low-pressure sewer system is to be submitted on the basis of best engineering practice for consideration by Local Government prior to any detailed design. Local Government will assess the initial report and confirm suitable system design parameters.

M2023.08 Discussion

Discussion on ownership and advantage vs disadvantages.

Installation of units at time of development may not be practical as the suitable position of the unit will be governed by the final layout/ house location. Also, it is not ideal to have pumps and electrical cabinet in place at time of subdivision due to risk of damage during building work or from pumps sitting unused for long periods. Electrical connection will likely be by property owner as it will be a private connection.

GRC noted that cost for individual property owners to maintain the systems is high and currently Council is considering taking responsibility for existing and new systems moving forwards. GRC is waiting for a Council resolution on ownership. Likely outcome is that GRC will own and maintain the systems.

Post meeting note. Potential for Council to require contribution from developers to cover costs for installation and ongoing maintenance.

M2023.08 Resolution

Hold final decision for now until resolution from GRC is available. Other LGAs to also consider their position on this prior to next meeting.

M2023.09 Update

- Scott McDonald (GRC) advised proposed approach would be that new developments would be the owner's responsibility.
- Private wells at the boundary connection to be provided at building phase.
- Richard Bywater (MCE) to discuss with Chris Wright from LSC and Jamie McCall (RRC) to discuss with Dan Toon from FRW.
- GRC intent is for the drawing to be referenced whether or not included as a CMDG document.
- MCE to revise as per red pen markups and send for review.

Action By

All

CMDG-R-040 Property Access along Bitumen Roads

CHRC have received a number of applications for rural driveways along bitumen roads. On one application it was conditioned that the applicant seal their driveway since it was along a bitumen road. The condition was changed following the applicant complaining to Council and the condition was deemed to be unreasonable on the basis of the cost the property owner had to incur to get the driveway sealed.

Since then, CHRC have not been conditioning sealed driveways for out of town property accesses, because the cost of installing sealed accesses is prohibitive.

CHRC is interested to know if other councils are facing the same issue and requested discussion into whether the guideline be modified so it better aligns with what can be implemented on the ground.

While the cost implication may be causing difficulties there are some important some reasons for sealing driveways including:

- The sealing helps to prevent gravel being tracked onto the road and creating a significant hazard for other road users.
- Helps to prevent erosion especially if a bed level crossing is used.
- It is necessary for safety to seal of the widening on the opposite side of the road once you reach higher traffic volumes.
- Rutting in the road shoulder is much more likely to occur which is a hazard for road users.
- Reduced maintenance. This could be an ongoing battle with owners about who maintains which parts of the driveway/ road shoulder.

M2023.08 Discussion

Discussion on options. General agreement that the seal on accesses is important for road safety and also to avoid damage to the road surfacing from gravel (from the access/ driveway) being pushed into the seal. Agreement that there could be situations where the seal extents could be reduced i.e. seal not required all the way to the boundary.

M2023.08 resolution

MCE to investigate options/ potential for reducing the seal extents. For further discussion next meeting with input from Sarah.

Post meeting note: consider combining drawings R-040 and R-040A. MCE to investigate the feasibility of this.

M2023.09 Update

Initial review of R-040 vs R-040A vs TMR 1807 (**refer attachment M**) highlighted some key points:

	R-040	R-040A	1807
Seal length	To property boundary	15m or to property boundary	Up to 10m from edge line
Table drain crossing	Pipe only	Pipe or bed level	Multiple crossing options.
BAR widening	Yes	No	No
Consideration of access use (commercial)	No	No	Yes

	Consideration of road AADT	Yes	No	No
	Consideration of speed environment	No	Yes	No
	Width of access	4m – 6m	3m – 6m	4m – 6m
<p><u>M2023.09 resolution</u></p> <p>Discussed the technical correctness of the required treatments. Inconsistencies were noted between the CMDG and TMR requirements. Potential to rationalise the design was discussed.</p> <p>Sarah Banda (CHRC) requested commentary on what other Councils are doing. LSC and RRC advised they are requiring seal to the property boundary.</p> <p>Identified that Mike Prior, previously from LSC, may have initiated a changed drawing in 2016 or 2017. MCE to review comments.</p> <p>Amendments to drawings required:</p> <ul style="list-style-type: none"> • Combine R-040 and R-040A • Check specified AADT values – i.e. are these referring to through traffic or turning movements. • Remove comment of 75mm gravel from all but gravel road access. • Fix leader/dimension for dimension Y. • Minimum seal length to be set as standard 10m or inside the boundary. • Remove BAR and make drawing rural residential only (not intersections) <p><u>Action By</u></p> <p>MCE</p>				

M23.06.01

Minimum Sewer Grades for low Eps

Consider addition of clause in D12 regarding minimum sewer grades for low EPs. Typically, self-cleansing is not possible or practical at the head of the system. Historically the generally rule has been to make the last length (assuming a reasonable length) of sewer 1% min before dropping to 0.67%. Below is the requirement for WBBROC.

Minimum Sewer Grades

Diameter (mm) %

150 0.55

225 0.33

300 0.25

375 0.17

450 0.14

525 0.12

600 0.10

750 0.08

For EPs < 20 the min grade for 150 main should be 1%
For EPs 20-50 the min grade for 150 main should be 0.67%
Prop Conns: DN 100 - 1.65%

For discussion

M2023.09 Resolution

Discussion regarding the need to conform to WSAA requirements, noting WSAA references minimum grades as per South East QLD design standards which were similar to WBBROC.

It was decided that sewer grades were to remain the same, as they are generally accepted in industry, and a note regarding the end of line to be 1% minimum grade to be added to D12 beneath Table D12.10.02.

For EPs < 20 the min grade for 150 main should be 1%
For EPs 20-50 the min grade for 150 main should be 0.67%
Prop Conns: DN 100 - 1.65%

MCE to add note and provide to all LGAs for review prior to being endorsed.

Action By

MCE

Discrepancy between D5 and D1 road stormwater design

Differences between minor system design requirements have been noted between D5 and parameters given in D1 tables.

Table D05.04.1 - Design Annual Exceedance Probabilities – Minor System

Development Category ⁴		Minor System	
		ARI (yrs)	AEP (%)
Central Business & Commercial		10	10
Industrial		2	39
Urban Residential (High Density – greater than 20 dwelling units/ha)		10	10
Urban Residential (Low Density – 6 & up to 20 dwelling units/ha)		2	39
Rural Residential – 2 to 5 dwelling units/ha		2	39
Open Space – Parks, etc.		1	63
Major Road ⁶	Kerb and channel flow	10 ¹	10
	Cross drainage (culverts)	50	2
Minor road ⁶	Kerb and channel flow ⁴		
	Cross drainage (culverts)	10	10

Notes:

1. The design AEP for the minor drainage system in a major road shall be that indicated for the major road, not that for the Development Category of the adjacent area.
2. Cross drainages should be designed to accept the flow for the minor system AEP shown. In addition, the designer must ensure that the major system backwater does not enter properties upstream. If upstream properties are at a relatively low elevation, it may be necessary to install culverts of capacity greater than that for the minor system AEP design storm to ensure flooding of upstream properties does not occur. In addition, the downstream face of the causeway embankment may need protection where overtopping is likely to occur.
3. The terms used in this table are described in QUDM.
4. Council specific or refer to development category in QUDM.
5. VDg, flow depth and width limitations are applicable in accordance with QUDM.
6. Refer to CMDG D1 Geometric Road Design for cross drainage design for the road hierarchy for individual local governments.

BSC – DESIGN CRITERIA – URBAN AREAS								
Criterion		Arterial Roads	Collector streets			Access Streets		
		Arterial	Industrial Collector	Major Urban Collector	Minor Urban Collector	Industrial Access	Urban Access Street	Urban Access Place
7	Minimum Flood Immunity for minor system (kerb and channel flow) AEP (ARI)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)
8	Minimum Flood Immunity for minor system (cross drainage), AEP (ARI)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)
9	Design check for trafficable immunity, AEP (ARI)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)

CHRC – DESIGN CRITERIA – URBAN AREAS									
Criterion		Arterial Roads		Collector streets			Access Streets		
		Arterial	Sub-Arterial	Industrial	Major collector	Minor collector	Industrial	Residential Access Street	Residential Access Place
12	Minimum Flood Immunity for minor system (kerb and channel flow) AEP (ARI)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)
13	Minimum Flood Immunity for minor system (cross drainage), AEP (ARI)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)
14	Design check for trafficable immunity, AEP (ARI)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)

GRC – DESIGN CRITERIA – URBAN AREAS										
Criterion	Road									
	Arterial Roads		Distributor Road		Collector streets		Street			
	Arterial	Sub-Arterial	4-Lane Distributor	2-Lane Distributor	Industrial	Residential / Commercial	Industrial Access Street	Residential Access Street	Residential Access Place	Residential Access Lane
14	Minimum Flood Immunity for Minor System (Kerb and channel flow) AEP (ARI)	1% (1 in 100 years)	2% (1 in 50 years)	2% (1 in 50 years)	5% (1 in 20 years)	5% (1 in 20 years)	5% (1 in 20 years)	10% ⁴ (1 in 10 years)	10% ⁴ (1 in 10 years)	
15	Minimum Flood Immunity for Minor System (Cross drainage), AEP (ARI)	-	-	-	-	-	-	-	-	
16	Design Check for Trafficable Immunity, AEP (ARI)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	

IRC – DESIGN CRITERIA – URBAN AREAS									
Criterion	Arterial Roads		Collector streets				Access Streets		
	Arterial	Sub-Arterial	Trunk	Industrial	Major collector	Minor collector	Industrial	Residential Access street	Residential Access place
12	Minimum Flood Immunity for minor system (kerb and channel flow) AEP (ARI)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	39% (1 in 2 years)	39% (1 in 2 years)	39% (1 in 2 years)
13	Minimum Flood Immunity for minor system (cross drainage), AEP (ARI)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)
14	Design check for trafficable immunity, AEP (ARI)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)

LSC – DESIGN CRITERIA – URBAN AREAS									
Criterion	Arterial Roads		Collector streets			Access Streets			
	Arterial	Sub-Arterial	Industrial	Major Urban Collector	Minor Urban Collector	Industrial	Residential Access Street	Residential Access Place	
11	Minimum Flood Immunity for minor system (kerb and channel flow) AEP	10%	10%	10%	10%	10%	10%	10%	10%
12	Minimum Flood Immunity for minor system (cross drainage), AEP	2%	2%	2%	2%	2%	2%	2%	2%
13	Design check for trafficable immunity, AEP	1%	1%	1%	1%	1%	1%	1%	1%

MRC – DESIGN CRITERIA – URBAN AREAS										
Criterion	Arterial Roads		Collector streets				Access Streets			
	Arterial	Sub-Arterial	Trunk Collector	Industrial Collector	Major Collector	Minor Collector	Commercial	Industrial Access	Residential Access Street	Residential Access Place
11	Minimum Flood Immunity for minor system (kerb and channel flow) AEP	10%	10%	10%	10%	10%	10%	39%	39%	39%
12	Minimum Flood Immunity for minor system (cross drainage), AEP	2%	2%	2%	2%	2%	2%	10%	10%	10%
13	Design check for trafficable immunity, AEP	1%	1%	1%	1%	1%	1%	1%	1%	1%

RRC – DESIGN CRITERIA – URBAN AREAS									
Criterion	Arterial Roads		Collector streets			Access Streets			
	Arterial	Sub-Arterial	Industrial	Major collector	Collector	Industrial	Access Street	Local Access	
12	Minimum Flood Immunity for minor system (kerb and channel flow) AEP (ARI)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	39% (1 in 2 years)	minimum 39% (1 in 2 years) Refer to D5	Minimum 39% (1 in 2 years) Refer to D5
13	Minimum Flood Immunity for minor system (cross drainage), AEP (ARI)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	2% (1 in 50 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)	10% (1 in 10 years)
14	Design check for trafficable immunity, AEP (ARI)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)	1% (1 in 100 years)

M2023.06 Discussion

Brief summary of discrepancies. General agreement that CMDG stormwater requirements should align with QUDM (as per D5). Scott noted that GRC have internal documentation that define design events/ requirements for stormwater for each road hierarchy. GRC table need to match these so D1 to remain unchanged at least until internal documents are reviewed and updated.

M2023.06 Resolution

Change wording in criterion to:

12	Minimum design event for kerb and channel flow
13	Minimum design event for cross drainage

14	Minimum design event for trafficability check
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BSC, CHRC and LSC to review stormwater requirements in D1 tables to determine if they can be updated to align with D5 values for the minor road drainage design events.

M2023.08 Update

Following further discussion with LSC. Further research has been completed. I believe that there is some confusion between design events for the drainage infrastructure and the design event for trafficability.

QUDM explains in detail the design requirements for dealing with stormwater in the road environment. For example, it includes flow widths check requirements for minor and major storms, freeboard in chambers, maximum depth at the crown of the road and DV product checks. We need to be careful in the specification of these design events as there is a danger of making the design of road and associated drainage infrastructure unachievable.

7.4.2 Minor and major storm conditions

There is very little scientific evidence defining the maximum rainfall intensity during which motor vehicle driving can occur. A 1975 Texas Transportation Institute report indicated that driver visibility is reduced to 25% during a rainfall intensity of 100 mm/hr, and that visibility reaches a minimum at around a rainfall intensity of 125 mm/hr. Neville Jones & Assoc (1996) suggests that people stop driving when rainfall is greater than 130 mm/hr.

This would suggest that the classification of minor/major storms depends on the specific road function/characteristic being designed. Table 7.4.1 provides recommended design storms.

Table 7.4.1 – Recommended design storm for road drainage design

Site condition	Minor storm	Major storm	Comments
Road drainage, minor roads	Depends on local land use category	50 yr ARI (2% AEP)	As per Table 7.3.1
Road drainage, major & state-controlled roads	Refer to the Department of Transport and Main Road's 'Road Drainage Manual'		
Flow width checks for traffic safety, major roads	10 yr ARI (10% AEP)	N/A	Includes managing surface flows that spill across a roadway, and minimum flood-free trafficable width
Flow width checks for traffic safety, minor roads	Set by local government	N/A	
Flow checks for pedestrian safety	Set by local government	N/A	Maximum flow width measured for kerb
Flow width for the control of flows entering properties	N/A	50 yr ARI (2% AEP)	100 yr ARI for flood level & minimum floor level checks
Cross drainage structures (culverts) major roads	50 yr ARI (2% AEP)	100 yr ARI (1% AEP)	Peak flows may arrive at the crossing well after the peak rainfall has passed and the road is otherwise trafficable
Cross drainage structures (culverts) minor roads	10 yr ARI (10% AEP)	100 yr ARI (1% AEP)	

Table 2.5.8 – Design immunity criteria for state-controlled urban roads

Location	AEP/EY *
Major system – includes all above and below ground components	2% AEP or 1% AEP ^A
Minor system components	
Cross-drainage – excl. floodways	2% AEP
Diversion channels	2% AEP
Road surface drainage including intersections ^B	10% AEP
Bridge deck drainage	10% AEP
Sediment basins	0.5 EY
Road surface drainage of pavements	1 EY
Water quality treatment devices	1 EY

Notes:

^A Refer to relevant local authority for confirmation of required Design Storm AEP, particularly where connecting/discharging to an existing system under their control.

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^B Road surface drainage includes kerb and channel, underground pits and pipe networks, table drains, diversion drains, batter drains and catch drains.

AEP for the design of retention and detention basins is project-specific and must be specified in the design brief.

* refer to Section 2.5.1 for a discussion on the terminology of event probability

I recommend that we clarify the stormwater content in the D1 table to be two rows as per the modified example table below:

Criterion			Arterial Roads		Collector streets			Access Streets		
			Arterial	Sub-Arterial	Industrial	Major Urban Collector	Minor Urban Collector	Industrial	Residential Access Street	Residential Access Place
11	Minimum Design Event Road Drainage AEP	Major storm	1% or 2%	1% or 2%	1% or 2%	1% or 2%	1% or 2%	2%	2%	2%
		Minor Storm	10%	10%	10%	10%	10%	39%	39%	39%
12	Minimum Design Event For Cross Drainage Structures AEP	Major storm	1%	1%	1%	1%	1%	1%	1%	1%
		Minor Storm	2%	2%	2%	2%	2%	10%	10%	10%
13	Design check for trafficable immunity, AEP		1%	1%	1%	1%	1%	1%	1%	1%

Current table for reference:

LSC – DESIGN CRITERIA – URBAN AREAS									
Criterion		Arterial Roads		Collector streets			Access Streets		
		Arterial	Sub-Arterial	Industrial	Major Urban Collector	Minor Urban Collector	Industrial	Residential Access Street	Residential Access Place
11	Minimum Flood Immunity for minor system (kerb and channel flow) AEP	10%	10%	10%	10%	10%	10%	10%	10%
12	Minimum Flood Immunity for minor system (cross drainage), AEP	2%	2%	2%	2%	2%	2%	2%	2%
13	Design check for trafficable immunity, AEP	1%	1%	1%	1%	1%	1%	1%	1%

	<p>Similar updates are required to the rural tables.</p> <p><u>M2023.09 suggested resolution</u></p> <p>Adopt changes to tables and LGAs adopt recommended values in QUDM, TMR RPDM and match D5 (may not directly correlate for GRC due to internal policy documents/ road hierarchy differences). All values to be populated to avoid confusion and provide parameters in one document.</p> <p><u>M2023.09 resolution</u></p> <p>Discussion was had on the complexity of the issue, noting multiple cross referencing guidelines and conflicting terminology etc.</p> <p>It was decided that each LGA will decide what design storm event will be included in the table Road Drainage major event. 1% was generally adopted by all councils. LGA's to confirm acceptance of 1% design storm event or provide alternative.</p> <p>Short text to be added to explain parameters and general note "refer to QUDM Section 7.4 for definitions" and "the major storm includes the cross drainage and overland flow, for trafficability check refer to QUDM" to each table.</p> <p>MCE to update tables and send draft to committee with a summary/ synopsis of the conclusion, history and the reasons behind the changes.</p> <p><u>Action By</u> All</p>
M23.06.03	<p>Addition of gate detail to drawing G-011</p> <p>It has been raised that G-011 contains reference to gate posts but does not have a gate detail. Example of a similar fence shown on Telstra standard drawings is included in Attachment P. A developer has requested that we add a gate detail similar to that shown on 017866P18.</p> <p><u>M2023.06 resolution</u></p> <p>MCE to amend drawing G-011 to include gate details similar to Telstra drawing 017866P18. Similar details are shown on S-056 and may be suitable. Consider referencing detail(s) on S-056 to avoid double up of information.</p> <p><u>M2023.09 update</u></p> <p>It was identified that AS1725 provides standard drawings for chain-link fences.</p> <p>MCE to review proposed drawings in accordance with AS1725 and new IPWEAQ standard drawings.</p> <p>Once any changes have been made MCE to send to committee for two week review.</p> <p><u>Action By</u> MCE</p>

M23.08.01	<p>As constructed submission and review process</p> <p>How are LGAs reviewing as constructed submissions and comparing with design drawings? For example pipe inverts and grades when using ADAC format.</p> <p><u>M2023.09 update</u></p> <p>LGAs are typically reviewing submitted information and comparing to design drawings. For example by loading ADAC (or alternatives) data into GIS software.</p> <p>All LGA's to review CP1 and advise of relevance.</p> <p><u>Action By</u></p> <p>All</p>
M23.08.02	<p>Fire Hydrant Coverage</p> <p>D11 – Water Design specification does not reference AS 2419.</p> <p>Mohit to provide further detail if required.</p> <p><u>M2023.08 Suggested Resolution</u></p> <p>Add reference to AS 2419. Add under D11.11.03 "Street Fire Hydrant coverage must be in accordance with AS2419".</p> <p><u>M2023.09 Resolution</u></p> <p>Background includes for example battle-axe lots whereby street hydrants do not provide coverage to the back of lot.</p> <p>Section to be added per suggestion.</p> <p>More description to be added around the requirement to evidence coverage (e.g. show coverage of proposed hydrants on the plan).</p> <p><u>Action By</u></p> <p>MCE</p>

Watermain depth of cover

It has been noted that CMDG contains different depths for watermains across the drawings and specifications. There is also some ambiguity between whether a driveway counts as vehicular loading.

D11:

D11.10. COVERS

D11.10.01. The minimum depth of cover to be provided for water mains and water service conduits shall be in accordance with Table D11.10.01 below. Cover under roads to be measured from the adjacent kerb or edge of gravel or edge of pavement.

Cover

D11.10.02. Lesser cover may be permitted at a localised situation, subject to special protection of the pipeline to the satisfaction of the Water Supply Service Provider. This may involve: DI pipe section, and/or cement stabilized sand and/or cover slab as approved in the drawings shall be constructed in accordance with CMDG Standard Drawings.

Reduced Cover

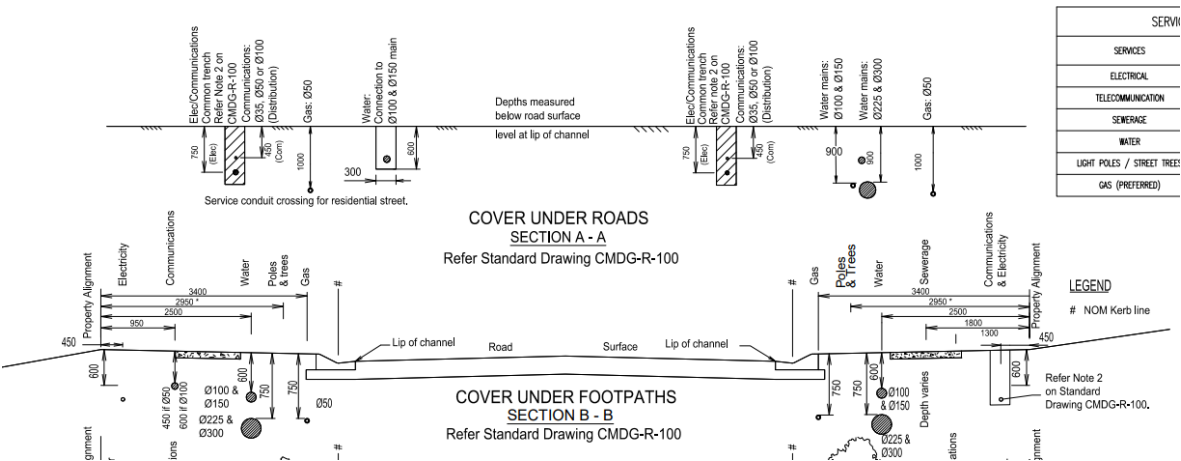
Table D11.10.01: Varied Depth Of Cover To Water Mains And Water Service Conduits

Location of Pipe	PVC*	DI
1. Areas not subject to vehicular loading:	600mm	300mm
2. Areas subject to vehicular loading:		
a) not in roadway	600mm	450mm
b) in sealed roadway	900mm#	600mm#
c) in unsealed roadway	900mm#	750mm#

Or 100mm below subgrade whichever is greater

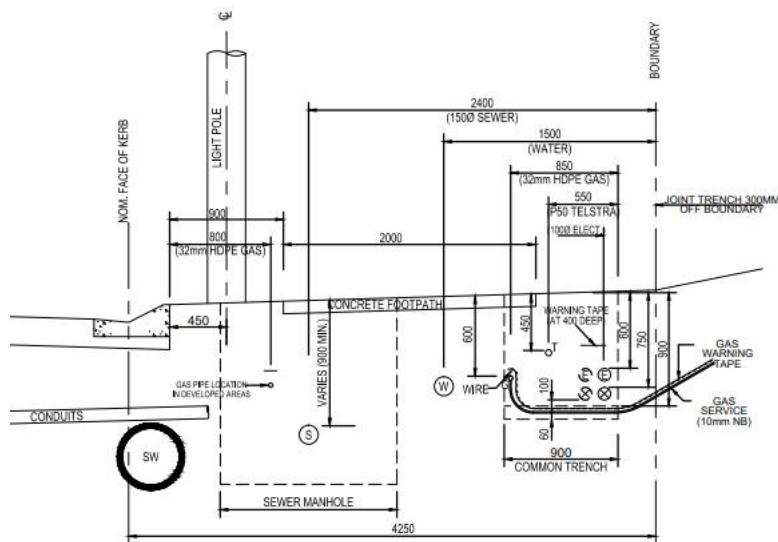
CMDG-R-101: under road 900mm – 100/150mm, 1000mm – 225/300mm

Footpath 600mm – 100/150mm, 750mm - 225/300mm



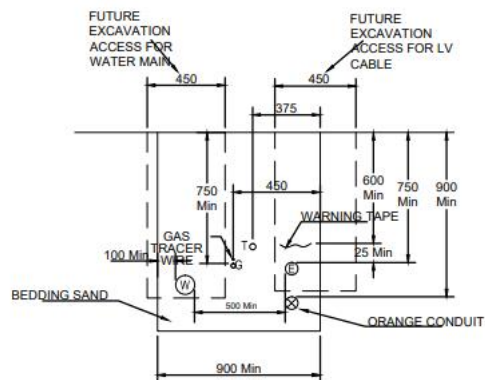
CMDG-R-101A: Under road shown as greater than 750mm and less than 900mm

Footpath 600mm



COMMON TRENCH (SECTION)

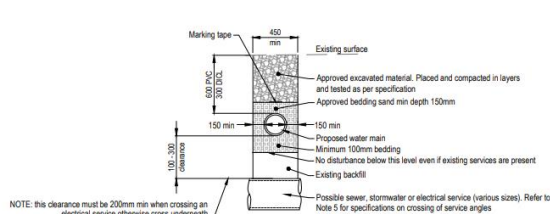
Scale 1:20



ROADWAY COMMON TRENCH (SECTION)

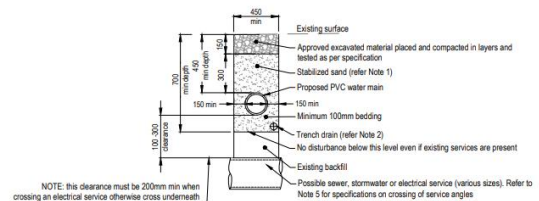
CMDG-W-040: 600mm PVC/ 300mm DICL – non trafficable verge

Note that there is no detail for standard construction in the road.



TYPE A - NON TRAFFICABLE ROAD VERGE

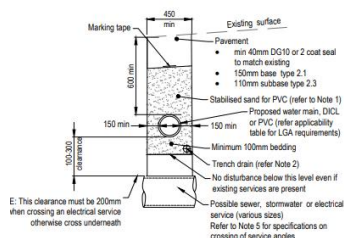
Scale NTS



TYPE B - NON TRAFFICABLE ROAD VERGE FOR PVC

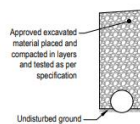
(USE ONLY FOR SHORT LENGTHS WHEN 600mm COVER CANNOT BE ACHIEVED AND WITH SPECIFIC LGA APPROVAL)
450mm to 600mm COVER

Scale NTS



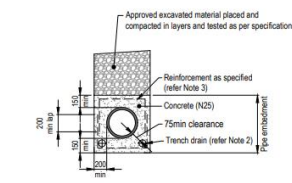
TYPE C - UNDER CARRIAGEWAY (SEALED)

Scale NTS



TYPE D - APPROVED NATURAL BEDDING

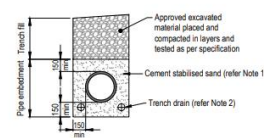
FOR USE IN SANDY GROUND
(SPECIFIC LGA APPROVAL REQUIRED)



TYPE E - UTILISING CONCRETE

EMBEDMENT UTILISE IN LOW BEARING CAPACITY GROUND AS DIRECTED BY DESIGNER (RIGID & FLEXIBLE PIPES)

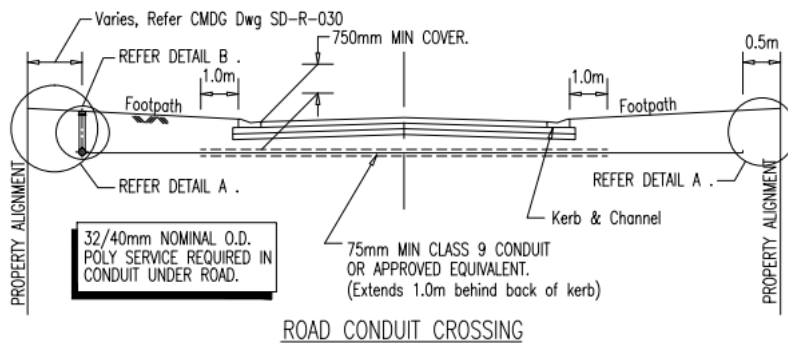
Scale NTS



TYPE F - UTILISING CEMENT STABILISED EMBEDMENT

UTILISE IN LOW BEARING CAPACITY GROUND AS DIRECTED BY DESIGNER (RIGID & FLEXIBLE PIPES)

CMDG-W-090: 750mm min cover for PVC conduit.



For discussion.

M2023.09 Proposed resolution

Update D11 to clarify intent of vehicular loading

Update drawings to match specification.

M2023.09 Resolution

It was discussed that the specification would override the drawings.

'Not in a roadway (e.g. driveway)' to be amended on Table D11.10.01. MCE to check PVC material type and ensure all materials are accounted for.

A lack of detail around road conduit crossings was identified. Given the potential for the current drawing requirements to result in a conduit end covered by the footpath, it was agreed that CMDG-W-090 be amended to show the footpath and the conduit extending minimum 0.5m past the outermost edge of the footpath, or 1m past the kerb.

Drawing CMDG-R-101 to be updated to remove sizing information.

Drawing CMDG-W-040 to be updated to include a "standard" trench detail for in the road

Action by

MCE

M23.09.02

CMDG PS-17 Resilient Seated Sluice Valves

CMDG PS-17 Resilient Seated Sluice Valves and refers to AS2129 Table C which has since been deleted in the standard.

M2023.09 Resolution

Brendan Fuller (GRC) to confirm what the replacement reference is and MCE to update PS-17 to suit.

Action by

MCE/GRC