CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES

2023 MEETING 7 MINUTES

Venue: Teams

Date and Time: **1st September 2023 at 11:00 am**

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Attendance:
Chris Hegarty (MCE), Richard Bywater (MCE), Brendan Fuller (GRC), Mohit Paudyal (RRC), Gary Carlyle (IRC), Michael Stanton (IRC), Allen Chen (LSC), Sarah Banda (CHRC), Jarvis Black (MRC), Jon Ashman (LSC), Jamie McCaul (RRC),</td></tr>
<tr><td>2</td><td>Apologies:
Grant Vaughan (RRC), Nathan Garvey (BSC), Scott McDonald (GRC)</td></tr>
<tr><td>3</td><td>True and correct record of minutes from previous meeting
Refer Attachment A

M2023.07 Resolution:
That the minutes of the meeting held via Teams on 3rd August 2023 be formally adopted.</td></tr>
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<tr><td>M23.07.01</td><td>D7 – Erosion control and stormwater management</td><td>BSC</td></tr>
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<tr><td>7</td><td>General Business</td></tr>
<tr><td>8</td><td>Next Meeting
Next meeting to be via Teams on Friday 29th September at 11am
Next long meeting to be Thursday 16th November in Calliope</td></tr>
<tr><td>9</td><td>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</td></tr>
<tr><td>10</td><td>Meeting Closed at 12pm</td></tr>
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Item No.	Item Details
M10.5.1	**D6 Site Regrading – consider retaining wall issue** M2023.04 Update 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. 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. MCE is to prepare draft D6 document for final review by the committee. M2023.05 Update Minutes of the meeting held on 23rd May are attached (**Attachment G)** along with the draft D6 amended document from that meeting (**Attachment H**). 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. 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. M2023.06 Update • 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: *A separate building approval application may be required for retaining walls additional to operational works applications. Requirements to be confirmed with the individual LGA.* • MCE to review approval requirements for retaining walls in existing road reserve. M2023.07 Update • 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. <u>Action By</u> MCE, RRC

M22.04.01

Review of Reference documents in all Specifications

M2023.02 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.
D3 Structures & Bridges	Apr 2019 – References updated	No		-
D4 Surface Drainage	Aug 2019	Yes	IRC (Michael)	Minor changes to references in document (refer **Attachment O**). General agreement but committee to review in detail and respond in next two weeks.
D5 Stormwater Design	Apr 2023	No		-
D6 Site Regrading	Mar 2012	Yes	RRC (Jamie) and MCE	Refer to item M10.5.1
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 combining content from C211. Potential upcoming training to be coordinated by RRC.
D9 Cycleway & Pathway Design	Apr 2023	No		-
D10 Landscaping (DRAFT)		Yes	RRC (Grant/ Michael Ramsay)	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.
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)	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.
D15 Driveways	Jun 2018	Yes	BSC (Nathan)	No update.

M2023.07 Update

Revised version of D4 to be uploaded to website.

D7 - Note comments in red in table.

D2 - no comments received from committee. Rich to check with Scott if GRC has any comments as many of the changes originated from GRC.

Action By

MCE

M23.01.06	**C224 – Open Drains** 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. For discussion. CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES OPEN DRAINS INCLUDING KERB & GUTTER (CHANNEL) C224 **CONSTRUCTION SPECIFICATION** <u>M2023.04 Discussion</u> 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. <u>M2023.04 Resolution</u> Brendan/ GRC to review document and consider which elements can be moved to D5 and provide feedback/ and updated C224 document. <u>M2023.06 Update</u> No change to the title required as table drains are cover by open drainage. Other updates in progress by Brendan. <u>M2023.07 Update</u> In progress. Brendan to send proposed changes to MCE for action/ finalising. <u>Action By</u> 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 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: *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.* Further background from Chris' email: 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. The service standards are where you outline that Council is obligated to supply the required pressure at the meter. 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? 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). 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).

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)	Finished surface/ street elevation at the main location	50 m (reticulation network)	80 m
Isaac Regional	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
Livingstone Shire	22 m		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.

Action By

MCE/ RRC

M23.03.01

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 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)

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

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. Action By MCE

M23.03.03

Sewer chamber size vs depth

Consideration to be given varying diameter of chamber based on depth. This is pursuant to GRC recent experience where a manhole internal reline left the reduced internal diameter unfit for confined space entry.

Access Chamber Internal Diameter

Some research has been carried out as follows:

WSAA 02/2002 Sewerage Code

The following extract is from WSAA-02/2002

6.6.5 Diameters of MHs

The standard internal diameter for MHs is 1050 mm. The range of sizes preferred by most Water Agencies is 1050 mm, 1200 mm and 1500 mm nominal internal diameter. For shallow sewers (less than 1.2 m to invert), 600 mm and 900 mm internal diameters may be permitted subject to approval by the Water Agency.

When selecting the appropriate MH diameter, the Designer shall give consideration to the base layout of the MH i.e. the number and orientation of incoming sewers and outgoing sewer to ensure adequate working space within the MH. *Internal drops may reduce the effective working space and thus a larger diameter MH may be required. Where there are several inlets in unusual configurations, the Designer may need to seek guidance from the Water Agency to establish the best base layout of the chamber.* Special base layouts shall be shown in the Design Drawings.

FNQROC – Drawing S3000 specifies internal diameter of 1050 or 1200mm but does not specify when larger diameter manholes are to be used.

CTM Alliance - (Cairns , Townsville Mackay) –The document states that "*Suitable Maintenance Hole sizing is addressed in standard drawing sets SEQ-SEW-1301 and 1303*". However, these drawings do not clearly indicate when larger diameters are to be used. The drawings indicate "*Dn1000 or DN 1200 or as specified*". PE – NuSewers seems to allow 900mm diameter minimum.

Presumably given the above doubt the CTM alliance have published the following table.

Sewer size (mm, NB)	MH diameter (mm, ID)		
	NuSewers (cast-in-situ only)	RIGSS	
		pre-cast	cast-in-situ
Up to 225	900, MH depth ≤ 3 m (G type)	1000	1050
	1200, MH depth > 3 m (F type)		
300 to 600	Min 1200 (F or X type)	Nominated by SEQ-SP	1500
675 to 900	Min 1200 (X type)	Nominated by SEQ-SP	1800

CMDG Current requirements

D12.09.05. Circular Access Chamber Internal Diameters shall be in accordance with Table D12.09.02. Rectangular Access Chamber shall have a minimum 600mm dimension opening. For more than 3 connecting lines the Sewerage Service Provider may require a larger access chamber internal diameter than specified in Table D12.09.02.

Table D12.09.02 Access Chamber Minimum Diameter

Sewer Size (mm)	Minimum chamber internal diameter (mm) *
150 – 300	1050
375 and larger	1500

* for up to 3 connecting lines

M2023.07 Discussion

It appears access diameter is generally specified to vary with sewerage main diameter and not depth. The is no mention of reduced diameters after refurbishment.

	The situation encountered by GRC, where an existing access chamber was relined reducing the diameter and therefore affecting accessibility is considered to be a reasonably rare event but these refurbishments will increase in frequency as the sewerage systems age. Perhaps refurbished chambers with reduced internal diameter can be regarded effectively as maintenance shafts (ie remote access only)? If maintaining internal diameter is required then it is possible to insert words in CMDG to reinforce that minimum internal diameters must be retained after refurbishment. However CMDG is generally for new infrastructure. Maintenance and refurbishment issues fall on Local Government. No action is recommended at this stage. For further discussion. For discussion Structural relining is not considered to be a common requirement but maybe become more regular in the future with ageing assets. However, there maybe a reduced requirement for man access in the future with alternative maintenance options. <u>M2023.07 Resolution</u> No action. Remove from agenda.
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 <u>M2023.07 discussion</u> • 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. <u>M2023.07 resolution</u> 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. <u>Action By</u> GRC/ MCE

M23.04.03	**D5 – Kerb Discharge Points** - No resolution this meeting RRC has raised the point that CMDG doesn't currently have any limitations around discharge to the kerb. Do we need to update D5 to include something similar to Brisbane City Council? BCC specifies that for Connection to Kerb and Channel – • The maximum permissible discharge to the kerb and channel must be limited to 30L/s (i.e. maximum 2 single house lots per discharge point dependent on roof area), and twin 100mm diameter pipes (equivalent 150mm diameter) with approved kerb adaptors. • All drainage pipes >150mm nominal diameter are to connect to a stormwater gully or maintenance hole. For discussion <u>M2023.07 Suggested resolution</u> Include an additional clauses in section D5.15 – Lawful Point of Discharge: • The maximum permissible discharge to the kerb and channel must be limited to 30L/s (i.e. maximum 2 single house lots per discharge point dependent on roof area), and twin 100mm diameter pipes (equivalent 150mm diameter) with approved kerb adaptors. • All drainage pipes >150mm nominal diameter are to connect to a stormwater gully or maintenance hole. <u>Action By</u> MCE

M23.04.04	**CMDG-R-040 Property Access along Bitumen Roads** - No resolution this meeting 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. For discussion. <u>Suggested resolution</u> TBC <u>Action By</u> TBC

M23.06.01	**Minimum Sewer Grades for low EPs** - No resolution this meeting 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 <u>M2023.06 Suggested Resolution</u> TBC <u>Action By</u> TBC

M23.06.02

Discrepancy between D5 and D1 road stormwater design - No resolution this meeting

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				Street					
		Arterial Roads		Distributor Road		Collector streets		Access Streets			
		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)	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)	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)	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				Commercial	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%	10%	39%	39%	39%
12	Minimum Flood Immunity for minor system (cross drainage), AEP	2%	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%	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)

<u>M2023.06 Discussion</u>

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.

<u>M2023.06 Resolution</u>

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

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.

M2023.07 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.

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

11	Minimum Design Event Road Drainage AEP	Major storm	1%	1%	1%	1%	1%	2%	2%	2%
		Minor Storm	10%	10%	10%	10%	10%	39%	39%	39%

CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES Page 1 of 4

Annexure D01E

LIVINGSTONE SHIRE COUNCIL D1 ROAD DESIGN HIERARCHY TABLES REVISION 1 Dec 2022

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
12	Minimum Design Event For Cross Drainage Structures AEP – Major storm	1%	1%	1%	1%	1%	1%	1%	1%
	Minimum Design Event For Cross Drainage Structures AEP – 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%

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)	

M2023.07 suggested resolution

Adopt changes to tables and LSC adopt recommended values in QUDM (may not directly correlate for GRC due to internal policy documents/ road hierarchy differences)

Action By

All

M23.06.03

Addition of gate detail to drawing G-011 - No resolution this meeting

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.

M2023.06 resolution

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.

M2023.07 update

Drawing update in progress.

Action By

MCE

M23.07.01	**D7 – Erosion control and stormwater management** D07.12.01 CMDG nominates the threshold for sediment traps/barriers at 0.5ha, where as the DES' Releases to waters from land development sites and construction sites 2500m^2 and greater" sets requirements for 0.25ha**.** M2023.07 Suggested Resolution Review and update D7 and C211 with regards to ESCP to better align with the State Planning Policy and current industry best practice guides (e.g. Catchments & Creeks, Healthy Waterways etc). This agenda item was mentioned during discussions regarding D7 updates in item M22.04.01. D7 and C211 will be combined and updated by RRC. No further action required against this agenda item.