

5.12. PROPOSED AMENDMENT TO THE FNQROC DEVELOPMENT MANUAL PLANNING SCHEME POLICY

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RECOMMENDATION

That Council resolves to:

1. amend the FNQROC Development Manual Planning Scheme Policy in accordance with Section 22 of the *Planning Act 2016* and Chapter 3 Minister's rules for making and amending a planning scheme policy; and
2. proceed to public consultation of the proposed amendments as required under Chapter 3 Minister's rules for making and amending a planning scheme policy.

EXECUTIVE SUMMARY

Far North Queensland Regional Organisation of Councils (FNQROC) has recently undertaken a review of the Regional Development Manual (the manual). The manual provides a comprehensive set of guidelines for carrying out various civil engineering works within the local government areas of: Cairns, Cassowary Coast, Cook, Douglas, Mareeba, and Tablelands.

The purpose of these latest amendments (referred to as Issue 7), are to ensure the manual continues to be functional and up to date and to provide a consistent set of standards to which all can refer.

This latest review has been delayed to ensure the process initiated under the Planning Act 2016 which became effective 3 July 2017. This latest proposed revision (Issue 7) includes all recommended amendments from submission received by various Council representatives.

BACKGROUND

Cairns Regional Council adopted the FNQROC Development Manual (Issue 6) as a Planning Scheme Policy on the 12 December 2014 in accordance with de-amalgamation legislation Douglas Shire Council transitioned this policy on 1 January 2015. The Development Manual Planning Scheme Policy (number 6) supports the Planning Scheme.

The FNQROC Development Manual was prepared to ensure a consistent set of standards across the region. The manual is a living document that needs to be continually reviewed to ensure it remains contemporary and reflects the needs of the users.

Under Chapter 3 Minister's rules for making and amending a planning scheme policy (PSP), Council must resolve to amend the Planning Scheme Policy as the first step in the amendment process, and then proceed to public consultation.

The current Douglas Shire Planning Scheme includes Planning Scheme Policy Number 6 – FNQROC Regional Development Manual and the proposed Douglas Shire Planning Scheme includes a Planning Scheme Policy - SC6.5 FNQROC Regional Development Manual.

COMMENT

Representatives from each of the local governments continually work together to review and make amendments to the manual. This is an ongoing process to ensure the manual is contemporary and reflects the needs of the users.

An explanatory statement and summary of the proposed amendments is attached to this report. A table summarising the planned actions and responsibilities over the coming months is as follows:

Action	Due Date	Responsibility
Send marked up development manual and proforma report to councils for Councils to resolve to amend the policy	23 June 2017	FNQROC
Council motion to amend the development manual	July 2017	Councils
Advertise the proposed amended policy through: - Cairns Post - Tablelander - Mossman/Port Douglas Gazette - Innisfail Advocate - Tully News - FNQROC Website Send e-subscriber advice to industry (note – all on mailing list have been moved to Development Manual Subscriber)	12 August 2017	FNQROC
Workshop with Industry on Proposed changes 28 August 2017	28 August 2017	FNQROC Councils Industry
Submissions to FNQROC on the amended manual due 22 September 2017	22 September 2017	Councils Industry
Send submissions on the amended manual to councils in preparation for next meeting	29 September 2017	FNQROC
Councils to review submissions prior to meeting 13 October 2017	29 September	Councils
Meeting to review and make recommendation on the submissions	13 October 2017	FNQROC Councils
Send list of submissions and recommendations with final development manual and report to councils for adoption	20 October 2017	FNQROC
Councils to adopt manual and advertise effective date	Oct/Nov-17	Councils

As noted above, public consultation is currently planned to commence on Saturday 12 August 2017 and conclude Friday 22 September 2017. During this time, two workshops will be undertaken with industry to explain the proposed changes. The FNQROC Executive Officer has managed the review process and will coordinate the advertising and response to any submissions. A further report on any submission received will be presented in another report to the October or November Council meeting following the public consultation process and subsequent review of submissions received.

PROPOSAL

That Council:

1. amend the FNQROC Development Manual Planning Scheme Policy in accordance with Section 22 of the *Planning Act 2016* and Chapter 3 Minister's rules for making and amending a planning scheme policy; and
2. proceed to public consultation of the proposed amendments as required under Chapter 3 Minister's rules for making and amending a planning scheme policy.

FINANCIAL/RESOURCE IMPLICATIONS

The FNQROC Development Manual (Issue 6) has been enacted in the current Douglas Planning Scheme as a planning scheme policy. The adoption of the updated Issue 7 document will not impose any additional financial or resource implications as it will be business as usual.

RISK MANAGEMENT IMPLICATIONS

The risk of not continually updating the manual is that Council will eventually have a manual that is not functional in providing a consistent set of relevant standards to which all can refer. Continually updating the manual will also enable Council to control the standard of infrastructure constructed as part of development and ensure 'donated assets' are fit for purpose, meet whole of life cost principles and will not burden future generations.

The Regional Development Manual is a Planning Scheme Policy and amendments must follow Chapter 3 Minister's rules for making and amending a planning scheme policy (PSP). This includes a minimum 20 day consultation period and review and response to any submissions received during the consultation period. By following this process, Council reduces the risk of being challenged in the future on the process undertaken when implementing Issue 7 of the FNQROC Development manual.

SUSTAINABILITY IMPLICATIONS

- Economic:** Provision of well planned, integrated and timely infrastructure is a core matter to be considered in the preparation of a planning scheme and in achieving financial, environmental and social sustainability.
- Environmental:** Well planned, integrated and timely infrastructure based on well established development manual provisions will ensure compliance with federal, state and local government environmental legislation which will preserve and enhance the natural environment.
- Social:** Well planned, integrated and timely infrastructure based on well established development manual provisions will ensure a consistent approach to development across the region which reflects the community's expectations and enhance community capital.

CORPORATE/OPERATIONAL PLAN, POLICY REFERENCE

This report has been prepared in accordance with the following:

Corporate Plan 2014-2019 Initiatives:

Theme 3 - Improve Environmental Performance

3.1.1 - Undertake a review of the Douglas Shire Planning Scheme acknowledging impacts of climate change so that Council and our communities can appropriately respond.

Theme 4 - Engage, Plan, Partner

4.1.2 - Undertake community engagement activities that are clearly identified and are appropriate in relation to the project.

Theme 5 – Governance

5.1.1 - Establish and develop long term financial, resource and infrastructure planning to ensure ongoing capacity to fund operations and capital works programs.

Operational Plan 2015-2016 Actions:

COUNCIL'S ROLE

Council can play a number of different roles in certain circumstances and it is important to be clear about which role is appropriate for a specific purpose or circumstance.

The implementation of actions will be a collective effort and Council's involvement will vary from information only through to full responsibility for delivery.

The following areas outline where Council has a clear responsibility to act:

Asset-Owner	Meeting the responsibilities associated with owning or being the custodian of assets such as infrastructure.
Facilitator	Bringing people together to develop solutions to problems
Regulator	Meeting the responsibilities associated with regulating activities through legislation or local law.

CONSULTATION

Internal: Nil. Over the coming months, Council Officers from Sustainable Communities, Infrastructure Services and Water & Wastewater will meet to review the draft FNQROC Development Manual and advocate for changes where required.

External: Industry representatives have contributed to the review process and these have been considered within the proposed manual.

COMMUNITY ENGAGEMENT

In accordance with Chapter 3 Minister's rules for making and amending a planning scheme policy (PSP), the proposed amendments must be advertised for a minimum of 20 days during which the community and industry groups may make comment. The public consultation period is currently planned to commence on Saturday 12 August 2017 and conclude on Friday 22 September 2017. During this time, two workshops will also be undertaken with the development industry to explain the changes.

ATTACHMENTS

1. Proposed Amendments To FNQROC Development Manual **[5.12.1]**

Item	Section	Title	Amend / New / Removal	Description	Comments	action
GENERAL						
1	General		Comment	Can we please put a search function in to each section to search each section		We will endeavour to do this - likely the search function will be on the Development Manual page rather than for the whole FNQROC website.
2	All Design and Specification documents	All	delete	Remove 'Operational Works' wording on cover page	Confusion as to whether this applies to ROL & MCU application (developer contested)	Recommended
3	Overall Change		Amend	Want change "works that will be in the ownership or maintenance responsibility of Council" to "All works which are subject to approval by Council"		Recommended however there is no such wording within any section of the development manual
USER GUIDE						
4	User Guide	Page 4	Amend	Amend subtitle "Construction Procedures" to "Construction Procedures for Operational works Permits and for the Endorsement of Landscape Plans for Private Works MCU"		Not recommended. Recommend change to introduction to include "as defined within the Planning Act 2016" Recommend definition inclusion in 'Definitions and Acronyms'
5	User Guide	Page 4	Amend	Under subtitle "Design Manuals" add "The design standards are the minimum requirements for landscaping on private property MCU. The design standards ensure landscaping meets the objective of the local government policies, codes and industry standards."		Not recommended - there is no need for a separate focus on Landscape
6	User Guide	Page 4	Add	Under subtitle "Specifications" Add Landscaping and clearing of vegetation.		Not recommended. Recommend amendment to wording to include "....all development works"
7	User Guide	Page 4	Add	Under subtitle "Standard Drawings" add 'and landscaping'		Not recommended. Recommend amendment to wording to include "....adopted standard drawings to set minimum standards required for development works"
APPLICATION PROCEDURES 1						
8	AP1	Operational Checklist	Needs to be in AP1	Link to operational Checklist	Currently the Operational Checklist is a Supplementary Document and not within AP1	Recommended an updated version inclusion as Appendix B "Operational Checklist" and additional wording added to AP1.08
9	AP1.01	Introduction	Amend	Amend point 6 to include: Landscape plans are required to be submitted to council for material change of use (MCU), Reconfiguring of Lot (ROL) and subdivisions. a. Material Change of Use (MCU) building applications – All building applications for new buildings where required under the provisions of the Planning Scheme Policy or as a condition of a Town Planning Consent or a Re-zoning applications such as multiple dwelling, industrial, commercial and shopping, schools and day care centres, tourist resorts, single dwelling on hill slopes, designated land when a development is to occur on land with vegetation including established trees as an additional site plan is required indicated details of all trees. b. Reconfiguring of a Lot / Subdivision applications – All applications for approval of engineering designs and specifications for subdivisions are required to show details of Parks/Reserves Planning, Playground, play spaces, street trees planning, buffer zone planting, hill slope development works. c. All applications for works within the road reserves need to show detail of paving, footpath and verge width, footpath planters (separate engineering details required for raised planters), tree planting, separate irrigation plan/s prepared by an irrigation designer in consultation with council for proposed parts, traffic islands and roundabouts. .d. It is recommended that the landscape designer makes contact with councils Engineering Assessment and inspection team during the concept stage of a design for a part, complicated subdivision or landscape. An initial meeting will enable clarity on Council's strategies and policies for landscaping of public spaces.		Not Recommended. Recommend change to AP1.01 (6) to include "plans for landscape works should be prepared by a"

Item	Section	Title	Amend / New / Removal	Description	Comments	action
10	AP1.01	Introduction	Amend	Amend Clause 7 to include site and existing vegetation photographs and endorsement of landscape plans for MCU.		Not Recommended. Recommend including 'Site and existing vegetation photographs' to AP1.01 (7)
11	AP1.02	Pre-Lodgement Discussions	Add	Add to Clause 1 "or endorsement of a landscape plan MCU"		Not Recommended. Recommend inclusion of "or Material Change of Use".
12	AP1.03	Design Requirements	Add	Add to Clause 1 "or endorsement of a landscape plan MCU"		Not Recommended
13	AP1.03	Design requirements	Amend	Amend point 3 to: " Council may request a Road safety audit at its discretion. Road Safety Audits are to be undertaken by a TMR registered Road Safety Auditor or a suitably experienced RPEQ as per the requirements..... "	Existing requirement is that a RSA is undertaken for every application. We do not receive this however and at the same time do not believe it is necessary for every application.	Recommended
14	Ap1.05	Documentation	Add 1b. And 1c	1b. Lodgement of Landscaping Plans for Endorsement MCU 1c. Lodgement of Operational Works Permit for Clearing of Vegetation	1b. Associated with the lodgement of the Application for Endorsement of Landscape Plans a application form must be stamped and paid as received and a Cover Page and Specifications for the works are to be submitted to Council :- (Bring back the "statement of compliance for landscape design" forms) this should be submitted with the landscape plans and application from enforcing the landscape designer to check and sign off that the landscape design complies with FNQROC S8 D9 and the conditions of the development approval and planning scheme policy: landscaping 1c.) Council may refuse assessing an application for landscape endorsement if the landscape plan does not comply with the minimum FNQROC standards, Planning Scheme Policy for Landscaping or the conditions for the landscaping in the Decision notice or Landscape Endorsement Letter 1c. Associated with the lodgement of the Application for Operational Works Clearing of Vegetation a Arborist Report is required to be Submitted as supporting information. #5209663 Information on what required of an Arborist Report and How to contact an Arborist	Not Recommended
15	Ap1.05	Operational Works and Landscaping Application Procedures		1.) The application process for submitting landscape plans for assessment involves submitting hard copy of the landscape plan (A3 is preferred if the plans will read at this scale) Plans along with the Application form and payment can be mailed by post or lodged in person at the customer service centre at CRC xxxx Spence St, Cairns 2.) FNQROC could provide a link of policies, codes, fact sheets and application forms that are applicable to landscaping and operational works for clearing of vegetation and state how to access these e.g.. the following groups of forms and documents are related to Cairns City Council Development Applications for Operational Works and Landscaping and are available in Adobe Portable Document Format (PDF) and Microsoft Word (Doc):- attach link to the fees and charges 3.)state a procedure for submitting additional information during assessment such as RFI and for submission of information after the assessment of the plans such as irrigation plans, as-constructed plans. with the approved species substitution detailed on the plans 4.)A received revised amended drawing letter will be sent acknowledging that the recent issued drawings supersede the issued drawings submitted with the Application for Landscape Endorsement		Not Recommended

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16		Operational Works and Landscaping Assessment Procedures	Add	<p>Assessment and inspections</p> <p>1.)The applicant must advise EAI of the date of completion for any landscaping in writing and if required arrange for a works acceptance inspection for landscaping. A pre-inspection checklist will be sent to the applicant to be completed and sent back to EIA. This check list will state the date of the inspection and record that the landscaping works is at an acceptable standard for an inspection #5230902</p> <p>2.) During the inspection a checklist for Works Acceptance for ROL and MUC will be checked to ensure the works comply with FNQROC #5230999</p> <p>3.)Landscape Endorsement or Decision Notice may require the landscaping works to under go a defect liability period or maintenance period following the works acceptance inspection. A certificate of compliance will be issued at works acceptance if no further liability or maintenance is required. If further on maintenance period is required documentation will be sent detailing the relevant comments, certificate of compliance for works acceptance and include the date for the off maintenance Final Works Acceptance Inspection #5230910</p> <p>If the landscaping is not part of a subdivision or combined Operational Works Application at final works acceptance inspection a check list is completed and if the landscaping complies with FNQROC and the conditions a certificate of compliance is issued #5230910</p>		Not Recommended
17	AP1.08	Supporting Information	1.)Remove 2.)Add	1.)1x A1 Landscaping Plans	<p>1.)A1 plans are not required to be submitted with the application for Endorsement of Landscape Plans - too large and plans available as PDF format also to be changed under AP1.08 (4.) Design Plans for landscape plans</p> <p>2.)add arborist report for Operational Works Application for Vegetation Clearing #5209663</p>	Not Recommended
18	AP1.08	Supporting Information	Under subheading Design Plans add new item 6 after Item 5 "The Council may request during the assessment of the application the digital ACAD file of the water and sewerage reticulation drawings for the purpose of including the reticulation layouts in the GIS system"	GIS requirement	Originated from CRC W&W discussion with the GIS Team	Recommended with amended wording to take out water and sewerage references.
19	AP1.30	Landscape Plan	Major review of section			reviewed wordings for this section is recommended
CONSTRUCTION PROCEDURES 1						
20	CP1	Table of Contents	Hyperlink all sub sections within CP1			Recommended - original error with PDF process.
21	CP1.08	Documentation to be provided prior to Pre-Start	Add	<p>Additional requirements:</p> <p>1. "A copy of the "For Construction" drawings inclusive of any amendments required by the Operational Works approval (pdf & electronic e-transmit AutoCAD files)"</p> <p>2. "A Pavement Design (if not supplied at Operational Works including records of geotechnical tests indicating subgrade CBR's, adopted traffic load, requirements for subsoil drainage and subsoil drainage design. Design to be certified by a RPEQ geotechnical engineer"</p>	Often the Op Works approval involves amendment to design. A revised design is therefore required for Council record of final "For Construction" plan. Also often pavement tests have not been undertaken by the Op Works submission stage. Information required for Council asset management purposes	Recommended
22	CP1.21	As Constructed Submission	Amend	Amend clause 4: 4. The following items must be submitted as part of the "As Constructed" submission:c. An electronic copy of the Council Approved Final Engineering Drawings in the same electronic format as the As Constructed data – PDF and DWG file. I.e. remove the words 'is suitable' and add the words 'and DWG file'.		Recommended

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23	CP1.27	Early Plan Approval and Bonding of Uncompleted Works	Add	Add: Early plan sealing requests will only be considered for those stages of development nominated in the development plan. Parts of a stage will not be considered for early plan approval. Delete (c) - deed of agreement and Appendix Q	Commentary added as a result of changes to the Land Sales Act 1984 (2015)	Recommended
24	CP1	Appendix A p8 of 14	Delete	Delete reference to WSA 03-2002 19.5	No longer required see hunter water	Not recommended as this relates to Disinfection
25	CP1	Appendix A Inspection and test requirements (page 1)	Add	Insert as first Element of Work: "Remnant Tree Management" Insert under Consulting Engineer's responsibility: "HOLD POINT Upon completion of survey, submit an Arborist's report and survey plan indicating trees proposed for retention, management & protection planning as per AS4970 Protection of Trees on Development Sites, for approval by Council. Insert under Council's Responsibility: "WITNESS POINT Joint inspection of Tree Protection Zones for trees to be retained and protected prior to Clearing and grubbing.	Introduces the involvement of an arborist at survey/concept/design phase prior to clearing and grubbing.	Not Recommended
26	CP1	Appendix C p1 of 10	Delete	Delete items 9 and 10 hold and witness points	No longer required - linked to WSA 03-2002 19.5	Not recommended as this relates to Disinfection
27	CP1	Appendix E	Delete	Delete reference to Planning and Environment Act 1990	no longer valid	Recommended
28	CP1	Appendix H	Final Works Acceptance	Add Landscaping components	(Note: form is for council inspector - existing checklist is for RPEQ sign off)	Not recommended for inclusion within the development manual as it is a check list for the inspector. Will be added as a supplementary document so industry is aware of what council will be looking for.
29	CP1 Appendix P	As Constructed Digital Data and drawing Standards, 16. Road Network, 9b Traffic Islands (p25)	Delete	Delete 16 Road Network, 9b Traffic Islands	Reduced requirement for road attributes - split into compulsory and only required if different to FNQROC specs	Recommended
30	CP1 Appendix P	Attribute Information Requirements ("As Constructed") - 4. Roads (p37 of 38)	Add	4) Roads - add sentence at the end of first paragraph "An "As Constructed" drawing is not acceptable if it does not include at minimum the compulsory attributes listed below.	Reduced requirement for road attributes - split into compulsory and only required if different to FNQROC specs	Recommended
31	CP1 Appendix P	Attribute Information Requirements ("As Constructed") - 4. Roads (p37 of 38)	Amend	4) Roads - Restate existing requirements for a. Pavement/surfacing, b. Pathways and d. Roundabout into compulsory and compulsory if the vary from FNQROC. Deletion of a couple of items	Reduced requirement for road attributes - split into compulsory and only required if different to FNQROC specs	Recommended
32	CP1 Appendix P	19. Attribute Information Requirements - 1. Water, (p27)	Amend	Split (c. Mains, d. Valves and Hydrants, e. Reservoir, f. Water Meter, g. Pump Station) attributes into compulsory and Desirable.	Reduce requirements for as constructed attributes	Recommended
33	CP1 Appendix P	19 Attribute Information Requirements ("As Constructed") 2. Sewer (p34)	Amend	Split (a. Valves, b. Manholes/Maintenance Shafts, c. Endcaps, d. Sewer Pipes, e. Storage / Overflow, f. Pumps and Lift Stations, g. Valve Pit, h. Property Connection Branch) attributes into compulsory and Desirable.	Reduced requirement for as-constructed attributes	Recommended
34	CP1 Appendix P	19. Attribute Information Requirements - 3. Stormwater (p38)	Amend	Split (b. Catch Drains c. Stormwater Quality Improvement Device, d. Head and Wing Walls, e. Kerb / Field Inlet Pits and Manhole / Access Chambers, f. Pipe / Culvert, g. Pump Station, h. Tidal Flap) attributes into compulsory and Desirable.	Reduced requirements for as constructed attributes	Recommended
35	CP1 Appendix P	Attributes for Electrical controls	Action - Review the attributes for electrical controls i.e. Page 12 and 20 of Appendix P		No action for change proposed	No recommendation
36	CP1 Appendix P	Drafting Requirements	Amend	Amend item vii under section d. of 2) Sewer (P 30 of 38) to read "Pipe Length - Plan Length...." Repeat same for xviii under rising mains	Are pipe lengths now required to be shown as the slope length or as the horizontal length between nodes? Traditionally horizontal lengths have been provided with slope length determined via extrapolation from the pipe invert levels, Are lengths required to be measured from node point to node point or from pipe intersection to pipe intersection at each respective node?	Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
DP1 - Development Principles						
37	DP1.04	Vegetation Protection and Environmentally Significant Areas	Amend	Amend clause 2 point 1 to read "Not less than the calculated Structural Root Zone clear of tree trunks of adjacent trees, as per AS4970:2009."		Recommended
38	DP1.04	Vegetation Protection and Environmentally Significant Areas	Amend	Amend Clause 3 - See Appendix A for Guidelines on Selection and Protection of remnant trees prior to site clearing.	Adds guidelines regarding Remnant Tree Selection and Protection Measures	Not Recommended
39	DP1.04	Vegetation Protection and Environmentally Significant Areas	Amend Clause 3	Adds guidelines regarding Remnant Tree Selection and Protection Measures	Add to Clause 3: See Appendix A for Guidelines on Selection and Protection of remnant trees prior to site clearing. (Appendix A to be developed for addition into this section.) Appendix A: #5209663	Not Recommended
40	DP1.04	Vegetation Protection and Environmentally Significant Areas	Add Appendix A	Add Appendix A" Guidelines on "The role and use of the Project Arborist in Selection and Protection of remnant trees in development planning, prior to site clearing. Appendix A: #5209663 requirements for an arborist and arborist report-information was collated from the Queensland Arbocultural Association (QAA) https://qaa.net.au/	Adds guidelines regarding the use of a project Arborist in Remnant Tree Selection and Protection	Not Recommended
D1 - ROAD GEOMETRY						
41	D1.03	Reference Documents	New	Under 'Australian Standards' add " AS2890 Parking Facilities " Under 'Department of Transport and Main Roads' add " Technical notes "	these should be referred to in design of the road network	Recommended
42	D1.06	Longitudinal Gradient	Amend	Point 5 - Amend to 'a grade on a side street more than 4% is undesirable' Point 6 change 'should' to 'shall'.		Recommended
43	D1.08	Vertical Curves	Amend	Include additional references in points 2 & 3 "AUSTRROADS guidelines and DTMR Road Planning and Design Manual ". Point 5 - Amend to read 'A minimum grade of 0.5 per cent shall be maintained in the kerb and channel'	these should be referred to in design of the road network	Recommended
44	Table D1.1	Street and Road Hierarchy	New	Add note: "Type 7 cross section only applies to constrained road corridors due to existing development. It is not acceptable in greenfield situations"	Cross section was historically developed for existing network upgrades where property resumption is not feasible	Recommended
45	Table D1.1	Street and Road Hierarchy	Amend	Access Place 0 - 25 Access Street 26 - 90 Minor Collector 91 - 300 Major Collector 301 - 600	Change in number of dwellings per street type based on internal investigation and residential vehicle trip and parking analysis.	Recommended
46	D1.10	Carriageway Width	New	Add new point - "Where a bicycle lane is adjacent to kerb and channel a minimum width of 1.5m must be provided measured from the face of kerb and minimum 1.2m from the edge of the interface between the carriageway and channel"		Recommended
47	D1.12	Intersections	Delete and amend	Remove points 1 & 2. Amend point 3 as follows: 'All intersections shall be designed in accordance with Austroads Guidelines and TMR's Road Planning and Design Manual.		Recommended
48	D1.12	Intersections	Amend	Point 4 should read " Intersections with Transport and Main Roads.... " Point 5 should be amended to " The design of intersections should allow all movements to operate safely for the anticipated demand. Projected traffic demands at an existing intersection post development must be calculated using actual current traffic counts as a base. "		Recommended
49	D1.13	Roundabouts	Amend	Amend Point 5 to read " Roundabouts shall be designed to provide for cyclists. They shall include provision for alternate off road cycle paths on Collector Roads and Sub-Arterial Roads. "		Recommended
50	D1.16	Bus Stops	Amend	Point 1 should be amended to indicate 400m rather than 500m for residents to be able to walk to a bus stop.		Recommended
51	D1.16	Bus Stops	Amend	Point 2 should include reference to " Transport & Main Roads Public Transport Infrastructure Manual "		Recommended

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52	D1.16	Bus Stops	Amend	Point 3 should read "Tactile Ground Surface Indicators (TGSIs) are to be installed at all bus stops and shelters in accordance with AS/NZS 1428 Design for access and mobility" (remove reference to AS/NZS 1428.4.2002, Appendix E)		Recommended
53	D1.17	Access to Allotments	Add	New point: "Location of accesses and site distance provision must be in accordance with AS2890.5 - Parking Facilities - Off Street Parking". Also,		Recommended
54	D1.18	Parking Provision	Amend	Note 3 amendment: "...Where necessary property boundaries shall be adjusted to meet this requirement unless it can be demonstrated that the footpath and all required services can be accommodated within the reduced verge "		Recommended
55	D1.20	Bikeways	Amend	Amend Point 1 reference to read ".....concrete paving in accordance with Austroads and the Manual of uniform Traffic Control (MUTCD)"		Recommended
56	D1.21	Kerb and Channel	Add	New point: "Access ramps are to be provided perpendicular to the carriageway and directionally in line with the opposing access ramp on the other side of the carriageway"		Recommended
57	D1.22	Signs and Road markings	Add	Add new clause: Edge line RRPMS should be installed 50mm from the edge line on the traffic lane side (i.e. the right hand side of the traffic lane edge line). RRPMS are not to be installed within bicycle lanes or on road shoulders that may be used by cyclists.		Recommended
58	D1.22	Signs & Road markings	delete	Point 5 to be deleted "Signs located in grassed areas....."		Recommended
59	D1.22	Signs & Road markings	Add	Add "For any new installation of line marking two coats of paint is required"		Recommended
60	D1.22	Signs & Road markings	Add	Add additional point: "Bicycle lane marking must be in accordance with the standard drawing "SXXX"		Recommended
61	D1.24	Pedestrian Foot Bridges	Amend	Amend Item 2. – The clear width of all pedestrian bridges shall match the width of the approaching pathway / bikeway but not be less than 2m min and shall have squeeze points to control access.		Recommended
62	D1.24	Pedestrian Foot Bridges	Amend	Amend Item 3 – Designers shall consult with Council at concept stage to confirm location, widths, flood immunity, durability etc.		Recommended
63	D1.29	Entering Sight Distance (ESD)	Delete	Remove the requirement for ESD (Clause 2)	The requirement for ESD at intersections has been removed from Austroads	Recommended
D3 - ROAD PAVEMENT						
64	D3.15	Subsoil Drains, clause 6	conflict	D3.15 identifies in kerbed roads, the preferred location for the line of the trench is direction behind the kerb however S1095 nominates the normal location for the subsoil under the kerb.		Recommend amendment to read under the kerb
D4 - STORMWATER DRAINAGE						
65	D4.05	Design Average Recurrence Interval	Amend	Remove reference to Table 7.02.1	The Manual references several external guidelines that forms its basis. As they are external documents, that undergo their own revision process, I think that it may be a good idea to pull all specific Table or Section references out, and simply refer to a reference as "per QUDM" or "per Austroads" for example. This would remove the need to hunt down where an external resource may now sit (within a revised document) and requiring an update of the Manual for simply correcting references.	Recommended
D6 WATER RETICULATION						
66	D6.01 clause 3	Scope	Amend	Replace the reference to WSA with CTM Water Alliance Design and Construction Code in the second dot point.	Incorporation of CTM Design and Construction Code	Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
67	D6.02 clause 4 (new)	General	new clause	Insert the following new clause "FNQROC specification S5 (Water Reticulation) contains addenda to the CTM/SEQ standard drawing list and shall be read in addition to the FNQROC standard drawings and local authority specific standard drawings."	Incorporation of CTM Design and Construction Code	Recommended
68	D6.04 Note	Reference documents	Amend	Amend the note to read "Where Acts or reference documents are updated, reference should be made to the current version excluding the CTM Code and the Water Services Association of Australia (WSAA) "	Incorporation of CTM Design and Construction Code	Recommended
69	D6.04	Reference documents	new	Insert "CTM Water Alliance Design and Construction Code" after Council Approved Product Register	Incorporation of CTM Design and Construction Code	Recommended
70	D6.06 clause 3	Existing Mains	Amend	Add amendment to wording of clause 3.inadequate cover or be less than 600mm horizontally clear of the back of kern,....	Operations requirement	Recommended
71	D6.07 Clause 1	Design Criteria - Flow parameters	Amend	Change Average Daily Consumption to be 400 L/EP/D from the existing FNQROC requirement of 500 L/EP/D.	Change based on demand studies undertaken by CRC	Not Recommended, Recommended amendment specific to Cairns Regional Council within D6.07
72	D6.07 clause 2 a)	2 Pressure Parameters	Add	Insert after the Table "Note 1: Where building envelop pressure is less than 30m, a notation is to be placed on the rates file advising the owner that any booster pump required to augment pressures to the building is to be supplied, installed, maintained and replaced at the property owners expense."	To address customer complaints about pressures	Recommended
73	D6.07 clause 2 a)	2. Pressure Parameters	Add	Insert after Note 2 above "The minimum pressure in the table is for the purpose of design and is not a guaranteed minimum pressure. Refer to the SP's Customer Service Standards for standards of service."	Clarification to avoid disagreement over standards of service.	Recommended with the exclusion of "...standards of service."
74	D6.07 clause 7	Design Criteria - Head loss Calculations	Amend	CRC is proposing to adopt the Darcey-Weisbach method over the Hazen-Williams method. - Table to be provided	Darcy-Weisbach is considered a better co-efficient to use than Hazen Williams. HW is sensitive to diameter and velocity and results in a less robust outcome. Cardno has prepared a Technical memo - refer #5264493	Recommended
75	D6.07 clause 8	Design Criteria - Road Crossings	amend	Change point 2 and 3 to read "Collector" only not "trunk Collector"	Often there is confusion whether minor collectors require DICL. Making this change should make it clear.	Recommended
76	D6.07 clause 9 (NEW)	Design Criteria	New	Insert following clause "Creek Crossings 1. Creek crossing are to be in DICL or PE 2. An arborist report is to be prepared to assess the risk associated with trees within 10m either side of the water main alignment	Not clear in FNQROC or WSA Arborist report to deal with potential risk from tree falls	Recommended with pipe class to be confirmed with Council
77	D6 Water New Sect ??	Building over or near Water Infrastructure	new/amend	Add a new section D6.?? Building near Water Infrastructure Add wording "refer to the requirements set out in D7.16 Building over or near Sewerage Infrastructure"	Provide guidance to developers, consultants and homeowners about the process and requirements for building near water mains etc.	Recommended
78	D6.10 clause 1	Reticulation network	Add	Include at the end of the first paragraph " Where water reticulation is to be laid on non-standard alignment, marker balls are to be used."		Recommended
79	D6.10	Table D6.2 Standard Alignments	Add	Mareeba Shire Council at 2.0m and 2.0m		Recommended
80	D6.11	Cover	New	Insert the following text after the last dot point. "Where the above minimum cover cannot be achieved, the following treatment options may be used, subject to approval from Council." Then insert the treatment options from the attached technical memo.	This clarification is provided to avoid disputes about when to replace or lower mains and what the treatment shall be.	Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
81	D6.14	Irrigation	Amend	Amend clause 3 to read "All irrigation connections to Council's water network (existing or proposed) must be completed by Council, approved subcontractors or under council supervision at the developer's cost.		Recommended in part.
82	D6.16	Pump Stations	Add	At point 1 add at the end of the first sentence "in accordance with SD XXXX"		Recommended
83	D6.16	Pump Stations	Amend	At the end of the paragraph, insert the following sentence "Approval shall be obtained for the use of other types of pumps"		Recommended with inclusion of "and is at council's discretion"
84	D6,16	Pump Stations	Amend	Amend Clause 2 to include: "...day reservoir capacity is provided; this may include provision for a three phase inlet to allow the connection of a mobile generator unit, at council's discretion.		Recommended
85	D6.16 clause 6	Pump Stations	amend	Include at the end of the sentence: "Roof sheeting and associated flashing, capping etc. in Colour Bond "Jasper" and the building in "Dulux Bogart P14 B5"."	This is a further clarification about pump station requirements	Not Recommended. Recommended wording "Internal and external pump station materials and surfaces are to be finished as approved by council.
86	D6.16 clause 7 (NEW)	Pump Stations	New	Insert as new Item 7. "Factory Acceptance testing is to be undertaken and the designer is to arrange a suitable time and date with Council for testing before the switchboard is installed at site. "	This is a further clarification about pump station requirements	Recommended with amendment.
87	D6.16 clause 8 (NEW)	Pump Stations	New	Insert as a new Item 8. "Underground consumer mains in conduits shall be provided between the electricity supply company's off-take point and the pumping station switchboard"	This is a further clarification about pump station requirements	Recommended with amendment.
88	D6 Appendix A	Addendum Title	Delete and new	Delete Was 03 2002 and replace with "CTM WATER SERVICES DESIGN AND CONSTRUCTION CODE Part B Water VERSION 0.2 May 2016"	Incorporation of CTM Design and Construction Code	Recommended (with workshop to occur)
89	D6 Appendix A	Body of addendum A	Delete and new	Major review to incorporate CTM Design and Construction Code	Incorporation of CTM Design and Construction Code	Recommended (with workshop to occur)
D7 Sewerage						
90	All	Table of Contents	Hyperlink all sub sections within D7			Recommended - PDF error
91	D7.01 clause 3	Scope	Amend	Replace clause 3 point (B) with the following text "Any relevant criteria contained within the Cairns Townsville Mackay (CTM) Water Alliance Design and Construction Code identified in D7.04 which is applicable to Rubber Ring Joint Gravity systems - refer addenda at the back of this section; and"	Incorporation of CTM Design and Construction Code	Recommended
92	D7.01 clause 3	Scope	Amend	Replace clause 3 point (c) with the following text "The criteria contained within the Water Services Association of Australia (WSAA) publications identified in D7.04. While vacuum and pressure sewer scheme WSA codes are listed, they are still considered unconventional infrastructure - refer D7.07; and"	Incorporation of CTM Design and Construction Code	Recommended
93	D7.01 clause 4 (New)	Scope	New clause	Insert new clause 4 with the following " Aspects of modification or clarification of the CTM Water Alliance Design and Construction Code are detailed in Appendix A of this manual." Shift previous clause 4 to clause 5 - see next row	Incorporation of CTM Design and Construction Code	Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
94	D7.01 clause 6	Scope	amend	Renumber original clause 6 to clause 7 and remove "SEQ Water Supply and Sewerage" and replace with "CTM Water Alliance Design and Construction Code"	Incorporation of CTM Design and Construction Code	Recommended
95	D7.02 clause 3 (NEW)	General	new clause	Insert the following new clause "FNQROC specification S6 (Sewerage Reticulation) contains addenda to the CTM/SEQ standard drawing list and shall be read in addition to the FNQROC standard drawings and local authority specific standard drawings."	Incorporation of CTM Design and Construction Code	Recommended
96	D7.04 Note	Reference documents	amend	Amend the note to read "Where Acts or reference documents are updated, reference should be made to the current version excluding the CTM Code and the Water Services Association of Australia (WSAA)"	Incorporation of CTM Design and Construction Code	Recommended
97	D7.04	Reference documents	add	Insert under Council Approved Products Register "CTM Water Alliance Design and Construction Code (May 2015)"	Incorporation of CTM Design and Construction Code	Recommended
98	D7 Sewerage New Sect 7.16 or perhaps 7.07?	Building over or near Sewerage Infrastructure	New	New section added	Provide guidance to developers, consultants and homeowners about the process and requirements for building over or near sewers etc.	Recommend amended submission
99	D7.08 clause 1b	Table 7.2 Sewerage Loadings	Amend	Change the C1 value for PWWF from 5 to 3.5.	This is now in line with the stated value in DERM on page 57	Recommended
100	D7.08 clause 2a	Table 7.3 Pipe Velocities	Amend	Amend the value for mannings in PVC from 0.013 to 0.0128.	This is now in line with the stated value in WSA page 65	Recommended
101	D7.08 clause 2a	Table 7.3 Pipe Velocities	Amend	Amend the value for mannings in Poly from 0.013 to 0.0128.	This is now in line with the stated value in WSA page 65	Recommended
102	D7.08 clause 2a	Table 7.3 Pipe Velocities	Amend	Amend the value for minimum velocity at PWWF from 0.6 m/s to 0.7 m/s.	This is now in line with the stated value in WSA 02 on page 64.	Recommended
103	D7.08 clause 3a	Table 7.4 Minimum grades for gravity sewers	amend	Delete and replace the following minimum grades:- For 1 in 60 delete 1.66% and replace with 1.65% For 1 in 80 delete 1.25% and replace with 1.2% For 1 in 150 delete 0.67% and replace with 0.55% For 1 in 150 delete 0.67% and replace with 0.55% For 1 in 290 delete 0.34% and replace with 0.33% For 1 in 420 delete 0.24% and replace with 0.25% For 1 in 570 delete 0.18% and replace with 0.17% For 1 in 900 delete 0.11% and replace with 0.12%	This is to align with the requirements in WSA 02 and DERM 129	Not recommended. Recommend deleting minimum grade % as it does not related to grade measurement already in the table. This meets DERM and WSA requirements.
104	D7.08 clause 5 a (NEW)	Sewer Depths	new	Insert new clause a. "Minimum pipe cover over sewers shall be in accordance with CTM Table 4.8 (Clause 4.6.3)	Note that drawing S3015 has also been amended to align.	Recommended
105	D7.08 clause 5 b (NEW)	Sewer Depths	new	Insert new clause b "Gravity sewerage clearance requirements shall be in accordance with CTM Table 4.2. "	Incorporation of CTM Design and Construction Code	Recommended
106	D7.08 clause 6 (NEW)	Sewer Depths	New	Insert the following new clause "All road crossings under Industrial roads, Collector (minor and major) or higher order roads where the sewer is less than 1.5 meters below the crown level is to be in DICL for the full width of the road formation"	To clarify when DICL is to be installed.	Recommended with amendment.
107	D7.10	Manholes	New	Insert the following new clause "Provide a flat area of 1.5 meter radius around the manhole lid where manholes are located in batters. Where the manhole is located on the standard alignment to a side or rear boundary provide a clear area on three sides"	This requirement is usually conditioned in operational works.	Recommended
108	D7.14	Property connections	Amend	Amend point 5 to read "Property connections into maintenance shafts are not permitted unless in circumstance approved by Council and carried out in accordance with the manufacturers requirements"	This is a further clarification	Recommended with minor amendment

Item	Section	Title	Amend / New / Removal	Description	Comments	action
109	D7.14	Property connections	Amend	replace the drawing reference in clause 11 from S3010 to S3005.	Correction	Recommended
110	D7.14 clause 12	Property connections	Add	At the end of clause 12 point ii insert the following "The designer is to include the measured drop into the sewer taking into account the house drain connection tee fitting that will be used"	This is a further clarification	Recommended
111	D7.15	On-site Sewerage Facilities	New	Insert new clause 4 that states the following "The minimum separation distance between on-site facilities (i.e. disposal trenches and the like) and water mains is to be 10 meters". Renumber the clauses.	This clearance is not specified in the AS or wastewater code	Recommended
112	D7.16	General	New	Insert new clause 6 which states the following "Where the calculated C1 value is less than 3.5, the pump operation mode shall be duty/assist. Where the calculated C1 value is 3.5 and greater, the pump operation mode shall be duty/standby. This requirement is to be confirmed with Council."	Provides clarification on the operation mode of the pump station.	Recommended
113	D7.16	General	Delete	Remove original clause 6 that relates to wet well washers.	Wet well washers are not required by CRC.	Not Recommended. Recommend amendment to make Cairns Regional Council an exception for wetwell washers.
114	D7.17 clause 8	Pump Stations	New	Insert at the end of clause 8 the following "The requirements of fencing of pump stations is to be confirmed with Council at the time of Operational Works application"	Outcome of Mt Peter SPS, where operations have had to pay for fencing post construction	Recommended
115	D7.17 clause 13	Pump Stations	Amend	Amend wording in clause 13 by adding after the word ".....application {insert} in Colour Bond 'Jasper' and any buildings are to be painted in 'Dulux Bogart P14 B5'."	Clarification for CRC painting requirements.	Not Recommended. Recommend amendment to be stainless steel
116	D7.17 clause 14	Pump Stations	amend	Amend the last sentence of the clause to read " The standby generator contained within a roof structure will be located a minimum of 300mm's above the ARI100 year flood event"	This is a further clarification	Recommended with additional wording related to three phase inlet.
117	D7.17 New Clause 15	Pump Stations	new	Insert the following new clause "The design of the pump station shall consider measures to prevent damage from vandals and to restrict un-authorized access; this may include screens and cages around equipment"	Outcome of Mt Peter SPS, operations to pay for fencing post construction	Recommended
118	D7.17 New Clause 16	Pump Stations	new	Insert the following new clause "Factory Acceptance Testing is to be undertaken and the designer is to arrange a suitable time and date with Council for testing before the switchboard is installed at site"	Request from Operations	Recommended with amendment.
119	D7.18	Table 7.14 Sewerage Pumping station Design criteria, Item 1	amend	For the Pump motor drives adopted design parameters, delete and replace with the following; <ul style="list-style-type: none"> • < 6 kW – Direct Online starter (DOL) • > 6 kW to 22 kW – VFD • > 22 kW – special design, refer to Council 	This is a further clarification	Recommended
120	D7.18	Table 7.14 Sewerage Pumping station Design criteria, Item 1	new	Insert in the Comments column of Item 1 after the second sentence "Variable Frequency Drives should be considered for pump stations that discharge into a common rising main" "For Dol and VFD refer to Council's Standard Electrical Drawings"	This is a further clarification	Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
121	D7.18	Table 7.14 Sewerage Pumping station Design criteria	New	Insert new item at item 8 "Sizing of overflow pipe" with the adopted design parameter as "Equal to PWWF" Renummer the clauses.	This is a further clarification	Recommended
122	D7.18	Table 7.14 Sewerage Pumping station Design criteria	amend	Amend wording in original item 9 (Duty Point) to read "With static head corresponding to Bottom water level and pipe friction factor as follows determine Duty point 1 and 2;"	This is a further clarification	Recommended
123	D7.18	Table 7.14 Sewerage Pumping station Design criteria	New	Replace reference to Hazen Williams formula to Darcey-Weisbach formula in Duty Point	Darcy-Weisbach is considered a better co-efficient to use than Hazen Williams. HW is sensitive to diameter and velocity and results in a less robust outcome. Cardno has prepared a Technical memo - refer #5264493	Recommended
124	D7.19	Table 7.15 Pressure Main Design	New	Replace reference to Hazen Williams formula to Darcey-Weisbach formula in Duty Point	Darcy-Weisbach is considered a better co-efficient to use than Hazen Williams. HW is sensitive to diameter and velocity and results in a less robust outcome. Cardno has prepared a Technical memo - refer #5264494	Recommended
125	Appendix A	Addendums to CTM Code	New	Appendix A now contains addendums to the CTM Code.	This addenda is to modify the CTM Code to avoid inconsistency with FNQROC Requirements	Recommended
126	Appendix B	Addendums to WSA Code	New	Appendix B now contains addendums to the WSA Code.	This addenda has been amended to reflect the CTM Code and other minor changes	Recommended
D8 PUBLIC UTILITIES						
127	D8.03	Reference Documents	Add	Add AS 1158 Lighting of Pedestrian Crossings		Recommended
128	D8.07	Utilities	Amend	Point 8 - Change reference to 'AS 1158.4 - 2015 Lighting of Pedestrian Crossings'.		Recommended
129	D8.07	Utilities	Amend	Point 11 - Change offset to be 1300mm (+/- 20mm) from the outer edge of carriageway to centre of pole.		Recommended
130	D8.07	Utilities	Add	New point (20) - The edge of a new driveway shall be no closer than 1.5m to any power pole or street light pole.		Recommended with amend from 1.5m to 1.0m
131	D8.07	Utilities	Add	New point (21) - The preferred lighting arrangement for roundabouts with a central island diameter of 6m or greater is a centrally located short arm high mast lighting column.		Recommended
132	D8.07	Utilities	Add	New point (22) - An offset of 1.12m from invert of kerb to centre of pole shall apply to light poles in the vicinity of corners, in accordance with AS/NZS 1158.1.2:2010. This is to allow for the possibility of long vehicles riding up over the kerb whilst turning.		Recommended
133	D8	Table D8.1 Lighting Categories	Amend	Category P4 remove Suburban Normal 32 Watt CFL	Commentary added as a result of procurement changed within Ergon (2015)	Recommended
D9 Landscaping						
134	D9.01	General Scope	Amend	Amend wording of point 1. - "This section sets out the minimum standards for landscaping for projects including landscaping within new subdivisions:- Reconfiguration of a Lot (ROL), on-street works and landscaping for assessable private developments such as Material Change of Use (MCU) applications		Not Recommended
135	D9.01	General Scope	Amend	amend Point 2: This manual contains procedures for the design of: "a. On-street works - including 1.) verge and street tree planting 2.)buffer mounds 3.)traffic islands and roundabouts 4.)roof tops and podium level planting		Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
136	D9.02	Objective	Amend	Amend subsection to include: a. "Visual" enhancement of the streetscapes b. "The use of a wide range of fit-for purpose plant species with an emphasis on native and particularly endemic species to develop increased habitat and plant diversity in order to provide a food source for indigenous fauna and reduce the potential impact of disease from monocultures." c. "Accessibility"		Recommended
137	D9.03	Reference Documents	Add	Include: AS/NZS 9001 Quality Management Systems		Recommended
138	D9.03	Reference Documents	Add	Include Biosecurity Act and Regulation		Recommended
139	D9.03	Reference Documents	Add	Include AS 2303 Tree Stock for Landscape Use		Recommended
140	D9.04	General	Delete and Add	Delete points 2 and 3 and replace with : 2.) "All landscaping work that will be maintained by Council will be subject to a strict assessment process to ensure that the proposed works comply with the Planning Scheme Policy, Codes and FNQROC Development Manual." 3.) "Council should be contacted prior to the commencement of the design to ascertain whether there are any site specific design requirements, policy documents that the designer should be aware of or particular requirements that council might have for each project. Some local authorities have plant selection guidelines and suburban planting themes.		Recommended
141	D9.05	Existing Vegetation	Amend	Amend existing wording to: 1.) Follow on from Council- "Where existing vegetation is present a separate plan is to be included as part of the landscape plan submission indicating information about the proposed treatment, classification and description of existing vegetation to be retained or removed. The following information must be listed in tabular format for existing vegetation with a Diameter at Greater Height 200mm or greater - a. Position b. Height c. Diameter at Breast Height DBH - Tree Protection Zone (TPZ) d. Diameter at root flare, Structural Root Zone (SRZ) e. Identify dead & defective tree not worth keeping f. Botanic Name / Common Name if known g. crown spread Measurements taken as per AS4970 - Protection of Trees on Development Sites		Recommended
142	D9.06	Verges	Add	Add 1. All existing and proposed street trees in verges must be shown on the landscaping plan. 2. When presented with a verge less than 1600mm in width, council must be contacted during the concept planning stages to discuss suitable species for on-street trees. Street trees are best suited for verges greater than 1600mm width, refer standard drawing S4210.		Recommended
143	D9.06	Verges	Amend	Amend point 3 (proposed point 5) to read:3.5. Aside from grass establishment and tree planting, landscaping of the verge between the property boundary and kerb is not a Council requirement. Where there is a small area for planting on the verge between the property boundary and a footpath, landscape planting can be an alternative to turfing subject to council approval. However, additional landscaping within the verge may be considered subject to Council approval. Generally, any additional landscaping shall be clear of underground services or alternatively limited to ground covers or small shrubs less than in 500mm height.		Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
144	D9.06	Verges	Add	Add additional clauses: 6. Root Barriers must be positioned on either side of the on-street tree where there is a footpath or the tree is within 2m of services, sewer and infrastructure. refer S4210.		Recommended
145	D9.07	Street Tree Planting	Amend	Amend point 4 to read: 4. Tree species must be selected in accordance to the councils planning scheme policy for landscaping plant list. Tree species shall be selected for their suitability to the site conditions (e.g.. small trees under power lines, drought resistance, soil suitability)		Recommended
146	D9.07	Street Tree Planting	Amend	Amend point 5 to read: 5. To ensure consistency in growth rate and form all trees must be well established in their root and branch formation as per AS 2303 Tree Stock for Landscape Use. A minimum 25 litre container should ensure a good survival factor.		Recommended
147	D9.07	Street Tree Planting	Amend	Amend Point 8a to read: 8.a. Biosecurity Regulation 2016 Schedule 4 Category 3 Restricted Matter: Section 13 Part 1 Invasive Plants		Recommended
148	D9.07	Street Tree Planting	Add	Add 9.a: a. Notify Council in writing on completion of planting and commencement of 13 week 'on maintenance' period.		Not Recommended. Amended wording is recommended: Notify Council in writing on completion of planting and maintain trees for a minimum of 13 weeks prior to 'works acceptance' and until final works Acceptance.
149	D9.08	Buffer Zones	Amend	Amend point 11 to read: Large Shade trees to be planted no higher than 1/3 from the base of mound .		Recommended
150	D9.11	Treatment to Park Boundaries	Amend	Amend point 1. change Log Barrier to recycled plastic barriers		Recommended with slight amendment.
151	D9.11	Treatment to Park Boundaries	Amend	Amend point 2. remove log barrier fencing and replace with 1.5 centres to represent the standard drawing for bollard placement		Not Recommended.
152	D9.11	Treatment to Park Boundaries	New	Add new point 4. Bollards must be installed when a lay back kerb is installed, bollards are often not required if a stand back kerb is installed and there is sufficient natural features deterring access		Recommended with slight amendment.
153	D9.13	Planting	New	Add new clause: Root Barrier must be installed for large shade trees that have the potential to disrupt services, play equipment embellishments and lawn. Refer Standard Drawing S4210		Recommended
154	D9.13	Planting	Amend	Amend legislation from Land Protection to Biosecurity Regulation		Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
155	New (D9.15)	Synthetic Turf (Artificial Grass)	New	Insert new clause for Synthetic Turf (artificial grass)D9.15 SYNTHETIC TURF (ARTIFICIAL GRASS) 1. sUse of synthetic turf (artificial grass) requires approval by council and maybe considered for sporting facilities, Commercial properties and developments, nature strips and public areas. 2. Synthetic turf products must comply with AS/NZS 9001. 3. A warranty for a minimum of ten (10) years with the conditions of the warrant is required to be submitted to Council. 4. Synthetic turf must be installed by a qualified person/company. 5. The top of the synthetic turf must sit flush with the kerb or edging. 6. All reticulation is to be capped off and removed. 4.7. Synthetic turf must not interfere with existing street trees.		Not Recommended.
156	D9.15	Mounding	Add	Add reference to standard drawing S4230		Recommended
157	D9.16	Furniture	Delete and add	Delete 1d and replace with "Council must be contacted to provide the specifications for the preferred Refuse Bins and whether a Refuse Bin is required"		Recommended
158	D9.16	Furniture	Add	Add to the start of point 4 "All Park embellishments are required to be approved by Councils prior to installation"		Recommended
159	D9.16	Furniture	Add	Add new point 5 : 4.5. Parks are subject to a 12 month defect liability period. Council is to be contacted in writing for the commencement of the 12 month period. After completion of the 12 month Defect Liability period, council must be contacted for a Final works Acceptance Inspection and hand over of the asset to Council. Warranties and Manufactures Specifications must be provided to Council by Final Works Inspection."		Not Recommended.
160	D9.19 clause 2	Provision of Water	Amend	Amending clause to read " In order to irrigate the park one (1) hose cock on a 20mm stand pipe should be provided for each 2,000 square metre of park.	To be confirmed by Parks and Leisure	Recommended
161	D9.19 clause 4 (NEW)	Provision of Water	Add	Insert the following new clause "Clauses contained within D9 shall comply with the relevant requirements in D6 or where applicable"	To be confirmed by Parks and Leisure	Recommended with amendment
162	D9.20	Water Features	Delete	Remove D9.20 - Water Features		Recommended
163	D9.21	Playgrounds	Add	Add new clause: "5. edging (not timber) installed at 250mm above ground level is to be installed if sand is used for the surfacing e.g. playgrounds, bubblers, fitness stations, seating. Edging flush with the surface level is not an acceptable edging."		Recommended
164	D9.21	Playgrounds	Amend	Amend 6 (new 7) - replace timber with REPLAS		Not Recommended. Recommended Amended wording to remove proprietary product name.
165	D9.23 clause 1	General	Add	At the end of the second sentence, include " and are to be installed by a licensed plumber. "	This is a clarification	Recommended
166	D9 landscaping		Rearrange	Rearrange document subsections to allow for a more logical flow. Section D9.23 should be moved to section D9.21 so the document reads, provision of water, water features and then irrigation (general)	This is a general comment only	Recommended
S1 Earthworks						
167	S1.08	Clearing and Grubbing	Amend	Amend Clause 7 - "...must only be done under direction of the project Arborist or suitably qualified person." Replace the word "person" with "Council officer".	To ensure quality control	Recommended
168	S1.09	Topsoil Operations	Amend	Amend Clause 2 - "... unless under direction or advice of the project Arborist or suitably qualified person." Replace the word "person" with "Council officer".	To ensure quality control	Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
169	S1.11	Excavations	Amend	Amend Clause 8 - "... unless under direction or approval of the project Arborist or suitably qualified person." Replace the word "person" with "Council officer".	To ensure quality control	Recommended
170	S1.13	Trenching Operations	Amend	Amend Clause 6 - "... unless under direction or approval of the project Arborist or suitably qualified person." Replace the word "person" with "Council officer".	To ensure quality control	Recommended
171	S1.13	Trenching Operations	Add	Add Clause 7 - Where alignment of conduits or pipes cannot avoid the Tree Protection Zone of a tree selected for retention and protection, alternative methods of installation may be considered in consultation with and under direction of the project Arborist, i.e. boring under the tree, hand digging through the TPZ to create space under or between roots or Hydro-excavation using a high volume water jet only, to avoid damage to the park of the roots. Any excavation past the TPZ requires refilling with good quality topsoil and watered in to remove any voids formed as a result of the excavation.	Provides alternatives to clause 6	Recommended with the inclusion of in consultation with council.
172						
173	CCTV Commentary		Amend commentary			Keep in commentary
S5 Water Specifications						
174	S5.01 clause 3	Scope	Add	Replace the reference to WSA in clause 3 with a reference to "CTM Alliance Water Service Design and Construction Code Version 0.2 May 2015"	Incorporation of CTM Design and Construction Code	Recommended
175	S5.02	Reference documents	Add	Before Australian Standards insert " CTM Code - CTM Water Alliance Design and Construction Code Version 0.2 May 2015"	Incorporation of CTM Design and Construction Code	Recommended
176	S5.02	Reference documents	Amend	Amend the WSA reference on Page 2 from WSA 02 - 2002 to WSA 02 2011	This is an update to the version	Recommended
177	S5.02	Reference documents	Amend	Under Water Services Association of Australia amend the clause to include the words in bold "WSA 03 - 2002 Dual Water Supply Systems - Supplement to the Water Supply Code of Australia"	This is a clarification	Recommended
178	S5.02	Reference Documents	Add	Include AS 4458 - Pressure Equipment - Manufacture		Recommended
179	S5.02	Reference Documents	Add	Include AS 3992 - Pressure equipment - Welding and brazing qualification		Recommended
180	S5.02	Reference Documents	Add	Include AS 4041 - Pressure Piping		Recommended
181	S5.03 clause 2 (v) (NEW)	Pipes General	Add	Insert the following material "(v) Stainless steel"	Inclusion of stainless steel as a material	Recommended
182	S5.05	Polyethylene Pipe (PE)	Amend	Amend point 2 to read "PE pipes to be minimum PE100 PN16"		Recommended
183	S5.06 clause 2	Ductile Iron	Amend	Amend clause 2 to include the text in bold "Socketed pipes to be class PN35 and where cover is less than minimum, then use the patented "tyton" type rubber ring joint or approved equivalent . Flanged pipes to be Class PN45.	This is a clarification	Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
184	S5.08 (NEW)	Stainless Steel	Add	Insert new subsection for Stainless Steel pipe to read "Stainless steel pipe is to be 316 stainless steel spiral wound pipe. Jointing of SS pipes at bends are to be undertaken by the contractor by welding onsite. Welding is to be carried out in accordance with AS4458. Qualification of welding procedures and welders is to comply with AS3992. Weld arrangements for jointing of stainless steel pipe is to be full penetration butt welds in accordance with AS4041 Class 2A. Weld arrangements for attachment of flange retaining rings are to comply with the relevant requirements of AS4041 Class 2A. On site welds are to be ground smooth removing any slag and sharp projections that may damage the plastic sleeving, but in such a way as to maintain the welds integrity."	S5 subsections after S5.08 to be renumbered	Recommended
185	S5.08 (original)	Bedding Material	Add	At the end of the clause insert the following "Reglass material supplied by Cairns Regional Council is an acceptable alternative bedding material"	CRC now supplies reglass and it has been used successfully in recent projects and CRC is trying to increase its use.	Recommended with alternative wording and removing supply by Cairns Regional Council.
186	S5.23	Anchor Blocks	New	Insert a NEW numbered item 3 that reads "The locations of anchor blocks are to be shown on the as-constructed drawing."		Not Recommended.
187	S5.29	Flushing and Disinfection	Delete	Remove clause 5 as this is a duplication of clause 4.	Correction	Recommended
188	S5.29	Flushing & Disinfection	Delete	Remove - appears to be no longer required		Not Recommended.
189	S5.31 (NEW)	Construction (NEW)	New	Insert new section S5.31 and state the following:- Marker balls are to be installed at changes in direction and at XXXX Spacing. Marker balls shall be omni balls or approved equivalent and installed in accordance with the manufacturers specification		Not recommended - is a design requirement included in D6 and is not for specification.
190	Appendix A	Amendments to standard drawings	Amend	Appendix A Heading to be changed to "CTM Water Alliance Design and Construction Code Version 0.2 May 2015"	Incorporation of the CTM Code CRC to provide an updated addenda table for standard drawings	Not recommended - it is recommended to reference identified SEQ standard drawings - namely....(Andy to provide)
191	Appendix B	Amendments to standard drawings	Amend	Correct the heading to "Dual Water Supply Systems Vers 1.2 - WSA 03-2002"	This is a correction	Recommended
S6 Sewerage specifications						
192	S6.01 clause 3	Scope	New	Insert a new a. and renumber the rest. Include "a. CTM Alliance Water Service Design and Construction Code Version 0.2 May 2015"	Incorporation of CTM Design and Construction Code. The reference to WSA02 is still required as WSA deals with rubber ring jointed gravity pipeline systems while the CTM Code primarily deals with smart sewer systems.	Recommended
193	S6.01 clause 5	Scope	Add	Include a reference to CTM in clause 5 as written in bold "The requirements of this manual will take precedence over the CTM Water Alliance Design and Construction Code and the Water Services Association of Australia Codes"	Incorporation of CTM Design and Construction Code.	Recommended
194	S6.02	Reference documents	Add	Under Water Services Association of Australia amend to include "CTM Water Alliance Design and Construction Code Version 0.2 May 2015"	Incorporation of CTM Design and Construction Code.	Recommended
195	S6.02	Reference documents	Delete	Remove the reference to WSA 05 - 2006. This code has been superseded		Recommended
196	S6.14	Bedding	Add	Insert new item 2. and renumber remainder of this section "2. Reglass material supplied by Cairns Regional Council is an acceptable alternative bedding material"	CRC now supplies reglass and it has been used successfully in recent projects and CRC is trying to increase its use.	Not Recommended. Recommended similar wording and removing reference to Cairns Regional Council

Item	Section	Title	Amend / New / Removal	Description	Comments	action
197	S6.18	Anchor Blocks	Add	Insert a NEW clause 3 that reads "The locations of anchor blocks are to be shown on the as-constructed drawing."	This is a clarification	Not Recommended. Is already in CP1.
198	S6.19	Property connection branches	Amend	Amended the wording of dot point 4 to include the amendments in bold as follows. " The position of each riser, junction or end of a sideline shall be clearly marked by the Contractor on completion of backfilling, with an approved metallic marker tape or wire to the end of the PCB and held in a vertical position during backfilling. The top end of the tape or wire shall be left flush with ground level.	This is a minor clarification	Recommended
199	S6.31	Tolerances	Delete and add	Delete the text and table under the heading and insert "Tolerances are to be in accordance with the CTM Alliance Water Service Design and Construction Code Version 0.2 May 2015"	Incorporation of CTM Design and Construction Code. CTM/SEQ contained more detail on tolerances	Not recommended. Recommend including WSA construction tolerances - Andy to provide.
200	Appendix A	Amendments to standard drawings	Amend	Change the Heading of Appendix A to "CTM Water Alliance Design and Construction Code Version 0.2 May 2015"	CRC to provide an updated table of amendments to standard drawings	Not recommended - it is recommended to reference identified SEQ standard drawings - namely....(Andy to provide)
S8 Landscaping						
201	S8.01	Scope	Add	Add to end of point 1. "for subdivisions and private landscaping works"		Not Recommended.
202	S8.02	Landscaping - Reference documents	Add	Add to Reference documents list: AS2303:2015 Tree Stock for Landscape Use Add CPTED Guidelines for Queensland Part A by Qld Gov.		Recommended
203	(new) S8.05	New section for Synthetic Turfing	New	S8.05 SYNTHETIC TURFING 1. Synthetic Turf must be coloured green. Alternative colours such as 'Field', 'Olive', 'Gold' are not acceptable to Council. 2. Machine Gauge must range between 7mm and 10mm 3. Pile Height must range between 30mm and 40mm 4. Pile Weight 1500grams to 2500 grams 5. Stitch rate (per 10cm) must range between 10 and 13 6. Primary backing must be UV resistant, non-fibrillated plain and or fleeced polypropylene fabric and manufactured with heavy metal free yarns. Yarns must be protected against UV degradation and light fastness meets the highest standards.		Not Recommended.
204	S8.06	Plant Stock	New	Add New Clause 1. "All trees sourced for any landscaping on any existing and future Council managed land must comply with Australian Standard AS2303:2015 - Tree Stock for Landscape Use"		Recommended
205	S8.06	Plant Stock	Amend	Amend Clause 4 (5 with new clause added) Change "...covered container." to "...covered vehicle or where transporting large trees, the tree/s shall be covered adequately to prevent sun and wind scorch/burn."		Recommended
206	S8.06	Plant Stock	Amend	Amend point 3a (new 4a) to read "Trees - 25litre/300mm container for street tree planting"		Recommended
207	S8.06	Plant Stock	Amend	Amend Point 5 (new 6) replace Land Protection Act with Biosecurity Regulation		Recommended
208	S8.08	Fertiliser	Amend	Amend Table S8.01 Fertiliser Types: Remove under Chemical Type in Tree Planting row: "Inorganic" Replace cell under Type of Application "Fertiliser Tablets (2 per tree)" with "Organic based fertiliser and water gell crystals, mixed into backfill as per manufacturer's recommendations specific to soil structure and texture)"		Recommended
209	(new)S8.14	Synthetic Turf (Artificial Grass)	Add	Add: 1. All Season Gold is the preferred 100% Australian owned product type of Synthetic Turf that Council recommends. Synthetic turf products must comply with AS 9001 Quality Management Systems as certified manufacturers of synthetic grass products to ensure consistent quality.	document provided however it has been split between design and specification.	Not Recommended.

Item	Section	Title	Amend / New / Removal	Description	Comments	action
210	S8.14	Planting	Amend	Amend Point 9 to read: "9. To ensure establishment, all trees shall be appropriately staked with hardwood or recycled plastic stake, extending into the ground to a depth of 500mm. Tree to be loosely supported from each stake by hessian tree tie or approved equivalent. Refer Standard Drawing S4210 for details.		Recommended
211	S8.14	Planting	Amend	Amend point 11. Remove Peanut shell or forest litter and replace with Natural Forest.		Recommended
212	S8.14	Planting	Add	Clause 13 add - "The use of slow release drip irrigation watering is recommended.		Recommended
213	S8.15	General	Amend	Amend Point 1 to include "for all landscaping of Council Assets that require irrigation"		Recommended
214	S8.15	General	Add	Add new Clause "As constructed irrigation plans are required to be submitted to Council and Temporary irrigation removed prior to the works acceptance inspection"		Not Recommended.
215	S8.15	General	Add	Add new Clause "3. Landscaping applications for private property Material Change of Use (MCU) are not required to provide Council with irrigation plans. Plants are required to be watered accordingly to ensure establishment."		Not Recommended.
Local Government Specifications						
216	Appendix P	Drafting Requirements	Amend	Replace the suburb prefix list as per attached	LIVE-#5013914-WW_Infrastructure_1/58/13_FNQROC_Suburb_Mark_up_11-02-2016	Recommended
217	D4.05		Amend	Amend - figure D4.01 to remove Douglas shire from mapping.		Recommended
218	D4.05		Amend	Amend - reference in D4.05 reference to QUDM 2007 ARI table 7.02.1 which has been shifted to QUDM 2013 (provisional) table 7.3.1		Recommended
219	D6.17	Telemetry Systems	Delete this clause.	Details to be provided on electrical switchboard drawings.	LIVE-#4586520-WW Infrastructure, FNQROC Amendments 2014, Proposed changes to D6.17, D7.13 and D7.25 of the CRC specific section	Recommended
220	D7.13	Property Connection	Delete this clause	FNQROC has adopted the CRC drawing therefore no longer need this drawing	LIVE-#4586520-WW Infrastructure, FNQROC Amendments 2014, Proposed changes to D6.17, D7.13 and D7.25 of the CRC specific section	Recommended
221	D7.25	Telemetry Systems	Delete this clause.	Details to be provided on electrical switchboard drawings.	LIVE-#4586520-WW Infrastructure, FNQROC Amendments 2014, Proposed changes to D6.17, D7.13 and D7.25 of the CRC specific section	Recommended
222	S6.03	Pipes General	Amend	correct spelling of "Manufacturer's"	This is a correction	Recommended
223	S6.21	Manholes	Grammer	Correct grammar in clause, e.g. remove capital M from manhole and change "configuration" to "configurations"	This is a correction	Recommended
224	S6.23	Pump Stations	Delete	Delete this clause.	CRC allows Cast In situ subject to approvals and in accordance with Standard Drawings S3020	Recommended
225	CRC Standard Drawings	Miscellaneous	Delete	Delete all drawings and replace with new set of drawings for water pump station	CRC to supply revised drawings	Recommend deletion - replacements are recommended for the regional manual.
226	Appendix A and B	Field Outstation RTU requirements	Delete	Delete Appendix B	To be replaced by a new CRC Standard specification for switchboards. CRC to supply	Deleted
227	NEW Specification	NEW	Add	Insert in new section "Standard Specification for Switchboard" document	CRC to supply the specification	Not Recommended.
228	NEW Design Guideline	NEW	Add	CRC to provide "Design guideline for sewerage pumping station" document	CRC to provide "Design guideline for sewerage pumping station" document	Not Recommended.

Item	Section	Title	Amend / New / Removal	Description	Comments	action
229	NEW Design Guideline	NEW	Add	CRC to provide "Design guideline for water booster pumping stations"	CRC to provide "Design guideline for water booster pumping stations"	Not Recommended.
230	NEW Design Guideline	Waste Collection and Storage	New guideline	CRC to supply the new guideline	LIVE-#5269940-WW Infrastructure, FNQROC 2016 Review, Draft section for Engineering Guidelines for Waste Storage and Collection	Not Recommended.
FNQROC Drawings						
231	New		New	Need a drawing outlining sound attenuation fencing for council roads outlining the positions (alignments) and requirements for fencing		Not recommended - TMR have a drawing for this.
232	New	Line Treatment with Official Bike path and Sealed shoulder	New	Add "Typical Bicycle Treatment drawing" (#4856706) to standard drawing set		Recommended
233	60292-02	New Water lift pump station	New	draft marked up drawing provided		Recommended
234	60292-03	New Water lift pump station				Recommended
235	SD-421	New Sewerage pump stations package fibre reinforced plastic	New	draft marked up drawing provided		Recommended
236	S1000	Concrete Kerb and Channel	Amend	Layback D&C 130mm high - apparently exceeds AS design standards for mounting by average passenger car - ISO 612:1978, term No. 6.10. Also need a note re cutting out of kerb for property access		Could add but may need more inlet pits as a result. It is recommended to include rollover kerb and channel
237	S1000			Lower layback that cardwell shire used would be a better option. It would negate the need to cut in vehicle crossings saving councils time and money	Ongoing complaints about the height of the FNQROC Layback Kerb.	Could add but may need more inlet pits as a result. It is recommended to include rollover kerb and channel
238	S1000	Concrete Kerb and Channel	Amend	Amend concrete invert type x-section - minimum thickness of concrete to be increased to 150mm Amend note 1 - Concrete N25 min for domestic and N32 min for industrial/commercial use in accordance with AS1379 and AS3600 Amend note 4 - Concrete testing to be conducted every 15m3 Amend edge restraint kerb type x-section		Recommended
239	S1004	Typical Section for 4.5m Verge		Footpath on 700mm alignment (see S1035C - it doesn't match). Also need to check to ensure reflects current NBN requirements.		Amendment recommended to S1035
240	S1005	Typical road cross sections - sheet 1	Amend	S1005 - Access Place (0 - 25 Dwellings); Access Street (26 - 90 Dwellings)		Recommended
241	S1006	Typical road cross Sections - Sheet 2	Amend	S1006 - Minor Collector (91 - 300 Dwellings); Major Collector (301 - 600 Dwellings)		Recommended
242	S1007	Typical road cross section - Sheet 3	Amend	S1007 - Replace Note 4 - Median width may be reduced if right turn provision not required. Absolute minimum median width shall be 2.5m. Remove dimension '3.4' from Type 8 cross section (both sides)		Recommended
243	S1008	Typical Road Cross Section - Sheet 4	Amend	s1008 - Replace Note 4 - Median width may be reduced if right turn provision not required. Absolute minimum median width shall be 2.5m.		Recommended
244	S1009	Typical Road Cross Section - sheet 5	Amend	S1009 - Add 2m wide footpath to one side of Type 12 Industrial Collector Street		Recommended
245	S1010	Typical Road Cross Sections	Amend	S1010 - Delete '0.67m Barrier Kerb and Channel' and add end dimension of services corridor, being 0.3m - 1.2m offset from property boundary. Change 1.0 dimension to read '1.3m clearance between edge of carriageway and centre of light pole.	Changes based on results of recent residential trip survey and analysis.	Recommended in part.

Item	Section	Title	Amend / New / Removal	Description	Comments	action
246	S1010	Public Utilities on Road Verges		820mm offset +/- tolerance Footpath on 700mm alignment (see S1035C) also amend to reflect NBN conduit requirements. Note on drawing to reflect D8.07.11.	Needs to match S1035C	Review of S1035 undertaken
247	S1015C	Access Crossovers		see note on vehicle clearance - drawing needs to reflect industry practice and planning constraints.		Noted - review of S1015 recommended
248	S1015C	Access Crossovers		Drawing shows 1200mm 'wings' however on a dwelling built to boundary a wing cannot be installed as it would encroach the neighbours property.		Review of S1015 recommended
249	S1015C	Access Crossovers		Need a detail for cutting out of the kerb fore residential property		Review of S1015 recommended
250	S1015C	Access Crossovers		Need to acknowledge most residential crossovers are 5m wide or more at the kerb	See also S1110D, reference to S2005	Review of S1015 recommended
251	S1015C	Access Crossovers		Amend dimension on flare/apron on plan section - 600mm min for residential applications and 1200mm for commercial and industrial Amend plan section - include text "property boundary" on the left edge of apron/flare join with kerb. The crossover must be within the confines of the property boundary Amend - new note on plan to read: all crossovers not compliant with this drawing require Council approval Amend - new notes: layback kerb may be left in situ and dowels installed, relocating or removing street trees require approval, s/w outlets to be clear of crossover and aprons, refer to FNQROC D9 for clearances from street trees, driveway to be 500mm clear from electrical disturbing pillars, driveway edge to be 1000mm clear of light and power poles Amend note 4 - where a concrete footpath abuts a crossing an expansion joint shall be installed and the footpath levels may not be altered Amend cross sections - add detail of viscreen between concrete and bedding layer to be consistent with S1035 Amend - plan to show crossover where layback kerb left in place and straight driveway to garage (no flare/apron) Amend dimension from property boundary to path to 700m, amend pathway width to 2000mm		Review of S1015 recommended
252	S1016	Kerb Ramps	Rationalise the number of redundant pram ramps installed. Create an alternative for a cut out and poured with path pram ramp	See PDF		Review of S1016 Recommended
253	S1016	Kerb Ramps		kerb ramps that are not compliant in relation to the slope of the ramp must be in the direction of travel. FNQROC does not provide an example where the ramp is located on a curve in the K&C which is often the case. TMR Std Drg 1446 is much clearer, Recommend that we revise the drawing to match the TMR standard drawing 1446 drawing.		Review of S1016 Recommended
254	S1016	Kerb Ramps		"Amend section at barrier kerb - new note for no step in invert and new dimension 1520mm from invert to start of transition Amend plan - reposition text for transition to barrier kerb 120mm and to layback kerb 1040mm Amend section at layback kerb - new note for no step in invert and new dimension 1280mm from invert to start of transition Amend perspective view - remove cut into existing footpath and add text: reconstruct footpath to existing levels Amend - new illustration to show facing kerb ramps at an intersection Amend notes - kerb ramp to be installed at all intersections with concrete path outside the tangent point, kerb ramps to be installed directionally in line with the opposing kerb ramp, retrofitted kerb ramps may have the tray left in situ with dowels"		Recommended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
255	S1035C	Pathways/Bikeways		3-5% grade on verge but path at 2.5% means verge may have steps that have been refused in the past. Additional note regarding nail in path for conduits under. Note or specification for a minimum grade i.e. in flat park, what is the minimum fall across a path? a 2.5% grade in this situation will create a step and trip/mowing hazard.		Review of S1035 Recommended
256	S1035C	Pathways/Bikeways		Commentary around corner truncations less than standard. 1 cord truncations of 4.0 x 4.0 to be formalised. S1004 contradicts offset as 700mm. See also D1.19 D9.12		Review of S1035 recommended
257	S1035C	Pathways/Bikeways		"Amend concrete pathway/bikeway x-section - pipe to not sit below kerb tray, pipe locations and allocations for dwelling. 25mm bedding sand to be increased to 50mm. 700m clearance between path and property boundary. Maybe add standardised markers for buried assets Amend footpath verge x-section - multiple pipes at kerb (100mm apart for PVC pipes, kerb adaptors may be touching) Amend expansion joint x-section Amend contraction joint x-section"		Review of S1035 Recommended
258	S1036	Bikeway Slowdown Control Details		confirm availability (was that 89.O.D x 4mm could not be bent in Cairns)		Recommend removal of dimensions
259	S1040	Street Name Signs		Position of poles on esplanade roads - street poles would provide greater visibility and safety on the non-housed side. Add additional street name suffix list or reference to what may be approved		Note on drawing does advise to place the street pole where there is best visibility.
260	S1040	Street Name Signs		Drawing specifies PVC but CRC currently use Aluminium - change?		Recommend amendment for CRC
261	S1050	Grated Kerb Inlet Pit Pipe dia. Less than 600mm		150mm clearance on section drawing - from inside or outside of pipe? Should there be a trafficable version?		External - Recommend amendment to drawing
262	S1050	Grated Kerb Inlet Pit Pipe dia. Less than 600mm		"Amend inlet sag x section - non slip surface text pointing to lintel Amend note - 10 lintel top to have a slip resistant surface"		Recommended
263	S1055	Grated Kerb Inlet Pit Pipe dia. Greater than 600mm		150mm clearance on section drawing - from inside or outside of pipe? Should there be a trafficable version?		External - Recommend amendment to drawing
264	S1060B	Kerb Inlet Grate and Frame		drawing silent on locking tabs - add comment. Crevet Cast Iron alternative pits to be added.		Not Recommended - galvanised grates are preferred - cast iron rust shut and are heavier to lift. No need for locking
265	S1065	Stormwater Manholes 1050 & 1500		150mm clearance on section drawing - from inside or outside of pipe? Add referencing notes to see S4.10		External is identified on the drawing.
266	S1095	Subsurface Drainage Flushing Points Outlet		Needs to be reflected on drawings S1004-1010 inclusive and S4210 Needs note on drawing to refer to D4.09. Need clarification around flushing points and use of Pit entry's as flushing point and need clarification around clashes (i.e. with stormwater parallel and under Kerb and/or insufficient cover)		Recommend adding note, Not recommended re clashes - this is site specific

Item	Section	Title	Amend / New / Removal	Description	Comments	action
267	S1095	Subsurface Drainage Flushing Points Outlet		nominate the location for the line of the trench under the kerb however D3.15 nominations it directly behind the kerb. Conflict needs to be resolved.		D3.15 amended to say under the kerb
268	S1100	Stormwater Drainage Entry Gates		Question over suitability for continued use of grates if potential exists for entrapment against them for a person where a GPT exists only?		Situational - this is a typical drawing to illustrate if being used.
269	S1100	Stormwater Drainage Entry Gates		Amend note - 6 all fittings and fixings to be stainless steel		Recommended
270	S1100	Stormwater Drainage Entry Gates		Reference S1015C, central drainage option?		Clarity needed - no grates in driveways.
271	S1110	Concrete driveway for allotment access		Amend - Minor constructability amendments to x-sections and notes		Recommended with additions
272	S2000(B)	Valve Box Installation		Add note to drawing stating "50mm NB valves are not permitted in TRC"	Due to poor performance of 50mm dia. valves TRC no longer permits them - marked up copy available	Recommended
273	S2000(B)	Valve Box Installation		Amend - Minor constructability amendments to x-sections and notes		No amendments shown on drawing provided
274	S2001	Air Valve Pit Air Release		Remove air valves (left hand side) sizes and add note that tee off take is to be appropriately sized.	Air valve type and sizing to suit specific requirements of sites	Recommended
275	S2005	Hydrant Box Installation		Note 11 - reference S1035, S1110		Recommend add reference to S1035. Not recommended for S1110
276	S2005	Hydrant Box Installation		Amend - Minor constructability amendments to x-sections and notes		Recommended
277	S2010	Kerb & Road Markers		Note 12 - not undertaken - not by contractors or CRC, is this relevant?		Recommended deletion of note 12
278	S2010	Kerb & Road Markers		Amend - modify hydrants to be FH and remove specification from embossing/indenting/stamped in notes		Recommended
279	S2012	Timber Marker Posts		Update?		Recommend amendment to marker plates as per S2010 and remove references timber
280	S2015	Thrust Block Details		Note 5 (stainless bolts/straps) contradicts drawing (Galvanised bolts/straps) also the table uses 225 dia pipe as an example which is less commonly used than sizes like 200 or 300mm. May need a note that other sizes to be engineered or refer to WSA codes. Also ref S5.24		It is recommended to delete S2015 and replace with reference to SEQ-WAT-1205-1 and SEQ-WAT-1206-1
281	S2020 (B)	Main Connection details		Note 5 developer to supply fittings, Council staff don't want the developer to supply		Recommend amendment and recommend delete note 4
282	S2020 (B)	Main Connection Details		Add note to drawing stating "50mm NB valves are not permitted in TRC"	Due to poor performance of 50mm dia. valves TRC no longer permits them - marked up copy available	Recommend
283	S2035	Water Reservoir Level Indicator Details		Relevance to manual? Is a developer going to build this item? Ever?		Recommend deletion of drawing
284	S2038	Standard Arrangement of 20mm Water Service and Recycled Water installations		Developer should install all road crossings and property connections at subdivisional stage. Note 6 should be replicated ON the drawing and also on S1035C.	This change would reduce the time taken for properties to be connected, reduce costs to council, reduce damaged services, reduce ESC risk, reduce WHS risk with people working on an open road	Not Recommended. This requires a rather big operational change - it is suggested this is raised at the next CRC Development meeting for workshopping.
285	S3000	Sewerage Manholes		Include reference to D7.10 and S6.21		Not recommended. Due process should be to refer to the manual.

Item	Section	Title	Amend / New / Removal	Description	Comments	action
286	S3005	House Connection Branches		Complete revision required with industry and CRC. Many of the Fibreglass pits will not work unless below around 2m deep.		Agreed - it is suggested this is raised at the next CRC Development meeting for workshopping.
287	S3015	Sewer Bedding and Trench Details		Under Note 8 replace the cover requirements to "Refer CTM Table 4.8"	Incorporation of CTM Design and Construction Code	not recommended - CTM table 4.8 difficult to find.
288	S3020	Sewerage pump station cast in situ		Numerous amendments	marked up drawing provided	Recommended
289	S3025	Sewerage Pump Station Precast Units		Numerous amendments	marked up drawing provided	reviewed and recommend mark up as provided for consultation.
290	S3025	Sewerage Pump Station Precast Units		Numerous amendments	marked up drawing provided	
291	S4100	Tree Guards		Title of drawing to reflect 'in road'.		Recommended
292	S4100	Tree Guards		Eminance kerb - is this Maintenance Kerb? (LGS Typical section)		Recommended and also amended 'guard' to 'barrier'
293	S4100	Tree Guards		1) Change 45 deg. and 60 deg Angle Parking drawings annotations "Varies 4.0m minimum" arrows to indicate that the 4.0m minimum is from root barrier to root barrier, not aligned with outside of kerb. 2) Add annotation to indicate distance between Kerb and Channel to outside of tree guard to be 1.2m only. 3) Add annotation at Typical Section drawing to indicate distance between root barriers to be minimum 4.0m. 4) Correct Note 4. Change "...of all islands as shown." to "... of all islands as shown for new plantings only and not for existing trees." 5) Add new Note 5 as follows: "Where installing guards around existing trees, the Structural Root Zone for the tree needs to be calculated in accordance with AS4970:2009 to determine minimum root space or 4.0m inside the guard as for new trees. Contact Council's Arborist for advice"		Not recommended. Some already there and some not possible.
294	S4110	Traffic Island Medians		Root Guard and Subsoil not in the right locations. Also ref S1095 and S1004-10		Recommend amendments
295	S4110	Traffic Island Medians		Amend - Minor constructability amendments to x-sections and notes		
296	S4210	Street Tree Planting		1) Remove "1000x800mm. 500g "Wool Eco mat" pinned with min 6 No. off Ø4.0mm galvanised wire pins, U-shaped, 200mm long 50mm wide" Not required with mulching practices 3) Amend wording in note on drawing referring to stakes. Remove "...top200mm neatly painted white." 4) Remove note and drawing "2 no. of 21g 'Agriform' Sow release fertiliser tablets at base of planting rootball" 5) Amend wording in drawing specification. Relace brackets with: ". (70% site topsoil, 30% mature mill mud, organic based fertiliser and water gell crystals, mixed into backfill as per manufacturer's recommendations specific to soil structure and texture)" 6) Add to notes on drawing: " All trees must comply with Australian Standard AS2303:2015 - Tree Stock for Landscape Use" 7) A note is required to state that a root barrier must be installed on both sides of the tree in the presence of foot paths and services. 8) Tree planting in a verge less than 1600mm must be discussed with Council during the Concept Planning stage.		Recommend all except note 8 - it is on another drawing.
297	S4210	Street Tree Planting		Should reflect typical planting in typical 4.5m verge with only 1.8m from invert to back of footpath. Root barrier at 20mm above finished level is too high next to a footpath and a constant source of defect on maintenance inspections		Drawing amended

Item	Section	Title	Amend / New / Removal	Description	Comments	action
298	S4210	Street Tree Planting		Needs note on drawing to refer to D4.09. Need clarification around flushing points and use of Pit entry's as flushing point and need clarification around clashes (i.e. with stormwater parallel and under Kerb and/or insufficient cover)		Not recommended. This is a case by case basis
299	S4230	Buffer Mound		Add point S: Large Shade trees to be planted no higher than 1/3 from base of mound.		Recommended
300	S4230	Buffer Mound		Correction of the planting position of trees on a buffer mound to allow for less root invasion of residential properties and to keep the canopies of trees low as possible in case of wind failure towards residences.		Recommended
301	S4300	Log Barrier Fencing & Timber Bollards		200 dia bollard not in use. Use 150mm. New drawing preferences recycled plastic - there fore spec needs to reflect availability of recycled materials (which come in 100, 125, 145 and 150mm sizes). Maybe plastic products need a separate drawing?		Recommended
302	S4300	Log Barrier Fencing & Timber Bollards		Amend note 8 to reflect proprietary removable bollards from Replas or the like		Not recommended - cannot include a proprietary product name.
303	S4300	Log Barrier Fencing & Timber Bollards		Amend notes - inclusion of recycled plastic as acceptable material		Recommended
304	S4240	Timber Bench Seat		Remove Timber from the drawing and notes		Recommended in part
305	S4370	Playground Edging		Alternatives such as Polypipe?		Alternatives to be discussed with Council
306	S4370	Playground Edging		200 dia bollard not in use. Use 150mm. New drawing preferences recycled plastic - there fore spec needs to reflect availability of recycled materials (which come in 100, 125, 145 and 150mm sizes). Maybe plastic products need a separate drawing?		Recommended
307	S4370	Playground Edging		Amend note 8 to reflect proprietary removable bollards from Replas or the like		Recommend amend Note 4, not recommended to refer to a proprietary product.
308	S4370	Playground Edging		Amend notes - inclusion of recycled plastic as acceptable material		Recommended
309	S4380	Garden Bed Edging		Include poured garden kerb		Council specific
310	S4390	Advisory Signs		As above for plastic materials. New spec? i.e. 200 x 50 board specified on 150mm posts, whereas Replas make 200 x 40 board fitted into 125mm square bollard		Recommended re recycled product, not recommended reference to proprietary product.
311	S4390	Advisory Signs		Amend notes - inclusion of recycled plastic as acceptable material		Recommended
312	S9010	Park Access Gate		add a detail for removable bollards or add note to drawing to see S4300		Recommended
314	MSC S2000	Valve Box Installation	New MSC drawing	S2000. SV - Location wire to be added. Loop of location wire to be 300mm long. Concrete under valve.	Marked up drawing provided	Recommended
315	MSC S2005	Hydrant Box installation	New MSC drawing	S2005-TRC-FH Location wire to be added to MSC standard drawing and blue cat to be moved from 100mm from \varnothing line to 1200mm off K&C. Cat eye marker being damaged while located in carriage way. Concrete thrust block under T.	Marked up drawing provided	Recommended
316	MSC S2015	Thrust Block Details	New MSC drawing	S2015 - TRC - Thrust blocks. Location wire and concrete under valve.	Marked up drawing provided	Recommended
317	MSC S2020	Main Connection Details	New MSC drawing	Mareeba would prefer copper pipe work with compression fittings. Nylon Olives to be used to prevent electrical earth leak transfer. Please refer to plan S2020. Only change requested would be cast iron path box over mains ferrule locator tube and the use of a white guide post with WM in large block letters. See attached photo. Guide post should stop pipe work damage from builders' vehicles and slashers. Locator tube and path box over mains ferrule will reduce cost of boundary valve installation.	Marked up drawing provided	Recommended