INFRASTRUCTURE COMMITTEE MEETING

AGENDA

5 DECEMBER 2023

Your attendance is required at an Infrastructure Committee meeting of Council to be held in the Council Chambers, 232 Bolsover Street, Rockhampton on 5 December 2023 commencing at 9:00am for transaction of the enclosed business.

CHIEF EXECUTIVE OFFICER
30 November 2023

Please note:

In accordance with the *Local Government Regulation 2012*, please be advised that all discussion held during the meeting is recorded for the purpose of verifying the minutes. This will include any discussion involving a Councillor, staff member or a member of the public.

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1 OPENING

1.1 Acknowledgement of Country

2 PRESENT

Members Present:

The Mayor, Councillor A P Williams (Chairperson)
Deputy Mayor, Councillor N K Fisher
Councillor S Latcham
Councillor C E Smith
Councillor C R Rutherford
Councillor M D Wickerson
Councillor D M Kirkland
Councillor G D Mathers

In Attendance:

Mr E Pardon – Chief Executive Officer
Mr P Kofod – General Manager Regional Services (Executive Officer)

3 APOLOGIES AND LEAVE OF ABSENCE

4 CONFIRMATION OF MINUTES

Minutes of the Infrastructure Committee held 7 November 2023

5 DECLARATIONS OF INTEREST IN MATTERS ON THE AGENDA

6 BUSINESS OUTSTANDING

Nil

7 PUBLIC FORUMS/DEPUTATIONS

Nil

8 PRESENTATION OF PETITIONS

Nil

9 COUNCILLOR/DELEGATE REPORTS

Nil

10 OFFICERS' REPORTS

10.1 MCLEOD PARK DRAINAGE

File No:	**2479**
Attachments:	**1. McLeod Park Flood Mapping⇩** **2. McLeod Park Drainage Plan⇩** **3. McLeod Park Fill Plan⇩**
Authorising Officer:	**Peter Kofod - General Manager Regional Services**
Author:	**Martin Crow - Manager Infrastructure Planning**

SUMMARY

Advice has been sought by Council in relation to ongoing drainage issues at McLeod Park.

OFFICER'S RECOMMENDATION

THAT the McLeod Park Drainage Report be 'received'.

COMMENTARY

McLeod Park is located in the downstream reach of the Frenchman's Creek system north-west of Robinson Street and Dean Street. The overall catchment reporting to the park is approximately 120ha.

Stormwater runoff drains into the park via surface flow and underground pipe networks and is detained within the park. The runoff is then discharged via a system of underground culverts and pipes across Dean and Rodboro Street intersection into an existing open channel in the south. The channel ultimately directs the flow across Water Street and into Frenchman's Creek system.

The park currently detains flow commencing from 1 in 1-year local storm event with a substantial area of the park inundated to a depth ranging from 0.3m to 0.5m at this event. The depth of flow is predicted to reach 1.5m during 1 in 100-year local storm event. Maximum velocity of flow of about 0.3m/s for a range of local storm events with the significant depth through the park confirming that the site is a functional detention basin. A high flood hazard is predicted in a 1 in 100-year event associated with the depth of water within the park (refer Attachment 1).

In order to support the park's use for recreational and sporting pursuits, it is important that localised park drainage is functioning correctly and the surface of the park itself is self-draining.

The channel located on the north- east boundary of the site and along Dean Street frontage of the park has been problematic, essentially due to the flat grades associated with the channel holding water and promoting vegetation growth. Regular maintenance of this channel to remove vegetation growth is required for this channel to perform correctly. A further drainage scheme was proposed in 2017 to reshape sections of the channel, install a sub-soil drain to keep the channel bed dry and improve capture of catchment seepage flows into an existing low flow pipe. Funding for this project has been delayed by competing Council priorities (refer Attachment 2).

Survey work has also been undertaken to investigate the ability of the playing surface to drain. Initial investigations indicated that there are a number of undulating areas on the northern end of the park which would likely hold water for a period of time. A fill plan requiring approximately 380m3 of fill has been prepared for Parks Services consideration. (refer Attachment 3).

Further investigations undertaken by Parks Services for improving surface drainage include the installation of a grid of sub-soil drainage underneath the playing surface. The purpose of this work would be to allow the surface to return to a playing condition in a more timely manner after inundation.

BACKGROUND

Council have called for a report on improvements that can be made to the drainage at McLeod Park as the park has been observed to not drain well after rain events, particularly at the northern end. Parks Services have a capital project to recommission the lighting in the park which had failed approximately 2 years ago. Council is concerned that the investment in lighting for the park would be ill-considered if the park was unusable for sporting uses for extended periods of time.

BUDGET IMPLICATIONS

A budget of $250,000 has been allocated for the renewal of McLeod Park Lighting in this financial year.

The drainage works proposed in 2016 were estimated to cost at that time approximately $100,000. A $100,000 budget for this work has been allocated in the 2025/26 capital program. This budget will need to be increased to reflect cost escalations and is now likely to be in the order of $200,000. The playing surface drainage improvements include the top dressing, levelling and turfing at an approximate cost of $70,000 and the installation of the subsoil drainage grid at an approximate cost between $280,000 and $330,000.

No specific budget currently exists for playing surface improvements for McLeod Park. Indicative costs have been included for future budget consideration.

CONCLUSION

McLeod Park is a functioning detention basin servicing a large catchment area. In order to support the park's use for recreational and sporting pursuits, it is important that localised park drainage is functioning correctly and the surface of the park itself is self-draining. Further improvements can be made to the local drainage infrastructure and the playing surface to improve park drainage.

MCLEOD PARK DRAINAGE

McLeod Park Flood Mapping

Meeting Date: 5 December 2023

Attachment No: 1

APPENDIX A – McLeod Park Local Catchment Flooding

Figure 1- 1 in 1 year flow depth through the park- Local Storm Event

Figure 2- 1 in 100 year flow depth through the park- Local Storm Event

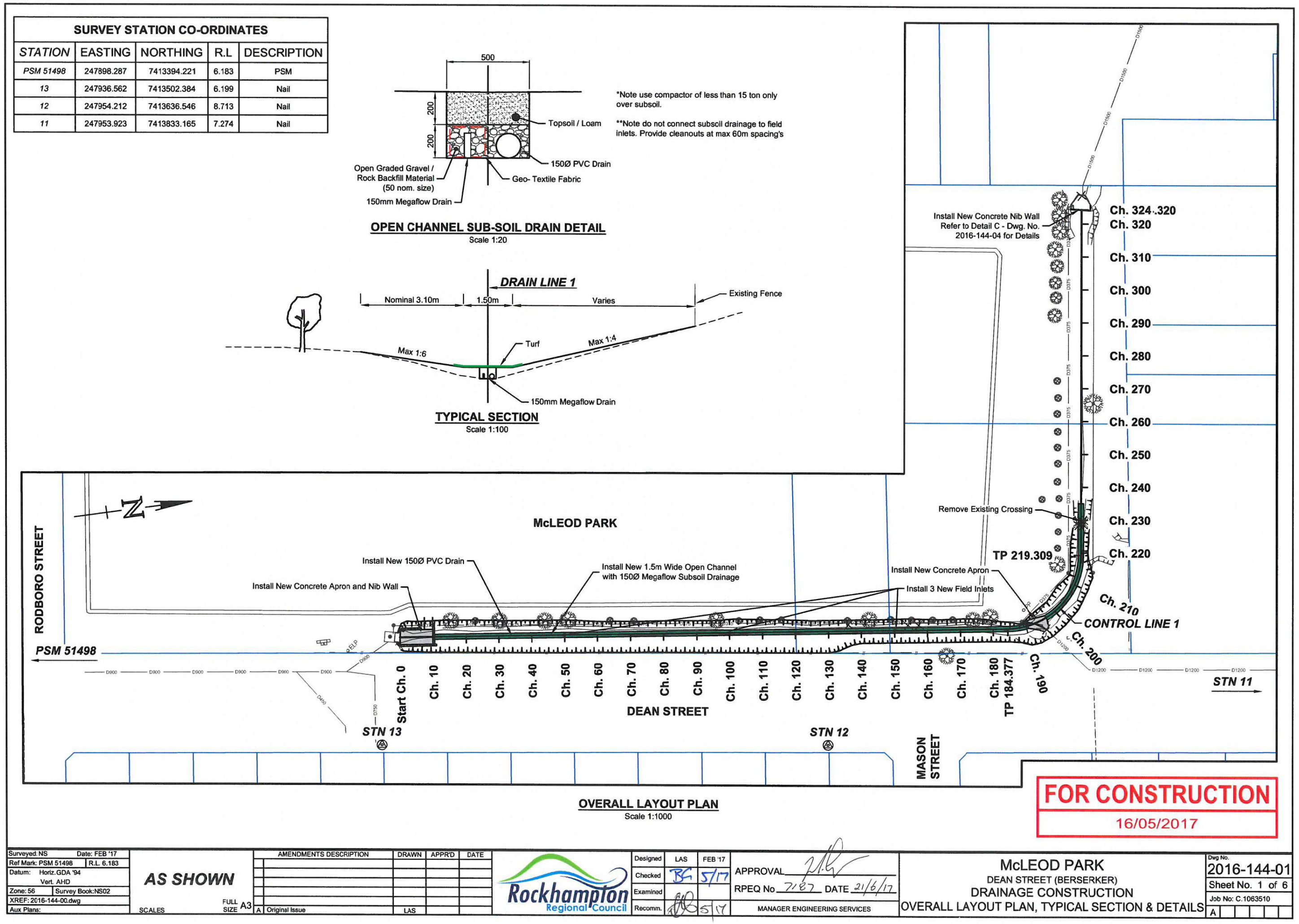
MCLEOD PARK DRAINAGE

McLeod Park Drainage Plan

Meeting Date: 5 December 2023

Attachment No: 2

SURVEY STATION CO-ORDINATES				
STATION	EASTING	NORTHING	R.L	DESCRIPTION
PSM 51498	247898.287	7413394.221	6.183	PSM
13	247936.562	7413502.384	6.199	Nail
12	247954.212	7413636.546	8.713	Nail
11	247953.923	7413833.165	7.274	Nail

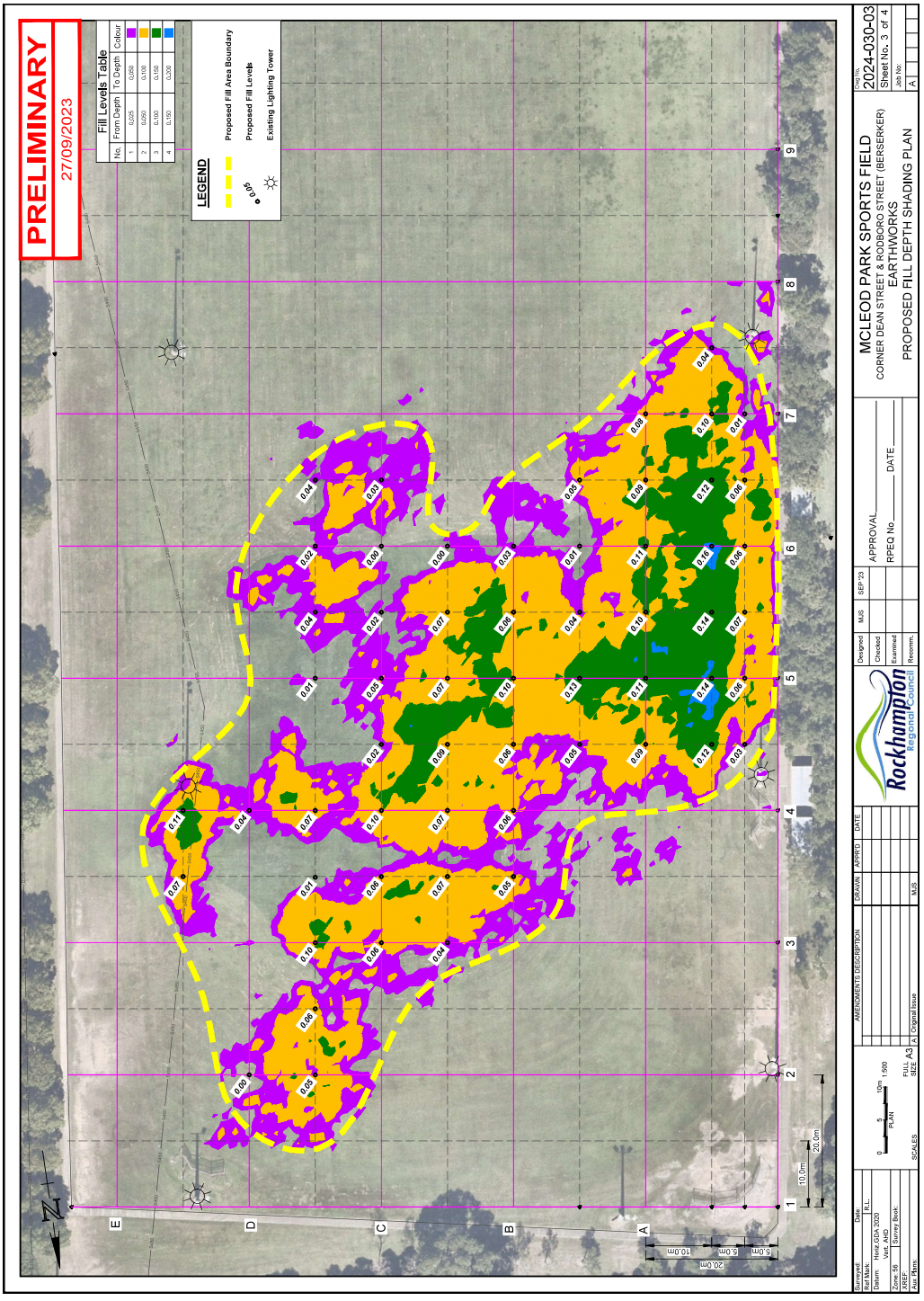


MCLEOD PARK DRAINAGE

McLeod Park Fill Plan

Meeting Date: 5 December 2023

Attachment No: 3



10.2 PROTECTING OUR COMMUNITIES PROGRAM

File No:	**12534**
Attachments:	**1. POCP Guidelines⇩**
Authorising Officer:	**Peter Kofod - General Manager Regional Services**
Author:	**Martin Crow - Manager Infrastructure Planning**

SUMMARY

The report requests Council's endorsement for the submission to the Queensland Government's 2023-24 Preparing Our Communities Program.

OFFICER'S RECOMMENDATION

THAT Council endorse the submission of the Gracemere and Mount Morgan Emergency Communications Systems project to the 2023-24 Preparing Our Communities (Disaster Resilience) Program.

COMMENTARY

On 10 November 2023, Council was invited to submit a funding application for a project identified as the Gracemere Integrated Emergency Communications System with the project scope identified as Upgrade satellite communication, UHF/VHF radio and fix known blackspots in the areas around Mount Morgan and Gracemere to increase communication during disasters. The Federal Government has allocated $500,000 under the Protecting Our Communities (Disaster Resilience) Program (POCP) to complete this work. The funding submission was required to be submitted by 5.00pm on Friday 1 December 2023.

The project appears to have been developed in the run-up to the last Federal election and relates to communications issues experienced by Emergency Services during the 2018 Gracemere Fires. Whereas we have a general idea of the problem to be resolved and a number of potential solutions to resolve these, further scope definition is required.

The funding submission that has been developed and submitted proposes that the project be separated into two phases being the Project Development and Design Phase and the Project Delivery Phase with both phases funded out of the allocated grant funding. It is also proposed that the Communications Sub-Group of the Local Disaster Management group be reformed to deliver this project. The project title has been amended slightly to more broadly capture potential solutions.

Note that no co-contributions are required for this program however cost overruns would be the responsibility of the applicant. It is proposed that once proposed solutions are identified, these solutions will be prioritized for delivery and sufficient project contingency held such that the grant allocation is not exceeded.

BACKGROUND

The Protecting Our Communities (Disaster Resilience) Program (POCP) was developed following the Australian Government's election commitment to provide funding to communities across Australia to increase their disaster resilience and preparedness for future disasters as part of the 2022-23 Budget – announced in October 2022.

BUDGET IMPLICATIONS

As no co-contributions are necessary under this program, there are no immediate implications to the operational or capital budgets. Careful consideration will need to be given to the proposed solutions to ensure that ongoing operational costs and future renewals sit with the agency that is benefiting from the solution.

STAFFING IMPLICATIONS

The management of this project and reformation of the Communications Sub-Group will require the commitment of Officer time from various sections of Council.

RISK ASSESSMENT

Projects that are not yet fully scoped or are in early stages of planning represent potential delivery risks in terms of both cost and timing and consequently meeting grant program and agreement requirements. The proposed methodology looks to address this risk before expending significant funds.

CORPORATE/OPERATIONAL PLAN

This report relates to Corporate outcomes:

1.1.4 - We pursue and advocate for funding that enables us to deliver our planned priorities and supports our financial sustainability.

CONCLUSION

Council has the opportunity to receive funding from the Federal Government through the Queensland Reconstruction Authority to address communications issues during emergency events by providing a submission under the 2023-24 Protecting Our Communities Program.

PROTECTING OUR COMMUNITIES PROGRAM

POCP Guidelines

Meeting Date: 5 December 2023

Attachment No: 1

Protecting Our Communities (Disaster Resilience) Program (POCP)

Guidelines 2023–24

Australian Government

Queensland Government

Document details

Security classification	Public
Date of review of security classification	October 2023
Authority	Queensland Reconstruction Authority
Document status	Final
Version	1.0
QRA Reference	DOC/23/59754 GD–0838

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Copies

Copies of this publication are available on our website at www.qra.qld.gov.au

Further copies are available upon request to:

Queensland Reconstruction Authority
PO Box 15428
City East QLD 4002

Phone (07) 3740 1700

www.qra.qld.gov.au

Contact for enquiries

All enquiries regarding this document should be directed to:
Email grants@qra.qld.gov.au

Queensland Reconstruction Authority
Phone (07) 3740 1700

Cover image: Pioneer River, Mackay

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Part A – Overview and objectives

About the Protecting Our Communities (Disaster Resilience) Program

The Protecting Our Communities (Disaster Resilience) Program (POCP) was developed following the Australian Government's election commitment to provide funding to communities across Australia to increase their disaster resilience and preparedness for future disasters as part of the 2022-23 Budget – announced in October 2022.

The purpose of this program is to deliver important disaster resilience projects for communities that represent value for money and have been identified by communities to improve their disaster resilience and preparedness for further disasters at the local level.

The Program is a closed, non-competitive funding program and will be delivered in two tranches.

- Tranche 1 – administered by the National Emergency Management Agency (NEMA), opened in June 2023 for applications.
- Tranche 2 – to be administered by states and territories and will have varying application timeframes.

Projects identified to receive grant funding by the Australian Government, detailed in the 'who may apply' section, are invited to apply for the program via the Queensland Reconstruction Authority (QRA). QRA is responsible for delivering Tranche 2 of the program in Queensland.

Funding source

Tranche 2 of this program will deliver commitments across Queensland with a total value up to $11.2 million in funding from the Australian Government.

Objective

The POCP objective is to deliver projects that aim to increase the disaster resilience and preparedness of Australian Communities for future disaster events by:

- increasing disaster resilience through building or upgrading telecommunications infrastructure, road infrastructure, evacuation centres, cyclone shelters and emergency management precincts;
- improving community preparedness through volunteer training and developing disaster management plans; and
- enhancing the ability to respond to disasters by purchasing essential equipment, such as Quick Response Vehicles.

Key timeframes

Application stage:

- Funding program opens 10 November 2023.
- Applications must be submitted by 5.00 pm 1 December 2023.
- All applicants will be notified of outcomes by 22 December 2023.

In addition to application activity, a Federal Funding Agreement schedule needs to be finalised and a statewide implementation plan developed for all successful projects. It is a Commonwealth requirement that the Federal Funding Agreement schedule is co-signed, and the statewide implementation plan is endorsed by NEMA prior to any projects commencing. Following this, QRA will create project funding agreements and projects will be able to formally commence in early-mid 2024.

All projects must be completed by 30 June 2026. All project acquittal reports are due within three months of the completion of the project, including any peer/external reviews of scoping studies or research.

Who may apply

This funding is only available to the applicants detailed below that have been identified by the Australian Government and invited by QRA to apply.

Table 1: Queensland Projects

Organisation	Project Name	Project Description	Commonwealth funding
Ipswich Show Society	Ipswich Showgrounds Evacuation Centre Upgrades	Upgrade of the Ipswich Showgrounds to improve amenities that can be utilised as an emergency relief centre during disasters	$1,500,000
Mackay Regional Council	Pioneer River Levee	Construction of a levee on the Pioneer River to protect South Mackay urban areas from future flooding	$5,000,000
Gladstone Regional Council	Deepwater National Park Fire Trail	Rebuild and upgrade Deepwater fire trails to allow for better access for the Queensland Rural Fire Service to better prepare for bushfires and keep the community safe during a bushfire	$2,000,000
Rockhampton Regional Council	Gracemere Integrated Emergency Communications System	Upgrade satellite communication UHF/VHF radio and fix known blackspots in the areas around Mount Morgan and Gracemere to increase communication during disasters	$500,000
Richmond Shire Council	Coalbrook Road culvert crossing replacement	Replacing the culvert crossing at Coalbrook Road to increase flood resilience	$301,620
Cairns Regional Council	FNQ Coastal Erosion Works	Undertake coastal erosion works on the northern beaches of Cairns to protect the coast against future erosion	$750,000
Cook Shire Council	FNQ pedestrian access bridge	Upgrade of the pedestrian access bridge that crosses the southern side of the Endeavour River near Cooktown to allow direct access to Cooktown for residents during the wet season	$250,000
Kowanyama Aboriginal Shire Council	Pormpuraaw Road concrete causeways	Construction of six concrete causeways to ensure year-round access to the South Mitchell River and Gulf of Carpentaria	$420,440
Mapoon Aboriginal Shire Council	Cullen Point Barge Ramp Rock Wall	Construction of a rock wall on the north side of the Cullen Point Barge Ramp in Mapoon to ensure the barge ramp withstands severe weather and can be used in emergency evacuations	$479,380
		Total funding	**$11,201,440**

Maximum funding available per project

No further Commonwealth or state funding is available beyond the amount of Commonwealth funding listed in Table 1 above. If this funding is insufficient, applicants are encouraged to make a co-contribution towards the total project cost.

If other Commonwealth funding is to be used as a co-contribution, applicants are encouraged to review the Guidelines of the applicable programs to ensure that funding from that program can be used for this purpose.

Eligible projects

To be eligible your project must:

- increase the disaster resilience and/or disaster preparedness of the community
- be consistent with the intent of the announced commitment
- for infrastructure projects, not be located on privately owned land where you do not have a formal arrangement, such as a lease, for use of the land, and comprise at least one of the following activities:
  - constructing new infrastructure
  - upgrading existing infrastructure
  - extending existing infrastructure
  - replacing infrastructure where there is a significant increase in benefit
  - fit out, alterations and/or extensions to existing premises
  - purchase of fixed equipment/assets that are related to your community infrastructure project.

If the grant activity is part of a larger project, you should provide evidence to show how the grant activity can be delivered in isolation and the outcomes to be achieved as a result of the grant.

Eligible costs

Eligible costs are costs directly associated with the delivery of the project and are able to be funded under this program.

To be eligible, expenditure must:

- be a direct cost of the project
- be incurred by you within the approved project period.

Eligible costs include:

- costs associated with the delivery of training and education programs, such as facilities hire, planning and facilitation, design and publication of materials, community/public messaging such as radio, print media and billboard space, and reasonable travel costs (calculated on the basis of your organisations' travel policy)
- remuneration of an existing employee, where the employee is temporarily reassigned to conduct work directly related to the delivery of the project
- personnel costs directly related to the delivery of the project including salaries, vehicle and office equipment leasing
- construction costs, such as all site works required as part of the construction, and construction-related labour, materials and equipment hire
- detailed design, for example, production of final or tender design drawings and/or specifications
- costs of conducting a tender for the proposed project
- project management costs proportionate with the funding amount sought including remuneration of additional technical, professional and/or administrative staff for time directly related to managing the construction or delivery of the proposed project (does not include executive duties or overhead charges)
- purchase and installation of fixed plant and equipment.

Ineligible costs

Ineligible costs are not funded by the program and will need to be met by the applicant.

Ineligible costs include:

- costs not associated with the delivery of the project
- legal costs
- catering and official opening expenses (excluding permanent signage)
- purchase of core business capital equipment such as motor vehicles and office equipment
- vehicle and office equipment leasing, unless directly related to the delivery of the project
- remuneration of executive officers
- remuneration of an existing employee, unless the employee is temporarily reassigned to conduct work directly related to the delivery of the project
- costs that are incurred prior to project approval (approval is once the funding agreement is signed and returned by the approved applicant)
- duplication of existing initiatives, for example costs already approved through other funding streams
- statutory fees and charges, and any costs associated with obtaining regulatory and/or development approvals
- costs of internal furnishings and supplies
- costs beyond the project period, for example ongoing costs for administration, operation, maintenance or management
- costs not supported by the general ledger, including on-cost charges
- profit margin of applicant
- Goods and Services Tax (GST) (unless the end-recipient of the grant is not registered for GST)
- costs exceeding the approved capped project funding amount.

Part B – Application process

How to apply

QRA will write to applicants listed in Table 1 outlining the process for progressing an application. This correspondence will include the program guidelines and the application form.

To apply, you must complete and send the application form (and all attachments) via email to submissions@qra.qld.gov.au, prior to the closing date.

If you need further guidance, or find an error in your application after submitting it, you can contact us by email at grants@qra.qld.gov.au.

Late applications

If the applicant is experiencing exceptional circumstances that are reasonably unforeseeable and beyond the applicant's control, late applications may be considered, on a case-by-case basis.

Notification of a late application requests must be made prior to the closing date and emailed to grants@qra.qld.gov.au. Following review of the request an outcome will be provided to advise if the late application will be accepted.

Assessment

QRA will review applications against the eligibility criteria to confirm alignment with program objectives.

The following assessment criteria will be used in reviewing applications:

1. **Benefits of your project to the community**
   Building future resilience for your community and/or preparing them for future disasters
2. **Project viability and sustainability**
   Ensuring the project is a viable and the applicant is ready to commence the project
3. **Your capacity, capability and resources to carry out the project**
   The applicant has the capacity, capability and resources to carry out the project

Part C – Governance and administrative arrangements

The following governance and administrative arrangements will apply to successful projects.

Funding agreement

It is a requirement that all recipients of this funding enter into a Project Funding Agreement with QRA.

A Project Funding Agreement will be formed either by:

- for regular recipients of QRA Funding: QRA will issue a Project Funding Schedule, which when executed by both parties, will be considered a binding Project Funding Agreement under the terms and conditions of the Head Agreement for QRA Funding already in place between QRA and the recipient, or
- for one-off funding: by execution of a standalone Project Funding Agreement.

The Project Funding Schedule/Agreement will detail the terms and conditions specific to the approved funding, including reference to the relevant funding guidelines that govern the program, funding type and amount, key date and milestone schedules, payment claim and reporting requirements.

By submitting an application for funding, you are agreeing that if successful for funding you will agree to the terms and conditions outlined in the funding agreement. If you would like a copy of the funding agreement, please email grants@qra.qld.gov.au to request a copy.

Project Funding must be used solely for the purposes of the relevant Project and only be used on Eligible Project Costs.

The applicant warrants that it has sufficient funds to complete the Project if the amount of the Project Funding is insufficient to deliver the project.

Funds that have been used, spent or committed otherwise than in accordance with the Project Funding Agreement, relevant Program Guidelines or provisions of any Head Agreement, must be repaid to QRA.

Any intellectual property associated with approved funding under this program will be provided to the applicant upon its creation by any third party.

At acquittal project intellectual property, such as research or scoping studies, will be provided for use by QRA.

Unspent funding

Unspent funds will be returned to the program and may be reallocated to other projects.

Variations

All variations to a Project Funding Schedule/Agreement, scope or change in control of a project are to be agreed formally in writing.

Where there are material changes following project approval, grant recipients must provide QRA with updated project information.

Procurement

The procurement of goods or services must be in accordance with the applicant's procurement policy and all applicable legislative/ industry requirements. If expenditure is in breach of any of these standards, then reimbursement of these costs cannot be sought under this program.

Record keeping

All funding recipients must keep an accurate audit trail. Records must be available for seven years from the end of the financial year the expenditure is acquitted by the Queensland Government.

For assurance purposes, the Queensland/and or Australian Government may at any time, via QRA, request documentation from applicants to evidence the State's compliance with these Guidelines. This may include, but is not limited to, access to application and project level information to confirm acquittal is in accordance with these Guidelines.

Progress reporting and progress claims

All applicants are required to provide monthly progress reports on the status of works and expenditure throughout project delivery.

Monthly progress reports are created and lodged through QRA's Monitoring and Reporting System (MARS) Portal, detailing:

- actual expenditure reported against the approved capped amount
- percentage of scope of works completed
- predicted start and completion dates and actual start and completion dates
- reasons for, and details of, any variances in scope, cost or time
- details of complementary works.

Once actual expenditure has exceeded the initial 30 per cent advance, and the project funding Schedule/Agreement is executed, applicants can progressively claim expenditure incurred up to 90 per cent of the approved funding from this program.

Claims for expenditure must be lodged with a progress report, a general ledger or transaction report (or similar financial document produced from the applicant's financial system) demonstrating the actual expenditure incurred against the recommended value of the approved scope of works. Progress reports must be certified by the applicant's delegated officer.

Extensions of time

If the applicant is experiencing exceptional circumstances that are reasonably unforeseeable and beyond the applicant's control, an extension of time (EOT) to the approved project completion date may be considered. Applicants are required to formally request an EOT, detailing the unforeseen circumstance impacting on project completion, the actions taken to minimise the impact, and the adjusted project plan and milestones. For all EOT requests, please contact your Regional Liaison Officer.

Project acquittal

Once the project is completed the monthly progress report needs to be changed to final and submitted. Once the final progress report is submitted, a close out submission is created. This close out submission, and associated documentation, must be completed and submitted to QRA within three months of the completion of the project. For example, if a project is completed on 20 June 2026, the close out submission must be lodged by 20 September 2026.

Close out submissions must include:

- final progress report detailing the completed approved works/activities against the approved project works/ activities
- final actual costs reported against the approved capped amounts
- detailed general ledger evidencing the final actual claimed expenditure and submitted total project costs (including details of contribution)
- final Project Report (available from the QRA website) and evidence demonstrating the completed works/activities, for example photo evidence representative of the extent of the completed works (JPG including EXIF metadata, GPS coordinates and time/date taken) and relevant reports.
- supporting documents to be made available for sampling by QRA if requested.

Close out submissions must be certified by the applicant in line with its delegations on lodgment.

QRA will undertake a final assessment of each project to ensure approved scope is delivered within timeframe, expenditure is eligible, and assurance requirements are satisfied.

Assurance activities

Applicants may be required to provide documentation to support any assurance activities. These assurance activities may include, but are not limited to:

- audit, site visits or inspections
- obtaining relevant documentary evidence to support estimated/actual costs and/or value for money assessments
- verification reviews on measures or projects
- compliance with legislative and policy requirements.

Certification

All project documentation, including applications, progress reports and final reports, must be certified by the applicant in line with its delegations.

Goods and Services Tax (GST)

Where the end-recipient of the grant is registered for GST, the claimed value must exclude GST and be actual expenditure, paid prior to lodging the submission.

Where the end-recipient of the grant is not registered for GST, the claimed value may include GST.

Public acknowledgment of funding source

Funding recipients must acknowledge relevant funding contributions in public materials. This includes, but is not limited to:

- media releases regarding the approved project
- acknowledgement or statements in project publications and materials
- events that use or include reference to the approved project
- plaques and signage at construction sites or completed works.

To comply with this requirement, all public advice and media releases should refer to the relevant funding source, as detailed in the Project Funding Schedule/Agreement.

Contact QRA for assistance and to coordinate approval for any materials by emailing media@qra.qld.gov.au

Queensland Reconstruction Authority
PO Box 15428
City East QLD 4002
Phone (07) 3740 1700

grants@qra.qld.gov.au
www.qra.qld.gov.au

10.3 PLANNING ASSUMPTIONS REPORT VERSION 4

File No:	**11344**
Attachments:	**1. PAR Executive Summary⇩**
Authorising Officer:	**Martin Crow - Manager Infrastructure Planning** **Peter Kofod - General Manager Regional Services**
Author:	**Stuart Harvey - Coordinator Infrastructure Planning**

SUMMARY

Officers have reviewed and updated Council's Planning Assumptions Model to a Version 4. This version includes updated population forecasts, development approvals and developments constructed since Version 3 was completed in 2019. This updated model and report will inform the upcoming amendment to the Local Government Infrastructure Plan (LGIP). This report and its findings are presented to Council for their consideration.

OFFICER'S RECOMMENDATION

THAT Council adopt the Planning Assumptions Report (Version 4).

COMMENTARY

Council officers have reviewed and updated the Planning Assumptions Model as a part of an upcoming review of the Local Government Infrastructure Plan (LGIP). A copy of the report is included as Attachment 1. Updates, since the previous planning assumption model in 2019, were focussed around:

- constructed development,
- approved development,
- changes in baseline population and employment
- changes in forecast population and employment
- sequencing of future development

Since the previous version of the Planning Assumptions model, the Queensland Government Statisticians Office have revised and lowered the population projections for the region. Additionally, since the PAR v3, the projection timeframes have had another 5 year cohort added (2046).

The Planning Assumptions Model (PAM) population growth projections are required to be benchmarked against Queensland Government Statistician's Office (QGSO) population projections to ensure that projections are based on appropriate sources. PAM v4 resident population growth projections are benchmarked against QGSO 2023 Medium Series population projections and were rebased using 2021 census data. These indicate average annual growth rate of 0.6%p.a.

As of March 2023, the estimated resident population (ERP) of the Rockhampton region is modelled in the PAM v4 to be 82,251 persons. By 2046, it is projected that the total population will be 99,085 persons.

BACKGROUND

To date three Planning Assumptions Reports (PAR) have been prepared as part of the Rockhampton Region Planning Scheme and Local Government Infrastructure Plan (LGIP) process. The last revision of the PAR (v3) was completed in 2019.

The Planning Assumptions Report contains the planning assumptions and growth projections underpinning the LGIP and has been prepared to:

- document the methodology and assumptions used to prepare dwelling, population, gross floor area (GFA) and employment planning assumptions and the timing of development (development sequence);

- present and discuss dwelling, population, GFA, employment projections and development sequence.

The planning assumptions are critical elements underpinning the LGIP. Their purpose is to provide a logical and consistent basis for detailed infrastructure planning within network catchments and state assumptions about the type, scale, location and timing of future development and subsequent population and employment growth.

The PAR v4 applies to all land within the boundaries of Rockhampton Regional Council (as set out within the Rockhampton Region Planning Scheme) and demonstrates how the strategic outcomes of the Rockhampton Region Planning Scheme are to be implemented at the local level. The planning period for the PAR v4 is 23 years to 2046.

PREVIOUS DECISIONS

Council adopted the Planning Assumption Report version 3 on 25 June 2019 and it formed part of the extrinsic material used to inform the interim amendment of the Local Government Infrastructure Plan (LGIP)

LEGISLATIVE CONTEXT

Under the *Planning Act 2016*, a local government that wishes to levy infrastructure charges or impose conditions about trunk infrastructure is required to prepare an LGIP. The LGIP is part of the planning scheme and identifies Council's plans for trunk infrastructure that are necessary to service urban development at the desired standard of service (DSS) in a coordinated, efficient and financially sustainable manner. The Planning Assumptions is a mandatory component of the LGIP.

RISK ASSESSMENT

There is a risk that inconsistent development projections will result in forecasting and construction of infrastructure before or after it is required. This can have significant impacts on Council's budget and forward works program. Council's PAM v4 is benchmarked to QGSO growth rates to reduce this risk. In the event that growth occurs quicker than forecasted, the sequencing timeframes will accelerate but it is unlikely that this will have a detrimental impact on the LGIP and forward works planning.

CORPORATE/OPERATIONAL PLAN

The projects align with Rockhampton Regional Council's Corporate Plan 2022-2027 goals, including:

Our Economy

3.1 We plan for growth with future neesds of the community, business and industry in mind.

Our Infrastructure

5*.1 Our Region has infrastructure that meets our current and future needs*

CONCLUSION

The PAR contains the planning assumptions and growth projections underpinning the LGIP. The PAR has been updated to version 4 to incorporate revised QGSO population projections. PAR v4 is now presented to Council for consideration and adoption to inform upcoming Local Government Infrastructure Plan updates.

PLANNING ASSUMPTIONS REPORT VERSION 4

PAR Executive Summary

Meeting Date: 5 December 2023

Attachment No: 1

Rockhampton Regional Council Planning Assumptions Report

Version 4, November 2023

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Executive Summary

This Planning Assumptions Report (PAR) contains the planning assumptions and growth projections underpinning the Local Government Infrastructure Plan (LGIP) prepared by Rockhampton Regional Council.

This PAR has been scoped to:

- document the methodology and assumptions used to prepare the Planning Assumptions Model (PAM), dwelling, population, gross floor area (GFA) and employment planning assumptions and the timing of development (development sequence);
- present and discuss dwelling, population, GFA, employment projections and development sequence; and
- inform the Priority Infrastructure Area (PIA);

The planning assumptions are critical elements underpinning the LGIP. Their purpose is to provide a logical and consistent basis for detailed infrastructure planning within network catchments and state assumptions about the type, scale, location and timing of future development and subsequent population and employment growth. The PAR applies to all land within the boundaries of Rockhampton Regional Council (as set out within the Rockhampton Region Planning Scheme), and demonstrates how the strategic outcomes of the Rockhampton Region Planning Scheme are to be implemented at the local level. The planning period for the PAR is 23 years to 2046.

Priority Infrastructure Area

The PIA forms part of the LGIP and identifies the area prioritised for the provision of trunk infrastructure to service the existing and assumed future urban development and will accommodate 10 to 15 years of growth.

The development sequencing assumptions in the PAR are a key input into the determination of the PIA and help ensure the provision of trunk infrastructure is undertaken in a logical and efficient manner.

Methodology

To guide the process of developing planning assumptions for the Rockhampton Regional Council LGIP, a detailed, robust and transparent methodology has been adopted consisting of six key steps. The six steps are:

Step 1 – Existing Land Use and Development Assumptions

Step 2 – Future Land Use Assumptions

Step 3 – Development Capacity Analysis

Step 4 – Development Sequencing Analysis

Step 5 – Growth Projections

Step 6 – Planning Assumptions Report

The Rockhampton region resident population growth projections are benchmarked against Queensland Government population projections (medium series), 2023 edition. Residential development sequencing and population growth projections are guided by the sub-regional allocation of population growth for the former Rockhampton City, Fitzroy and Mount Morgan Local Government areas.

Population

As of March 2023, the estimated resident population (ERP) of the Rockhampton region is modelled in the PAM to be 82,251 persons with a non-resident population (NRP) of 4,051 persons and a total population (ERP plus NRP) of 86,302 persons (refer to Section 4.2.1). By 2046, it is projected that the total population will be 99,085 persons. As shown in Figure E.1, the resident population of the Rockhampton Regional Council (RRC) area is projected in the PAM to grow at 0.6% pa, in line with the 2023 Queensland Government medium series population projections. Section 2.5.2 provides the population projections methodology used.

A summary of population projections at a sub-regional scale is shown in Table E.1. A summary of population inside and outside of the PAM reporting areas is shown in Table E.2.

The PAM Reporting Areas are largely urban localities where growth is most likely to occur and encompass the areas most likely to form part of the PIA.

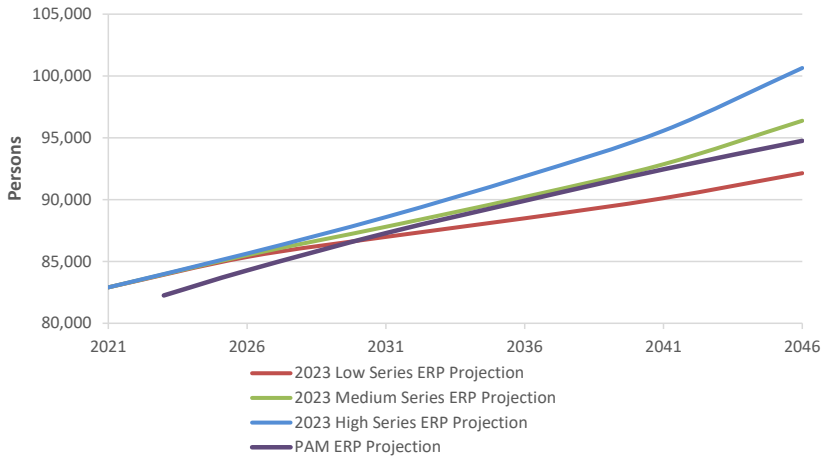


Figure E.1 - Planning Assumptions Model and Queensland Government ERP Projections

Table E.1 - Planning Assumptions Model and Queensland Government ERP Projection Comparison

		Existing (2023)#	2026	2031	2036	2041	2046	Growth Rate ^	RRC Growth Share (2023 - 2046)
Rockhampton City Area	Planning Assumptions Model	62,480	63,722	65,660	67,440	69,062	70,258	0.5%	64.5%
	2023 Medium Series Projection	62,961	63,912	65,129	66,504	68,094	69,884		
	Difference with PAM	**-480**	**-190**	**531**	**936**	**968**	**374**		
		-0.8%	**-0.3%**	**0.8%**	**1.4%**	**1.4%**	**0.5%**		
Fitzroy Area	Planning Assumptions Model	16,972	17,743	18,812	19,615	20,518	21,619	1.0%	34.8%
	2023 Medium Series Projection	17,982	18,622	19,685	20,707	21,748	23,464		
	Difference with PAM	**-1,010**	**-879**	**-873**	**-1,092**	**-1,231**	**-1,845**		
		-6.0%	**-5.0%**	**-4.6%**	**-5.6%**	**-6.0%**	**-8.5%**		
Mount Morgan Area	Planning Assumptions Model	2,798	2,810	2,818	2,856	2,871	2,878	0.1%	0.7%
	2023 Medium Series Projection	2,967	2,977	2,990	3,006	3,020	3,031		
	Difference with PAM	**-168**	**-167**	**-172**	**-150**	**-149**	**-153**		
		-6.0%	**-5.9%**	**-6.1%**	**-5.2%**	**-5.2%**	**-5.3%**		
RRC LGA	Planning Assumptions Model	82,251	84,275	87,291	89,911	92,451	94,755	0.6%	100.0%
	2023 Medium Series Projection	83,910	85,511	87,805	90,217	92,862	96,380		
	Difference with PAM	**-1,659**	**-1,236**	**-514**	**-305**	**-411**	**-1,624**		
		-2.0%	**-1.5%**	**-0.6%**	**-0.3%**	**-0.4%**	**-1.7%**		

^Average annual population growth rate between 2023 and 2046

2023 Medium Series Projection Existing (2023) estimated using average annual growth between 2021 and 2026

Table E.2 - Population Summary

	Existing (2023)	2026	2031	2036	2041	2046
Total ERP inside Reporting Areas	76,641	78,662	81,678	84,298	86,838	89,089
Total ERP outside Reporting Areas	5,610	5,613	5,613	5,613	5,613	5,667
Total Non-Resident Population	4,051	4,061	4,090	4,148	4,230	4,329
Total RRC Population Projection (ERP + NRP)	**86,302**	**88,336**	**91,381**	**94,059**	**96,681**	**99,085**

Employment

As of March 2023, the number of employed persons in the Rockhampton region is modelled in the PAM to be 33,504 (refer to Section 5.1.1). By 2046, it is projected that the total employment in the Rockhampton Region will be 38,912 persons. Figure E.2 below shows a comparison between employment and population projections (ERP plus NRP).

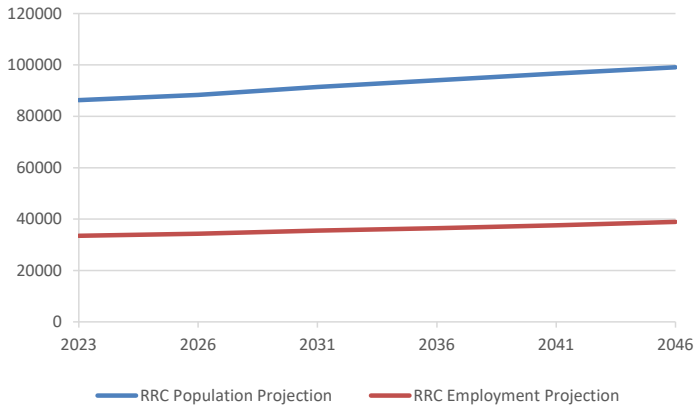


Figure E.2 - RRC Population and Employment Projections

A summary of employment projections at a sub-regional scale and inside and outside the Reporting Areas is shown in Table E.3. Employment projections for sub-regional areas are shown in Figure E.3.

Table E.3 - Employment Projection Summary

	Existing (2023)	2026	2031	2036	2041	2046
Employment Projection by Sub-Regional Area						
Rockhampton City Area Employment	30,249	31,007	32,168	32,940	33,788	35,063
Fitzroy Area Employment	2,928	2,937	2,982	3,131	3,385	3,460
Mount Morgan Area Employment	328	329	331	385	387	389
Employment Projection Summary						
Total Employment inside the Reporting Areas	31,780	32,545	33,747	34,720	35,819	37,167
Total Employment outside the Reporting Areas	1,725	1,728	1,733	1,736	1,741	1,745
Total RRC Employment	**33,504**	**34,273**	**35,480**	**36,456**	**37,559**	**38,912**

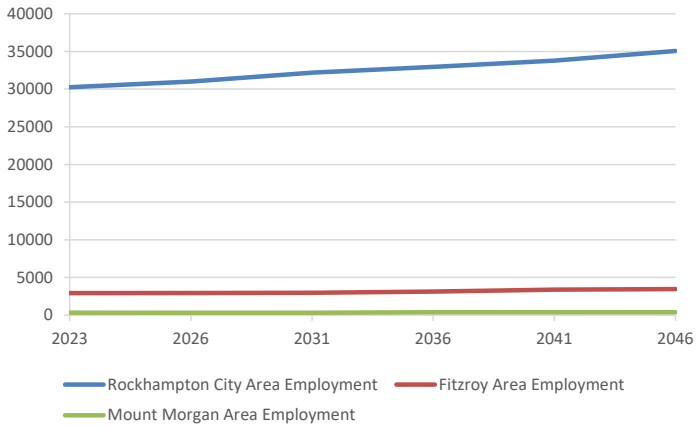


Figure E.3 - Employment Projections for Sub-Regional Areas

As shown in Figure E.4, it is projected that community purposes development will drive employment growth, with steady growth in commercial and industry based employment.

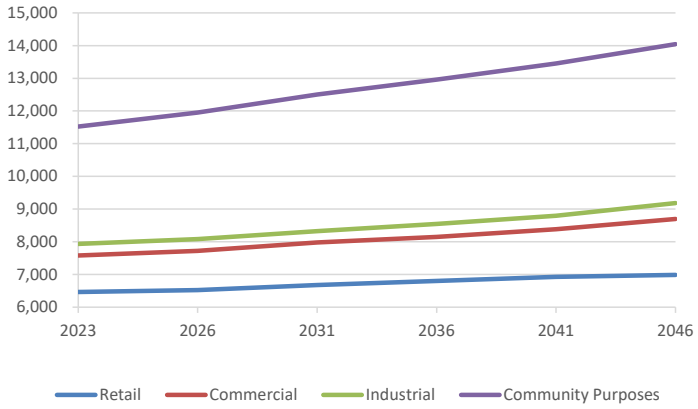


Figure E.4 - Employment Projections by Employment Category

10.4 BRIDGE RENEWAL PROGRAM AND HEAVY VEHICLE SAFETY AND PRODUCTIVITY PROGRAM FUNDING

File No:	**12534**
Attachments:	**Nil**
Authorising Officer:	**Martin Crow - Manager Infrastructure Planning** **Peter Kofod - General Manager Regional Services**
Author:	**Stuart Harvey - Coordinator Infrastructure Planning**

SUMMARY

Submissions have been called by the Federal Government for the Bridges Renewal Program and the Heavy Vehicle Safety and Productivity Program. Rockhampton Regional Council will be submitting a number of projects for funding under these funding programs.

OFFICER'S RECOMMENDATION

THAT Council:

1. Endorse the submission of the Scrubby Creek Crossing on Fairy Bower Road for Bridges Renewal Program; and
2. Endorse the submission of Malchi Nine Mile Road (Hopper Road to Kabra Scrubby Creek Road) and South Yaamba Road (CH 4020 to CH10,000) under Heavy Vehicle Safety and Productivity Program; and
3. Agree to provide a co-contribution of 20% of the project cost should the submissions be successful.

COMMENTARY

The Bridges Renewal Program and the Heavy Vehicle Safety and Productivity Program close on 20 December 2023. Successful projects must be delivered within 3 years of the funding agreement being offered. Council Officers are proposing to submit the following projects.

The following details are based on current draft submissions which are still under development.

Bridges Renewal Program:

1. Scrubby Creek Crossing – Fairybower Road:

Project Cost estimated to be $2,106,000 and seeking $1,684,800 in grant funding. Council funding of approx. $1.3M has been included in the Capital budget in 25/26 for this project however the application is proposing only a $421,000 contribution from Council. The project is supported by the bridges and major culverts asset management plan and has a number of safety issues identified with the approach alignment to the existing floodway.

Heavy Vehicle Safety and Productivity Program:

1. South Yaamba Road (CH4020 to CH10000)

Project cost estimated to be $3,177,500 and seeking $2,542,000 in grant funding. Council funding of approximately $615,700 has been included in the Capital Budget in 24/25 for this project but $635,500 is required for the 20% contribution. The project works involve extending the bitumen sealing along the road, improving floodway and drainage structures and some minor horizontal alignment improvements.

2. Malchi Nine Mile Road (Hopper Road to Kabra Scrubby Creek Road)

Project cost estimated to be $1,824,778 and seeking $1,459,823 funding. Council funding of approximately $369,000 has been included in the Capital budget in 24/25. The project works involve improving the horizontal alignment at the intersection of Kabra Scrubby Creek Road,

improving the approaches to the Scrubby Creek Bridge at Hopper Road and provision of bridge rail protection on the Scrubby Creek Bridge.

BACKGROUND

On 6 October 2023, it was announced that both the Bridges Renewal Program and the Heavy Vehicle Safety and Productivity Program were open to state, territory and local governments for project proposals. Both rounds close on 20 December 2023.

The *Bridges Renewal Program* upgrades and repairs bridges to enhance access for local communities and facilitate higher productivity vehicle access.

The *Heavy Vehicle Safety and Productivity Program* aims to increase the productivity and safety of heavy vehicle operations, including through the provision of driver fatigue management rest areas and the enhancement of heavy vehicle networks.

BUDGET IMPLICATIONS

Both of these funding programs require a minimum of 20% co-contribution from Council. Available budgets based on draft capital programs have been outlined in the commentary section of the report.

CORPORATE/OPERATIONAL PLAN

The projects described align with the following Corporate Plan outcome:

COMMUNITY EXPECTATION – Regional Infrastructure and Facilities

Corporate Outcomes

1.1 Safe, accessible, reliable and sustainable infrastructure and facilities

CONCLUSION

Rockhampton Regional Council are proposing to apply to the *Bridges Renewal Program and the Heavy Vehicle Safety and Productivity Program* as per its continued efforts to seek government funding to assist with the costs of infrastructure for the community.

10.5 ASSET MANAGEMENT PLANS - WATER AND SEWERAGE INFRASTRUCTURE

File No:	**5960**
Attachments:	**1. Asset Management Plan - Water Infrastructure⇩** **2. Asset Management Plan - Sewerage Infrastructure⇩**
Authorising Officer:	**Martin Crow - Manager Infrastructure Planning** **Peter Kofod - General Manager Regional Services**
Author:	**Andrew Whitby - Coordinator Assets and GIS**

SUMMARY

This report presents revised Asset Management Plans for Water and Sewerage Infrastructure for adoption.

OFFICER'S RECOMMENDATION

THAT Council adopt the Asset Management Plan for Water Infrastructure, and the Asset Management Plan for Sewerage Infrastructure.

COMMENTARY

Revised Asset Management Plans (AMP) have been developed for all assets in the Water Infrastructure and Sewerage Infrastructure asset classes.

The Water Infrastructure AMP covers all assets associated with the storage of raw water; treatment and distribution of potable water; and the storage and distribution of recycled water. The water infrastructure asset class has a replacement value estimated at $735,482,747.

The Sewerage Infrastructure AMP covers all assets associated with the collection and treatment of sewage. The sewerage infrastructure asset class has a replacement value estimated at $384,970,285.

The revised AMPs include the following:

Levels of Service

The AMPs outline Council's agreed customer service standards and recent actual performance. They also benchmark Council's recent performance in comparison to other medium sized service providers.

Future Demand

The AMPs identify the drivers affecting demand and consider the impact these may have on future service delivery.

Asset Lifecycle Management

The AMPs document the asset lifecycle demands (renewals, acquisitions, disposals, operations and maintenance) to deliver agreed service levels, and the availability of funding through the Long-Term Financial Forecast and other external sources.

Risks Management

The AMPs document the treatment plans for critical risks associated with the delivery of services.

Financial Summary

The AMPs aggregate the medium-term financial requirements for each asset class and consider the key indicators for sustainable service delivery.

Improvement Plan

The AMPs identify future improvements to ensure effective asset management and informed decision marking.

BACKGROUND

Council principally exists to provide services that meet the needs of the community. Asset management planning is a comprehensive process; the purpose of which is to ensure the delivery of services from Council owned infrastructure is financially sustainable.

PREVIOUS DECISIONS

Council adopted the current Water and Sewerage Infrastructure AMPs in 2015.

BUDGET IMPLICATIONS

Over the 10-year planning period Council's has 98% of the funding required to meet the asset lifecycle demands documented in the Water Infrastructure AMP. The only notable funding gap is in water main renewals, which is currently underfunded by $1,100,000/year. This funding gap is not a significant concern over the medium term as water main and water service breaks are currently well within the targets set in the customer service standards.

Over the 10-year planning period Council's has 94% of the funding required to meet the asset lifecycle demands documented in the Sewerage Infrastructure AMP. There is a notable funding gap in the rehabilitation of gravity mains, which is currently underfunded by $700,00/year. This funding gap is not a significant concern over the medium term as gravity main blockages and sewage overflows are currently well within the targets set in the customer service standards. The other notable funding gap is in operations and maintenance, which is estimated at $1,500,000/year from 2024/25 onwards. This estimated funding gap highlights the fact that the current levels of funding for operations and maintenance will not be adequate as sewage treatment capacity and the number of sewage pump stations increases.

LEGISLATIVE CONTEXT

A local government must prepare and adopt a long-term asset management plan under the Local Government Act (Local Government Regulation 2012).

LEGAL IMPLICATIONS

There are no legal implications.

STAFFING IMPLICATIONS

There are no staffing implications.

RISK ASSESSMENT

The AMPs document the treatment plans for critical risks associated with the delivery of services. The costs associated with these risk treatments are generally included in the asset lifecycle management plan.

CORPORATE/OPERATIONAL PLAN

These AMPs supports the following Corporate Plan goals:

- We are fiscally responsible.
- We are motivated to provide excellent service and have a strong organisational culture.
- We plan for growth with the future needs of the community, business and industry in mind.
- Our region is resilient and prepared to manage climate-related risks and opportunities.
- Our Region has infrastructure that meets current and future needs.

CONCLUSION

The revised Water and Sewerage Infrastructure AMPs document the service levels, future demand, asset lifecycle demands (renewals, acquisitions, disposals, operations and maintenance) and critical risks associated with the water and sewerage infrastructure asset classes.

ASSET MANAGEMENT PLANS - WATER AND SEWERAGE INFRASTRUCTURE

Asset Management Plan – Water Infrastructure

Meeting Date: 5 December 2023

Attachment No: 1


ASSET MANAGEMENT PLAN
Rockhampton Regional Council
Water Infrastructure

Document Control		Asset Management Plan		
Version	**Date**	**Plan Type**	**Author**	**Reviewed By**
1	Draft	Asset Class	Mark O'Hallahan	Jason Plumb Andrew Whitby Martin Crow Stuart Harvey
2	Draft	Asset Class	Andrew Whitby Mark O'Hallahan	Martin Crow
3	Draft	Asset Class	Andrew Whitby Mark O'Hallahan	Dan Toon

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

The Rockhampton Regional Council (Council) principally exists to provide services that meet the needs of the community. This includes the provision of infrastructure for the storage of raw water; the treatment and distribution of potable water; and the storage and distribution of recycled water.

This Asset Management Plan (AMP) seeks to communicate the infrastructure asset management requirements for the continued provision of commercially viable water services that satisfy adopted and statutory customer service standards. It summarises Council's existing water infrastructure assets and outlines the actions and funding required over the 10-year planning period.

1.2 Asset Description

This plan covers assets in the water infrastructure asset class. The water infrastructure asset class comprises:

- 2 Potable Water Supply Schemes
- 4 Non-Potable Water Supply Schemes

Council's water infrastructure assets have a replacement value estimated at $735,482,747.

1.3 Levels of Service

Renewal funding is sufficient to continue providing existing services at current levels for the planning period. There is sufficient funding over the 10-year planning period for acquisition projects. Operations and maintenance funding will need to increase as the acquisition projects identified are completed.

1.4 Future Demand

The factors influencing future demand are as follows:

- Residential growth
- Development of industrial land
- Climate change, in particular the potential for longer hotter periods in the future.
- Level of water conservation practices by the community.

Future demand will be managed through a combination of upgrading existing assets, constructing new assets and employing demand management strategies.

Key projects and initiatives identified in this AMP include:

- The construction of new trunk water infrastructure to accommodate forecast growth in Rockhampton Water Supply Scheme.
- Renewal and upgrade work at the Glenmore WTP to ensure a treatment capacity of 120ML/day under most raw water quality conditions.
- The construction of a new water main between Gracemere and Mount Morgan, including the construction of 2 new water pump stations.
- A focus on renewing all water meters that have reached the end of their useful life.
- On-going program for the renewal of water mains.
- Various initiatives from the system leakage management plan to monitor and reduce leakage.
- Non-asset related initiatives that encourage customers to conserve water.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

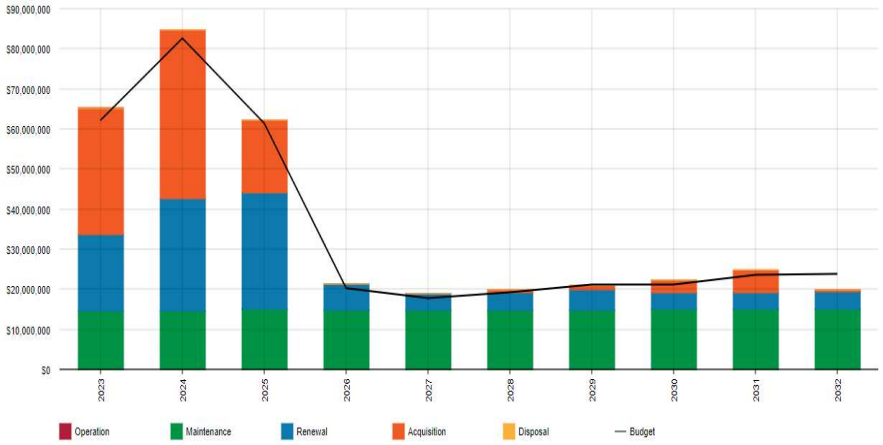
Lifecycle demand for water services covered by this AMP includes operation and maintenance, renewal, acquisition, and disposal activities. The total lifecycle demand identified in this AMP is $360M over the next 10 years, or $36M on average per year.

1.6 Financial Summary

1.6.1 What funding do we have?

Lifecycle funding (LTFF + External Funding) for water services over the 10-year planning period is $353M, or $35.3M on average per year. The lifecycle funding that is currently available leaves a shortfall of $0.7M on average per year. The figure and table below show the lifecycle demand compared to lifecycle funding. It should be noted that operation and maintenance demand is shown as maintenance in the figure below. All values are in current year dollars.

Lifecycle Demand and Lifecycle Funding



Year	Lifecycle Demand			Lifecycle Funding		
	Renewal	Acquisition	Operations & Maintenance	Renewal	Acquisition	Operations & Maintenance
23/24	19,058,858	31,582,527	14,545,238	15,566,908	32,064,777	14,545,238
24/25	28,059,700	42,051,300	14,587,456	26,163,300	41,910,000	14,545,238
25/26	29,006,420	18,195,980	15,034,009	28,881,100	17,972,400	14,545,238
26/27	6,586,750	86,250	14,725,977	5,633,000	75,000	14,545,238
27/28	4,088,750	86,250	14,769,798	3,173,300	75,000	14,545,238
28/29	4,270,750	806,250	14,814,167	3,874,300	825,000	14,545,238
29/30	5,087,750	1,032,250	14,859,090	5,644,300	1,005,000	14,545,238
30/31	4,146,750	3,182,250	14,904,575	3,302,600	3,300,000	14,545,238
31/32	4,230,750	5,654,250	14,950,629	3,153,700	5,875,000	14,545,238
32/33	4,352,750	460,750	14,997,258	6,229,025	3,071,525	14,545,238
Totals	**108,889,228**	**103,138,057**	**148,188,198**	**101,621,533**	**106,173,702**	**145,452,376**

1.6.2 What we cannot do

There is insufficient funding over the 10-year planning period for the water mains renewals. With a funding gap of approximately $1.1M/year Council will not be able to renew all the water mains that have been identified which may lead to an increase in water main breaks (CSS14) and water service breaks (CSS15). This is not a significant concern over the medium term, as these customer service standards are currently well within target.

1.6.3 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term. We will continue to manage our risks associated with this asset class by:

- Monitoring customer service standards.
- Monitoring the condition of critical components.
- Developing condition assessment programs for water treatment plants, water pump stations and reservoirs
- Further developing procedures to determine forecast renewal programs.
- Continuing to engage specialist consultants to oversee the Glenmore WTP renewals and upgrades.

1.7 Asset Management Planning Practices

Key assumptions made in this AMP are:

- Historical construction dates are accurate for water mains.
- Treatment plant renewal and acquisition decisions are based on condition and capability assessments completed by specialist consultants.
- Future demand for water services is based on population and employment projections set out in Planning Assumptions Report. This report is prepared in conjunction with the Local Government Infrastructure Plan.

1.8 Monitoring and Improvement Program

The next steps resulting from this AMP to improve asset management practices are:

- Complete a comprehensive review of the maintenance assets at all water sources, treatment plants, pump stations and reservoirs.
- Develop and document processes for the on-going management of both valuation and maintenance asset data at all water sources, treatment plants, pump stations and reservoirs.
- Review all current statutory and preventative maintenance activities/frequencies to ensure compliance and best practice. Update the maintenance strategy manual and R1 maintenance schedules with any changes identified. Ensure maintenance activities have sufficient detail and work schedule is deliverable.
- Develop and deliver a condition assessment program for all water sources, treatment plants, pump stations and reservoirs.
- Review the current processes for the capture and submission of as constructed asset information from internal capital projects to ensure the timely and accurate update of asset information in the R1 and GIS systems.
- Complete a comprehensive review of all valuation assets in readiness for 2023/24 revaluation.
- Develop and document procedures to improve the reliability of renewal demand forecasts. Incorporate Network Asset Criticality Guidelines, Queensland Water, Nov 2020 to assist with prioritising renewals.

2.0 Introduction

2.1 Background

The Rockhampton Regional Council (Council) is a registered water service provider under the Water Supply (Safety and Reliability) Act 2008. Fitzroy River Water (FRW) is a commercial business unit of Council responsible for providing water services to the communities of Rockhampton, Gracemere and Mount Morgan. FRW is also a bulk drinking water supplier to the Livingstone Shire Council.

This AMP aims to communicate the infrastructure asset management requirements for the safe, reliable and sustainable delivery of water services to the community.

This AMP should be read in conjunction with the following:

- Corporate Plan 2022 – 2027
- Operational Plan
- Long Term Financial Forecast (LTFF)
- Enterprise Risk Management Framework
- Asset Management Policy
- Asset Custodianship Policy
- Asset Management Responsibilities Policy
- Local Government Infrastructure Plan (LGIP)
- Drinking Water Quality Management Plan 2022-2023 (DWQMP)
- Drought Management Plan 2009
- Sustainability Strategy - Towards 2030
- Capricorn Municipal Development Guidelines (CMDG)

Council operates two potable water supply schemes and four non-potable water supply schemes. A summary of the two potable water supply schemes is found in Table 2.1.1.

Table 2.1.1: Potable Water Supply Schemes

Scheme Name	Water Source/s	Supply Area	Water Treatment Plant	Water Distribution and Reticulation Network
Rockhampton Water Supply Scheme	Fitzroy River Barrage	Rockhampton and Gracemere	Glenmore Water Treatment Plant	30 Water Pump Stations 2 Water Valve Stations 19 Reservoirs 797km Water Mains 29,999 Water Meters
Mount Morgan Water Supply Scheme	Mount Morgan No. 7 Dam	Mount Morgan	Mount Morgan Water Treatment Plant	10 Water Pump Stations 2 Reservoirs 75km Water Mains 1,775 Water Meters

The potable water supply schemes are described in detail in the DWQMP. This document includes information on the:

- water sources for drinking water supply;
- water treatment processes; and
- operation of the water distribution and reticulation networks.

A summary of the four non-potable water supply schemes is found in Table 2.1.2.

Table 2.1.2: Non-Potable Water Supply Schemes

Type	Scheme Name	Description
Recycled Water	Gracemere Recycled Water Scheme	Treated effluent for irrigation of the 15-hectare block adjacent to the Gracemere Sewage Treatment Plant, and the 24-hectare Gracemere Golf Course.
	Mount Morgan Recycled Water Scheme	Treated effluent for irrigation of Newman Oval and Mount Morgan State High School sporting fields.
	North Rockhampton Recycled Water Scheme	The infrastructure is in place to supply treated effluent to the Rockhampton Jockey Club, however there are licence related matters to be resolved before supply can commence.
Raw Water	Fitzroy Barrage Water Supply Scheme	Raw water used by irrigators

The water infrastructure assets covered in this AMP have a total replacement value of **$735,482,747**.

Key Stakeholders in the preparation and implementation of this AMP are shown in Table 2.1.3.

Table 2.1.3: Key Stakeholders in the AMP

Key Stakeholder	Role in Asset Management Plan
Elected Council	▪ Represent the needs of community ▪ Provide the strategic direction and priorities for Council ▪ Ensure services are sustainable
Chief Executive Officer	Implement the policies and strategic direction provided by Council.
General Manager of Regional Services	Setting direction and facilitating approval of policies on asset management, ensuring integration with corporate planning.
Chief Financial Officer	Financial management and reporting. Annual review of Council's LTFF.
Manager Infrastructure Planning and Coordinator Assets & GIS	Corporate asset management governance functions including: ▪ Asset Management Framework, Policy and Strategy ▪ Administration and development of Council's corporate asset management and geographic information systems. Asset management functions related to water infrastructure including: ▪ Development of condition assessment activities and analytics for maintenance data. ▪ Asset Management Plan development. ▪ Financial asset modelling.
Manager Infrastructure Planning and Coordinator Strategic Infrastructure	Identification and prioritisation of new and upgrade projects through the LGIP.
Manager Project Delivery	Delivery of allocated major capital projects
Manager Water and Wastewater	Primary responsibility for assets and services including financial, planning, operation, risk management and works execution.

2.2 Goals and Objectives of Asset Ownership

Council principally exists to provide services that meet the needs of the community. The community requires the provision of safe, reliable and financially sustainable water services. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking asset management planning to the LTFF

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

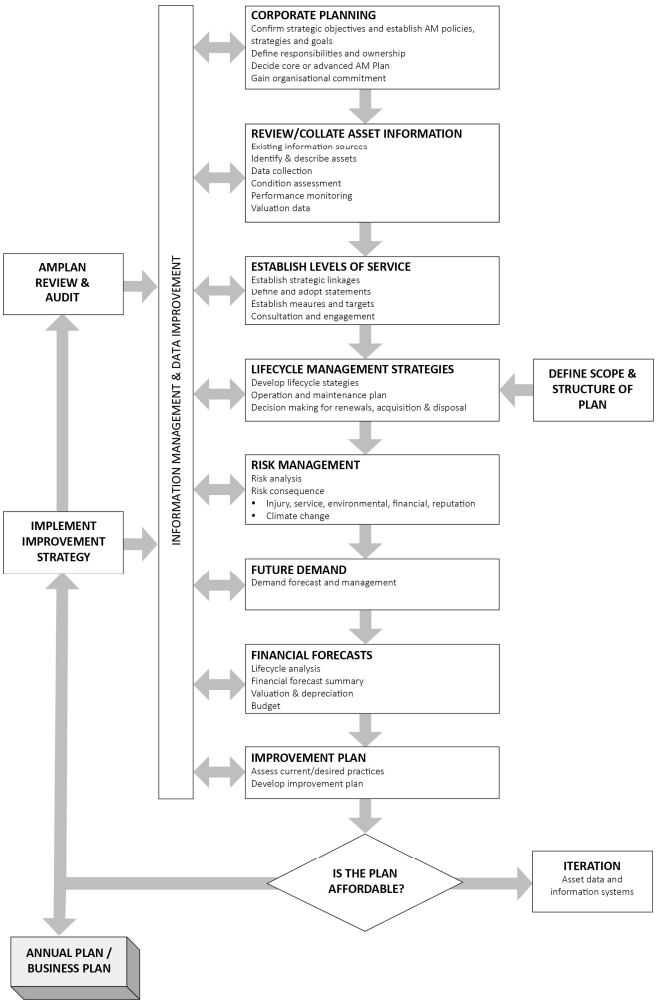
Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 [1]
- ISO 55000[2]

[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13
[2] ISO 55000 Overview, principles and terminology

A road map for preparing an Asset Management Plan is shown below.

Road Map for preparing an Asset Management Plan
Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



3.0 LEVELS OF SERVICE

3.1 Customer Expectations

The primary means of identifying community expectations is through the Corporate Plan. The Local Government Act 2009 requires Council to develop a 5-year Corporate Plan that incorporates community engagement. Table 3.1 outlines the community expectations relevant to the provision of water services. These expectations are recorded as goals in the Corporate Plan.

Table 3.1: Customer Expectations

Theme	Community Expectations
Our Council	▪ We are fiscally responsible ▪ We are motivated to provide excellent service and have a strong organisational culture
Our Economy	▪ We plan for growth with the future needs of the community, business and industry in mind
Our Environment	▪ Our region is resilient and prepared to manage climate-related risks and opportunities
Our Infrastructure	▪ Our region has infrastructure that meets current and future needs

3.2 Strategic Goals and Corporate Outcomes

This AMP is prepared under the direction of Council's vision and corporate objectives.

Our vision is:

One Great Region
Live. Visit. Invest

The Corporate Plan identifies Councils corporate objectives as related to the goals listed in Table 3.1 above. Table 3.2 demonstrates that this AMP supports these corporate objectives.

Table 3.2: Corporate Objectives and how these are addressed in this AMP

Goals	Corporate Objectives	How objective is supported in AMP
We are fiscally responsible	Our budgets are financially sustainable and provide value and accountability to the community	Section 7.1 - Financial Sustainability and Projections
We are motivated to provide excellent service and have a strong organisational culture	We have a workplace culture that is safe, engaged, responsive, professional and accountable	Sections 3.4 - Customer Levels of Services Section 8.2 - Improvement Plan
We plan for growth with the future needs of the community, business and industry in mind.	Our strategic planning supports the Region's growing population and enables economic development	Section 4 - Future Demand Section 5.3 - Acquisitions
Our region is resilient and prepared to manage climate-related risks and opportunities	We have a greater understanding of climate risks and their impacts on the Region, which prepares us for challenges and opportunities in the future	Section 6 - Risk Management Planning Section 4.3 - Demand Management Plan
Our region has infrastructure that meet current and future needs	Our Council assets are well maintained Our future projects are planned and prioritised	Section 5 - Lifecycle Management Plan

3.3 Legislative Requirements

There are many legislative requirements relating to the management of infrastructure assets. Below is a summary of the key legislative requirements relating to water infrastructure assets and the services they provide.

Table 3.3: Legislative Requirements

Legislation	Key Requirements
Local Government Act 2009	Sets out role, purpose, responsibilities and powers of local government including the preparation of the Corporate Plan, LTFF supported by infrastructure and asset management plans for sustainable service delivery
Water Supply (safety and reliability) Act 2008	▪ Preparation of drinking water quality management plan. (Chapter 2, Part 4, Division 1) ▪ Review and audit of drinking water quality management plans. (Chapter 2, Part 4, Division 2) ▪ Preparation of customer service standards. (Chapter 2, Part 4, Division 3) ▪ Preparation of drinking water quality management plan reports and performance reports. (Chapter 2, Part 4, Division 5) ▪ Preparation of recycled water management plans. (Chapter 3, Part 2) ▪ Review and audit of recycled water management plans. (Chapter 3, Part 6) ▪ Completion of a failure impact assessment for referable dams. (Chapter 4, Part 1, Division 2) ▪ Preparation and review of emergency action plans for referable dams. (Chapter 4, Part 1, Division 2A) ▪ Preparation, approval and review of flood mitigation manuals for referable dams. (Chapter 4, Part 2, Division 2)
Environmental Protection Act 1994	Defines Environmentally Relevant Activities (ERA) as activities that could have impacts on the environment and therefore require an Environmental Authority to be issued for the activity. (Chapter 1, Part 3, Division 2, Subdivision 4) The Department of Environment and Science sets licence conditions for ERA's (both Water and Sewage Treatment Plant activities) Sets out requirement to prepare Environmental Management Plans that proposes mechanisms to manage potential environmental impacts. (Chapter 3, Sec 39 and 40).
Work Health and Safety Act 2011	A person conducting a business or undertaking must ensure as is reasonably practicable, the health and safety of workers while the workers are at the business or undertaking work at the business. (Division 2 Primary Duty of Care, Section 19)
Public Health Act 2005	Public Health risks include drinking water supplied by a drinking water service provider, sewerage and recycled water. (Part 1, Sec 11) The role of local government is to ensure the community is protected from public health risks under its control.
Planning Act 2016	Local Government may by resolution charge for providing trunk infrastructure for development. (Chapter 4 Subdivision 1, 113). Process for development approvals and applications associated water and sewerage infrastructure. (Chapter 3, Parts 1 – 7).

3.4 Customer Levels of Service

The Water Supply (Safety and Reliability) Act 2008 requires service providers prepare customer service standards (CSS) to ensure customers who do not have a contract with the service provider for the supply of registered services are protected by standards relating to the supply.

Council has adopted CSS that address the following key service considerations:

- Day to day continuity of supply
- Adequacy and quality of normal water supply
- Long-term continuity of water services
- Responsiveness to customer requests

Council's CSS targets and recent performance are shown in the Tables 3.4.1 to 3.4.3 below.

Table 3.4.1: Customer Service Standards and Actual Performance

CSS Ref.	Performance Indicator	Rockhampton Supply Scheme			Mount Morgan Supply Scheme		
		Target	21/22	22/23	Target	21/22	22/23
Day to Day Continuity of Supply							
CSS1	Extent of unplanned interruptions – connections based (no. per 1,000 connections per year)	**<80**	35	39	**<80**	37	16
CSS2	Extent of unplanned interruptions – incidents based (no. per 100 km of main per year)	**<30**	81	64	**<30**	13	14
CSS3	Time for restoration of service – unplanned interruptions (% restored within 5 hours)	**>90%**	93%	100%	**>90%**	100%	100%
CSS4	Customer interruption frequency: 1 interruption per year 2 interruptions per year 3 interruptions per year 4 interruptions per year 5 or more interruptions per year	 **<12%** **<2%** **<1%** **<0.5%** **<0.25%**	 1.25% 0.02% N/A N/A N/A	 4.66% 0.02% 0.00% 0.00% 0.00%	 **<12%** **<2%** **<1%** **<0.5%** **<0.25%**	 1.15% 0.52% N/A N/A N/A	 6.6% 0.00% 0.00% 0.00% 0.00%
CSS5	Relative incidence of planned and unplanned interruptions – connections based (percentage of planned vs total numbers of interruptions)	**>30%**	3%	5%	**>30%**	N/A	17%
CSS6	Average interruption duration – planned – unplanned (hours)	**<3 hrs**	2.24	1.92	**<3 hrs**	0.38	0.6
CSS7	Response time Priority 1 - 1 hour response Priority 2 - 2 hours response Priority 3 - 24 hours response	 **>95%** **>95%** **>95%**	 87% 79% 98%	 84 % 75 % 99 %	 **>95%** **>95%** **>95%**	 84% 92% 100%	 78% 58% 100%
	Restoration Time Priority 1 - 5 hours restoration Priority 2 - 24 hours restoration Priority 3 - 5 days restoration	 **>95%** **>95%** **>95%**	 91% 94% 99%	 88% 95% 98%	 **>95%** **>95%** **>95%**	 100% 100% 100%	 88% 100% 100%

Table 3.4.2: Customer Service Standards and Actual Performance

CSS Ref.	Performance Indicator	Rockhampton Supply Scheme			Mount Morgan Supply Scheme		
		Target	21/22	22/23	Target	21/22	22/23
Adequacy and Quality of Normal Water Supply							
CSS8	Minimum pressure standard at the water meter (KPa)	**220 kPa**	220	220	**220 kPa**	220	220
CSS9	Min Flow standard at the water meter	**9 L/min**	9	9	**9 L/min**	9	9
CSS10	Connections with deficient pressure and/ or flow (% of total connections)	**<2.5%**	0.3%	0.3%	**<2.5%**	2%	2%
CSS11	Drinking water quality (compliance with industry standard) *	**>98%**	100%	100%	**>98%**	100%	100%
CSS12	Drinking water quality complaints (number per 1000 connections)	**<5**	0.96	1.14	**<5**	combined with Rockhampton Supply Scheme	
CSS13	Drinking water quality incidents (number per 1000 connections)	**<5**	0	0.035	**<5**	0	0
Long-term Continuity of Water Services							
CSS14	Water main breaks (number per 100 km of water main)	**<40**	9	6	**<40**	2	3
CSS15	Water service breaks (number per 1000 connections)	**<40**	19	18	**<40**	6	15
CSS16	System water loss (litres per connection per day)	**<200 L**	235	197	**<200 L**	9	61

*The DWQMP identifies the following key water quality parameters as reference indicators for customer service purposes: physical and chemical water quality parameters – Target: >99% of all samples tested compliant with Australian Drinking Water Guidelines; E. coli – Target: None detected in >98% of all samples tested.

Table 3.4.3: Customer Service Standards and Actual Performance

Performance Indicator	Rockhampton and Mount Morgan Supply Schemes		
	Target	21/22	22/23
Responsiveness to Customer Requests			
Installation of new water connections (within water service area) *	15 Working days	81%	100%
Complaints (excluding maintenance of water and sewerage services) – advise outcome	20 Working days	100%	100%

*Within 15 days of approval of the application and payment of the related fee or by the installation date agreed with customer outside the 15-day period

The following observations are made in relation to Council's recent performance against the CCS targets.

- Although there is a high number of incidents resulting in an unplanned supply interruption (CSS2) in the Rockhampton Water Supply Scheme, the number of customers impacted is within target (CSS1).
- The low number of planned supply interruptions, generally associated with water main renewals, impacts Council's ability to meet the target set for the relative incidence of planned and unplanned interruptions (CSS5). This performance indicator has been removed from 2023/24 onwards.
- System water losses (CSS16) in the Rockhampton Water Supply Scheme have been high for some time. Some water loses can be attributed to water main and service breaks (CSS14 and CSS15) however, the fact that these numbers are relatively stable and system water losses are relatively high, may be related to the age of Council's domestic water meters most of which are at the end of their useful life.

3.5 Performance Benchmarking

The Water Supply Safety and Reliability Act requires water service providers in Queensland to report annually to the regulator on a suite of key performance indicators (KPIs). The Queensland Water Directorate then prepares an annual benchmarking report based on the information received. The data collected and reported by the Queensland Water Directorate enables service providers to compare their performance against similar sized service providers.

Table 3.5 summarises Council's recent performance compared to other medium sized water service providers.

Table 3.5: Performance Benchmarking

Performance Indicator	Rockhampton Regional Council		Bundaberg Regional Council		Fraser Coast Regional Council		Mackay Regional Council	
	2020/21	2021/22	2020/21	2021/22	2020/21	2021/22	2020/21	2021/22
Water main breaks (number per 100 km of water main)	10.3	7.3	32.7	17.3	5.3	6.3	6.2	6.4
System water losses (litres per connection per day)	170	224	135.4	59.2	53.1	59	228.1	116.4
Unplanned interruptions (number per 1,000 properties)	75.7	42.1	87.2	58.4	70.5	28.6	169.8	204.2
Water operating cost ($ per property)	$427.25	$595.05	$475.33	$443.89	$433.69	$415.64	$525.39	$577.23
Annual residential water bill (based on 200 KL per annum)	$595.34	$590.05	$715.45	$705.5	$905.02	$895.30	$743.02	$729.85

The following key observations are made in relation to Council's recent performance compared to similar size water service providers:

- Council's system water losses are consistently high compared with others in the cohort.
- Council's water annual residential water bills are the lowest of the cohort.

4.0 FUTURE DEMAND

4.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, customer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

4.2 Demand Forecasts

Long term, region wide planning for infrastructure that integrates with land use planning is detailed in the Local Government Infrastructure Plan (LGIP), which is contained within the Rockhampton Region Planning Scheme. The LGIP outlines the trunk infrastructure our Region will need to support predicted future growth and development and is underpinned by the Planning Assumptions Report which provides a logical and consistent basis for detailed infrastructure planning within network catchments and states assumptions about the type, scale, location and timing of future development and subsequent population and employment growth up to 2036.

Figure 4.2.1 below shows the projected water supply demand for the Priority Infrastructure Areas of the Rockhampton Region for the period 2017 to 2036 as set out in the LGIP. In this figure, demand is expressed in equivalent tenements (ET), which is the measure used to assess the impact a development or land type has on Councils water supply relative to a standard residential property. Significant growth in demand is forecast to occur in North Rockhampton and Gracemere. The growth in these areas is largely due to residential development. There is also some forecast growth in South Rockhampton. This growth is associated with the potential redevelopment and intensification of use on existing lots, primarily around the CBD area.

Figure 4.2.1: Equivalent Tenements Projections for Priority Infrastructure Areas

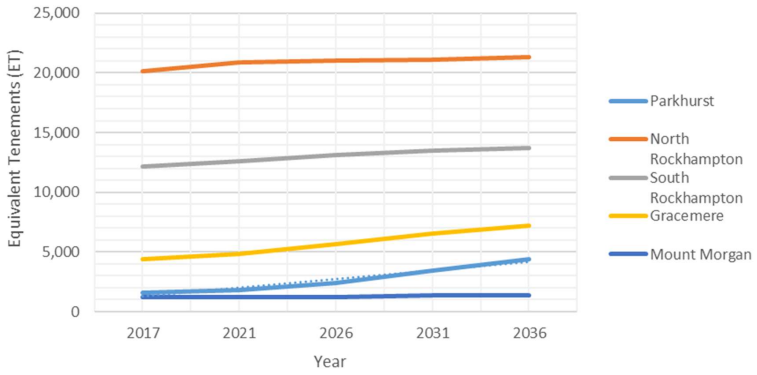
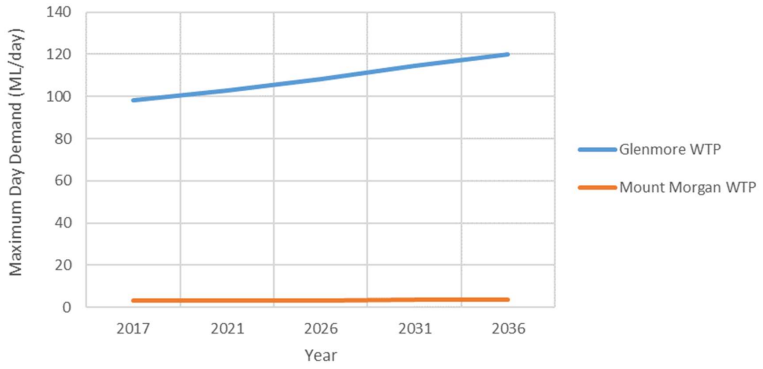


Figure 4.2.2 shows the maximum day (MD) demand in each supply scheme up to 2036. The MD for water demand represents the predicted largest volume of water required for the network in a single day. The water supply network is designed to meet the MD demand. MD water demand for the Rockhampton Supply Scheme is forecast to increase to 120 ML/day in 2036. A minimal increase in MD demand is predicted for the Mount Morgan Water Supply Scheme.

Figure 4.2.2: Maximum Day Water Demand Projections for Water Supply Schemes



4.3 Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets, providing new assets to meet demand, and demand management practices. Demand management practices can include non-asset solutions. The following non-asset solutions will continue to be employed by Council:

Monitoring

Several key performance indicators are used to monitor the effectiveness of demand and leakage management activities. The main key performance indicators are:

- residential per person consumption (L/person/day)
- non-residential consumption (L/property/day)
- non-revenue water (L/connection/day)
- leakage (L/connection/day)

Education

Council promotes and encourages water conservation through its website and other forms of communication. Council offers rebates to residential customers for the purchase of water efficient products. Council also has a 3-tier water tariff structure which is designed to encourage residential customers to conserve water.

Leakage Management

Council seeks to minimise system losses through the following actions:

- The installation of Pressure Reducing Valves (PRV) to manage water pressures in the distribution network. In accordance with the Capricorn Municipal Development Guidelines, the maximum desirable water pressure is 500 KPa, and the absolute maximum pressure is 800 KPa.
- Ensuring water mains, services and meters are replaced as their condition deteriorates.
- Responding to water mains and service breaks in a timely manner.
- Monitoring Demand Management Zones (DMZ's) which divide the network into several small isolated manageable zones. Approximately 30 flow meters have been installed at key locations to enable the measurement of water use and water losses.

Recycled Water

Council seeks to use recycled water wherever it can to offset the use of potable water.

Water Restrictions

Council will impose water restrictions as required.

4.4 Asset Programs to meet Demand

New assets required to meet demand may be acquired, donated or constructed. Additional assets are summarised in **Appendix A** and detailed in **Appendix B**.

Acquiring new assets will commit Council to ongoing operations, maintenance, and renewal costs for the period that the service provided from the assets is required. These future costs are considered in the demand forecasts.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how FRW plans to manage and operate its assets to provide water services while managing life cycle costs.

5.1 Background Data

5.1.1 Physical Parameters

The assets covered by this AMP are summarized in Table 5.1.1.1

Table 5.1.1.1: Assets covered by this Plan

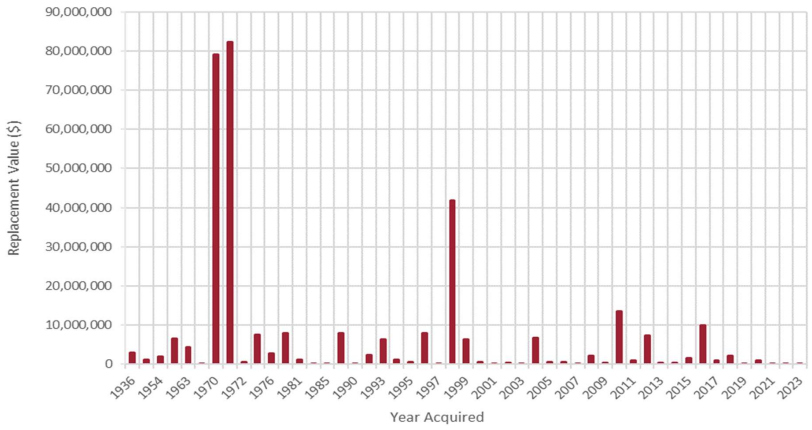
Asset Category	Asset Type	Count/Dimension	Replacement Value
Active	Water Sources	2	$133,115,415
	Water Treatment Plants (WTP)	2	$82,889,442
	Reservoirs	21	$67,014,084
	Water Pump Stations (WPS)	40	$37,956,214
	Water Valve Stations	2	$125,284
	Recycled Water Pump Stations	3	$1,513,130
Passive	Water Mains	872 km	$396,016,769
	Pressure Reducing Valves (PRV)	37	$595,152
	Flow Meters	30	$362,683
	Water Meters	31,774	$15,894,574
	TOTAL		**$735,482,747**

Appendix D provides schematics of the Rockhampton and Mount Morgan Water Supply Schemes.

Active Assets – Age Profile

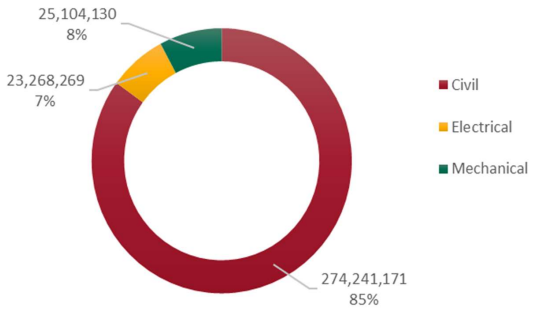
The age profile for all active assets is shown in Figure 5.1.1.1. Construction of the Glenmore WTP and Fitzroy River Barrage were completed in the early 1970s which accounts for the significant spike in that period. The other significant spike in late 1990s relates to the raising of the No. 7 Dam in Mount Morgan. A major asset added in 2010 was the Boundary Reservoir.

Figure 5.1.1.1: Active Assets - Age Profile



Active assets include civil, mechanical and electrical assets. As per Figure 5.1.1.2, Civil assets account for 85% of all active assets by replacement value. Civil assets include all structures associated with the storage, treatment, and distribution of water.

Figure 5.1.1.2 – Breakdown of Active Assets



Passive Assets – Age Profile

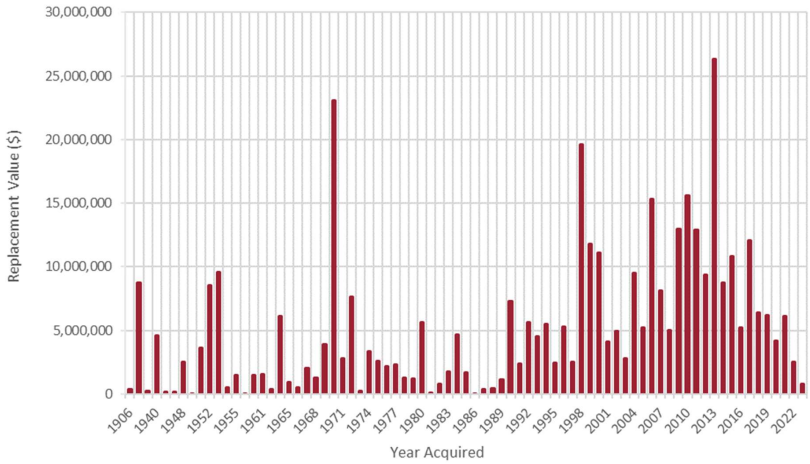
Water Mains

The age profile for water mains is shown in Figure 5.1.1.3. The average age of all water mains is 33 years. Water mains under 20 years of age have a replacement value of $144M and account for 41% of all water mains. Water mains less than 50 years old have a replacement value of $276M and account for 78% of all water mains. Water mains greater than 50 years old have a replacement value of $76M and account for 22% of all water mains. All water mains greater than 50 years old are expected to require replacement over the next 20 years.

From 1953 to 1955 a mild steel cement lined trunk water main was laid from just north of the Yaamba Road Reservoir up to the Athelstane Reservoir, and this accounts for the spike in replacement value in that period. A section of this line on Musgrave Street from Moores Creek Road to Lakes Creek Road was replaced in 2006 after several leaks. Approximately 6.5 km ($12.2M) of this trunk main is yet to be renewed.

The spike in 1970 is for a 750mm trunk main installed to strengthen the trunk supply to the network and provide additional security to Athelstane reservoir. In 1998 a 900mm mild steel trunk main was installed from the Glenmore WTP to the Yaamba Reservoir to further strengthen the network. The period between 2010 and 2015 saw rapid growth in Gracemere and to a lesser extent Rockhampton and resulted in large amounts of new water mains being added to the network. This has tapered off since 2015 and the values in this period largely reflect mains replacement. The spike in 2013 was due to the Rockhampton – Yeppoon pipeline being constructed.

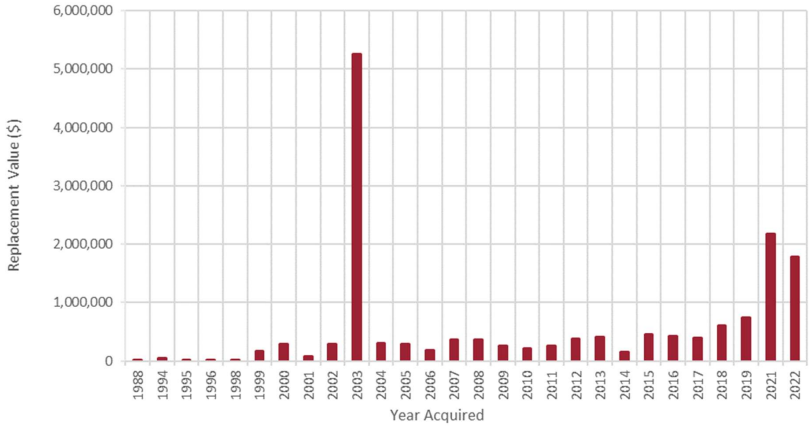
Figure 5.1.1.3: Water Mains - Age Profile



Water Meters – Age Profile

The age profile of all water meters is shown in Figure 5.1.1.4. Universal metering was introduced to the Rockhampton Water Supply Scheme in the early 2000s. Meters were introduced to the Mount Morgan Water Supply Scheme from 2008 onwards.

Figure 5.1.1.4: Water Meters – Age Profile



5.1.2 Asset Capacity, Performance and Condition

Water Sources

Information on each water source, including information relating to capacity, performance, and condition, is found in Table 5.1.2.1 below.

Table 5.1.2.1: Water Sources

Information	Fitzroy River Barrage				Mount Morgan No. 7 Dam			
Year Constructed	1970				1900*			
Water allocation (ML/annum)	50,383				584			
Total storage (ML)	76,100[3#]				2,830[4^]			
Total water volume drawn from water source (ML/a)[$]	2019	2020	2021	2022	2019	2020	2021	2022
	21,859	23,740	22,496	20,937	418	374	301	1[$]
Reactive maintenance work orders over last 2 years	30 (Electrical) 3 (Mechanical)				5 (Electrical) 1 (Mechanical)			

Commentary

* In 1999 the Mount Morgan No.7 was raised 4.5m

[#] Usable storage volume is 49,850 ML and dead storage volume is 26,250 ML. (All figures from 2014 bathymetric survey) The Barrage sits at the bottom of the Fitzroy River catchment which is the second largest in Australia covering more than 140,000 km2. Due to the size of the catchment and the predominantly sub-tropical climate, the system is subject to highly variable but historically reliable flows with an average discharge between 5,000,000 and 6,000,000 ML/year.

^ The Mount Morgan No.7 Dam is located on the Dee River immediately downstream of the river's junction with Limestone Creek. The dam was constructed in the early 1900s by the Mount Morgan Gold Mine Company. In 1993 Council assumed ownership of the dam. With its small storage capacity and relatively small catchment area of 39 km2, the dam relies on regular summer rainfalls and has proven to be an unreliable water source. Between 2002/03 and 2015/16 the dam catchment received below average inflows and declined to critical levels on several occasions during this period.

[$] In March 2021 the dam was at critically low storage levels and Council was required to commence transporting potable water to the Black Street reservoir in Mount Morgan.

Water Treatment Plants

Information on each water treatment plant, including information relating to capacity, performance and condition, is found in Table 5.1.2.2 below.

[3] Rockhampton Regional Water Supply Security assessment, Department of Energy and Water Supply, 2016.
[4] Mt Morgan Regional Water Supply Security Assessment, Department of Natural Resources, Mines and Energy, 2018

Table 5.1.2.2: Water Treatment Plants

Information	Glenmore WTP				Mount Morgan WTP			
Year constructed	1971				1994			
Design	Conventional				Package Style Plant			
Fixed secondary power supply on-site	Yes				No			
Original design raw water treatment capacity (ML/day)	63.6				2.6			
Current raw water treatment capacity (ML/day)	140*				2.6			
Current treated water capacity (ML/day)	115[5]^				2.14[6]			
Actual maximum day demand (ML/day)	2019	2020	2021	2022	2019	2020	2021	2022
	97.3	89.7	96.3	82.4	1.9	1.6	1.3	1.1
Incidents or events where non-compliance with water quality criteria over last year %	0				0			
Reactive maintenance work orders over the last 2 years	189 (Electrical) 217 (Mechanical)				24 (Electrical) 27 (Mechanical)			

Commentary

* In 1997 the Glenmore WTP was upgraded to a raw water treatment capacity of 140 ML/day. As sludge and backwash water is not recycled, treated water capacity is less than raw water treatment capacity.

^ The capacity and capability assessment completed by Hunter H2O in January 2022, found that filter capacity at Glenmore WTP was insufficient to sustain efficient operation, and that producing more than 80 ML/d of treated water during periods of high raw water turbidity was not likely to be possible.

% Council is required under Sections 102 or 102A of the water Safety and Reliability Act 2008 to report non-compliance with water quality criteria to regulator.

Water Pump Stations

Information on water pump stations, including information relating to capacity, performance, and condition, is found in Table 5.1.2.3 below.

Table 5.1.2.3: Water Pump Stations

Information	Rockhampton Water Supply Scheme	Mount Morgan Water Supply Scheme
No. of WPS where a secondary power supply is available on-site	5	0
% Of WPS where current pump capacity requirements are met	100%	100%
Reactive maintenance work orders over last 2 years	159 (Electrical) 58 (Mechanical)	6 (Electrical) 1 (Mechanical)

In 2022/23 Officers reviewed the asset register at each water pump station and commence visual condition assessments. This data will be used to assist with renewal demand forecasting.

[5] Hunter H_2O, Glenmore Water Treatment Plant Capacity and Capability Report, Jan 2022
[6] Hunter H_2O, Mt Morgan WTP Plant Inspection Report, Jan 2022

Reservoirs

Information on reservoirs, including information relating to capacity, performance, and condition, is found in Table 5.1.2.4 below.

Table 5.1.2.4: Reservoirs

Information	Rockhampton Water Supply Scheme	Mount Morgan Water Supply Scheme
Total Storage Capacity (ML)	107#	5
Leaks detected from Reservoirs	2^	0
Reactive maintenance work orders over last 2 years	179 (Electrical) 104 (Mechanical)	7 (Electrical) 4 (Mechanical)

Commentary

Total storage capacity excludes the Boundary Reservoir which supplies the Capricorn Coast Water Supply Scheme. This storage capacity allows Council to balance peak demands and provides some security in the event of a power outage or process failure at the Glenmore WTP.

^ The Yaamba Road and Thozet Road reservoirs were identified as having leaks in February 2023

All reservoirs in the Rockhampton Water Supply Scheme are listed in Table 5.1.2.5.

Table 5.1.2.5 Reservoirs - Rockhampton Water Supply Scheme

Reservoir Name	Year Constructed	Capacity (ML)	Type/Design	Roof
Clear Water Reservoir 1 (Glenmore WTP)	1971	2.2	Concrete/Circular	Fully enclosed concrete
Clear Water Reservoir 2 (Glenmore WTP)	1971	2.2	Concrete/Circular	Fully enclosed concrete
Birkbeck Drive	1999	12.2	Concrete/Circular	Fully enclosed metal sheet
Samuel Crescent	1993	0.34	Steel Panel/Circular	Fully enclosed metal sheet
Yaamba Road	1974	13.7	Concrete/Circular	Fully enclosed metal sheet
Nagle Drive	1986	10.2	Concrete/Circular	Fully enclosed metal sheet
Thozet Road	1963	9.0	Steel Plate/Circular	Fully enclosed metal sheet
Forbes Avenue	1976	4.5	Concrete/Circular	Fully enclosed metal sheet
Rogar Avenue	2004	7.0	Concrete/Circular	Fully enclosed concrete
Mount Archer	1974	0.27	Concrete/Circular	Fully enclosed concrete
Agnes Street – Reservoir A	1958	4.5	Concrete/Circular	Fully enclosed metal sheet
Agnes Street – Reservoir B	1958	4.5	Concrete/Circular	Fully enclosed metal sheet
Agnes Street – Reservoir C	1932	9.1	Concrete/Rectangular	Fully enclosed fibro sheet
Agnes Street – Reservoir D	1996	20.0	Concrete/Circular	Fully enclosed metal sheet
Mawdesley Hill – Reservoir 1	1986	1.5	Concrete/Circular	Fully enclosed metal sheet
Mawdesley Hill – Reservoir 2	1993	1.5	Concrete/Circular	Fully enclosed metal sheet
Mawdesley Hill – Reservoir 3	1972	1.0	Concrete/Circular	Fully enclosed metal sheet
Lucas Street	2004	3.75	Concrete/Circular	Fully enclosed metal sheet
Boundary	2010	10	Concrete/Circular	Fully enclosed concrete

All reservoirs in the Mount Morgan Water Supply Scheme are listed in Table 5.1.2.6.

Table 5.1.2.6: Reservoirs – Mount Morgan Water Supply Scheme

Reservoir Name	Year Constructed	Capacity (ML)	Type/Design	Roof
North Street	1993	2.5	Concrete/Circular	Fully enclosed metal sheet
Black Street (Mount Morgan WTP)	1955	2.5	Concrete/Circular	Fully enclosed metal sheet

Passive Assets

Information on water mains, including information relating to capacity, performance, and condition, is found in Table 5.1.2.7 below.

Table 5.1.2.7: Water Mains

Information	Rockhampton Water Supply Scheme	Mount Morgan Water Supply Scheme
% Of properties where minimum pressure and flow are met*	99.7%	98%
% Of network where minimum firefighting flows and residual pressures are met$	99%	80%
Water main breaks in the last 2 years per 100 km of water main	21	6
Water service breaks in the last 2 years per 1000 connections	38	16

Commentary

* Council's CSS identifies a minimum pressure and flow rate of 220kPa and 9L/min respectively.

$ The CMDG outlines the firefighting flow requirements for low and medium density residential (15L/s for 2h), and high density residential and commercial / industrial (30L/s)

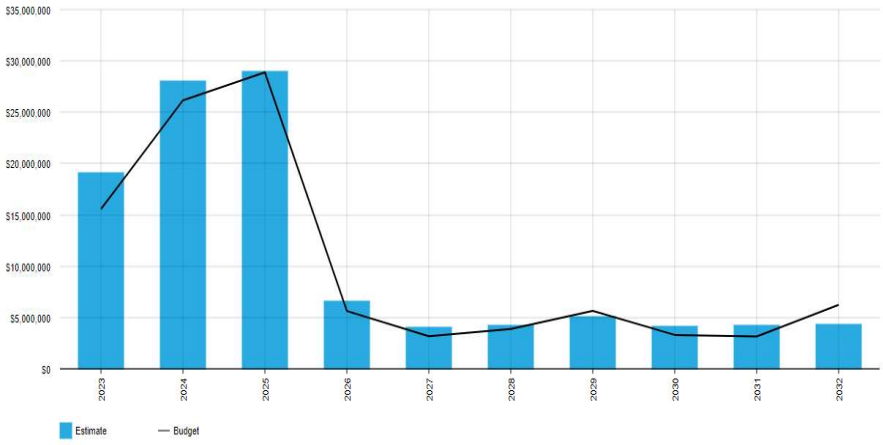
5.2 Renewals

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to its original service potential is an acquisition, resulting in increased asset replacement value and additional future operations and maintenance costs.

5.2.1 Summary of Renewal Demand

Renewal demand is the renewal works required over the planning period of the AMP. Renewal Demand is summarised by project per year in **Appendix A,** and project briefs are provided in **Appendix B**. **Appendix C** summarises renewal demand compared to renewal funding for each project. Figure 5.2.1 shows renewal demand (Estimate) relative to the renewal funding (Budget).

Figure 5.2.1: Renewal Demand



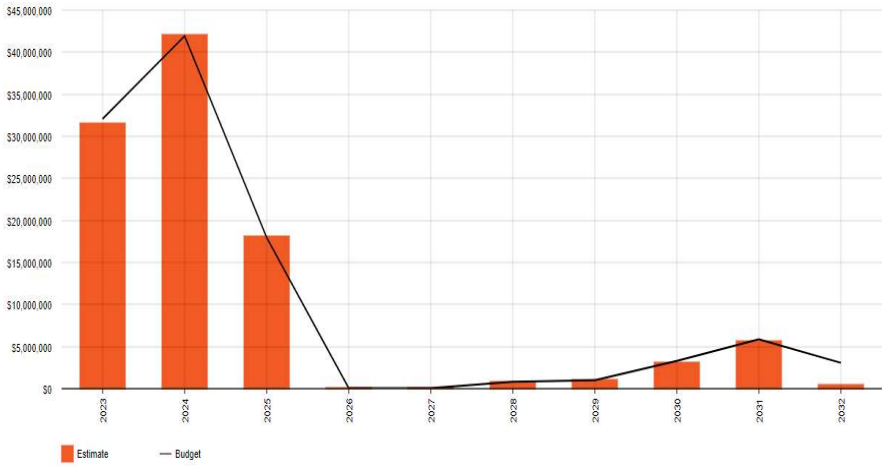
5.3 Acquisitions

Acquisition refers to new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its current capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Council through the development approval process or by other levels of government.

5.3.1 Summary of Acquisition Demand

Acquisition demand is the asset acquisitions required over the planning period of the AMP. Acquisition demand is summarised by project per year in **Appendix A**, and project briefs are provided in **Appendix B. Appendix C** summarises acquisition demand compared to the acquisition funding for each project. Figure 5.3.1 shows acquisition demand (Estimate) relative to acquisition funding (Budget) from the LTFF and external sources.

Figure 5.3.1: Acquisition Demand



5.4 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition, or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.4. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in this table. Any costs or revenue gained from asset disposals is included in the long-term financial forecast.

Table 5.4: Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
Mount Morgan WTP	Treated water will be supplied from the Glenmore WTP.	TBD	TBD	N/A

5.5 Operations and Maintenance Plan

5.5.1 Operations

Operations includes the on-going regular activities required to provide services. This includes process control and monitoring, energy costs and business support functions.

A SCADA system is used to monitor and control the active assets within each water supply scheme. This system gathers and displays the status of key equipment (e.g., pump running) and the values of analogue variables (e.g., flow rates, water levels in reservoirs) and enables control (manual and/or automatic) of key equipment from a manned 24-hour control room. Alarms log abnormal situations and alert operators to operational faults.

5.5.2 Maintenance

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Maintenance includes planned and unplanned (reactive) maintenance activities.

Planned Maintenance

Planned Maintenance includes work activities that are identified and managed proactively through a maintenance management system. FRW's maintenance strategy is documented in the *Maintenance Strategy Manual for the Active and Passive Assets of Fitzroy River Water*. This document sets out the planned maintenance strategies for both active and passive water assets. Planned maintenance carried out by FRW includes:

a) Safety and Compliance (Statutory) Maintenance

Safety and compliance maintenance is the minimum level of maintenance required to meet the legal and other mandatory requirements contained in the associated standards and regulations. Safety and compliance maintenance occurs at defined intervals and aims to ensure equipment is safe for its operating conditions.

b) Preventative Maintenance

Preventative maintenance is planned maintenance that is generally based on a manufacturer's recommendations for servicing equipment. Preventative maintenance is scheduled to occur at defined interval and aims to optimise the whole of life service potential of the asset.

c) Planned Corrective Maintenance

Planned corrective maintenance refers to actions that may be identified through the completion of other planned or reactive maintenance activities, or asset condition monitoring. These maintenance activities are usually one-off and can be planned and scheduled according to their priority.

Reactive Maintenance

Reactive Maintenance includes unplanned repair work that is carried out in response to customer service requests or operational faults.

5.5.3 Operations and Maintenance

Operations and maintenance expenditure over the last three financial years is shown in Table 5.5.3 below.

Table 5.5.3: Operations and Maintenance Expenditure

Year	Passive Assets	Active Assets	Total Expenditure
2021/22	$3,804,278	$10,415,898	$14,220,176
2022/23	$3,387,698	$9,547,223	$12,934,921
2023/24*	$3,377,434	$11,167,804	$14,545,238

* This is the adopted budget for 2023/24 and it includes a $1,000,000 increase in chemicals for the Glenmore WTP.

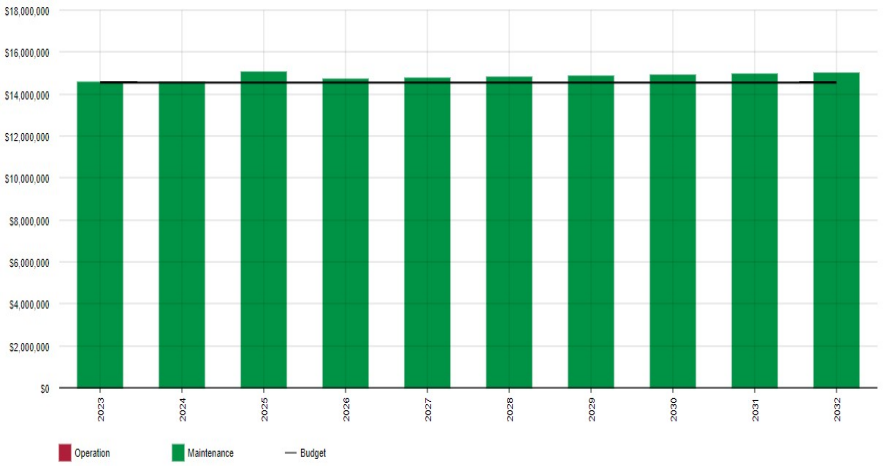
5.5.4 Forecast Operations and Maintenance Costs

Operations and maintenance costs for passive assets are expected to vary relative to the total length of the water network. The water network will continue to grow through developer contributions which have averaged 6.6km per year of new water mains over the last 5 years, through the delivery of the identified LGIP projects, and through the construction of the water main from Gracemere to Mount Morgan. Overall, the water network is expected to grow by 1.25% per year over the 10-year planning period.

Operations and maintenance costs for active assets are expected to vary relative to the number of water treatment plants, water treatment capacity, the number of reservoirs, and the number of water pump stations. Over the 10-year planning the reliable treatment capacity of the Glenmore WTP will be improved, the Mount Morgan WTP will be decommissioned, and two new water pumps stations will be constructed.

Figure 5.5.4 below shows the forecast operations and maintenance costs (Maintenance) relative to the 2023/24 budget.

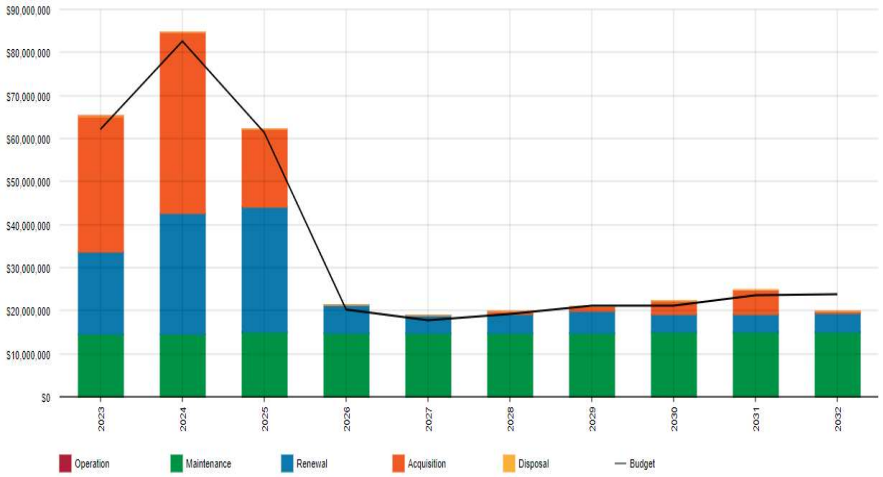
Figure 5.5.4: Forecast Operations and Maintenance Costs



5.6 Summary of lifecycle demand

The 10-year lifecycle demand for this AMP is shown in Figure 5.6. This figure shows the lifecycle demand (operation and maintenance, renewal, acquisition, and disposal) relative to lifecycle funding (budget) which includes the LTFF, current operations and maintenance budget, and external funding. All figure values are shown in current day dollars.

Figure 5.6: Lifecycle Summary



6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'[7].

An assessment of risks[8] associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

Table 6.1 Critical Assets

Asset Type	Asset Description	Failure Mode	Potential Impact
Water Sources	All	Structural failure	Loss of water storage capacity.
	Mount Morgan No. 7 Dam	Structural failure	Flooding of downstream residents.
	Fitzroy River Barrage	Mechanical/Electrical asset failure	Inability to lift gates during floods resulting in large hydraulic loads being placed on the structure. Inability to lower gates when floods recede resulting in a loss of water storage capacity.
Water Treatment Plants	All	Civil, Mechanical or Electrical asset failure	Widespread disruption of normal operations. Water is not treated sufficiently to meet drinking water quality requirements resulting in potential health impacts.
Water Pump Stations	All	Mechanical or electrical asset failure	Inability to transfer treated water to reservoirs or customers in high pressure supply zones.
Reservoirs	All	Civil, Mechanical or Electrical asset failure	Inability to supply water to customers, or additional costs associated with continuously running pumps to supply customers.
Water Mains	Trunk mains (≥ 300mm) and other priority mains	Pipe breakage	Loss/reduction of service to a large area of network. Loss/reduction of service to critical customers including hospitals, businesses, and dialysis patients.
Pressure Reducing Valves	All	Mechanical failure	Multiple water main breaks due to increased pressure in the water network.

[7] ISO 31000:2009, p 2
[8] Rockhampton Regional Council Enterprise Risk Management Policy

6.2 Risk Assessments

The risk management process used is shown in Figure 6.1 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

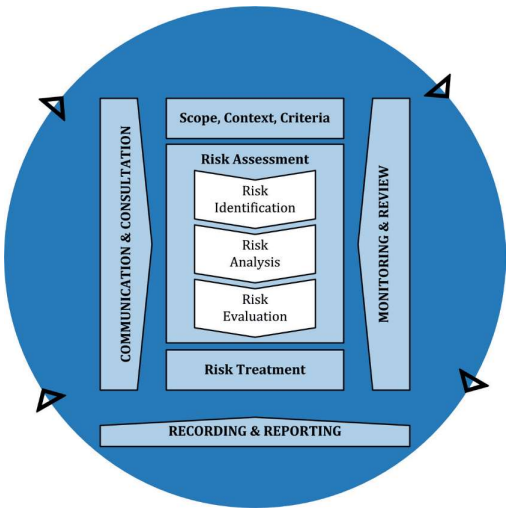


Fig 6.1 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks. An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Table 6.2 outlines the critical risks related to the supply of water services.

Table 6.2: Critical Risks and Treatment Plans

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk*	Treatment Costs	ALARP	Future Controls
Water Source (Barrage)	Water supply failure due to reduced river flows	VH	Council can impose water restrictions as storage levels decline. Water tariff structure is designed to encourage water conservation.	H	Operations and maintenance budget includes funding for monitoring of storage levels.	N	Engagement with major upstream water allocation holders and State Government to ensure appropriate risk controls are in place.
	Structural failure	VH	Barrage Emergency Action Plan. 12 Monthly Deformation Survey	H	Operations and maintenance budget includes funding for deformation survey.	N	Develop and implement an on-going condition assessment program. Implement recommendations from previous GHD assessments
	Civil, Mechanical or electrical asset failure	H	Barrage Emergency action Plan. In emergency individual gates can be opened by air tools or with manual winder. Preventative maintenance strategy is in place. Renewals identified based on asset age, maintenance history or condition assessment. SCADA system monitors the operation of active assets 24 hours/day for any faults. On-call crew available 24hrs/day for reactive maintenance.	M	Operations and maintenance budget includes preventative and reactive maintenance activities. Fitzroy River Barrage - Renewals - $10.5M.	N	Develop and implement an on-going condition assessment program

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk*	Treatment Costs	ALARP	Future Controls
	Power supply outage	H	A secondary power supply (generator) is permanently installed. In emergency, individual gates can be opened by air tools or with manual winder	M	Operations and maintenance budget includes planned maintenance activities associated with back-up generators	Y	
Water Source (No. 7 Dam)	Water supply failure due to reduced river flows	VH	Council can impose water restrictions as storage levels decline. Water tariff structure is designed to encourage water conservation.	VH	Operations and maintenance budget includes funding for monitoring of storage levels.	N	Mount Morgan Water Supply Security - $72.7M
	Structural failure	H	Emergency Action Plan is in place that sets out emergency procedures should a flood event occur. Tri-weekly dam inspections by trained officers and annual comprehensive inspection by dam specialist.	M	Operations and maintenance budget includes inspection activities.	N	Mount Morgan No. 7 Dam - Dam Safety - $0.63M
Water Treatment Plants	Contamination of raw water supply	H	As set out in DWQMP	M	Operations and maintenance budget includes activities in the DWQMP.	Y	

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk*	Treatment Costs	ALARP	Future Controls
	Mechanical and electrical equipment failure	H	Preventative maintenance strategy is in place. Renewals and upgrades overseen by specialist consultants. SCADA system monitors the operation of active assets 24 hours/day for any faults. On-call crew available 24hrs/day for reactive	M	Operations and maintenance budget includes preventative and reactive maintenance activities. Glenmore WTP - Renewals and Upgrades - $43.6M	N	Develop and implement recommendations from an on-going condition assessment program
	Structural failure	VH	A consultant recently inspected the structures at both WTPs[9]	H	Glenmore WTP - Renewals and Upgrades - $43.6M	N	Develop and implement an on-going condition assessment program
	Power supply outage	VH	A secondary power supply (emergency generator) is permanently installed at the Glenmore WTP	M	Operations and maintenance budget includes planned maintenance activities associated with the back-up generator	Y	

[9] Hunter H_2O, Glenmore WTP Condition Assessment, Feb 2022 and Hunter H_2O, Mount Morgan WTP Inspections, Jan 2022.

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk*	Treatment Costs	ALARP	Future Controls
Water Pump Stations	Mechanical and Electrical Equipment failure	H	Preventative maintenance strategy is in place. Renewals identified based on asset age and maintenance history. SCADA system monitors the operation of active assets 24 hours/day for any faults. On-call crew available 24hrs/day for reactive maintenance.	M	Operations and maintenance budget includes preventative and reactive maintenance activities. Water Pump Stations - Planned Renewals - $2.4M. Emergent Water Renewals - $3.5M	N	Develop and implement an on-going condition assessment program
	Insufficient pump capacity	H	CMDG Guidelines are in place and regularly reviewed. Last reviewed January 2022. Pump capacity is reviewed regularly for existing WPS	L	Mount Morgan Water Supply Security project and Trunk Infrastructure Projects include funding to upgrade the Old Capricorn Highway WPS and Agnes Street WPS respectively	Y	
	Structural failure	H	Preventative maintenance strategy includes general site inspections. Ad hoc condition assessment completed at some WPS sites.	M	Operations and maintenance budget includes preventative and reactive maintenance activities.	N	Develop and implement an on-going condition assessment program

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk*	Treatment Costs	ALARP	Future Controls
	Power Supply outage	VH	A secondary power supply (generator) is permanently installed at the Agnes Street WPS, Braddy Street WPS, Ibis Avenue WPS, Frenchville Road WPS and the Hi-lift WPS (Glenmore WTP). A transfer switch is available for the connection of a mobile generator at 12 other WPS sites.	H	Operations and maintenance budget includes planned maintenance activities associated with back-up generators	N	Complete risk assessments for all WPS sites to determine if a secondary power supply or transfer switch is required.
Reservoirs	Sabotage	H	Security fences and retractable ladders at reservoir sites. CCTV at some high-risk sites. Preventative maintenance strategy includes general site inspections.	M	Operations and maintenance budget includes preventative and reactive maintenance activities.	N	Complete risk assessments for all reservoir sites to determine if additional security measures are required.

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk*	Treatment Costs	ALARP	Future Controls
	Mechanical and Electrical Equipment failure	H	Preventative maintenance strategy is in place. Renewals identified based on asset age and maintenance history. SCADA system monitors the operation of active assets 24 hours/day for any faults. On-call crew available 24hrs/day for reactive maintenance.	M	Operations and maintenance budget includes preventative and reactive maintenance activities. Reservoirs - Planned Renewals - - $6.7M Emergent Water Renewals - $3.5M	N	Develop and implement an on-going condition assessment program
	Structural failure	H	Ad hoc condition assessments completed at some reservoir sites resulting in the identification of renewal projects.	H	Reservoirs - Planned Renewals – $6.7M	N	Develop and implement an on-going condition assessment program
	Contamination due to animals accessing reservoirs	M	Ad hoc condition assessments completed at some reservoir sites resulting in the identification of renewal projects.	L	Reservoirs - Planned Renewals – $6.7M	N	Develop and implement an on-going condition assessment program

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk*	Treatment Costs	ALARP	Future Controls
Water Reticulation Network	Water supply loss	H	On call crew available 24 hrs/day for reactive maintenance Annual water main replacement program Valves with the potential to impact dialysis patients are clearly identified.	L	Operations and maintenance budget includes preventative and reactive maintenance activities. Water Main Renewals - $36M.	N	Further implementation of water loss program to identify sources of system water losses.

Note * The residual risk is the risk remaining after the existing controls implemented.

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to our customers and the services we provide. To adapt to changing conditions and growth over time we need to understand our capacity to respond to possible disruptions and be positioned to absorb disturbance and act effectively in a crisis to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity, climate change risk assessment and crisis leadership. Our current measures of resilience are shown in Table 6.3 which includes the type of threats and hazards and the current approach that the Council takes to ensure service delivery resilience.

Table 6.3: Resilience Assessment

Threat / Hazard	Current Resilience Approach
Health impacts due to contaminated water	▪ Regular Monitoring and controls in place to prevent contamination of potable water supply
Water shortages due to widespread power disruptions under storm conditions	▪ Emergency generator at the Glenmore WTP. ▪ Emergency generators installed at some pump stations and the facility to attach a mobile generator at other pump stations. ▪ Total storage is greater than maximum day demand.
Long dry spells lead to water supply shortages	▪ Demand Management initiatives put in place to reduce per capita consumption and extend available storage volume (refer to Section 4.3 Demand Management Plan). Additional demand is however placed on the Barrage Storage by the Stanwell Power Station demand which is beyond the control of Council. Further to this, in 24/25 the Fitzroy to Gladstone Pipeline will be commissioned placing additional demand on the Barrage Storage which also is beyond the control of Council.
Persistent breakdowns in the water network under normal operating conditions	▪ On- going water main replacement program in Rockhampton and Mount Morgan. ▪ Preventative maintenance program at Pump Stations and Treatment Plants. ▪ Control over the design and construction of new water infrastructure in subdivisions. ▪ Monitor the performance of the network with a level of service that measures system water losses.

7.0 FINANCIAL SUMMARY

This section contains the financial requirements resulting from the information presented in the previous sections of this AMP. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Sustainability and Projections

7.1.1 Sustainability of service delivery

There are four key indicators of sustainable service delivery that are considered in the AMP for this service area. These indicators are as follows:

- Asset Renewal Funding Ratio
- Asset Sustainability Ratio
- 10-year Lifecycle Funding Ratio
- Asset Consumption Ratio

Asset Renewal Funding Ratio[10]

The Asset Renewal Funding Ratio measures the ability of Council to fund its projected asset renewals. This ratio is calculated by dividing the 10-year renewal funding by the 10-year renewal demand.

The Asset Renewal Funding Ratio is **93%.**

The only notable renewal funding gap over the 10-year planning period is in the water main renewal program. Water main renewals are under funded by approximately $1.1M/year.

Asset Sustainability Ratio[11]

The Asset Sustainability Ratio approximates the extent to which the infrastructure assets managed by a Council are being replaced as they reach the end of their useful lives. A ratio of >80% per annum (on average over the long-term) is the target for infrastructure assets owned by Council. This ratio is calculated by dividing average yearly renewal funding over the life of the AMP by annual depreciation.

Asset Sustainability Ratio is **106%.**

The ratio is high due to the significant renewal works that will occur at Glenmore WTP.

Lifecycle Funding Ratio

The Lifecycle Funding Ratio represents the extent to which all demand (operations, maintenance, renewal and acquisition) is funded over the 10-year planning period. This ratio is calculated by dividing total funding by total demand.

Lifecycle Funding Ratio is **98%**

Table 7.1 shows lifecycle demand versus the lifecycle funding for the 10-year planning period. This ratio is less than 100% on account of the funding gaps that currently exist.

[10] Financial Management (Sustainability) Draft Guideline, 2022, Version 1, Sustainability Measure 8
[11] Financial Management (Sustainability) Draft Guideline, 2022, Version 1, Sustainability Measure 6

Table 7.1: Lifecycle Demand vs Lifecycle Funding

Year	Lifecycle Demand			Lifecycle Funding		
	Renewal	Acquisition	Operations & Maintenance	Renewal	Acquisition	Operations & Maintenance
23/24	19,058,858	31,582,527	14,545,238	15,566,908	32,064,777	14,545,238
24/25	28,059,700	42,051,300	14,587,456	26,163,300	41,910,000	14,545,238
25/26	29,006,420	18,195,980	15,034,009	28,881,100	17,972,400	14,545,238
26/27	6,586,750	86,250	14,725,977	5,633,000	75,000	14,545,238
27/28	4,088,750	86,250	14,769,798	3,173,300	75,000	14,545,238
28/29	4,270,750	806,250	14,814,167	3,874,300	825,000	14,545,238
29/30	5,087,750	1,032,250	14,859,090	5,644,300	1,005,000	14,545,238
30/31	4,146,750	3,182,250	14,904,575	3,302,600	3,300,000	14,545,238
31/32	4,230,750	5,654,250	14,950,629	3,153,700	5,875,000	14,545,238
32/33	4,352,750	460,750	14,997,258	6,229,025	3,071,525	14,545,238
Totals	**108,889,228**	**103,138,057**	**148,188,198**	**101,621,533**	**106,173,702**	**145,452,376**

Asset Consumption Ratio[12]

The asset consumption ratio approximates the extent to which Council's infrastructure assets have been consumed compared to what it would cost to build new assets with the same benefit to the community. A ratio of >60% is the target for infrastructure assets owned by Council. This ratio is calculated by dividing depreciated replacement cost by current replacement cost.

Asset Consumption Ratio is **58%**

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's budget and LTFF.

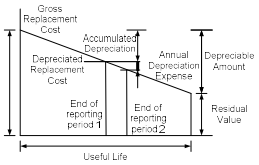
The LTFF determines how funding will be provided, whereas the AMP communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of assets included in this AMP are shown below.

Current Replacement Cost	$735,482,747
Accumulated Depreciation	$309,228,698
Depreciated Replacement Cost[13]	$426,254,049
Annual Depreciation (Passive Assets)	$5,598,315
Annual Depreciation (Active Active)	$4,638,288



[12] Financial Management (Sustainability) Draft Guideline, 2022, Version 1, Sustainability Measure 7
[13] Also reported as Written Down Value, Carrying or Net Book Value.

7.3.2 Valuation Forecast

Asset values are forecast to increase as additional assets are acquired.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this AMP, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AMP and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AMP are:

- Historical construction dates are accurate for water mains.
- Treatment plant renewal and acquisition decisions are based on condition and capability assessments completed by specialist consultants.
- Future demand for water services is based on population and employment projections set out in Planning Assumptions Report. This report is prepared in conjunction with the LGIP.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AMP are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale[14] in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AMP is shown in Table 7.5.2.

[14] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

Table 7.5.2: Data Confidence Assessment for Data used in AMP

Data	Confidence Assessment
Demand Drivers	B
Demand Forecast	C
Acquisition Demand	C
Operations and Maintenance Demand	C
Renewal Demand	C
Disposal forecast	B

The overall **confidence level** for data used in the preparation of this AMP is **Medium**. Acquisition and Renewal demand relating to some projects may vary as the scope of these projects is further developed.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices

Accounting and financial data sources

This AMP utilises accounting and financial data. This data is sourced from Council's financial system being R1.

Accounting and financial data sources

This AMP also utilises asset management data. This data is sourced from Council's assets and works system being R1, and Council's system being ArcGIS.

8.2 Improvement Plan

It is important that an entity recognise areas of their AMP and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan identified for this asset class is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Timeline
1	Complete a comprehensive review of all maintenance assets at the Glenmore WTP. Update the asset register accordingly.	Fitzroy River Water and Infrastructure Planning	In-line with capital project delivery
2	Develop and document processes for the on-going management of both valuation and maintenance asset data at all water sources, treatment plants, pump stations and reservoirs.	Infrastructure Planning and Fitzroy River Water	1 year
3	Review all current statutory and preventative maintenance activities/frequencies to ensure compliance and best practice. Update the maintenance strategy manual and R1 maintenance schedules with any changes identified. Ensure maintenance activities have sufficient detail and work schedule is deliverable.	Fitzroy River Water	1 year
4	Review the current processes for the capture and submission of as constructed asset information from internal capital projects to ensure the timely and accurate update of asset information in the R1 and GIS systems	Infrastructure Planning and Fitzroy River Water	1 year
5	Complete a comprehensive review of all valuation assets in readiness for 2023/24 revaluation.	Infrastructure Planning	1 year
6	Develop and document procedures to improve the reliability of renewal demand forecasts. Incorporate Network Asset Criticality Guidelines, Queensland Water, Nov 2020 to assist with prioritising renewals.	Infrastructure Planning and Fitzroy River Water	2 years

8.3 Monitoring and Review Procedures

This AMP will inform the LTFF and will be considered during the annual budget planning process. A review of this AMP will be triggered when there is a material change to service levels, asset values, forecast demand, assets risks or allocated funding.

8.4 Performance Measures

The effectiveness of this AMP can be measured in the following ways:

- The degree to which the lifecycle demand identified in this AMP is incorporated into the LTFF.
- Whether the improvement plan tasks are actioned.

9.0 REFERENCES

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- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Rockhampton Regional Council Long Term Financial Forecast 2022/23
- Rockhampton Regional Council Corporate Plan 2022 – 2027

10.0 APPENDICES

Appendix A Summary of Renewal and Acquisition Demand

The following table summarises all renewal and acquisition demand by project per year over the 10-year planning period.

Summary of Renewal and Acquisition Demand

Brief No.	Project Description	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	10-Year Demand	Renewal Demand	Acquisition Demand
W.1	Water Main Renewals	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000	36,000,000	36,000,000	0
W.2	Water Meter Renewals	2,060,000	6,760,000	6,760,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	16,000,000	13,000,000	3,000,000
W.3	New Water Meter Installations	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	750,000	0	750,000
W.4	PRV and District Flow Meter Renewals	66,000	0	54,000	0	0	0	0	0	0	0	120,000	120,000	0
W.5	Glenmore WTP - Renewals and Upgrades	8,356,385	15,000,000	20,000,000	0	0	0	250,000	0	0	0	43,606,385	34,885,108	8,721,277
W.6	Mount Morgan Water Supply Security	25,000,000	37,000,000	10,700,000	0	0	0	0	0	0	0	72,700,000	0	72,700,000
W.7	Trunk Infrastructure Projects		655,000	2,098,000			750,000	850,000	3,225,000	5,800,000	200,000	13,578,000	543,120	13,034,880
W.8	Water Pump Stations - Planned Renewals	1,739,000	279,000	176,000	88,000	0	0	35,000	19,000	0	28,000	2,364,000	2,364,000	0
W.9	Fitzroy River Barrage - Planned Renewals	2,000,000	3,000,000	2,500,000	2,500,000	0	0	500,000	0	0		10,500,000	10,500,000	0
W.10	Reservoirs - Planned Renewals	2,595,000	2,717,000	750,000	0	90,000	242,000		0	0	318,000	6,712,000	6,712,000	0
W.11	Glenmore WTP - Solar Power Project	4,100,000	0	0	0	0	0	0	0	0	0	4,100,000	0	4,100,000
W.12	SCADA System Renewals and Upgrades	0	400,000	0	0	0	0	400,000	0	0	0	800,000	640,000	160,000
W.13	Glenmore WTP - Washdown Bay	200,000	0	0	0	0	0	0	0	0	0	200,000	0	200,000
W.14	Mount Morgan No. 7 Dam - Dam Safety	350,000	275,000	0	0	0	0	0	0	0		625,000	625,000	0
W.15	Emergent Water Renewals	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	3,500,000	3,500,000	0
W.16	Water Main Upgrades and Extensions	150,000		139,400							182,500	471,900	0	471,900
	Totals	**50,641,385**	**70,111,000**	**47,202,400**	**6,673,000**	**4,175,000**	**5,077,000**	**6,120,000**	**7,329,000**	**9,885,000**	**4,813,500**	**212,027,285**	**108,889,228**	**103,138,057**

Appendix B Project Briefs

W.1 Water Main Renewals

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Passive	Water Mains
Mount Morgan	Passive	Water Mains

Background

The Rockhampton Water Supply Scheme includes water mains with a total length of approximately 800km. The earliest water mains installed in Rockhampton were cast iron (CI) pipes (1920 to 1970) and asbestos cement (AC) pipes (1960 to 1986). There approximately 222km of CI and AC pipes in the Rockhampton Water Supply Scheme.

The Mount Morgan Water Supply Scheme includes water mains with a total length of approximately 75km. The earliest water mains installed in Mount Morgan were class B AC pipes (1948 to 1950). There are approximately 5 km of AC pipes in the Mount Morgan Water Supply Scheme.

Rational

Water main segments are prioritised for renewal by considering maintenance history, material, age and criticality. A prioritised list of water main segments is prepared annually.

The table below summarises all water mains across both water supply schemes by material type. It also summarises the water mains breaks recorded by material type between 2010 and 2022. The main breaks shown in this table only relate to water mains that are currently in service.

Material	Length (km)	% of Network	No. of Breaks	% of Breaks
Asbestos Cement (AC)	165	19	245	78
Cast Iron (CI & CICL)	74	8.5	32	11
Ductile Iron (DICL)	20	2.2	0	0
Galvanised Steel	2	0.3	0	0
Polyethylene (PE)	64	7.4	4	1
Polyvinyl Chloride (PVC, mPVC, oPVC)	506	58	32	10
Mild Steel (MSCL)	40	4.5	0	0

Proposal

Water main renewal projects include the renewal of all associated property services, valves and hydrants. Existing water mains are replaced with the modern equivalent material. In Mount Morgan where the original AC pipes were 100mm in diameter, these are generally replaced with 150mm water mains to improve firefighting capacity.

Budget Estimate

Total renewal demand over the 10-year planning period is $36M. Total renewal demand has been determined based on the current replacement value of all water mains expiring over the 10-year planning period. The replacement value of these water mains is averaged to provide an annual average renewal demand of $3.6M per year.

Project Timing

This is an annual renewal program.

W.2 Water Meter Renewals

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Passive	Water Meters
Mount Morgan	Passive	Water Meters

Background

The Rockhampton Water Supply Scheme includes approximately 32,000 domestic and commercial water meters installed from 1994 onwards.

The Mount Morgan Water Supply Scheme includes approximately 1,500 domestic and commercial water meters installed from 2008 onwards.

Rational

Water meters are mechanical devices that wear with usage and age.

Most of the water meters in Rockhampton have been in service for more than 15 years and need to be replaced now.

Most of the water meters in Mount Morgan will reach the end of their useful within the next 10 years.

The water meter replacement program ensures reliable and accurate water meter readings.

Proposal

Water meters will be replaced with a remote reading meter of the same size. A remote reading meter has a battery and a low-powered wireless transmitter, similar to a remote control for a garage door. When a meter reader is near a property, the meter sends the reading to their handheld device.

This program includes planned and unplanned (failure) water meter renewal activities. Water meters are prioritised for replacement based on installation date and water age.

Budget Estimate

Total renewal demand over the 10-year planning period is $13M. $12.4M for Rockhampton Water Supply Scheme within the next 3 years, and $0.6M for Mount Morgan Water Supply Scheme over the next 10 years. Total renewal demand is determined based on the current replacement value of all water meters expiring during the planning period.

There is also an upgrade component to this project with the replacement of manual meters with remotely read meters. The upgrade component is estimated at $3M.

Project Timing

Water meters in the Rockhampton Water Supply Scheme will be replaced over the next 3 years, and water meters in the Mount Morgan Water Supply Scheme will be replaced over the next 10 years.

W.3 New Water Meter Installations

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Passive	Water Meters

Background

New residential and commercial properties will be developed within the Rockhampton Supply Scheme over the next 10 years.

Rational

As new residential and commercial properties are constructed a new water meter request is submitted to Council.

Proposal

New water meters will be installed as required.

Budget Estimate and Project timing

Total acquisition demand over the 10-year planning period is estimated at $0.75M. This demand is averaged to provide an annual acquisition demand.

W.4 PRV and District Flow Meter Renewals

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Passive	Pressure Reducing Valves
		Flow Meters
Mount Morgan	Passive	Pressure Reducing Valves
		Flow Meters

Background

Pressure reducing valves (PRVs) and district flow meters are used for water loss monitoring and control.

PRVs reduce the water main pressure in areas that would otherwise experience very high pressures. This pressure reduction helps to reduce the risk of water main breaks and water losses occurring.

District flow meters monitor the water flows into specific zones within each water supply scheme. High night flows are an indication that water losses may be occurring, and further investigation is required.

Rational

Over the next 10 years several PRVs and district flow meters will be due for replaced based on their age.

Proposal

PRVs and district flow meters will be replaced like for like.

Budget Estimate

Total renewal demand over the 10-year planning period is estimated at $0.12M. Total renewal demand is based on the current replacement value of all PRVs and district flow meters expiring over the 10-year planning period.

Project Timing

The following table list all PRVs and district flow meter renewal projects and their estimated timing.

Water Scheme	Asset Category	Asset Type	Asset Description	Timing Estimate	Current Replacement Value ($)
Rockhampton	Passive	Flow Meter	Bridge St East Flowmeter 150mm	2023/24	$11,000
Rockhampton	Passive	Flow Meters	Bridge St West Flowmeter 150mm	2023/24	$11,000
Rockhampton	Passive	Flow Meter	Main St Flowmeter 150mm	2023/24	$11,000
Rockhampton	Passive	Flow Meter	Shopping Fair Flowmeter 150 mm	2023/24	$11,000
Rockhampton	Passive	Flow Meter	Simpson St Flowmeter 150mm	2023/24	$11,000
Rockhampton	Passive	Flow Meter	249 Mason St Flowmeter 100mm	2023/24	$14,000
Rockhampton	Passive	PRV	Skyline Drive PRV 150mm	2025/26	$11,000
Rockhampton	Passive	PRV	Kent Hill PRV 250mm	2025/26	$29,000
Mount Morgan	Passive	PRV	Glen Gordon St PRV 100 mm	2025/26	$11,000

W.5 Glenmore WTP – Renewals and Upgrades

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Active	Water Treatment Plants

Background

The Glenmore WTP treats water for the Rockhampton, Caves and Capricorn Coast Water Supply Schemes.

Contract 14224 was awarded in 2021 and work has commenced on the replacement of all electrical cables and the installation of a new main switchboard along with PLC, intake and chemical switchboards and associated platforms and buildings. Also included in this project are mechanical upgrades to chemical dosing plant, replacement of filter underdrains and filter media, and the renewal of mechanical and civil assets that are in a poor condition.[15] Works are being prioritised within the available budget.

Consultants[16] have since recommended additional works be undertaken to ensure a reliable water treatment capacity of 120 ML/day under all raw water quality conditions. This work includes:

1. Replacement of existing Sludge Scrapers,
2. Installation of new Lamella tubes in both sedimentation tanks,
3. Installation of up to four (4) additional filters and associated pipework,
4. Installation of UV disinfection system for treated water.

Council has accepted these recommendations and budgeted for these works in two stages. The first stage will include items 1,2 and 4. Item 3 will be addressed after the current upgrade works are completed and improved production has stabilised.

Rational

The Glenmore WTP was constructed in 1971 and original electrical, control and mechanical assets are at the end of their useful life.

The Glenmore WTP water treatment capacity under all raw water quality conditions is compromised at the sedimentation and filtration process steps. It is anticipated upgrades planned in items 1, 2 and 3 will provide a more reliable treatment capacity from the plant sufficient to meet future demand.

Proposal

Renewal projects involve like for like asset replacement with modern equivalent assets. While most of the projects are renewal a portion is upgrade where new technology exists to give a higher level of service.

Budget Estimate

The total estimated budget for the Glenmore WTP renewals and upgrades is $43.6M.

Project Timing

Contract 14224 was awarded in 2021 and work at the Glenmore WTP is expected to be completed in the 2025/26 financial year.

[15] Hunter H_2O, Glenmore WTP Condition Assessment, Feb 2022
[16] Hunter H_2O, Glenmore WTP Capacity and Capability Assessment Final Report RRC, Jan 2022

W.6 Mount Morgan Water Supply Security

Water Supply Scheme	Asset Category	Asset Type
Mount Morgan	Active	Water Pump Station
	Passive	Water Mains

Background

Water for the Mount Morgan Water Supply Scheme is currently sourced from the No.7 Dam which is located on the Dee River immediately downstream of the river's junction with Limestone Creek. This dam was constructed in the early 1900s by the Mount Morgan Gold Mine Company. In 1993 Council assumed ownership of the dam, and in 1999 it was raised by 4.5m to provide the current total storage capacity of 2,830 ML. Council holds the only water licence authorising the use of 584 ML/annum.

Rational

With its small storage capacity and relatively small catchment area of 39 km^2, the No.7 Dam relies on regular summer rainfall. Between 2002/03 and 2015/16 the dam received below average inflows and declined to critical levels on several occasions during this period. In March 2021 the dam was again at critical storage levels and the decision was made to take the dam offline. Since March 2021 treated water has been trucked from the Rockhampton Water Supply Scheme to the Black Street reservoir which is situated at the Mount Morgan WTP.

To ensure future water security in Mount Morgan, Council determined that the Glenmore WTP would supply treated water to the Mount Morgan Water Supply Scheme.

Proposal

The project includes the following activities:

- Construct a new 250mm water main from the Lucas Street Reservoir site in Gracemere to the Black Street Reservoir at the Mount Morgan WTP.
- Construct a new water pump station and reservoir at the Lucas Street Reservoir site.
- Construct a new water pump station and reservoir at Moonmeera.
- Upgrade the capacity of the Old Capricorn Highway WPS.

Budget Estimate

The total estimated budget for this project is $72.7M.

Project Timing

This project is scheduled for completion in the 2025/26 financial year.

W.7 Trunk Infrastructure Projects

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Active	Water Pump Stations
	Passive	Water Mains

Background

Long-term, region wide planning for infrastructure that integrates with land use planning is detailed in the LGIP, which is contained within the Rockhampton Region Planning Scheme. The LGIP outlines the trunk infrastructure our Region will need to support predicted future growth and development.

Rational

Most growth in future demand will occur in North Rockhampton (Parkhurst) and Gracemere.

Proposal

New trunk water mains, water pump stations and reservoirs will be constructed to meet future demand.

Budget Estimate

The LGIP identifies trunk infrastructure growth projects with an estimated total cost of $13.6M over the 10-year planning period.

Project Timing

The following table lists all LGIP projects and their estimated timing.

Water Scheme	Asset Category	Asset Type	Project Name	Timing Estimate	Budget Estimate ($)
Rockhampton	Active	Pump Stations	(R) R WPS Agnes St No 1-2-3 Pump Renewal	2025/26	$675,000
Rockhampton	Passive	Water Mains	Water Main 200mm - Lawrie St (Old Cap Hwy-John St) (WAT79) – 130m	2024/25	$130,000
Rockhampton	Passive	Water Mains	Water Main 300mm - Western Extn of Olive St (Yaamba Rd to Western Boundary) (WAT 69) – 1,350m	2025/26	$283,000
Rockhampton	Passive	Water Mains	Water Main 200mm - Birkbeck Reservoir to Edenbrook Drive (Split HZ & LZ) (WAT90)	2025/26	$675,000
Rockhampton	Passive	Water Mains	Water Main 450mm - Yaamba Rd to western boundary of Lot 5 SP238731 (WAT 45) - 750 m	2024/25	$990,000
Rockhampton	Passive	Water Mains	Water Main 450mm - Western Extn of Olive St (Yaamba Rd to Western Boundary) (WAT51) - 1,350m	2029/30	$1,700,000
Rockhampton	Passive	Water Mains	Water Main 200mm - Washpool Rd (Cherryfield Rd to Eastern Boundary L1 RP848973) (WAT75) – 1,400 m	2028/29	$750,000
Rockhampton	Passive	Water Mains	Water main 200 mm - Lucas St (Chatterton Blvd to Allen Rd) - 970 m (WAT 49)	2031/32	$500,000
Rockhampton	Passive	Water Mains	Water main 200 mm - Allen Rd (Lucas St - Gavial Gracemere Rd) (WAT 50) - 780 m	2031/32	$400,000
Rockhampton	Passive	Water Mains	Water Main 300 mm - Mawdesley Hill Res - Lucas St Res (WAT 52) – 5,200 m	2031/32	$4,900,000
Rockhampton	Passive	Water Mains	Water Main 200 mm - Webster St (Eastern boundary lot 253 P4014 to Eastern Bdry of lot 252 0n P4013) (WAT 74) - 400 m	2032/33	$200,000
Rockhampton	Passive	Water Mains	Water Main 300mm Middle Road (Macquarie Street- Wat 60)	2030/31	$875,000
Rockhampton	Passive	Water Mains	Water Main 200mm Somerset Road (Western Extension from Overpass) – Wat 63	2030/31	$700,000
Rockhampton	Passive	Water Mains	Water Main 200mm Stewart Street (Middle Road to Somerset Road) – Wat 61	2030/31	$800,000

W.8 Water Pump Stations – Planned Renewals

Water Scheme	Asset Category	Asset Type
Rockhampton	Active	Water Pump Stations
Mount Morgan	Active	Water Pump Stations

Background

Water pump stations are critical to the distribution and supply of potable water. Water pump stations include mechanical (pumps), electrical (switchboards and telemetry) and civil (structures and pipework) assets.

Rational

Mechanical and electrical assets are identified for renewal based on their age. These asset components have a short life compared with the civil components of a pump station and require mid-life renewal. The typical lives used as a guide in renewal decision making are set out in the table below.

Asset	Useful Life (Years)
Pumps	20
Switchboards	20
Telemetry	20

Mechanical and electrical assets are prioritised for renewal based on maintenance history and criticality.

Civil assets are identified for renewal based on condition assessment and prioritised based on criticality.

Proposal

Renewal projects involve like for like replacement of assets with a modern equivalent asset.

Budget Estimate

Renewal demand over the 10-year planning period is estimated to be $2.4M

Project timing

The following table lists all water pump station renewals and their estimated timing.

Water Scheme	Asset Category	Asset Type	Project Name	Timing Estimate	Budget Estimate ($)
Rockhampton	Active	Water Pump Stations	Africander Avenue WPS - Pump 1	2023/24	$6,000
Rockhampton	Active	Water Pump Stations	Belmont Road WPS - Pump 1	2023/24	$8,000
Rockhampton	Active	Water Pump Stations	Braddy Street WPS - Pump 2	2023/24	$8,000
Rockhampton	Active	Water Pump Stations	Davison Street WPS - Pumps 1,2 and 3	2023/24	$20,000
Rockhampton	Active	Water Pump Stations	Mt Archer WPS 01 - Pumps and Switchboard	2023/24	$88,000
Rockhampton	Active	Water Pump Stations	Mt Archer WPS 02 - Pumps and Switchboard	2023/24	$88,000
Rockhampton	Active	Water Pump Stations	Mt Archer WPS 03 - Pumps and Switchboard	2023/24	$88,000
Rockhampton	Active	Water Pump Stations	Thozet Road WPS - Pumps and Switchboard	2023/24	$780,000
Rockhampton	Active	Water Pump Stations	Norman Road WPS - Pumps and Switchboard	2023/24	$561,000

Mount Morgan	Active	Water Pump Stations	Baree WPS - Telemetry	2023/24	$7,000
Mount Morgan	Active	Water Pump Stations	Black Street WPS - Pump 1 and 2	2023/24	$12,000
Mount Morgan	Active	Water Pump Stations	Darcy Street WPS - Pump 1	2023/24	$7,000
Mount Morgan	Active	Water Pump Stations	East Street Extn WPS - Pump 1	2023/24	$8,000
Mount Morgan	Active	Water Pump Stations	Hall Street WPS - Pump 1	2023/24	$7,000
Mount Morgan	Active	Water Pump Stations	Hamilton Creek WPS Pump 1	2023/24	$6,000
Mount Morgan	Active	Water Pump Stations	Horse Creek WPS Pump 1	2023/24	$7,000
Mount Morgan	Active	Water Pump Stations	Horse Creek WPS Switchboard	2023/24	$38,000
Rockhampton	Active	Water Pump Stations	Ibis Ave WPS Pump set (4 x Pumps)	2024/25	$29,000
Rockhampton	Active	Water Pump Stations	Rockonia Rd WPS Replace	2024/26	$400,000
Rockhampton	Active	Water Pump Stations	Everingham Ave WPS Pump set (4 x Pumps)	2025/26	$26,000
Rockhampton	Active	Water Pump Stations	Frenchville Rd WPS Pump set (3 x Pumps)	2026/27	$17,000
Rockhampton	Active	Water Pump Stations	Mt Archer WPS 04 Pumps and Switchboard	2026/27	$71,000
Rockhampton	Active	Water Pump Stations	Ridgedale WPS Pump 01	2029/30	$6,000
Rockhampton	Active	Water Pump Stations	Samuel Cres WPS Pump set (3 x Pumps)	2029/30	$23,000
Rockhampton	Active	Water Pump Stations	Sleipner St WPS Pump 01	2029/30	$6,000
Rockhampton	Active	Water Pump Stations	Wehemeier Ave WPS Pump 01	2030/31	$6,000
Rockhampton	Active	Water Pump Stations	Whitely St WPS Pump 01	2030/31	$6,000
Mount Morgan	Active	Water Pump Stations	William St WPS Pump 1	2030/31	$7,000
Rockhampton	Active	Water Pump Stations	Mt Archer WPS 01 Pipework	2032/33	$4,000
Mount Morgan	Active	Water Pump Stations	Darcy St WPS Switchboard	2032/33	$20,000
Mount Morgan	Active	Water Pump Stations	Darcy St WPS Pipework	2032/33	$4,000

W.9 Fitzroy River Barrage – Planned Renewals

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Active	Water Sources

Background

The Rockhampton Water Supply Scheme is supplied with raw water drawn from Council's 50,383 ML/a high priority water allocation, which is stored in an impoundment behind the Barrage. The Barrage sits at the bottom of the Fitzroy River Catchment and was commissioned in 1970.

Rational

The barrage structure is now more than 50 years old, and some of the mechanical, electrical and civil assets require renewal.

Proposal

This project includes gate refurbishment, steel and concrete repairs, replacement of gate winches and cables, and the renewal of electrical switchboards and cabling.

Budget Estimate

Total renewal demand over the 10-year planning period is $10.5 M. Total renewal demand has been determined by FRW.

Project timing

FRW has identified $10M is required over the next 4 financial years. An additional $0.5M has been identified the 2029/30 financial year.

W.10 Reservoirs – Planned Renewals

Water Scheme	Asset Category	Asset Type
Rockhampton	Active	Reservoirs
Mount Morgan	Active	Reservoirs

Background

Reservoirs are critical to the storage and supply of potable water. Reservoirs include mechanical (valves), electrical (switchboards and telemetry) and civil (structures and pipework) assets.

Rational

Mechanical and electrical assets are identified for renewal based on their age. The typical lives used as a guide in renewal decision making are set out in the table below.

Asset	Useful Life (Years)
Switchboards	20
Telemetry	20
Valves	30

Mechanical and electrical assets are prioritised for renewal based on maintenance history.

Civil assets are identified for renewal based on condition assessment.

Proposal

Renewal projects involve like for like replacement of assets with a modern equivalent asset.

Budget Estimate

Renewal demand over the 10-year planning period is estimated to be $6.7M.

Project timing

The following table lists all reservoir renewals and their estimated timing.

Water Scheme	Asset Category	Asset Type	Project Name	Timing Estimate	Budget Estimate
Rockhampton	Active	Water Reservoirs	Yaamba Road - Roof replacement	2023/24	$1,750,000
Rockhampton	Active	Water Reservoirs	Yaamba Road - Floor leak repair	2023/24	$300,000
Rockhampton	Active	Water Reservoirs	Forbes Avenue - Floor leak repair	2023/24	$250,000
Rockhampton	Active	Water Reservoirs	Agnes Street Reservoir D - Roof replacement	2023/24	$1,200,000
Rockhampton	Active	Water Reservoirs	Agnes Street Reservoir C - Roof replacement	2024/25	$1,450,000
Rockhampton	Active	Water Reservoirs	Lucas Street - Chlorine dosing pump renewal	2028/29	$50,000
Rockhampton	Active	Water Reservoirs	Nagle Drive - Instrumentation renewal	2024/25	$41,000
Rockhampton	Active	Water Reservoirs	Agnes Street Reservoir A - Automated valves renewal	2024/25	$90,000
Rockhampton	Active	Water Reservoirs	Agnes Street Reservoir B - Automated valves renewal	2027/28	$90,000
Rockhampton	Active	Water Reservoirs	Thozet Road - Telemetry renewal	2023/24	$45,000
Rockhampton	Active	Water Reservoirs	Thozet Road - Automated valves and pipework renewal	2028/29	$192,000
Rockhampton	Active	Water Reservoirs	Yaamba Road - Telemetry Renewal	2024/25	$39,000
Rockhampton	Active	Water Reservoirs	Mawdesley Hill - Chlorine dosing system renewal	2023/24	$200,000
Rockhampton	Active	Water Reservoirs	Mawdesley Hill - Telemetry renewal	2024/25	$26,000
Rockhampton	Active	Water Reservoirs	Thozet Road - Chlorinator renewal	2032/33	$85,000
Rockhampton	Active	Water Reservoirs	Birkbeck Drive - Telemetry renewal	2032/33	$27,000
Rockhampton	Active	Water Reservoirs	Forbes Avenue - Chlorine dosing system renewal	2023/24	$350,000
Rockhampton	Active	Water Reservoirs	Forbes Avenue – Telemetry renewal	2032/33	$44,000
Mount Morgan	Active	Water Reservoirs	Black Street - Pipework renewal	2032/33	$129,000
Mount Morgan	Active	Water Reservoirs	Black Street - Telemetry renewal	2032/33	$33,000
Mount Morgan	Active	Water Reservoirs	Black Street - Roof replacement	2024/25	$321,000

W.11 Glenmore WTP – Solar Power Project

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Active	Water Treatment Plants

Background

Council's Sustainability Strategy recognises the need for Council to transition towards net zero emissions. This strategic priority is supported by several key initiatives, including a commitment to pursue renewable energy sources and where practical, install behind the meter solar PV on Council facilities and key community infrastructure.

Rational

The Glenmore WTP uses approximately 13.6MW of electricity annually. In 2021/22 the Glenmore WTP's electricity costs were $2.2M. To offset this a solar system will be installed on-site.

Proposal

Install a ground mounted 1.37 MW solar system.

Budget Estimate

The total estimated budget for the project is $4.1M. This project is funded from the Sustainable Rockhampton Investment fund.

Project Timing

Construction commenced in 2022/23 and will be completed in the 2023/24 financial year.

W.12 SCADA System Renewals and Upgrades

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Active	Water Treatment Plants

Background

A SCADA system is used to monitor and control the active assets within the water supply schemes. The SCADA system gathers and displays the status of key equipment (e.g., pump running) and the values of analogue variables (e.g., flow rates, water levels in reservoirs) and enables control (manual and/or automatic) of key equipment from a manned 24-hour control room at the Glenmore WTP. Alarms log abnormal situations and alert operators to operational faults.

Rational

The SCADA system includes both software and hardware components that required regular renewal/upgrade.

Proposal

This project is for the replacement of servers and NAS (network attached storage) on critical infrastructure.

Budget Estimate

This project is estimated to cost $0.8M over the 10-year planning period. This is an FRW estimate based on similar project costs.

Project Timing

SCADA System renewals and upgrades are forecast to occur in the 2024/25 and 2029/30 financial years.

W.13 Glenmore WTP - Washdown Bay

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	-	Plant and Equipment

Background

The FRW works depot is located at the Glenmore WTP. The Glenmore WTP doesn't have a washdown facility so all FRW vehicles must be taken to the Dooley Street depot for cleaning.

Rational

Washdown facilities allow the removal and capture of contaminants stuck on the vehicles surface including oil, harmful chemicals, pathogens and noxious weed seeds.

Proposal

This project is for the construction of a washdown facility at the Glenmore WTP.

Budget Estimate

This project is estimated to cost $0.2M. This is an FRW cost estimate.

Project Timing

This project is scheduled for completion in the 2023/24 financial year.

W.14 Mount Morgan No. 7 Dam - Dam Safety

Water Supply Scheme	Asset Category	Asset Type
Mount Morgan	Active	Water Sources

Background

The No. 7 Dam is a category 2 referable dam under the Water Safety and Reliability Act 2008 due to the risks to persons or property if the dam were to fail. In accordance with the Queensland Dam Safety Management Guidelines 2020, the No. 7 Dam is required to have an annual inspection, and a 5 yearly comprehensive inspection. These inspections must be conducted by a suitably qualified and experienced registered professional engineer.

Rational

In 2021 GHD were engaged by Council to conduct the annual inspection on the No.7 Dam. The annual inspection report prepared by GHD included recommendations to improve dam safety and to ensure Council meets it obligations under the Queensland Dam Safety Management Guidelines. In 2022 GHD were re-engage by Council to prioritise its recommendations and to provide budget cost estimates.

Proposal

Complete the recommended actions identified in the scoping and implementation plan[17] prepared by GHD.

Budget Estimate

This project is estimated to cost $0.63M.

Project Timing

This work is scheduled to occur over the 2023/24 and 2024/25 financial years.

[17] GHD, Mount Morgan No 7 Dam Scoping and Implementation Plan, March 2022.

W.15 Emergent Water Renewals

Water Supply Scheme	Asset Category	Asset Type
Rockhampton	Active	Water Sources
		Water Treatment Plants
		Water Pump Stations
		Reservoirs
Mount Morgan	Active	Water Sources
		Water Treatment Plants
		Water Pump Stations
		Reservoirs

Background

All water sources, water treatment plants, water pump stations and reservoirs include mechanical and electrical assets. These assets are critical to the operation of each site. Mechanical and electrical assets have a short life compared to civil assets and require more frequently renewal. With an estimated useful life of 20 years for most mechanical and electrical assets, it's difficult to accurately estimate renewal demand over a 10-year planning period.

Rational

This project covers renewal activities that are not identified in other project briefs.

Proposal

Replace mechanical and electrical assets with modern equivalent assets as the need arises.

Budget Estimate

Emergent renewal demand is estimated at $0.35M annually over the 10-year planning period which is approximately 30% of annual depreciation for mechanical and electrical assets.

W.16 Water Mains Upgrades and Extensions

Water Scheme	Asset Category	Asset Type
Rockhampton	Passive	Water Mains
Mount Morgan	Passive	Water Mains

Background

All water mains are sized to provide firefighting flows and minimum water pressure at the property boundary.

Rational

Existing water mains are identified for upgrade or extension where deficiencies are found in meeting the water supply network design criteria outlined in Table 4.4.1.2 of the LGIP. Water main extension projects are also identified where there is justification to extend the water supply area.

Proposal

Install new 150mm water mains in Rosewood Drive and West Gracemere.

Upgrade a section of water main in Maloney Street from 100mm to 150mm to improve firefighting capacity.

Budget Estimate

Demand over the 10-year planning period is estimated to be $0.47M.

Project timing

The following table lists all water main upgrade and extension projects and their estimated timing.

Water Scheme	Asset Category	Asset Type	Project Name	Timing Estimate	Budget Estimate ($)
Rockhampton	Passive	Water Mains	Rockhampton – Rosewood Dr 150 mm Water Main Duplication	2025/26	$139,400
Rockhampton	Passive	Water Mains	West Gracemere 150 mm Water Main extension	2023/24	$150,000
Rockhampton	Passive	Water Mains	Maloney Street 150 mm Water Main Upgrade	2032/33	$182,500

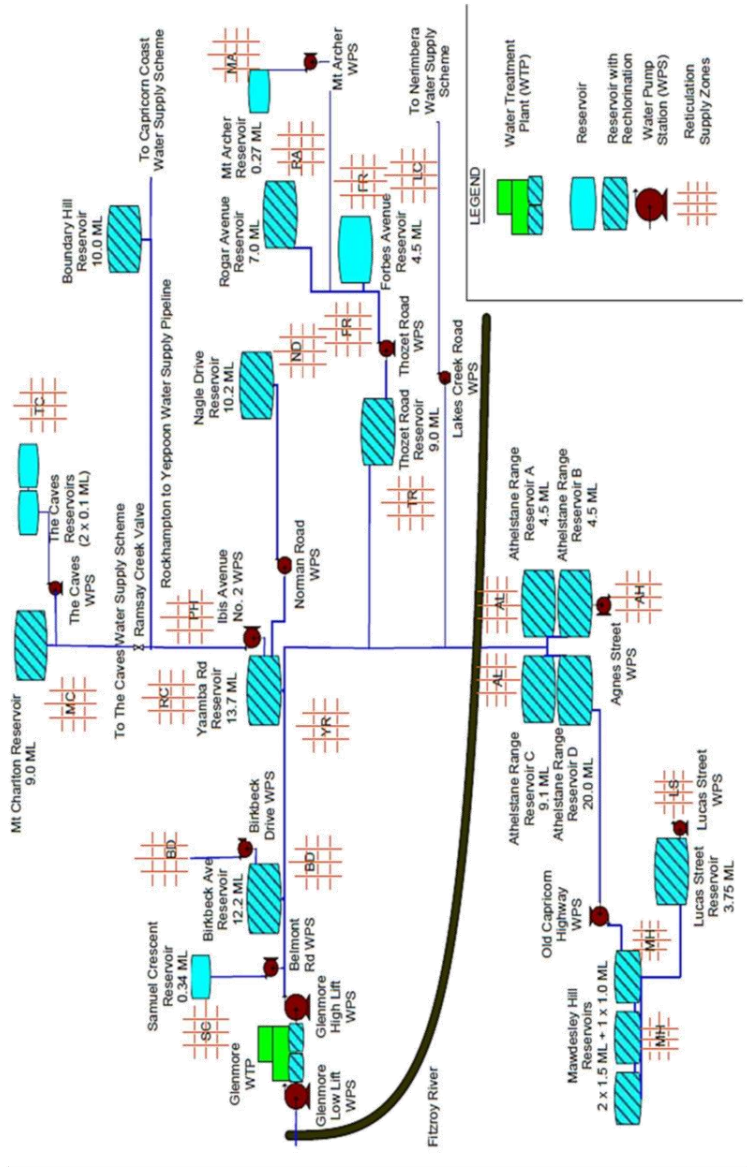
Appendix C Renewal and Acquisition Demand vs LTFF Funding

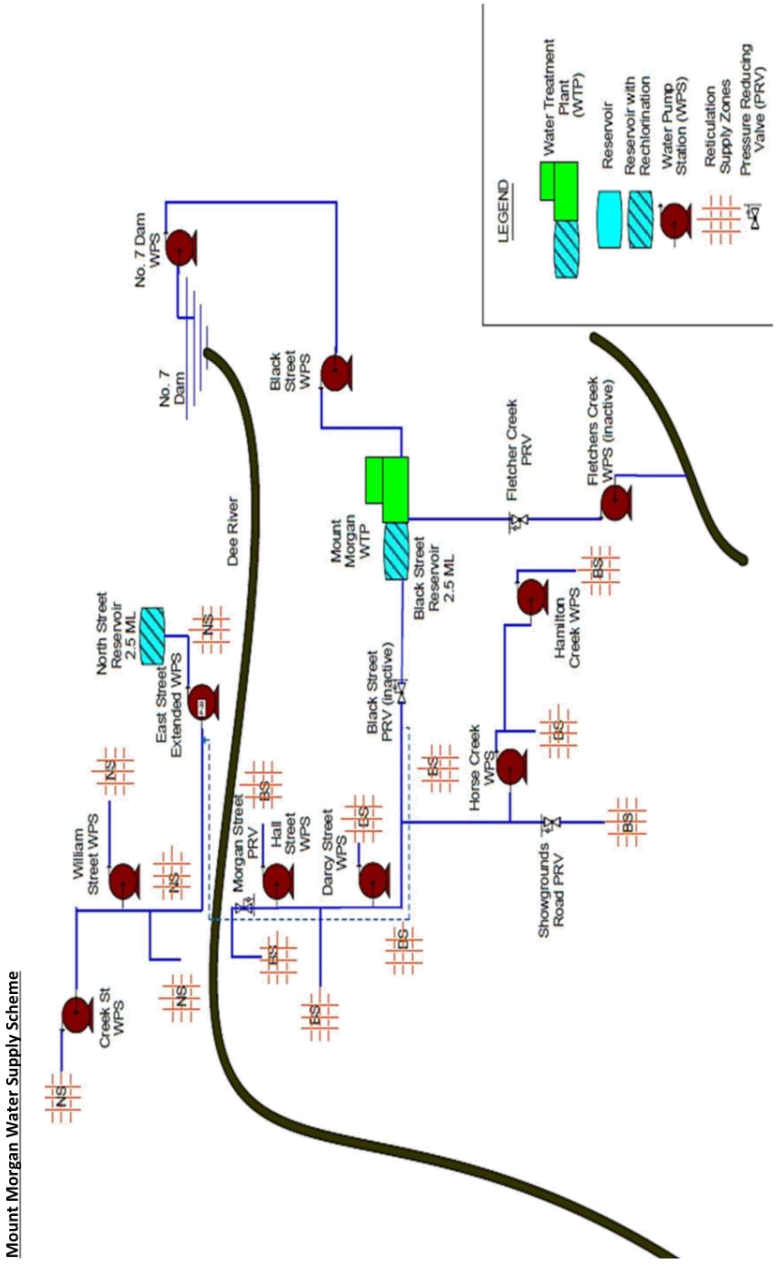
The following table summarises all renewal and acquisition demand at a project level compared to funding that is available in the LTFF.

Brief No.	Project Description	Renewal Demand	Acquisition Demand	Renewal Funding	Acquisition Funding
W.1	Water Main Renewals	36,000,000	0	24,789,300	0
W.2	Water Meter Renewals	13,000,000	3,000,000	13,774,600	3,000,000
W.3	New Water Meter Installations	0	750,000	0	750,000
W.4	PRV and District Flow Meter Renewals	120,000	0	164,500	0
W.5	Glenmore WTP - Renewals and Upgrades	34,885,108	8,721,277	34,816,608	8,789,777
W.6	Mount Morgan Water Supply Security	0	72,700,000	0	72,700,000
W.7	Trunk Infrastructure Projects	543,120	13,034,880	540,000	13,038,000
W.8	Water Pump Stations - Planned Renewals	2,364,000	0	4,423,600	0
W.9	Fitzroy River Barrage - Planned Renewals	10,500,000	0	10,500,000	0
W.10	Reservoirs - Planned Renewals	6,712,000	0	8,084,525	2,964,025
W.11	Glenmore WTP - Solar Power Project	0	4,100,000	0	4,100,000
W.12	SCADA System Renewals and Upgrades	640,000	160,000	640,000	160,000
W.13	Glenmore WTP - Washdown Bay	0	200,000	0	200,000
W.14	Mount Morgan No. 7 Dam - Dam Safety	625,000	0	625,000	0
W.15	Emergent Water Renewals	3,500,000	0	3,263,400	0
W.16	Water Main Upgrades and Extensions	0	471,900	0	471,900
		108,889,228	**103,138,057**	**101,621,533**	**106,173,702**

Appendix D Water Supply Scheme Schematics

Rockhampton Water Supply Scheme




Mount Morgan Water Supply Scheme
LEGEND
Water Treatment Plant (WTP)
Reservoir
Reservoir with Rechlorination
Water Pump Station (WPS)
Reticulation Supply Zones
Pressure Reducing Valve (PRV)
No. 7 Dam WPS
No. 7 Dam
Black Street WPS
Dee River
Fletcher Creek PRV
Fletchers Creek WPS (inactive)
Mount Morgan WTP
Black Street Reservoir 2.5 ML
North Street Reservoir 2.5 ML
East Street Extended WPS
Black Street PRV (inactive)
Hamilton Creek WPS
Horse Creek WPS
William Street WPS
Morgan Street PRV
Hall Street WPS
Darcy Street WPS
Showgrounds Road PRV
Creek St WPS
NS
BS

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ASSET MANAGEMENT PLANS - WATER AND SEWERAGE INFRASTRUCTURE

Asset Management Plan – Sewerage Infrastructure

Meeting Date: 5 December 2023

Attachment No: 2

ASSET MANAGEMENT PLAN

Rockhampton Regional Council
Sewerage Infrastructure

Document Control	Asset Management Plan			
Document ID :				
Version	**Date**	**Plan Type**	**Author**	**Reviewed By**
1	Draft	Asset Class	Mark O'Hallahan	Andrew Whitby
2	Draft	Asset Class	Andrew Whitby Mark O'Hallahan	Martin Crow Karyn Beck
3	Draft	Asset Class	Andrew Whitby Mark O'Hallahan	Dan Toon

Contents

1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

The Rockhampton Regional Council (Council) principally exists to provide services that meet the needs of the community. This includes the provision of infrastructure for the collection and treatment of sewage. Asset management planning is a comprehensive process; the purpose of which is to ensure the delivery of services from Council owned infrastructure is financially sustainable.

This Asset Management Plan (AMP) seeks to communicate the infrastructure asset management requirements for the continued provision of commercially viable sewerage services that satisfy adopted and statutory customer service standards. It summarises Council's existing sewerage infrastructure assets and outlines the actions and funding required over the 10-year planning period.

1.2 Asset Description

This plan covers assets in the sewerage infrastructure asset class which comprises the following sewerage schemes:

- Rockhampton Sewerage Scheme
- Gracemere Sewerage Scheme
- Mount Morgan Sewerage Scheme

Council's sewerage infrastructure assets have a replacement value estimated at $384,970,285.

1.3 Levels of Service

Renewal funding is sufficient to continue providing existing services at current levels for the planning period. Based on the current strategies for the long-term treatment of sewage loads from North Rockhampton, South Rockhampton and Gracemere, there is sufficient funding over the 10-year planning period for acquisition projects. Current funding levels for operations and maintenance will be insufficient as the acquisition projects identified are completed.

1.4 Future Demand

The factors influencing future demand are as follows:

- Residential growth
- Development of industrial land
- Climate change, in particular the potential for more frequent and intense rainfall events
- Level of water conservation practices by the community

Future demand will be managed through a combination of upgrading existing assets, constructing new assets, and employing demand management strategies.

Key projects and initiatives identified in this AMP include:

- New trunk sewerage infrastructure to accommodate forecast growth in the Rockhampton and Gracemere Sewerage Schemes.
- On-going program for the rehabilitation of gravity mains in the Rockhampton Sewerage Scheme which includes sewer main relining, access chamber raising and localised gravity main/junction repairs.
- An interim strategy that will allow for the transfer of sewage loads from Gracemere to the existing South Rockhampton STP until a new South Rockhampton STP is constructed.
- Construction of a new 55,000 EP sewage treatment plant that will treat all sewage loads from South Rockhampton and Gracemere.
- The ultimate transfer of all sewage loads from Gracemere to a new South Rockhampton STP.
- Augmentation of the North Rockhampton STP to increase its capacity from 50,000 EP to 75,000 EP, and to improve its reliability.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

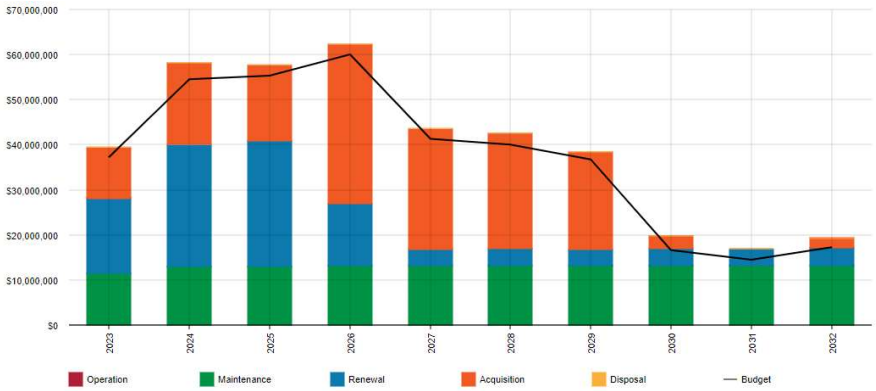
Lifecycle demand for sewerage services covered by this AMP includes operation and maintenance, renewal, acquisition, and disposal activities. The total lifecycle demand identified in this AMP is $398M over the next 10 years or $39.8M on average per year.

1.6 Financial Summary

1.6.1 What funding do we have?

Lifecycle funding (LTFF + External Funding) for sewerage services over the 10-year planning period is $374M, or $37.4M on average per year. The lifecycle funding that is currently available leaves a shortfall of $2.4M on average per year. The figure and table below show the lifecycle demand compared to lifecycle funding. It should be noted that operation and maintenance demand is shown as maintenance in the figure below. All values are in current year dollars.

Lifecycle Demand v Lifecycle Funding



Lifecycle Demand v Lifecycle Funding

Year	Lifecycle Demand			Lifecycle Funding		
	Renewal	Acquisition	Operations & Maintenance	Renewal	Acquisition	Operations & Maintenance
23/24	16,663,375	11,310,000	11,461,382	12,162,800	13,570,000	11,461,382
24/25	26,969,861	18,090,000	13,047,655	20,949,100	22,090,000	11,461,382
25/26	27,844,788	16,790,000	13,065,038	28,966,300	14,900,000	11,461,382
26/27	13,764,764	35,425,000	13,082,577	18,099,500	30,475,000	11,461,382
27/28	3,721,617	26,800,000	13,100,274	3,037,600	26,800,000	11,461,382
28/29	3,772,667	25,550,000	13,152,744	3,037,600	25,550,000	11,461,382
29/30	3,667,961	21,605,000	13,170,760	3,684,500	21,605,000	11,461,382
30/31	3,757,087	2,850,000	13,223,553	3,489,000	1,650,000	11,461,382
31/32	3,657,834	0	13,241,896	3,040,300	0	11,461,382
32/33	3,992,325	2,165,000	13,126,022	3,646,000	2,165,000	11,461,382
Totals	**107,812,279**	**160,585,000**	**129,671,901**	**100,112,700**	**158,805,000**	**114,613,820**

1.6.2 What we cannot do

There is insufficient funding over the 10-year planning period for the rehabilitation gravity mains. With a funding gap of approximately $0.7M/year Council will not be able to rehabilitate all the gravity mains that have been identified which may lead to an increase in gravity main blockages (CSS21) and sewage overflows to customer property (CSS18). This, however, is not a significant concern over the medium term, as these customer service standards are currently well within target.

Over the 10-year planning period the current level of funding for operations and maintenance will not be adequate. Increases in sewage treatment capacity, the number of sewage pump stations, and the length of the sewerage network will all contribute to an increase in funding demand.

1.6.3 Managing the Risks

Our present funding levels are sufficient to continue to manage risks in the medium term. We will continue to manage our risks associated with this asset class by:

- Monitoring customer service standards.
- Monitoring the performance of critical assets.
- Developing condition assessment programs for sewage treatment plants and sewage pump stations.
- Further developing procedures to forecast renewal demand.
- Continuing to engage specialist consultants to oversee the major sewage treatment plant projects.

1.7 Asset Management Planning Practices

Key assumptions made in this AMP are:

- Historical construction dates are accurate for gravity mains.
- Treatment plant renewal and acquisitions decisions are based on the condition and capacity assessments completed by specialist consultants.
- Future demand for sewerage services is based on population and employment projections set out in Planning Assumptions Report. This report is prepared in conjunction with the Local Government Infrastructure Plan.

1.7.1 Monitoring and Improvement Program

The next steps resulting from this AMP to improve asset management practices are:

- Complete a comprehensive review of the maintenance assets at all treatment plants and pump stations.
- Develop and document processes for the on-going management of both valuation and maintenance asset data at all treatment plants and pump stations.
- Review all current statutory and preventative maintenance activities/frequencies to ensure compliance and best practice. Update the maintenance strategy manual and R1 maintenance schedules with any changes identified. Ensure maintenance activities have sufficient detail and work schedule is deliverable.
- Develop and deliver a condition assessment program for all treatment plants and pump stations.
- Review the current processes for the capture and submission of as constructed asset information from internal capital projects to ensure the timely and accurate update of asset information in the R1 and GIS systems.
- Complete a comprehensive review of all valuation assets in readiness for 2023/24 revaluation.
- Develop and document procedures to improve the reliability of renewal demand forecasts. Incorporate Network Asset Criticality Guidelines, Queensland Water, Nov 2020 to assist with prioritising renewals.

2.0 INTRODUCTION

2.1 Background

The Rockhampton Regional Council (Council) is a registered sewerage service provider under the *Water Supply (Safety and Reliability) Act 2008.* Fitzroy River Water (FRW) is a commercial business unit of Council responsible for providing sewerage services to the communities of Rockhampton, Gracemere, and Mount Morgan.

This AMP should be read in conjunction with the following key documents:

- Corporate Plan 2022-2027
- Operational Plan
- Long Term Financial Forecast (LTFF)
- Enterprise Risk Management Framework
- Asset Management Policy
- Asset Custodianship Policy
- Asset Management Responsibilities Policy
- Local Government Infrastructure Plan (LGIP)
- Sustainability Strategy (Towards 2030)
- Capricorn Municipal Development Guidelines (CMDG)
- Gracemere and South Rockhampton STP Master Strategy and Design, Hunter H20, May 2022
- North Rockhampton STP Detailed Design Report, GHD, March 2020

Council owns and operates three sewerage schemes with an estimated replacement value of **$384,970,285**. These schemes are summarised in Table 2.1.1 below, and the sequencing of the sewage pump stations relative to the sewage treatment plants is shown in **Appendix D.**

Table 2.1.1: Sewerage Schemes

Sewerage Scheme	Sewage Treatment Plant (STP)	Sewerage Network
Rockhampton Sewerage Scheme*	North Rockhampton STP	25 Sewage Pump Stations 425 km Gravity Mains 11 km Rising Mains
	South Rockhampton STP	15 Sewage Pump Stations 162 km Gravity Mains 14 km Rising Mains
Gracemere Sewerage Scheme	Gracemere STP	13 Sewage Pump Stations 106 km Gravity Mains 15 km Rising Mains
Mount Morgan Sewerage Scheme	Mount Morgan STP	4 Sewage Pump Stations 14 km Gravity Mains 1 km Rising Mains

* The effluent limits set by the Department of Environment and Science are for the combined discharge from the North Rockhampton and South Rockhampton STPs into the Fitzroy River downstream of the Barrage. As such, the North Rockhampton and South Rockhampton Catchments form the Rockhampton Sewerage Scheme.

Key Stakeholders in the preparation and implementation of this AMP are shown in Table 2.1.2 below:

Table 2.1.2: Key Stakeholders in the AMP

Key Stakeholder	Role in Asset Management Plan
Elected Council	■ Represent the needs of community. ■ Provide the strategic direction and priorities for Council ■ Ensure services are sustainable
Chief Executive Officer	Implement the policies and strategic direction provided by Council.
General Manager of Regional Services	Setting direction and facilitating approval of policies on asset management, ensuring integration with corporate planning.
Chief Financial Officer	Financial management and reporting. Annual review of Council's long term financial forecast.
Manager Infrastructure Planning and Coordinator Assets & GIS	Corporate asset management governance functions including: ■ Asset Management Framework, Policy and Strategy ■ Administration and development of Council's corporate asset management and geographic information systems. Asset management functions related to sewerage infrastructure including: ■ Development of condition assessment activities and analytics for maintenance data. ■ Asset Management Plan development. ■ Financial asset modelling.
Manager Infrastructure Planning and Coordinator Strategic Infrastructure	Identification and prioritisation of new and upgrade projects through the LGIP.
Manager Project Delivery	Delivery of allocated major capital projects
Manager Water and Wastewater	Primary responsibility for assets and services including financial, planning, operation, risk management and works execution.

2.2 Goals and Objectives of Asset Ownership

Council principally exists to provide services that meet the needs of the community. The community requires the provision of safe, reliable, and financially sustainable sewerage services. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing, and appropriately controlling risks, and
- Linking asset management planning to the Long-Term Financial Forecast

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

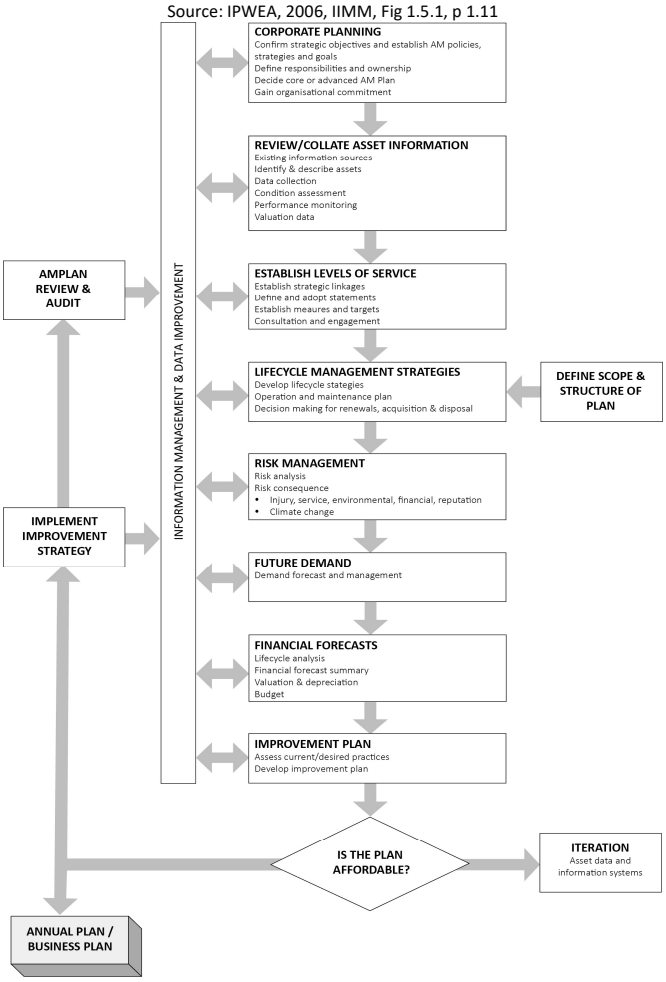
Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 [1]
- ISO 55000[2]

A road map for preparing an Asset Management Plan is shown below.

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11



[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13
[2] ISO 55000 Overview, principles and terminology

3.0 LEVELS OF SERVICE

3.1 Customer Expectations

The primary means of identifying community expectations is through the Corporate Plan. The Local Government Act 2009 requires Council to develop a 5-year Corporate Plan that incorporates community engagement. Table 3.1 outlines the community expectations relevant to the provision of sewerage services. These expectations are recorded as goals in the Corporate Plan.

Table 3.1: Customer Expectations

Theme	Community Expectations
Our Council	▪ We are fiscally responsible ▪ We are motivated to provide excellent service and have a strong organisational culture
Our Economy	▪ We plan for growth with the future needs of the community, business and industry in mind
Our Environment	▪ Our region is resilient and prepared to manage climate-related risks and opportunities
Our Infrastructure	▪ Our region has infrastructure that meet current and future needs

3.2 Strategic Goals and Corporate Outcomes

This AMP is prepared under the direction of Council's vision and corporate objectives.

Our vision is:

One Great Region
Live. Visit. Invest

The Corporate Plan identifies Council's corporate objectives as related to the goals listed in Table 3.1 above. Table 3.2 demonstrates that this AMP supports these corporate objectives.

Table 3.2: Corporate Objectives and how these are addressed in this AMP

Goals	Corporate Objectives	How objective is supported in AMP
We are fiscally responsible	Our budgets are financially sustainable and provide value and accountability to the community	Section 7.1 - Financial Sustainability and Projections
We are motivated to provide excellent service and have a strong organisational culture	We have a workplace culture that is safe, engaged, responsive, professional and accountable	Sections 3.4 - Customer Services Levels Section 8.2 - Improvement Plan
We plan for growth with the future needs of the community, business and industry in mind	Our strategic planning supports the Region's growing population and enables economic development	Section 4.3 - Demand Impact and Demand Management Plan Section 5.3 - Acquisitions
Our region is resilient and prepared to manage climate-related risks and opportunities	We have a greater understanding of climate risks and their impacts on the Region, which prepares us for challenges and opportunities in the future	Section 6 – Risk Management Planning Section 4.3 - Demand Impact and Demand Management Plan
Our region has infrastructure that meet current and future needs	Our Council assets are well maintained Our future projects are planned and prioritised	Section 5 – Lifecycle Management Plan

3.3 Legislative Requirements

There are many legislative requirements relating to the management of infrastructure assets. Below is a summary of the key legislative requirements relating to sewerage infrastructure assets and the services they provide.

Table 3.3: Legislative Requirements

Legislation	Key Requirements
Local Government Act 2009	Sets out role, purpose, responsibilities and powers of local governments including the preparation of the Corporate Plan, LTFF supported by infrastructure and asset management plans for sustainable service delivery
Water Supply (safety and reliability) Act 2008	Preparation of customer service standards. (Chapter 2, Part 4, Division 3)
Environmental Protection Act 1994	Defines Environmentally Relevant Activities (ERA) as activities that could have impacts on the environment and therefore require an Environmental Authority to be issued for the activity. (Chapter 1, Part 3, Division 2, Subdivision 4) The Department of Environment and Science sets licence conditions for ERA's (both Water and Sewage Treatment Plant activities). Sets out requirement to prepare Environmental Management Plans that proposes mechanisms to manage potential environmental impacts. (Chapter 3, Sections 39-40).
Work Health and Safety Act 2011	A person conducting a business or undertaking must ensure as is reasonably practicable, the health and safety of workers while the workers are at the business or undertaking work at the business. (Division 2 Primary Duty of Care, Section 19)
Public Health Act 2005	Public Health risks include drinking water supplied by a drinking water service provider, sewerage and recycled water. (Part 1, Sec 11) The role of local government is to ensure the community is protected from public health risks under its control.
Planning Act 2016	Local Government may by resolution charge for providing trunk infrastructure for development. (Chapter 4 Subdivision 1, 113). Process for development approvals and applications associated water and sewerage infrastructure. (Chapter 3, Parts 1 – 7).
Plumbing and Drainage Act 2018	Able to regulate and monitor on – site sewage facilities where there is no Council reticulated network (Part 6, Division 2, S 137).

3.4 Customer Levels of Service

The Water Supply (Safety and Reliability) Act 2008 requires service providers prepare Customer Service Standards (CSS) to ensure customers who do not have a contract with the service provider for the supply of registered services are protected by standards relating to the supply.

Council has adopted CSS that address the following key service considerations:

- Effective transportation of sewage
- Long-term continuity of sewerage services
- Responsiveness to customer requests

Council's CSS targets and recent performance are shown in Tables 3.4.1 and 3.4.2.

Table 3.4.1: Customer Service Standards and Actual Performance

CSS Ref.	Performance Indicator	Rockhampton/Gracemere Sewerage Schemes			Mount Morgan Sewerage Scheme		
		Target	21/22	22/23	Target	21/22	22/23
Effective Transportation of Sewage							
CSS17	Sewage overflows – total (number per 100 km main)	**<30**	49.52	20.22	**<10**	ND	0
CSS18	Sewage overflows to customer property (number per 1000 connections)	**<10**	6.89	2.8	**<5**	ND	0
CSS19	Odour complaints (number per 1000 connections)	**<1**	1	0.45	**<1**	Combined with Rockhampton/ Gracemere Sewerage Schemes	
CSS20	Incident Response time						
	Priority 1 – 1 hour response	**>95%**	82%	73%	**>95%**	ND	ND
	Priority 2 – 2 hours response	**>95%**	84%	81%	**>95%**	ND	ND
	Priority 3 - 24 hours response	**>95%**	96%	100%	**>95%**	ND	ND
	Incident Restoration time						
	Priority 1 – 5 hours restoration	**>95%**	91%	91%	**>95%**	ND	ND
	Priority 2 – 24 hours restoration	**>95%**	97%	96%	**>95%**	ND	ND
	Priority 3 – 5 days restoration	**>95%**	97%	98%	**>95%**	ND	ND
Long Term Continuity of Sewerage Services							
CSS21	Sewer main breaks and chokes (number per 100 km main)	**<50**	16.60	12.19	**<20**	ND	ND
CSS22	Sewer inflow and infiltration (ratio of Peak Wet Weather Flow to Average Dry Weather Flow)	**<5**	3.03	2.96	**< 5**	2.02	1.75

ND indicates that no data is available, however the indicator is relevant.

Table 3.4.2: Customer Service Standards and Actual Performance

Performance Indicator	Rockhampton, Gracemere and Mount Morgan Sewerage Schemes		
	Target	21/22	22/23
Responsiveness to Customer Requests			
Installation of sewage connections (within sewered area) *	<15 Working days	100%	100%
Complaints (excluding maintenance of water and sewerage services) – advise outcome	<20 Working days	100%	100%

* Within 15 days of approval of the application and payment of the related fee or by the installation date agreed with customer outside the 15-day period

The following observations are made in relation to Council's recent performance against the CCS targets.

- There was a high number of sewage overflows per 100 km of main (CSS17) in 2021/22. Sewage overflows often occur during wet weather events because of stormwater entering and overloading the sewerage network.
- Further investigation is required to determine whether CSS20 reporting includes houseline blockages.

3.5 Performance Benchmarking

The Water Supply Safety and Reliability Act requires water service providers in Queensland to report annually to the regulator on a suite of key performance indicators (KPIs). The Queensland Water Directorate then prepares an annual benchmarking report based on the information received. The data collected and reported by the Queensland Water Directorate enables service providers to compare their performance against similar sized service providers.

Table 3.5 summarises Council's recent performance compared to other medium sized water service providers.

Table 3.5: Performance Benchmarking

Performance Indicator	Rockhampton Regional Council		Bundaberg Regional Council		Fraser Coast Regional Council		Mackay Regional Council	
	2020/21	2021/22	2021/22	2021/22	2020/21	2021/22	2020/21	2021/22
Sewer main breaks and chokes (number per 100 km's of main)	16.5	16.3	30.1	29.9	6.5	3.6	4.6	1.3
Sewerage operating costs ($'s per property)	308	304	515	549	445	499	618	686
Sewerage economic real rate of return (%)	7.8	7.9	4	4.3	4.6	3.7	2.5	1.9
Annual residential sewerage bill ($)	685	678	817	802	794	786	857	841

The following key observations are made in relation to Council's recent performance compared to similar size water service providers:

- Council's economic real rate of return is the highest of the cohort.
- Council's sewerage operating costs and annual residential sewerage bills are the lowest of the cohort.

4.0 FUTURE DEMAND

4.1 Demand Drivers

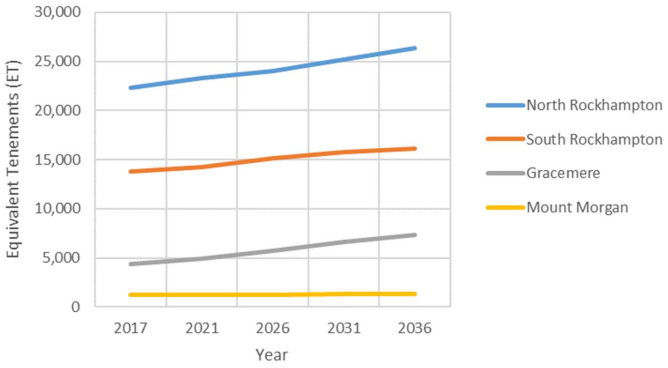
Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, customer preferences and expectations, technological changes, economic factors and environmental awareness, etc.

4.2 Demand Forecasts

Long term, region wide planning for infrastructure that integrates with land use planning is detailed in the Local Government Infrastructure Plan (LGIP), which is contained within the Rockhampton Region Planning Scheme. The LGIP outlines the trunk infrastructure our Region will need to support predicted future growth and development and is underpinned by the Planning Assumptions Report which provides a logical and consistent basis for detailed infrastructure planning within network catchments and states assumptions about the type, scale, location and timing of future development and subsequent population and employment growth up to 2036.

Figure 4.2 below shows the projected sewer catchment loadings for the period 2017 to 2036 as set out in the LGIP. In this figure, demand is expressed in equivalent tenements (ET), which is a measure of the load an average single residential house under dry weather places on the sewage system and is calculated by factoring different ET rates for different land uses to arrive at a total ET amount for the area. Significant growth in demand is forecast to occur in North Rockhampton and Gracemere. The growth in these areas is largely due to residential development. There is also some forecast growth in South Rockhampton. This growth is associated with the potential redevelopment and intensification of use on existing lots, primarily around the CBD area.

Figure 4.2: Equivalent Tenements Projections



4.3 Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets, providing new assets to meet demand, and demand management practices. Demand management practices can include non-asset solutions. The following non-asset solutions will continue to be employed by Council:

Education

Council educates people on harmful substances and practices that add extra costs and hinder effective and efficient treatment of sewage through its website.

Regulation of Trade Waste

Council controls the quality of the sewage entering the sewerage network by requiring all non-domestic users to apply for trade waste approval. Trade waste may have an organic strength many times more than that of domestic sewage and can contain other substances which sewerage systems are not designed to treat. Trade waste approval sets out the trade waste generators responsibility to comply with the permit agreement conditions and any pre-treatment devices to be installed and operated by the trade waste generator.

Wet Industry location

Controlling the location of new industries with a high sewage volume. The Gracemere Industrial Area has been established with the capacity to cater for wet industries.

Water Conservation

There is some relationship between water usage and sewer catchment loadings. Council has adopted a water pricing strategy that encourages water conservation.

4.4 Asset Programs to meet Demand

New assets required to meet demand may be acquired, donated or constructed. Additional assets are summarised in **Appendix A** and detailed in **Appendix B**.

Acquiring new assets will commit Council to ongoing operations, maintenance, and renewal costs for the period that the service provided from the assets is required. These future costs are considered in the demand forecasts.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate its assets to provide sewerage services while managing lifecycle costs.

5.1 Background Data

5.1.1 Physical Parameters

The assets covered by this AMP are summarized in Table 5.1.1

Table 5.1.1 Assets covered by this Plan

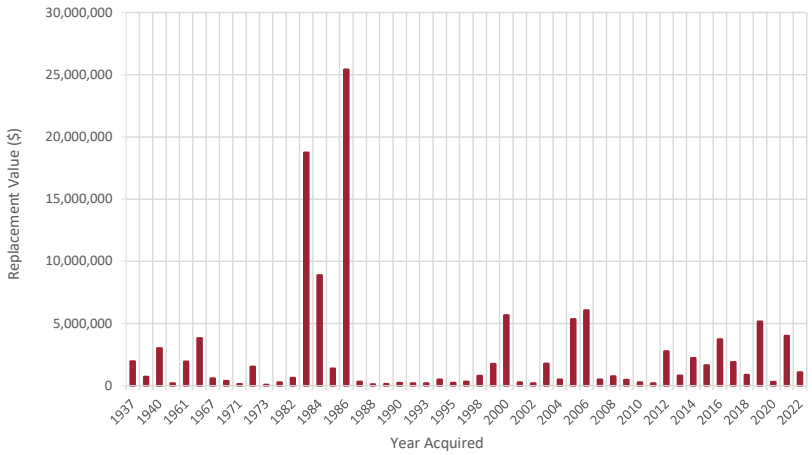
Asset Category	Asset Type	Number/ Length (km)	Replacement Value
Active	Sewage Treatment Plants (STP)	4	$120,298,111
	Sewage Pump Stations (SPS)	57	
Passive	Gravity Mains Rising Mains	706 42	$264,672,174
	TOTAL		**$384,970,285**

Appendix D provides the sequencing of the sewage pump stations that transport sewage to each sewage treatment plant.

Active Assets – Age Profile

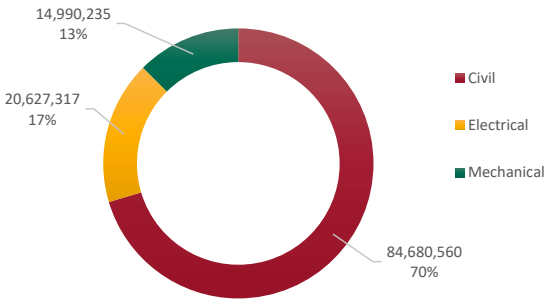
The age profile for all active assets is shown in Figure 5.1.1.1. Construction of the South Rockhampton STP in 1983, the Gracemere STP in 1984 and the North Rockhampton STP in 1986 account for the most significant spikes. The Mount Morgan STP was constructed in 2005.

Figure 5.1.1.1: Active Assets - Age Profile



Active assets include civil, mechanical and electrical assets. As per Figure 5.1.1.2. Civil assets account for 70% of all active assets by replacement value. Civil assets include all structures associated with the treatment and transportation of sewage.

Figure 5.1.1.2 – Breakdown of Active Assets

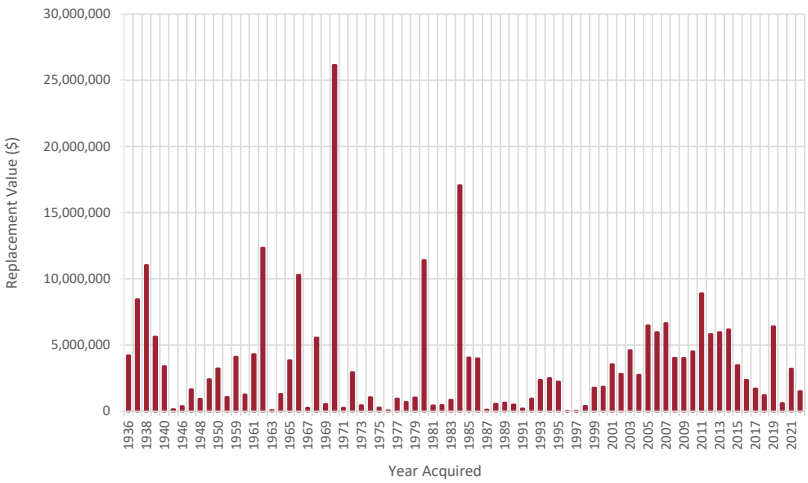


Passive Assets – Age Profile

Gravity and Rising Mains

The age profile for gravity and rising mains is shown in Figure 5.1.1.3. The earliest gravity mains constructed from 1936 onwards were earthenware (EW) pipes. Between 1936 and 1949 approximately 200 km of EW gravity mains were constructed. From 1950 concrete pipes were used and this accounts for the big spike in 1970. From 1983 to 1986 the South Rockhampton and North Rockhampton STPs were constructed and there was a spike in the construction of gravity mains using PVC pipes. In the early 2000s many new gravity mains were constructed due to growth in residential developments. A sewer main relining program also commenced in the early 2000s and since then approximately 174 km of gravity mains (EW and concrete pipes) have been relined. In 2015 Council's relining program was reduced and residential developments began to slow. In 2019 a new sewer rising main was constructed between the Jardine Park SPS and the South Rockhampton STP.

Figure 5.1.1.3: Sewer Mains - Age Profile



5.1.2 Asset Capacity, Performance and Condition

Sewage Treatment Plants

Information on each sewage treatment plant, including information relating to capacity, performance, and condition, is found in Table 5.1.2.1 below.

Table 5.1.2.1: Sewage Treatment Plants

Information	South Rockhampton STP	North Rockhampton STP	Gracemere STP	Mount Morgan STP
Year constructed	1983*	1986	1984	2005
Design	Extended Aeration	Activated Sludge	Extended Aeration	Extended Aeration
Contaminants removed	SS, BOD, N, Bacterial Pathogens	SS, BOD, N, Bacterial Pathogens	SS, BOD, N, Bacterial Pathogens	SS, BOD, N, Bacterial Pathogens
Fixed secondary power supply in place	Yes	Yes	No	No
Original (ADWF[$]) design capacity (KL/day)	8,500[3]	12,700[4]	1,760[5]	140[6]
Actual (ADWF) inflow in 2022 (KL/day)	4,727	10,069	1,964	150
Average inflow in 2022 (KL/day)	6,072	11,936	2,045	164
Maximum daily Inflow in 2022 (KL/day)	33,190	56,435	5,049	306
No. of days where inflow is > 3 x ADWF^	12	9	0	0
Effluent discharge location	Fitzroy River	Fitzroy River	Land	Land[@]
Effluent re-use scheme in place	No	No[#]	Yes	Yes
Effluent quality	-	-	Class A	Class A
Effluent re-used (%)	-	-	30%[!]	95%
Reportable Licence limit breaches over the last year[%]	1		1	1
Reactive maintenance work orders over the last 2 years	31 (Electrical) 37 (Mechanical)	44 (Electrical) 82 (Mechanical)	20 (Electrical) 39 (Mechanical)	47 (Electrical) 49 (Mechanical)

Commentary

* In 2015/16 the South Rockhampton STP underwent modifications to a Modified Ludzack Ettinger (MLE) process. These modifications improved effluent quality through the removal of nitrogen. This improvement in effluent quality allowed the West Rockhampton STP to be decommissioned after a rising main between the Jardine Park SPS and the South Rockhampton STP was constructed.

[$] Average Dry Weather Flow (ADWF) is calculated according to the definition in the manual of British Practice in Water Pollution Control, 1975

[3] North Rockhampton STP Operating Manual
[4] Sewerage Treatment Plant Strategy Planning Study, Aug 2013, Sinclair, Knight, Merz
[5] Sewerage Treatment Plant Strategy Planning Study, Aug 2013, Sinclair, Knight, Merz
[6] Mount Morgan STP Operating Manual

^ Current design guidelines recommend a peak treatment plant capacity of 3 x ADWF.

@ Under certain conditions discharge is permitted to the Dee River

The infrastructure is in place to supply treated effluent to the Rockhampton Jockey Club, however there are licence related matters to be resolved before supply can commence.

! Approximately 70% of effluent from the Gracemere STP is discharged to grazing land, and 30% is reused on sporting fields.

% The licence breach for the Rockhampton Sewerage Scheme was a free residual chlorine exceedance. For the Mount Morgan STP, there was a discharge to the Dee River that was outside of licence. The Gracemere STP has an ongoing breach which has been discussed with the Department of Environment and Science at a high level, of continued irrigation beyond what is allowed under the licence conditions.

Sewage Pump Stations

Information relating to the capacity, performance and condition of Council's Sewage Pump Stations is found in Table 5.1.2.2 below.

Table 5.1.2.2: Sewage Pump Stations

Information	Rockhampton Sewerage Scheme	Gracemere Sewerage Scheme	Mount Morgan Sewerage Scheme
No. of SPS	40	13	4
No. of SPS where pump duty requirements are met	40	13	4
No. of SPS where emergency storage has been assessed	30	10	0
No. of SPS where emergency storage is < 4hrs*	9	5	-
No. of SPS where emergency storage is < 2hrs#	1	1	-
No. of SPS where pump capacity is > 50L/s	6	1	-
No. of SPS where pump capacity is > 50L/s and a secondary power supply is on-site$	2	1	-
No. of SPS where a transfer switch is available for a mobile generator^	27	13	1
Reactive maintenance work orders over the last 2 years	245 (Electrical) 168 (Mechanical)	124 (Electrical) 191 (Mechanical)^	17 (Electrical) 44 (Mechanical)^

Commentary

* The CMDG specifies a minimum 4-hours emergency storage will be provided at each SPS.

The CMDG specifies an absolute minimum 2-hours emergency storage may be provided subject to the completion of a satisfactory risk assessment and the provision of a generator transfer switch in the switchboard.

$ The CMDG states that all SPS with a pump capacity of more than 50L/s shall be provided with an on-site secondary power supply, even if it complies with the emergency storage capacity requirement.

^ The high volume of reactive mechanical maintenance in the Gracemere Sewerage Scheme requires investigation.

Gravity and Rising Mains

Information regarding the capacity, performance and condition of Council's gravity and rising mains is found in Table 5.1.2.3 below.

Table 5.1.2.3: Gravity and Rising Mains

Information	Rockhampton Sewerage Scheme	Gracemere Sewerage Scheme	Mount Morgan Sewerage Scheme
% Of network that can accommodate 5 x ADWF	100%	100%	100%
% Of network where depth of flow does not exceed 60% at PDWF	100%	100%	100%
Length (%) of gravity mains relined:			
- Trunk gravity mains (≥300mm)	28km (50%)	-	-
- Earthenware gravity mains	122km (53%)	-	-
- Concrete gravity mains	52km (30%)	-	-
No. of locations with repeat blockages over the last 2 years:			
- Gravity Mains	22	3	0
- House Connections	49	9	0
- Combine Lines	21	0	0

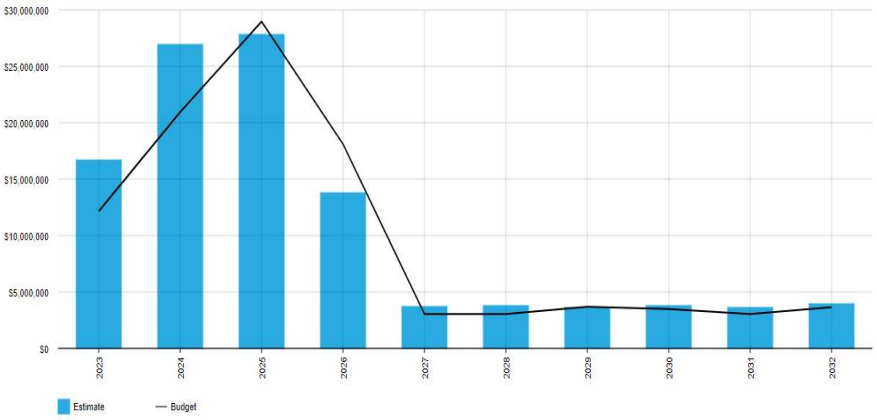
5.2 Renewals

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces, or renews an existing asset to its original service potential. Work over and above restoring an asset to its original service potential is an acquisition, resulting in increased asset replacement value and additional future operations and maintenance costs.

5.2.1 Summary of Renewal Demand

Renewal demand is the renewal work required over the planning period of the AMP. Renewal demand is summarised by project per year in **Appendix A**, and project briefs are provided in **Appendix B**. **Appendix C** summarises renewal demand compared to renewal funding for each project. Figure 5.2.1 shows renewal demand (Estimate) relative to the renewal funding (Budget).

Figure 5.2.1: Renewal Demand



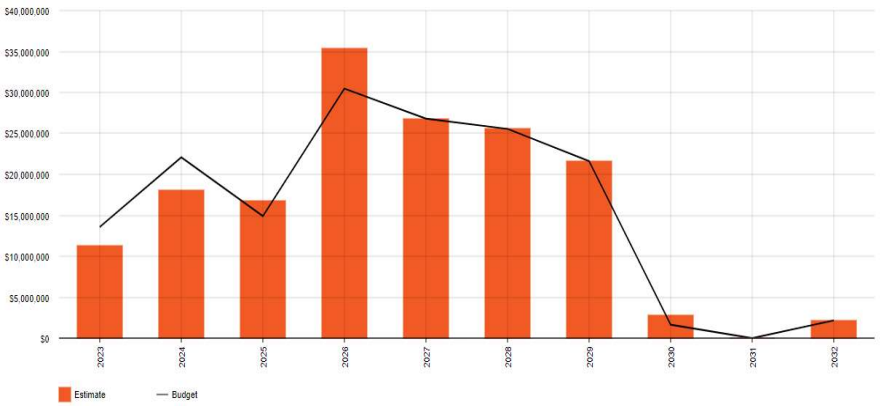
5.3 Acquisitions

Acquisition refers to new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its current capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Council through the development approval process or by other levels of government.

5.3.1 Summary of Acquisition Demand

Acquisition demand is the asset acquisitions required over the planning period of the AMP. Acquisition demand is summarised by project per year in **Appendix A**, and project briefs are provided in **Appendix B**. **Appendix C** summarises acquisition demand compared to the acquisition funding for each project. Figure 5.3.1 shows acquisition demand (Estimate) relative to acquisition funding (Budget) from the LTFF and external sources.

Figure 5.3.1: Acquisition Demand



5.4 Disposals

Disposals includes any activity associated with the disposal of a decommissioned asset including sale, demolition, or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.4. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in this table. Any costs or revenue gained from asset disposals is included in the long-term financial forecast.

Table 5.4: Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
West Rockhampton STP	This treatment plant was decommissioned in 2019, however the physical assets remain.	TBD	TBD	TBD
Mount Morgan STP	This treatment plant will be decommissioned once the new Mount Morgan STP is operational.	2026	TBD	TBD
Gracemere STP	This treatment plant will be decommissioned once the new South Rockhampton STP is operational.	TBD	TBD	TBD

5.5 Operations and Maintenance

5.5.1 Operations

Operations includes the on-going regular activities required to provide services. This includes process control and monitoring, energy costs and business support functions.

A SCADA system is used to monitor and control the active assets within each sewerage supply scheme. This system gathers and displays the status of key equipment (e.g., pump running) and the values of analogue variables (e.g., flow rates, water levels in critical pump wells) and enables control (manual and/or automatic) of key equipment from a manned 24-hour control room. Alarms log abnormal situations and alert operators to operational faults.

5.5.2 Maintenance

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Maintenance includes planned and unplanned (reactive) maintenance activities.

Planned Maintenance

Planned Maintenance includes work activities that are identified and managed proactively through a maintenance management system. FRW's maintenance strategy is documented in the *Maintenance Strategy Manual for the Active and Passive Assets of Fitzroy River Water*. This document sets out the planned maintenance strategies for both active and passive assets. Planned maintenance activities include:

a) Safety and Compliance (Statutory) Maintenance

Safety and compliance maintenance is the minimum level of maintenance required to meet the legal and other mandatory requirements contained in the associated standards and regulations. Safety and compliance maintenance occurs at defined intervals and aims to ensure equipment is safe for its operating conditions.

b) Preventative Maintenance

Preventative maintenance is planned maintenance that is generally based on a manufacturer's recommendations for servicing equipment. Preventative maintenance is scheduled to occur at defined interval and aims to optimise the whole of life service potential of the asset.

c) Planned Corrective Maintenance

Planned corrective maintenance refers to actions that may be identified through the completion of other planned or reactive maintenance activities, or asset condition monitoring. These maintenance activities are usually one-off and can be planned and scheduled according to their priority.

Reactive Maintenance

Reactive Maintenance includes unplanned repair work that is carried out in response to customer service requests or operational faults.

5.5.3 Operations and Maintenance Expenditure

Operations and maintenance expenditure over the last three financial years is shown in Table 5.5.3 below.

Table 5.5.3: Operations and Maintenance Expenditure

Year	Passive Assets	Active Assets	Expenditure
2021/22	$2,831,750	$6,445,112	$9,276,862
2022/23	$2,042,754	$9,660,452	$11,703,206
2023/24*	$1,914,179	$9,547,203	$11,461,382

* This is the adopted budget for 2023/24 and it includes Sewage Treatment Plant sludge management costs of $1,675,000.

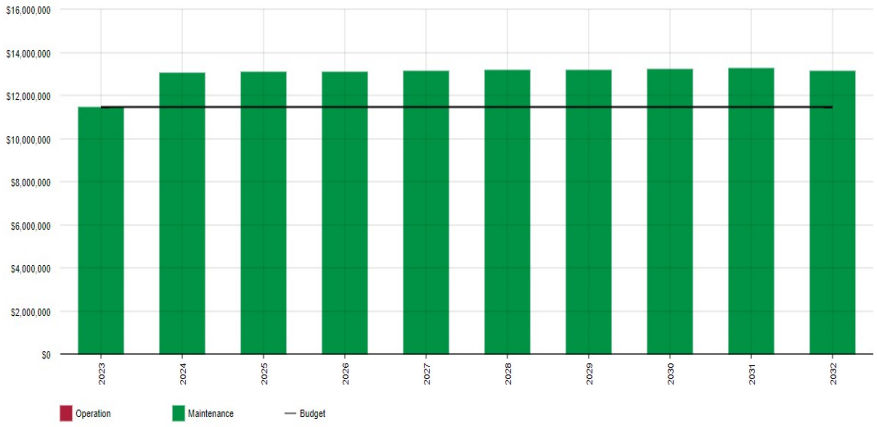
5.5.4 Forecast Operations and Maintenance Costs

Operations and maintenance costs for passive assets are expected to vary relative to the total length of the sewerage network. The sewerage network will continue to grow through developer contributions which have averaged 5.4km/year of new gravity mains over the last 7 years; and through the delivery of other trunk infrastructure acquisition projects. Overall, the sewerage network is expected to grow by approximately 1% per year.

Operations and maintenance costs for active assets are expected to vary relative to the number of sewage treatment plants, sewage treatment capacity, and the number of sewage pump stations. Over the 10-year planning period the number of sewage treatment plants will decrease by 25%, overall treatment capacity will increase by 40%, and the number of sewage pump stations will increase by 10%.

Figure 5.5.4 below shows the forecast operations and maintenance costs (Maintenance) relative to the 2023/24 budget.

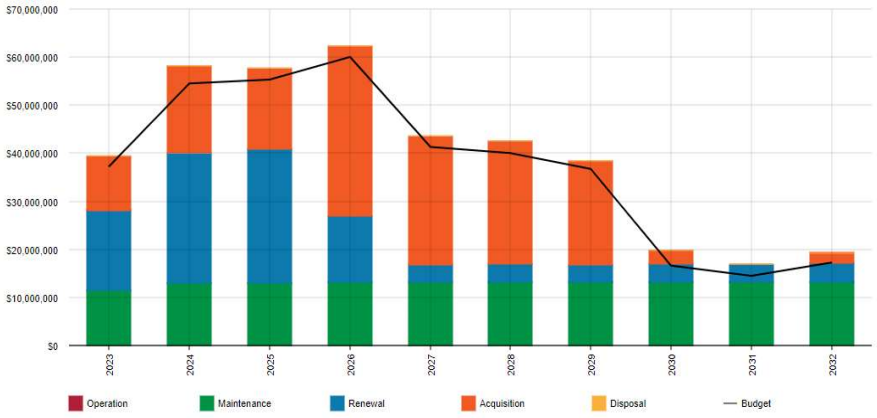
Figure 5.5.4: Forecast Operations and Maintenance Costs



5.6 Summary of lifecycle demand

The 10-year lifecycle demand for this AMP is shown in Figure 5.6. This figure shows the lifecycle demand (operation and maintenance, renewal, acquisition, and disposal) relative to lifecycle funding (Budget) which includes the LTFF, current operations and maintenance budget, and external funding. All figure values are shown in current day dollars.

Figure 5.6: Lifecycle Summary



6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'[7].

An assessment of risks[8] associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant damage or disruption of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1.

Table 6.1 Critical Assets

Asset Type	Asset Description	Failure Mode	Potential Impact
Sewage Treatment Plants	All	Civil, Mechanical or Electrical asset failure	Widespread disruption of normal operations and sewage overflows to the built and natural environments, with potential health impacts Failure to comply with licence limits
Sewage Pump Stations	All	Civil, Mechanical or Electrical asset failure	Widespread disruption of normal operations and sewage overflows to the built and natural environments, with potential health impacts and sanction pursuant to the EP Act.
Gravity Mains	Trunk mains (≥ 300mm dia.)	Blockage/Collapse	Widespread disruption of normal operations and sewage overflows to the built and natural environments, with potential health impacts and sanction pursuant to the EP Act.
Rising Mains	All	Blockage/Collapse	Widespread disruption of normal operations and sewage overflows to the built and natural environments, with potential health impacts and sanction pursuant to the EP Act.

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

[7] ISO 31000:2009, p 2
[8] Rockhampton Regional Council Enterprise Risk Management Policy

6.2 Risk Assessments

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

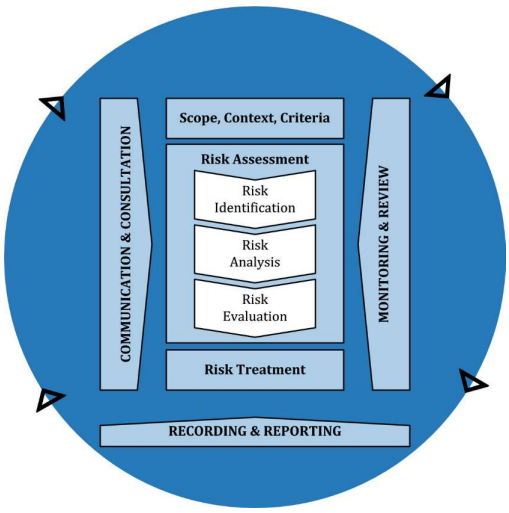


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks. An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Table 6.2 outline the critical risks related to the supply of sewage services.

Table 6.2: Critical Risks and Treatment Plans

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk	Treatment Costs	ALARP	Future Controls
Sewage treatment plants	Insufficient treatment capacity or inadequate process to achieve the licence limits set by the Department of Environment and Science	H	Demand forecasting through LGIP. Consultants engaged to complete capacity and process assessments, and to assist with long-term sewage treatment strategies. Continued monitoring and reporting of performance against licence limits.	M	North Rockhampton STP Augmentation Project, - $75M South Rockhampton STP and Gracemere STP Interim Strategy - $11M. South Rockhampton and Gracemere Long-Term Sewage Treatment Strategy - $110M	Y	
	Mechanical and electrical equipment failure	H	Preventative maintenance strategy is in place. Renewals identified based on asset age and maintenance history. SCADA system monitors the operation of active assets 24 hours/day for any faults. On-call crew available 24hrs/day for reactive maintenance.	M	Operations and maintenance budget includes preventative and reactive maintenance activities The capacity/process design related projects identified above include mechanical and electrical asset renewals Sewage Treatment Plant - Mechanical and Electrical Renewals - $0.16M	N	Develop and implement an on-going condition assessment program for sewage treatment plants. Review preventative maintenance strategy.
	Structural failure	H	Ad hoc assets inspections	H	Operations and maintenance budget is used for ad hoc asset inspections.	N	Develop and implement an on-going condition assessment program for sewage treatment plants
	Power supply outage	VH	A secondary power supply (generator) is permanently installed at the North Rockhampton STP and the South Rockhampton STP.	M	Operations and maintenance budget includes planned maintenance activities associated with back-up generators	N	Complete a risk assessment to determine whether a secondary power supply is required on-site at the Mount Morgan STP

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk	Treatment Costs	ALARP	Future Controls
Sewage Pump Stations	Mechanical and electrical equipment failure	H	Preventative maintenance strategy is in place. Renewals identified based on asset age and maintenance history. SCADA system monitors the operation of active assets 24 hours/day for any faults. On-call crew available 24hrs/day for reactive maintenance.	M	Operations and maintenance budget includes preventative and reactive maintenance activities. Sewage Pump Stations - Mechanical and Electrical Renewals - $2.2M	N	Develop and implement an on-going condition assessment program for sewage pump stations. Review preventative maintenance strategy.
	Insufficient pump sizing and/or emergency storage capacity	H	CMDG design guidelines are in place and regularly reviewed. Last reviewed January 2022. Pump sizing and storage capacity has been reviewed for most of the existing sewage pump stations.	M	Nil	N	Review all sewage pump stations where emergency storage capacity is <4hrs and assess the need for a secondary power supply or increase storage capacity.
	Structural failure	H	Ad hoc assets inspections	H	Operations and maintenance budget is used for ad hoc asset inspections.	N	Develop and implement an on-going condition assessment program for sewage pump stations.
	Power supply outage	VH	A secondary power supply (generator) is permanently installed at the Armstrong Street SPS, Forrest Parks Estate SPS and Yaamba Road SPS. A transfer switch is available for the connection of a mobile generator at most other sewage pump stations.	H	Operations and maintenance budget includes planned maintenance activities associated with back-up generators	N	Install a secondary power supply at all SPS where the pump capacity is >50L/s as per the CMDG requirements. Assess critical overflow locations that demand enhanced controls i.e., sewage pump stations with overflows above the Barrage.

Service or Asset Risk	What can Happen	Inherent Risk	Existing Controls	Residual Risk	Treatment Costs	ALARP	Future Controls
	Sewage overflows due to high stormwater inflows during rainfall events	H	Some benefit is realised by rehabilitating gravity mains and access chambers that are found to be in a poor condition.	H	Gravity Mains Rehabilitation Program – $31M	N	Installing flow loggers to identify sub-catchments where stormwater inflow is high. Develop and implement an inspection program to identify inflow sources.
Rising Mains	Pipe failure	H	CMDG design guidelines are in place and regularly reviewed. Last reviewed January 2022.	H	Nil	N	Rising mains can be exposed to highly corrosive environments and must resist static, dynamic and transient (surge) pressures over the life of the asset. Complete risk assessments on all existing rising mains.
Trunk Gravity Mains	Pipe Blockage or Collapse	H	50% of all trunk gravity mains in the Rockhampton Sewerage Scheme have been relined. On-call crew available 24hrs/day for reactive maintenance. Follow-up CCTV inspections occur to investigate the cause of every gravity main blockage.	M	Gravity Mains Rehabilitation Program – $31M Operations and maintenance budget includes reactive maintenance activities.	N	Monitor CSS 18 and CSS 21 to assess the impact of underfunding of the Gravity Mains Rehabilitation Program.
	Sewage overflows due to high stormwater inflows during rainfall events	H	Some benefit is realised by rehabilitating gravity mains and access chambers that are found to be in poor condition.	H	Gravity Mains Rehabilitation Program – $31M	N	Installing flow loggers to identify sub-catchments where stormwater inflow is high. Develop and implement an inspection program to identify inflow sources.

Note * The residual risk is the risk remaining after the selected risk treatment plan is implemented.

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to our customers and the services we provide. To adapt to changing conditions and growth over time we need to understand our capacity to respond to possible disruptions and be positioned to absorb disturbance and act effectively in a crisis to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity, climate change risk assessment and crisis leadership. Our current measures of resilience are shown in Table 6.3 which includes the type of threats and hazards and the current approach that the Council takes to ensure service delivery resilience.

Table 6.3: Resilience Assessment

Threat / Hazard	Current Resilience Approach
Environmental damage / health hazards from effluent discharges	▪ Monitoring program in place that enables licence holder to show compliance with the licence limits. Frequency and timing of sampling enables compliance with licence conditions and helps detect any changes in operations that may lead to an unacceptable negative impact on compliance. ▪ Effluent re-use schemes operating in Gracemere and Mount Morgan. ▪ Treatment Plant Operation is monitored 24 hours a day through SCADA to minimise plant malfunction. ▪ Capital upgrades identified to improve capacity and performance of sewage treatment plants.
Widespread spills from the sewerage network under wet weather and flood conditions	▪ Sewer overflow lines (SOF's) to storm water network in known wet weather spill areas and at some pump stations. ▪ Reflux valves fitted to properties where sewage could back up and enter property. ▪ High level and overflow alarms at all pump stations for advance warning of an overflow event. ▪ Procedures in place to manage overflows should they occur including reporting to the Department of Environment and Science, education, and clean-up to minimise impacts. ▪ Hydraulic modelling of the system which identifies parts of the existing sewerage network which may have inadequate system capacity. ▪ New pump stations must install overflow management e.g. storage, overflow line. ▪ Electrical switchboards are placed above Q100 flood levels. ▪ Sewerage network designed to carry 5 x ADWF. ▪ Sewage Treatment Plants designed to treat 3 x ADWF before bypassing.
Persistent spills from sewerage network under normal operating conditions (dry weather)	▪ Ongoing program of investigating and rehabilitating gravity mains and access chamber in Rockhampton. ▪ Preventative maintenance program at Pump Stations and Treatment Plants. ▪ Control over the design and construction of new sewage infrastructure in subdivisions through the CMDG. ▪ Procedures in place to manage overflows should they occur including reporting to the Department of Environment and Science, education, and clean-up to minimise impacts. ▪ Monitor the performance of the network with a level of service that measures the number of sewage overflows and blockages. ▪ Sewage network designed to carry 5 x ADWF.

7.0 FINANCIAL SUMMARY

This section contains the financial requirements resulting from the information presented in the previous sections of this AMP. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Sustainability and Projections

7.1.1 Sustainability of service delivery

There are four key indicators of sustainable service delivery that are considered in the AMP for this service area. These indicators are as follows:

- Asset Renewal Funding Ratio
- Asset Sustainability Ratio
- 10-year Lifecycle Funding Ratio
- Asset Consumption Ratio

Asset Renewal Funding Ratio[9]

The Asset Renewal Funding Ratio measures the ability of Council to fund its projected asset renewals. This ratio is calculated by dividing the 10-year renewal funding by the 10-year renewal demand.

The Asset Renewal Funding Ratio is **93%**

The only notable renewal funding gap over the 10-year planning period is in the gravity mains rehabilitation program. This program is under funded by approximately $0.7M/year.

Asset Sustainability Ratio[10]

The Asset Sustainability Ratio approximates the extent to which the infrastructure assets managed by a Council are being replaced as they reach the end of their useful lives. A ratio of >80% per annum (on average over the long-term) is the target for infrastructure assets owned by Council. This ratio is calculated by dividing average yearly renewal funding over the life of the AMP by annual depreciation.

The Asset Sustainability Ratio **214%**

The ratio is high due to the significant renewal works that will occur at the North Rockhampton STP and the South Rockhampton STP.

Lifecycle Funding Ratio

The Lifecycle Funding Ratio represents the extent to which all demand (operations, maintenance, renewal and acquisition) is funded over the 10-year planning period. This ratio is calculated by dividing total funding by total demand.

Lifecycle Funding Ratio is **94%**

Table 7.1 shows lifecycle demand versus the lifecycle funding for the 10-year planning period. This ratio is less than 100% on account of the funding gaps that currently exist.

[9] Financial Management (Sustainability) Draft Guideline, 2022, Version 1, Sustainability Measure 8
[10] Financial Management (Sustainability) Draft Guideline, 2022, Version 1, Sustainability Measure 6

Table 7.1: Lifecycle Demand vs Lifecycle Funding

Year	Lifecycle Demand			Lifecycle Funding		
	Renewal	Acquisition	Operations & Maintenance	Renewal	Acquisition	Operations & Maintenance
23/24	16,663,375	11,310,000	11,461,382	12,162,800	13,570,000	11,461,382
24/25	26,969,861	18,090,000	13,047,655	20,949,100	22,090,000	11,461,382
25/26	27,844,788	16,790,000	13,065,038	28,966,300	14,900,000	11,461,382
26/27	13,764,764	35,425,000	13,082,577	18,099,500	30,475,000	11,461,382
27/28	3,721,617	26,800,000	13,100,274	3,037,600	26,800,000	11,461,382
28/29	3,772,667	25,550,000	13,152,744	3,037,600	25,550,000	11,461,382
29/30	3,667,961	21,605,000	13,170,760	3,684,500	21,605,000	11,461,382
30/31	3,757,087	2,850,000	13,223,553	3,489,000	1,650,000	11,461,382
31/32	3,657,834	0	13,241,896	3,040,300	0	11,461,382
32/33	3,992,325	2,165,000	13,126,022	3,646,000	2,165,000	11,461,382
Totals	**107,812,279**	**160,585,000**	**129,671,901**	**100,112,700**	**158,805,000**	**114,613,820**

Asset Consumption Ratio[11]

The asset consumption ratio approximates the extent to which Council's infrastructure assets have been consumed compared to what it would cost to build new assets with the same benefit to the community. A ratio of >60% is the target for infrastructure assets owned by Council. This ratio is calculated by dividing depreciated replacement cost by current replacement cost.

Asset Consumption Ratio is **59%**

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's budget and LTFF.

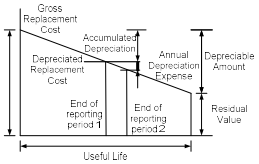
The LTFF determines how funding will be provided, whereas the AMP communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of assets included in this AMP are shown below.

Replacement Cost (Current/Gross)	$384,970,285
Accumulated Depreciation	$156,930,196
Depreciated Replacement Cost[12]	$228,040,089
Annual Depreciation (Passive Assets)	$2,898,253
Annual Depreciation (Active Assets)	$2,128,066



[11] Financial Management (Sustainability) Draft Guideline, 2022, Version 1, Sustainability Measure 7
[12] Also reported as Written Down Value, Carrying or Net Book Value.

7.3.2 Valuation Forecast

Asset values are forecast to increase as additional assets are acquired.

Asset acquisitions will generally add to the operations and maintenance needs in the longer term. Acquisitions will also add to future annual depreciation forecasts. With the significant level of acquisitions identified in this AMP, annual depreciation will increase over the 10-year planning period.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this AMP, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AMP and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AMP are:

- Historical construction dates are accurate for gravity and rising mains.
- Treatment plant renewal and acquisition strategies are based on the condition and capacity assessments completed by specialist consultants. These strategies may be subject to change as the projects evolve and additional information is gathered.
- Future demand for sewerage services is based on population and employment projections set out in Planning Assumptions Report. This report is prepared in conjunction with the LGIP.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AMP are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale[13] in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for the reliability of data used in this AMP is shown in Table 7.5.2.

[13] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

Table 7.5.2: Data Confidence Assessment for Data used in AMP

Data	Confidence Assessment
Demand Drivers	B
Demand Forecast	C
Acquisition Demand	C
Operation and Maintenance Demand	C
Renewal Demand	C
Disposal Demand	D

The overall **confidence level** in the data used in the preparation of this AMP is **Medium**. Acquisition and Renewal demand relating to the South Rockhampton STP, Gracemere STP and Arthur Street SPS projects may vary as their scope is further developed.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices[14]

Accounting and financial data sources

This AMP utilises accounting and financial data. This data is sourced from Council's financial system being R1.

Asset management data sources

This AMP also utilises asset management data. This data is sources from Council's assets and works system being R1, and Council's GIS system being ArcGIS.

8.2 Improvement Plan

It is important that an entity recognise areas of their AMP and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan identified this asset class is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Timeline
1	Complete a comprehensive review of all maintenance assets at the treatment plants. Update the asset register accordingly.	Fitzroy River Water and Infrastructure Planning	In-line with capital project delivery
2	Develop and document processes for the on-going management of both valuation and maintenance asset data at all treatment plants and pump stations.	Fitzroy River Water and Infrastructure Planning	1 year
3	Review all current statutory and preventative maintenance activities/frequencies to ensure compliance and best practice. Update the maintenance strategy manual and R1 maintenance schedules with any changes identified. Ensure maintenance activities have sufficient detail and work schedule is deliverable.	Fitzroy River Water	1 year
4	Review the current processes for the capture and submission of as constructed asset information from internal capital projects to ensure the timely and accurate update of asset information in the R1 and GIS systems	Fitzroy River Water and Infrastructure Planning	1 year
5	Complete a comprehensive review of all valuation assets in readiness for 2023/24 revaluation.	Infrastructure Planning	1 year
6	Develop and document procedures to improve the reliability of renewal demand forecasts. Incorporate Network Asset Criticality Guidelines, Queensland Water, Nov 2020 to assist with prioritising renewals.	Infrastructure Planning and Fitzroy River Water	2 years

8.3 Monitoring and Review Procedures

This AMP will inform the LTFF and will be considered during the annual budget planning process. A review of this AMP will be triggered when there is a material change to service levels, asset values, forecast demand, assets risks or allocated funding.

[14] ISO 55000 Refers to this as the Asset Management System

8.4 Performance Measures

The effectiveness of this AMP can be measured in the following ways:

- The degree to which the lifecycle demand identified in this AMP is incorporated into the LTFF.
- Whether the improvement plan tasks are actioned.

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
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- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Rockhampton Regional Council Corporate Plan 2022 – 2027
- DILGP, 2013, 'Financial Management (Sustainability)', Department of Infrastructure, Local Government and Planning, Queensland

10.0 APPENDICES

Appendix A Summary of Renewal and Acquisition Demand

The following table summarises all renewal and acquisition demand by project per year over the 10-year planning period.

Summary of Renewal and Acquisition Demand

Brief No.	Project Description	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	10-Year Demand	Renewal Demand	Acquisition Demand
S.1	Gravity Mains Rehabilitation Program	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	31,000,000	31,000,000	0
S.2	Combine lines Replacement Program	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	1,500,000	1,500,000	0
S.3	Sewage Pump Stations - Planned Renewals	613,375	279,861	144,788	56,064	131,617	182,667	77,961	167,087	67,834	402,325	2,123,579	2,123,579	0
S.4	Sewage Treatment Plants - Planned Renewals	0	0	0	68,700	0	0	0	0	0	0	68,700	68,700	0
S.5	Trunk Infrastructure Projects	2,550,000	2,040,000	0	475,000	1,800,000	550,000	1,605,000	2,850,000	0	2,165,000	14,035,000	0	14,035,000
S.6	Sewer Emergent Renewals	340,000	340,000	340,000	340,000	340,000	340,000	340,000	340,000	340,000	340,000	3,400,000	3,400,000	0
S.7	North Rockhampton STP Augmentation Project	14,000,000	25,000,000	33,000,000	15,000,000	0	0	0	0	0	0	87,000,000	58,290,000	28,710,000
S.8	South Rockhampton STP and Gracemere STP Interim Strategy	5,500,000	10,000,000	0	0	0	0	0	0	0	0	15,500,000	8,060,000	7,440,000
S.9	South Rockhampton and Gracemere Long-Term Sewage Treatment Strategy	1,000,000	3,000,000	5,900,000	30,000,000	25,000,000	25,000,000	20,000,000	0	0	0	109,900,000	0	109,900,000
S.10	Arthur Street SPS Replacement Project	250,000	0	0	0	0	0	0	0	0	0	250,000	200,000	50,000
S.11	Mount Morgan STP Replacement Project	0	1,000,000	2,000,000	0	0	0	0	0	0	0	3,000,000	3,000,000	0
S.12	NRFMA Sewer Upgrade Project	450,000	0	0	0	0	0	0	0	0	0	450,000	0	450,000
S.13	Campbell SPS Rising Main Diversion Project	20,000	150,000	0	0	0	0	0	0	0	0	170,000	170,000	0
	Totals	**27,973,375**	**45,059,861**	**44,634,788**	**49,189,764**	**30,521,617**	**29,322,667**	**25,272,961**	**6,607,087**	**3,657,834**	**6,157,325**	**268,397,279**	**107,812,279**	**160,585,000**

Further information on these projects can be found in **Appendix B**

Appendix B Project Briefs

S.1 Gravity Mains Rehabilitation Program

Sewerage Scheme	Asset Category	Asset Type
Rockhampton Gracemere Mount Morgan	Passive	Gravity Mains

Background

The Rockhampton Sewerage Scheme includes a significant network of gravity mains with a total length of approximately 587 km. The earliest gravity mains installed in Rockhampton were earthenware pipes (1936 to 1949) and concrete pipes (1950 to 1982). When PVC pipes were introduced in 1983, there were approximately 231km of earthenware and concrete gravity mains in the Rockhampton Sewerage Scheme.

In the early 2000s Council began using structural liners to rehabilitate its gravity mains. Since then, approximately 174 km (43%) of the earthenware and concrete gravity mains have been relined due to their age and deteriorated condition.

The Gracemere and Mount Morgan Sewerage Schemes are much younger than the Rockhampton Sewerage Scheme and it is not envisaged that they will require rehabilitation over the 10-year planning period.

Rational

Council uses a pipe crawler to assess the structural condition and serviceability of its gravity mains. This technology incorporates closed circuit television (CCTV) and allows the gravity mains to be assessed in accordance with the Conduit Inspection Reporting Code of Australia, WSA 05-2020. Gravity mains that are in a poor condition are at risk of blocking through several different mechanisms including: collapse, root intrusion and joint displacement. They are also more likely to allow groundwater to enter the sewer network and thereby contribute to additional inflows at downstream pump stations and the treatment plant.

Proposal

Council will continue to rehabilitate its gravity mains using structural liners. Planned CCTV inspection programs will continue to focus on earthenware and concrete pipes. All relining activities will be prioritise based on condition, material, age and diameter. Consideration is also given to gravity mains in low-lying flood prone areas as a means of reducing stormwater inflows.

The gravity mains rehabilitation program includes access chamber raising and localised gravity main/junction repairs. These activities are necessary to complete the rehabilitation process, while also helping to further reduce groundwater inflows to the sewerage network.

Budget Estimate

Total renewal demand over the 10-year planning period is $31M. Total renewal demand is determined based on the current replacement value of all gravity mains expiring over the 10-year planning period. The replacement value of these gravity mains is averaged to provide an average renewal demand of $3.1M per year.

Project Timing

This is an annual renewal program.

S.2 Combine lines Replacement Program

Sewerage Scheme	Asset Category	Asset Type
Rockhampton	Passive	Gravity Mains

Background

Combine lines are typically 100mm sewer pipes that service more than one property. The CMDG states the minimum diameter for a gravity main is 150mm. As such, Council resolved on 22 June 1999 to maintain combined lines as a community service obligation. Since 1999 Council has been upgrading poor condition combine lines.

Rational

Council uses a push camera to assess the structural condition and serviceability of combine lines with repeat blockages. Combine lines that are found to be in a poor condition are prioritised for replacement.

Proposal

Council will continue to replace combined lines that are in a poor condition. Combine lines that are replaced are upgraded to 150 mm gravity mains, and where possible each property is provided with an individual sewer connection.

Budget Estimate

Renewal demand over the 10-year planning period is $1.5M which equates to $0.15M per year.

The budget is an FRW estimate based on historical spending on combined lines. As the work is classed as a community service obligation the full cost incurred can be claimed back.

Project Timing

This is an annual renewal program.

S.3 Sewage Pump Stations - Planned Renewals

Sewerage Scheme	Asset Category	Asset Type
Rockhampton Gracemere Mount Morgan	Active	Sewage Pump Stations

Background

Sewage pump stations are critical to the collection and transfer of sewage with a scheme. Sewage pump stations include mechanical (pumps), electrical (switchboards and telemetry) and civil (structures and pipework) assets.

Rational

Mechanical and electrical assets are identified for renewal based on their age. These asset components have a short life compared with the civil components of a pump station and require mid-life renewal. The typical lives used as a guide in renewal decision making are set out in the table below.

Asset	Useful Life (Years)
Pumps	20
Switchboards	20
Telemetry	20

Mechanical and electrical assets are prioritised for renewal based on maintenance history and criticality.

Civil assets are identified for renewal based on condition assessment and prioritised based on criticality.

Proposal

Renewal projects involve like for like replacement of assets with a modern equivalent asset.

Budget Estimate

Renewal demand over the 10-year planning period is estimated to be $2.1M. Renewal demand is based on the current replacement value of the assets that have been identified for renewal.

Project timing

The following table lists all planned sewage pump station renewals and their estimated timing.

Sewerage Scheme	Asset Category	Asset Type	Project Name	Timing Estimate	Budget Estimate ($)
Rockhampton	Active	Pump Station	Airport Carpark SPS1; Pump Set No. 1 and 2	2023/24	27,140
Rockhampton	Active	Pump Station	Airport Fuel Depot SPS 2; Pump Set No. 1 and 2	2023/24	20,474
Rockhampton	Active	Pump Station	Airport General Aviation SPS 3; Pump Set No. 1 and 2	2023/24	27,140
Rockhampton	Active	Pump Station	Aquatic Place SPS; Pump Set No. 1 and 2	2023/24	18,253
Rockhampton	Active	Pump Station	Belmont Road No 3 SPS; Pump Set No. 1 and 2	2023/24	18,253
Rockhampton	Active	Pump Station	Blue Gum Terrace SPS; Pump Set No. 1 and 2	2023/24	20,475
Rockhampton	Active	Pump Station	Bodero Street SPS; Pump Set No 1 and 2	2023/24	180,444
Rockhampton	Active	Pump Station	Campbell Street SPS; Telemetry	2023/24	11,795
Rockhampton	Active	Pump Station	Lakes Creek Road East SPS; Pump Set No. 1	2023/24	20,697
Rockhampton	Active	Pump Station	Lakes Creek Road West SPS; Pump Set No. 1 and 2	2023/24	27,140
Rockhampton	Active	Pump Station	Lion Creek Road SPS; Pump Set No 1 and 2	2023/24	20,697
Rockhampton	Active	Pump Station	Melbourne Street SPS; Pump Set No. 1	2023/24	27,140
Rockhampton	Active	Pump Station	Melbourne Street SPS; Telemetry	2023/24	10,018
Rockhampton	Active	Pump Station	Pennycuick Street SPS; Pump Set No 1 and 2	2023/24	27,140
Rockhampton	Active	Pump Station	Prestige Est SPS; Pump Set No 1 and 2	2023/24	18,253
Rockhampton	Active	Pump Station	Red Hill SPS; Pump Set No 1	2023/24	53,802
Rockhampton	Active	Pump Station	Armstrong Street SPS; Telemetry	2024/25	24,831
Rockhampton	Active	Pump Station	Arthur St SPS; Pump No 4	2024/25	68,004
Rockhampton	Active	Pump Station	Belmont Rd North SPS; Pump Set No 1 and 2	2024/25	29,362
Rockhampton	Active	Pump Station	Water Street SPS; Pump Set No 1	2024/25	16,697
Rockhampton	Active	Pump Station	Forest Park Estate SPS; Pump set No 1 and 2	2025/26	62,689
Rockhampton	Active	Pump Station	Forest Park Estate SPS; Telemetry	2025/26	28,979
Rockhampton	Active	Pump Station	Kele Park SPS; Pump Set No. 1 and 2	2025/26	19,141
Rockhampton	Active	Pump Station	Kerrigan St SPS; Pump Set No. 1 and 2	2025/26	33,806
Rockhampton	Active	Pump Station	Plover Street SPS; Pump Set No. 1 and 2	2025/26	24,918
Rockhampton	Active	Pump Station	York Street SPS; Pump Set No. 1 and 2	2025/26	20,697
Rockhampton	Active	Pump Station	Bodero St SPS; Telemetry	2026/27	91,790

Rockhampton	Active	Pump Station	Lakes Creek Rd East SPS; Pipework	2026/27	52,998
Rockhampton	Active	Pump Station	Chancellor Park SPS; Telemetry	2027/28	18,906
Rockhampton	Active	Pump Station	Belmont Rd North SPS; Telemetry	2028/29	11,203
Rockhampton	Active	Pump Station	Fitzroy St SPS; Pump Set No 01 and 2	2028/29	26,918
Rockhampton	Active	Pump Station	Arthur St SPS; Telemetry	2029/30	68,088
Rockhampton	Active	Pump Station	Belmont Rd North SPS; Chemical Dosing	2029/30	8,985
Rockhampton	Active	Pump Station	Blue Gum Terrace SPS; Telemetry	2029/30	6,462
Rockhampton	Active	Pump Station	Frenchville Rd SPS; Pump Set No 1 and 2	2029/30	43,803
Rockhampton	Active	Pump Station	Harman St Boat Shed Switchboard	2029/30	18,161
Rockhampton	Active	Pump Station	Harman St SPS; Electrical	2029/30	7,446
Rockhampton	Active	Pump Station	Peppermint Dr SPS; Telemetry	2029/30	6,581
Rockhampton	Active	Pump Station	Belmont Rd No 3 SPS; Telemetry	2030/31	5,277
Rockhampton	Active	Pump Station	Chancellor Park SPS; Pump Set No 1 and 2	2030/31	37,138
Rockhampton	Active	Pump Station	Lion Creek Rd SPS; Telemetry	2030/31	6,581
Rockhampton	Active	Pump Station	Pennycuick St SPS; Telemetry	2030/31	10,018
Rockhampton	Active	Pump Station	Plover St SPS; Chemical Dosing	2030/31	8,985
Rockhampton	Active	Pump Station	Prestige Est SPS; Telemetry	2030/31	5,277
Rockhampton	Active	Pump Station	Airport Carpark SPS; Chemical Dosing	2031/32	15,746
Rockhampton	Active	Pump Station	Airport Fuel Depot SPS; Telemetry	2031/32	4,448
Rockhampton	Active	Pump Station	Airport Light Aircraft SPS; Telemetry	2031/32	9,899
Rockhampton	Active	Pump Station	Aquatic Place SPS; Telemetry	2031/32	4,685
Rockhampton	Active	Pump Station	Blackall St SPS Telemetry	2031/32	6,344
Rockhampton	Active	Pump Station	Nuttall St Telemetry	2031/32	8,122
Rockhampton	Active	Pump Station	Red Hill SPS telemetry	2031/32	24,831
Rockhampton	Active	Pump Station	Peppermint Dr SPS, Pump Set No 1 and 2	2032/33	20,697
Rockhampton	Active	Pump Station	Bruce Highway SPS 1 and 2	2032/33	47,137
Mount Morgan	Active	Pump Station	Dee River SPS Pump Number 1 and 2	2024/25	23,585
Mount Morgan	Active	Pump Station	Swimming Pool SPS Telemetry	2024/25	3,855
Mount Morgan	Active	Pump Station	Dee River SPS Telemetry	2025/26	8,122

Mount Morgan	Active	Pump Station	Swimming Pool SPS Pump No 1 and 2	2025/26	15,597
Gracemere	Active	Pump Station	Capricorn Highway SPS; Pump Set No 1	2023/24	20,236
Gracemere	Active	Pump Station	Fisher St SPS; Pump Set No 1 and 2	2023/24	47,136
Gracemere	Active	Pump Station	Victoria Park SPS; Pump Set No 1 and 2	2023/24	17,142
Gracemere	Active	Pump Station	Capricorn Street SPS; Pump Set No 1 and 2	2024/25	43,803
Gracemere	Active	Pump Station	Gavial Gracemere Road SPS; Pump Set No 1	2024/25	27,456
Gracemere	Active	Pump Station	Rahima Court SPS; Pump Set No 1	2024/25	30,473
Gracemere	Active	Pump Station	Rahima Court SPS; Telemetry	2024/25	11,795
Gracemere	Active	Pump Station	Fisher St SPS; Switchboard	2025/26	81,472
Gracemere	Active	Pump Station	Gavial Gracemere SPS; Pump Set No 2	2025/26	27,456
Gracemere	Active	Pump Station	Rosella Park SPS; Pump Set No 1	2025/26	20,697
Gracemere	Active	Pump Station	Rosella Park SPS; Telemetry	2025/26	6,581
Gracemere	Active	Pump Station	Tippett Crescent SPS; Pump Set No 1 and 2	2025/26	19,141
Gracemere	Active	Pump Station	Tippett Crescent SPS; Telemetry	2025/26	5,751
Gracemere	Active	Pump Station	Victoria St SPS; Pump Set No 1 and 2	2025/26	20,697
Gracemere	Active	Pump Station	Victoria St SPS; Telemetry	2025/26	6,581
Gracemere	Active	Pump Station	Viney St SPS; Pump Set No 1 and 2	2027/28	27,140
Gracemere	Active	Pump Station	Viney St SPS; Telemetry	2027/28	10,018
Gracemere	Active	Pump Station	Capricorn Street SPS; Switchboard	2028/29	74,590
Gracemere	Active	Pump Station	Capricorn St SPS; Telemetry	2028/29	18,906
Gracemere	Active	Pump Station	Old Capricorn Highway SPS; Pump Set No 1 and 2	2029/30	23,141
Gracemere	Active	Pump Station	Victoria Park SPS; Telemetry	2030/31	4,685
Gracemere	Active	Pump Station	Capricorn Highway SPS; Telemetry	2031/32	7,884
Gracemere	Active	Pump Station	Old Capricorn Highway SPS; Telemetry	2031/32	17,128
Gracemere	Active	Pump Station	Washpool Rd SPS; Telemetry	2031/32	20,684
Gracemere	Active	Pump Station	Washpool Rd SPS Pump Set No 1 and 2	2031/32	47,316

S.4 Sewage Treatment Plants - Planned Renewals

Sewerage Scheme	Asset Category	Asset Type
Rockhampton Gracemere Mount Morgan	Active	Sewage Treatment Plants

Background

Sewage treatment plants are critical to the treatment of sewage loads from a scheme. Sewage treatment plants include mechanical (pumps), electrical (switchboards and telemetry) and civil (structures and pipework) assets.

Rational

Mechanical and electrical assets are identified for renewal based on their age. These asset components have a short life compared with the civil components of a pump station and require mid-life renewal. The typical lives used as a guide in renewal decision making are set out in the table below.

Asset	Useful Life (Years)
Pumps	20
Switchboards	20
Telemetry	20

Mechanical and electrical assets are prioritised for renewal based on maintenance history and criticality.

Civil assets are identified for renewal based on condition assessment and prioritised based on criticality.

Proposal

Renewal projects involve like for like replacement of assets with a modern equivalent asset.

Budget Estimate

Renewal demand over the 10-year planning period is estimated to be $0.07M. Renewal demand is based on the current replacement value of the assets that have been identified for renewal.

Project timing

The following table lists all planned sewage treatment plant renewals and their estimated timing.

Sewerage Scheme	Asset Category	Asset Type	Project Name	Timing Estimate	Budget Estimate ($)
Rockhampton	Active	Treatment Plant	North Rockhampton STP sludge dewatering pump station valves	2026/27	68,700

S.5 Trunk Infrastructure Projects

Sewerage Scheme	Asset Category	Asset Type
Rockhampton Gracemere	Active Passive	Sewage Pump Stations Gravity Mains Rising Mains

Background

Long-term, region wide planning for infrastructure that integrates with land use planning is detailed in the LGIP, which is contained within the Rockhampton Region Planning Scheme. The LGIP outlines the trunk infrastructure our Region will need to support predicted future growth and development.

Rational

Most growth in future demand will occur in North Rockhampton (Parkhurst) and Gracemere.

Proposal

New trunk gravity mains, sewage pump stations and rising mains will be constructed to meet future demand.

Budget Estimate

The LGIP identifies trunk infrastructure growth projects with an estimated total cost of $14.1M over the 10-year planning period. It's acknowledged that LGIP project costs are generally underestimated, and the current LGIP was adopted in 2017 meaning a review is now required under the Planning Act 2016.

Project Timing

The following table list all LGIP projects and their estimating timing.

Sewerage Scheme	Asset Category	Asset Type	Project Name	Timing Estimate	Budget Estimate ($)
Rockhampton	Active	Pump Stations	Ramsay Creek SPS	2024/25	$750,000
			Springbrook Close SPS - Upgrade	2024/25	$40,000
			Limestone Creek SPS	2030/31	$1,200,000
	Passive	Rising Mains	Rising Main 200 mm (McLaughlin St SPS to Birkbeck Dr)	2024/25	$800,000
			Rising Main 200 mm (Ramsay Creek SPS A to Mason Ave)	2024/25	$450,000
			Rising Main 300 mm Norman Rd (Limestone Creek SPS to Nagle Dr) – 2.2 km	2030/31	$1,400,000
		Gravity Mains	Gravity Main 300 mm Elida West (Stockland Infrastructure Agreement)	2026/27	$475,000
			Gravity Main 225mm (Birkbeck Dr to Sturt St)	2023/24	$2,100,000
			Gravity Main 375 mm (to Discharge chamber for rising main under Mason St) - 160 m	2027/28	$150,000
			Gravity Main 375 mm Norman Rd (Masons St - Rachel Drive) - 700 m	2029/30	$550,000
			Gravity Main 450 mm Norman Rd (Rachel Drive to Limestone Creek SPS) - 550 m	2029/30	$650,000
			Gravity Mains 300 mm Rachel Drive (Beal Av to Norman Rd) - 190 m	2029/30	$155,000
Gracemere	Active	Pump Stations	SPS Breakspeare Street PS # 6	2023/24	$450,000
			SPS Webster St PS # 11	2032/33	$550,000
			SPS Washpool South (South of Washpool Rd on Lot 1 RP848973)	2028/29	$425,000
			SPS Capricorn St Pump Augmentation to match new rising main	2032/33	$65,000
	Passive	Rising Mains	Rising Main 100 mm (Webster St to SPS 11)	2032/33	$550,000
			Rising main 300 mm (SPS Breakspeare St PS #6 to Gracemere STP) – 2.4 km	2027/28	$1,500,000
			Rising Main 100 mm (Washpool SPS to head of reticulated gravity work)	2028/29	$125,000
			Rising Main 150 mm (Capricorn St SPS to existing 200 mm main)	2030/31	$250,000
		Gravity Mains	Gravity Main 225 mm (Northern Bdry lot 3 SP119672 to SPS FS 15) – 350 m Washpool Rd SPS	2027/28	$150,000
			Gravity Main 225 mm (Southern bdry of Lot 2 SP119672 to Northern bdry) Washpool Rd SPS	2029/30	$250,000
			Gravity main 225 mm (Macquarie St to Capricorn St) – 750 m	2032/33	$350,000
			Gravity Main 300 mm - Somerset Rd (Western side Lot 49 on P4030 to Somerset Rd SPS) - 1.1km	2032/33	$650,000

S.6 Emergent Sewer Renewals

Sewerage Scheme	Asset Category	Asset Type
Rockhampton Gracemere Mount Morgan	Active	Sewage Pump Stations Sewage Treatment Plants

Background

All sewage pump stations, and sewage treatment plants include mechanical and electrical assets. These assets are critical to the operation of each site. Mechanical and electrical assets have a short life compared to civil assets and require more frequently renewal. With an estimated useful life of 20 years for most mechanical and electrical assets, it's difficult to accurately estimate renewal demand over a 10-year planning period.

Rational

This project covers renewal activities that are not identified in other project briefs.

Proposal

Replace mechanical and electrical assets with modern equivalent assets as the need arises.

Budget Estimate

Emergent renewal demand is estimated at $0.34M annually over the 10-year planning period which is approximately 30% of annual depreciation for mechanical and electrical assets.

Project Timing

This is an annual renewal demand.

S.7 North Rockhampton STP Augmentation Project

Sewerage Scheme	Asset Category	Asset Type
Rockhampton	Active	Sewage Treatment Plants

Background

The North Rockhampton STP was constructed in 1986 with a design capacity of 50,000 EP. The North Rockhampton STP treats all sewage loads from the North Rockhampton Catchment of the Rockhampton Sewage Scheme.

Rational

Current treatment demand at the North Rockhampton STP is approaching full capacity and significant growth is forecast to occur in the North Rockhampton Catchment. By 2051 the North Rockhampton STP is expected to require a treatment capacity of up to 75,000 EP.

Proposal

This project involves the construction of a new process train with a treatment capacity of 25,000 EP (Stage A). The new process train will consist of new inlet works, clarifier and oxidation ditch. This project also includes condition-based renewals of electrical, mechanical and civil assets in the two existing process trains (Stage B).

A further Stage C is under development which will see additional treatment processes added to meet anticipated effluent quality parameters under updated license conditions.

At the completion of this project the North Rockhampton STP will have reliable treatment capacity of 75,000 EP.

Budget Estimate

In 2020 Council engaged GHD to a prepared detailed design report15 for the augmentation of the North Rockhampton STP. AECOM together with Hunter H20 have since completed a peer review of the proposed design and prepared a cost estimate to complete the project.

The total estimated budget for this project Stages A and B is $87M. Estimated costs for Stage C are yet to be finalised but indicatively will cost $30M.

Council has a Works for Queensland (W4Q) grant of $6.5M, and a Building our Region (BoR) grant of $2.0M for this project.

Project Timing

Construction contract 14337 - Upgrade to North Rockhampton STP (Stage A), was awarded in March 2022. In August 2023 this project is well progressed with all concrete structures completed and under hydrostatic testing and mechanical/electrical fit out underway. Stage B will commence on completion of the Stage A works. This project is expected to be completed in 2026. Stage C will commence in 2025 and be completed in 2027.

[15] North Rockhampton STP Stage 1 - Detailed Design Report, GHD, March 2020

S.8 South Rockhampton STP and Gracemere STP Interim Strategy

Sewerage Scheme	Asset Category	Asset Type
Rockhampton	Active	Sewage Treatment Plants
Gracemere	Active	Sewage Pump Stations

Background

The South Rockhampton STP was constructed in 1983 with a design capacity of 34,000 EP. Since 2019 the South Rockhampton STP has treated sewage loads from the entire South Rockhampton Catchment of the Rockhampton Sewage Scheme incorporating the former West Rockhampton Catchment.

The Gracemere STP was constructed in 1984 with design capacity of 8,100 EP. The Gracemere STP treats all sewage loads from the Gracemere Sewerage Scheme.

Rational

The Gracemere STP has an environmental license condition that requires all treated effluent to be disposed to land. The limited availability of suitable land in Gracemere would constrain the Gracemere STP to operating at approximately 30% of its design capacity if license conditions are to be met. The Gracemere STP has an ongoing breach which has been discussed with the Regulator to allow the continued irrigation of treated effluent for a period beyond what is allowed under the licence conditions whilst the interim strategy is developed and implemented.

In 2013 it was recommended that Council expand the Gracemere effluent re-use scheme. This expansion was commenced with the construction of an effluent main between the Rockhampton Golf Course and Fairy Bower Lane in Gracemere. This section of the effluent main was constructed in 2015 at the same time as the water supply upgrade to Gracemere. The construction of this effluent main has now been completed between Fairy Bower Lane and the Gracemere STP making further land, subject to the implementation of appropriate reuse schemes, available for treated effluent disposal. In 2022 a master strategy[16] was developed that will see all sewage load in Gracemere ultimately transferred to the South Rockhampton STP. The interim strategy has been developed to stage the transfer of sewage load from Gracemere to South Rockhampton until a new South Rockhampton STP is operational.

Proposal

This project includes the following activities:

- Various renewals and acquisitions will be completed at the Gracemere STP to improve the performance of the plant.
- Remediation of Sludge Lagoons at both Gracemere and South Rockhampton STP's to improve the performance of the plants.
- A new pump station and dual rising mains will be constructed in a staged manner to transfer untreated sewage from Gracemere to the South Rockhampton STP
- Various renewals and acquisitions will be completed at the South Rockhampton STP to improve the capacity and performance of the plant to receive the additional load from Gracemere.
- An effluent main between the South Rockhampton STP and Gracemere will be completed.

[16] Gracemere and South Rockhampton STP Master Strategy and Design, Hunter h_2o, May 2022

Budget Estimate

The total estimated budget for the South Rockhampton STP's improvement works and sludge lagoon cleaning project is $18.1M. Estimated costs for the initial stage of the Gracemere Pump Station and transfer main is yet to be determined but is likely to fall between $10M and $20M.

Project Timing

Improvements to aeration capacity at Gracemere STP have been completed and sludge lagoon cleaning at both sites has been completed. Design works for the necessary upgrades at the South Rockhampton STP is in progress. Preliminary design for the initial stage transfer main has been completed and is under review. Concept design for the Gracemere Pump Station has been completed and is under review. This project is expected to be completed by the end of 2024.

S.9 South Rockhampton and Gracemere Long-Term Sewage Treatment Strategy

Sewerage Scheme	Asset Category	Asset Type
Rockhampton	Active	Sewage Treatment Plants

Background

By the end of 2024 all or a portion of sewage loads from Gracemere will be treated at the South Rockhampton STP. Some of the treated effluent will be reused in Gracemere and South Rockhampton, and the balance will be discharged to the Fitzroy River downstream of the Barrage.

Rational

Sewage loads coming into Gracemere and hence the South Rockhampton STP are forecast to increase significantly as residential and industrial development continues in Gracemere. This continued growth will see the interim upgrades at South Rockhampton STP reach capacity by 2033.

Proposal

To construct a new 55,000 EP sewage treatment plant by 2033 that will treat all sewage load from South Rockhampton and Gracemere.

Budget Estimate

The total estimated budget for this project is $110M.

Project Timing

Preliminary investigations have commenced into refining the long-term strategy. This project is expected to be completed prior to 2033.

S.10 Arthur Street SPS Replacement Project

Sewerage Scheme	Asset Category	Asset Type
Rockhampton	Active	Sewage Pump Stations

Background

The Arthur Steet SPS was constructed in 1937 and is a critical asset being the terminal pump station prior to the South Rockhampton STP. Original structures at this site are at the end of their useful life.

Rational

A preliminary condition assessment was completed on the Arthur Street SPS in 2022. The wet well was found to be in a very poor condition.

Proposal

Due to the age and perceived condition of the existing Arthur Street SPS, it is proposed to construct a new Arthur Street SPS and decommission the existing. Preliminary design has been undertaken indicating a significant capacity upgrade is required at this site. More detailed condition and capacity assessments are required to better inform the need and timing for this project.

Budget Estimate

Initial estimates indicated a budget of $7.5M was required to replace the Arthurs Street SPS. Updated estimates based on the preliminary design indicate a likely budget requirement of $11M. A budget of $250,000 is required to complete detailed condition and capacity assessments.

Project timing

Detailed condition and capacity assessments will be completed in 2023/24. The project timing and budget estimate will be updated once this occurs.

S.11 Mount Morgan STP Replacement Project

Sewerage Scheme	Asset Category	Asset Type
Mount Morgan	Active	Sewage Treatment Plants

Background

The Mount Morgan STP was constructed in 2005 with a design capacity of 700 EP. The Mount Morgan STP treats all sewage loads from the connected properties within the catchment of the Mount Morgan Sewage Scheme.

Rational

Although current treatment demand at the Mount Morgan STP is near full capacity, and limited population growth is forecast to occur in the Mount Morgan Catchment, there are approximately 110 properties that could connected to the sewer network and thereby increase treatment demand.

Recent condition assessments of the Mount Morgan STP have indicated that mechanical, electrical and civil infrastructure is in poor condition. The limited demand on the Mount Morgan STP lends itself to replacement with a new package plant rather than renewal or replacement of the existing infrastructure.

Proposal

This project involves the replacement of the existing Mount Morgan STP package plant with a new package plant that has an increased design capacity and improved treatment reliability.

Budget Estimate

The total estimated budget for this project is $3M.

Project Timing

This project is expected to commence in 2024 and to be completed in 2026.

S.12 NRFMA Sewer Upgrade Project

Sewerage Scheme	Asset Category	Asset Type
Rockhampton	Passive	Gravity Mains

Background

The North Rockhampton Flood Management Area (NRFMA) is an area susceptible to flooding. The NRFMA is subject to riverine, creek and stormwater overland flow flooding. The sewerage network can also contribute to the flooding through sewage surcharges in the area during rainfall events. Several flood mitigation measures have already been completed in the area to reduce flood risk.

Rational

The proposed works will further reduce the risk of flooding in the NRFMA, and will improve operational response during floods and major rain events.

Proposal

In 2023/24 vehicle access will be improved to existing sewerage infrastructure in the NRFMA and trailer mounted diesel pumps will be purchased to assist flood mitigation.

Budget Estimate

The NRFMA Sewer Upgrade Project was initiated by Council and is jointly funded by State Government. The budget estimate for the remaining works $450,000.

Project timing

The project is to be completed in 2023/24.

S.13 Campbell SPS Rising Main Diversion Project

Sewerage Scheme	Asset Category	Asset Type
Rockhampton	Passive	Rising Mains

Background

The Campbell Street SPS is part of the Rockhampton Sewerage Scheme. It's a major pump station that services a large in the South Rockhampton Catchment. The rising main leaving the Campbell Street SPS is a 150mm Cast Iron pipe that was installed in 1945.

Rational

The final section of this rising main flows under gravity conditions and the reduced flow rate results in a significant build-up of waste material that requires regular high-pressure cleaning. Regularly cleaning this section of the rising main has seen its concrete lining deteriorate.

Proposal

To divert the rising main so that it discharges in other location.

Budget Estimate

The project is estimated to cost $0.17 M.

Project timing

It is planned to undertake survey, design and further investigation in 2023/24, with construction to be completed in 2024/25.

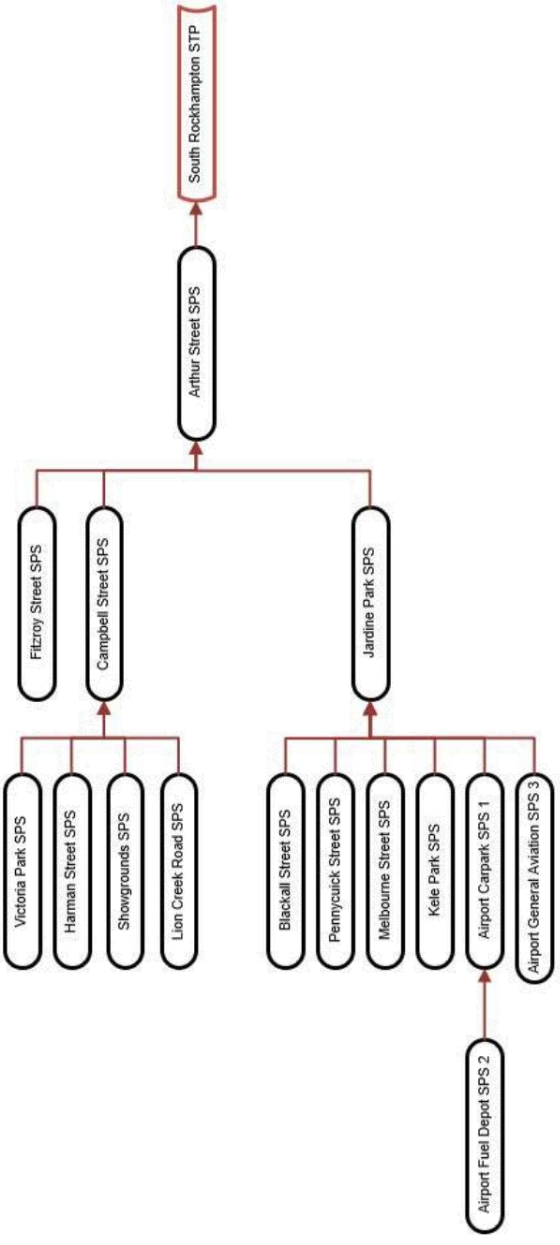
Appendix C Renewal and Acquisition Demand v LTFF Funding

The following table summarises all renewal and acquisition demand at a project level compared to funding that is available in the LTFF.

Brief No.	Project Description	Renewal Demand	Acquisition Demand	Renewal Funding	Acquisition Funding
S.1	Gravity Mains Rehabilitation Program	31,000,000	0	23,770,300	0
S.2	Combine lines Replacement Program	1,500,000	0	1,500,000	0
S.3	Sewage Pump Stations - Planned Renewals	2,123,579	0	513,700	220,000
S.4	Sewage Treatment Plants - Planned Renewals	68,700	0	68,700	0
S.5	Trunk Infrastructure Projects	0	14,035,000	0	12,185,000
S.6	Sewer Emergent Renewals	3,400,000	0	4,390,000	0
S.7	North Rockhampton STP Augmentation Project	58,290,000	28,710,000	58,500,000	28,500,000
S.8	South Rockhampton STP and Gracemere STP Interim Strategy	8,060,000	7,440,000	8,000,000	7,500,000
S.9	South Rockhampton and Gracemere Long-Term Sewage Treatment Strategy	0	109,900,000	0	109,900,000
S.10	Arthur Street SPS Replacement Project	200,000	50,000	200,000	50,000
S.11	Mount Morgan STP Replacement Project	3,000,000	0	3,000,000	0
S.12	NRFMA Sewer Upgrade Project	0	450,000	0	450,000
S.13	Campbell SPS Rising Main Diversion Project	170,000	0	170,000	0
	Totals	**107,812,279**	**160,585,000**	**100,112,700**	**158,805,000**

Appendix D Sequencing of Sewage Pump Stations

Rockhampton Sewerage Scheme – South Rockhampton Catchment



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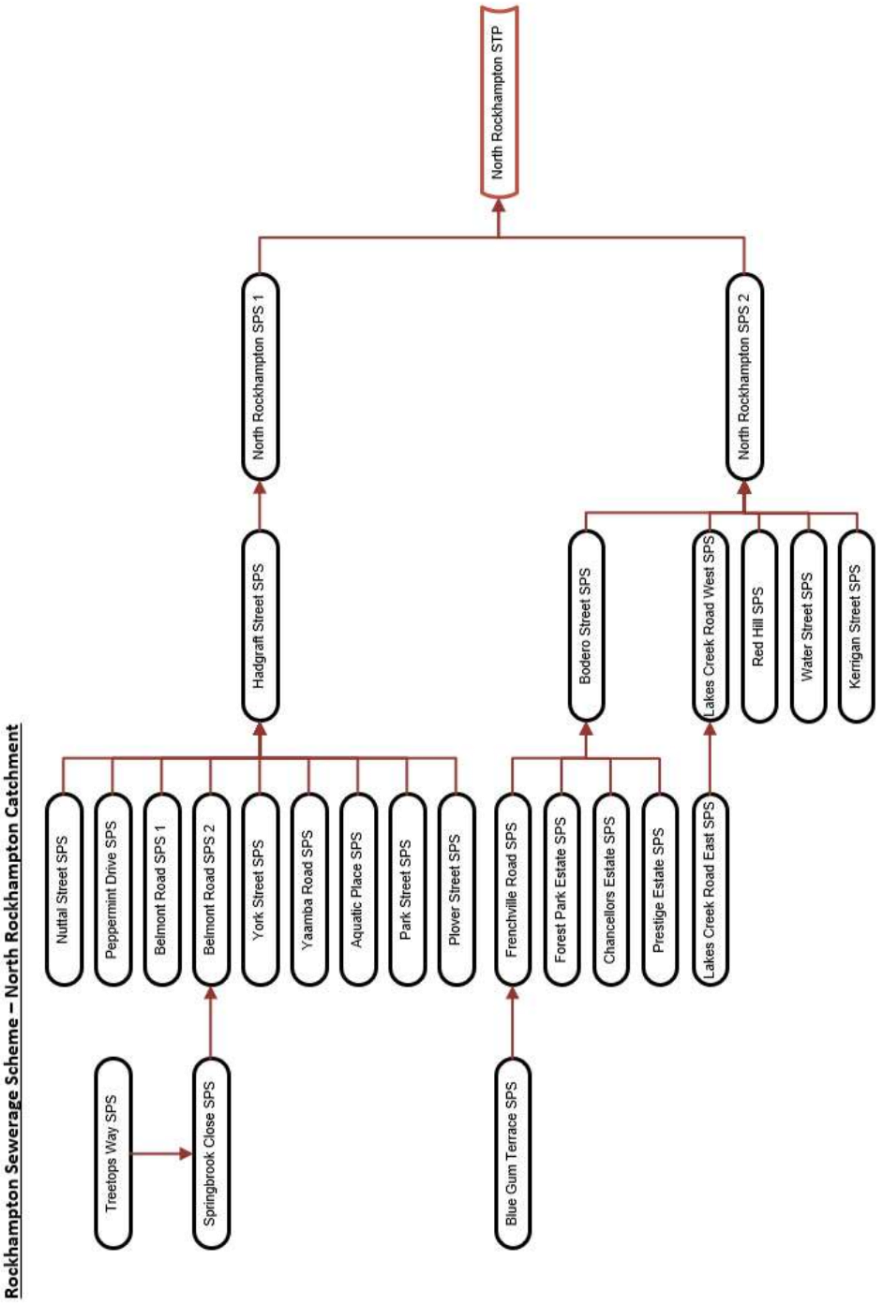
Rockhampton Sewerage Scheme – North Rockhampton Catchment
North Rockhampton STP
North Rockhampton SPS 1
North Rockhampton SPS 2
Hadgraft Street SPS
Bodero Street SPS
Lakes Creek Road West SPS
Red Hill SPS
Water Street SPS
Kerrigan Street SPS
Nuttal Street SPS
Peppermint Drive SPS
Belmont Road SPS 1
Belmont Road SPS 2
York Street SPS
Yaamba Road SPS
Aquatic Place SPS
Park Street SPS
Plover Street SPS
Frenchville Road SPS
Forest Park Estate SPS
Chancellors Estate SPS
Prestige Estate SPS
Lakes Creek Road East SPS
Treetops Way SPS
Springbrook Close SPS
Blue Gum Terrace SPS

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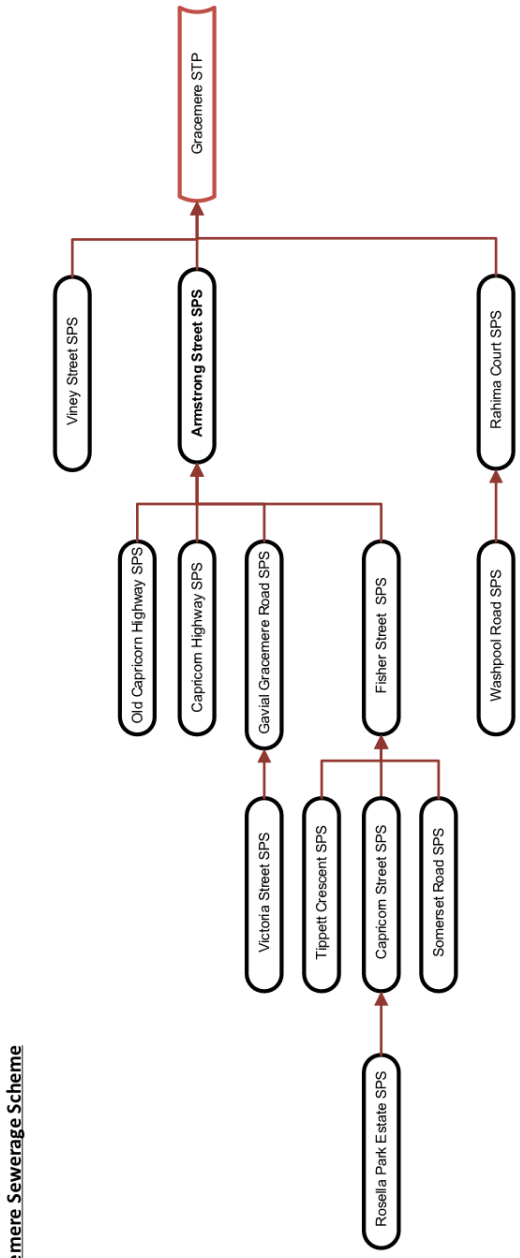
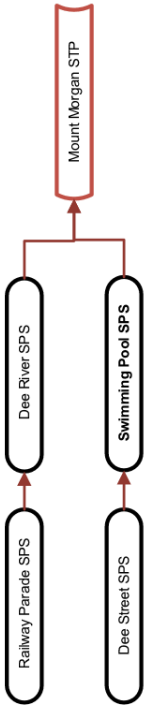


Gracemere Sewerage Scheme



Mount Mogan Sewerage Scheme

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10.6 MONTHLY PROJECT STATUS REPORT FOR CIVIL OPERATIONS - OCTOBER 2023

File No:	**7028**
Attachments:	**1. Monthly Project Status Report - October 2023⇩**
Authorising Officer:	**Peter Kofod - General Manager Regional Services**
Author:	**John Gwydir - Manager Civil Operations**

SUMMARY

Monthly Project Status Report on all major capital projects being delivered by the Civil Operations section.

OFFICER'S RECOMMENDATION

THAT the Monthly Project Status Report for Civil Operations for October 2023 be received.

COMMENTARY

The Civil Operations section submits a monthly project status report outlining the status, key milestones and deliverables of major capital projects managed by the Unit.

The following projects are reported on for the month of October 2023:

- Unsealed Road Network;
- 2023/2024 Capital Works Program;
- Stanwell-Waroula Road Upgrade
- Scrubby Creek Bridge Replacement
- River Rose Drive – New Road Construction
- Campbell Street (Albert Street to Cambridge Street) - Reconstruction

MONTHLY PROJECT STATUS REPORT FOR CIVIL OPERATIONS – OCTOBER 2023

Monthly Project Status Report - October 2023

Meeting Date: 5 December 2023

Attachment No: 1

CIVIL OPERATIONS

Monthly Project Report – October 2023

UNSEALED ROAD NETWORK

During the month of October 2023, approximately 44 kms of roads were graded and a further 5.9 kms of gravel re-sheet programmed with approximately 100mm of gravel to improve wet weather trafficability.

Completed – October 2023			
Road Name	**Area**	**Total Length Graded**	**Total Length Re-sheeted**
Casuarina Road	Midgee	11.92 kms	
Kelly Road	Gracemere	2.6 kms	0.50 kms
Rookwood Road	Gogango	6.0 kms	
Hume Road	Kabra	7.47 kms	0.525 kms
Callan Avenue	Kabra	2.03 kms	0.25 kms
Glenroy-Marlborough Road	Glenroy-Marlborough	4.0 kms	3.0 kms
Richards Road	Glenroy-Marlborough	4.11 kms	
Reid Road Extension	Alton Downs		1.2 kms
Rosewood Road	Wycarbah	5 kms	
Harrett Road	Alton Downs	0.25 kms	0.20 kms
Dalma Ridgelands Road	Ridgelands	1.31 kms	

In Progress – October 2023			
Road Name	**Area**	**Remaining Length to be Graded**	**Remaining Length to be Re-sheeted**
Glenroy-Marlborough Road	Glenroy-Marlborough	18.0 kms	2.0 kms
North Langmorn	Marmor	7.8 kms	1.7 kms
Stracey Road	Alton Downs	2.27 kms	
Ohio Road	Gogango	1.2 kms	
Rookwood Road	Gogango		1.5 kms
Smith Road	Gogango	12.0 kms	2.0 kms
Rosewood Road	Wycarbah	17.0 kms	3.5 kms

Roads Programmed During November 2023	
• Stanwell Waroula Road • Kaatz Road • Glenroy Marlborough Road • Barrett Road • Smith Road	• Rosewood Road • Cherryfield Road • Watts Road • Sullivan Road (Gracemere)





Photos of construction of Reid Road Extension (1.2 kms)

CAPITAL WORKS PROGRAM 2023-2024

Summary (by project status)

Design

	Comment
2023/2024 Bus Stop Shelter Program (BSSP Funding)	*50% bus stop slab designs completed*
2023/2024 Passenger Transport Accessible Infrastructure Program (PTAIP Funding)	*50% bus stop slab designs completed*

Design	
	Comment
Alexandra Street – Birkbeck Drive to William Palfrey Road – New Construction	Design underway
Archer Street Drainage Scheme - Stage 1 – Stormwater (PACP Funding)	
Archer Street Drainage Scheme - Stage 2 – Stormwater (PACP Funding)	
Canning Street / Derby Street / Upper Dawson Road - Intersections Upgrade - Blackspot Funding	Design underway
Denham Street / West Street - Intersection Upgrade - Blackspot Funding	Survey completed
Derby Street / Kent Street / Denison Street - Intersections Upgrade - Blackspot Funding	Survey completed
Glenroy Road – Fitzroy River Bridge	
Glenroy Road Upgrade	
Lion Mountain Road - Sealing	
Parkhurst Industrial Area - Wade Street (Alexandra Street to McLaughlin Street) – Reconstruction (HVSPP Funding)	Design underway
Well Station Creek Road, Wycarbah - Floodway	

Pre-Construction / Procurement		
	Estimated Start Date	**Comment**
Annual Reseal Program – Spray Seals		Tender phase
Annual Reseal Program – Micro-surfacing (Slurry Seals)		Tender phase
Frenchville State School – Set Down Area (STIP Funding)		*Tender phase*
Mount Archer State School – Wiltshire Street Footpath (STIP Funding)		*Tender phase*
Mt Morgan State High School – Bus Stop (STIP Funding)		*Tender phase*
Rockhampton Grammar School – Quarry Street Footpath (STIP Funding)		*Tender phase*

Delivery			
	Actual Start Date	**Estimated Completion Date**	**Comment**
Annual Reseal Program – Asphalt Resurfacing	July 2023	June 2024	10% complete
Berserker Street – Elphinstone to Leamington – Road Rehabilitation	August 2023	October 2023	*85% complete*
Campbell Street (Cambridge Street to Albert Street) - Reconstruction (LRCI Funding)	January 2023	October 2023	Refer to Major Projects Update below
Dale Park - Access Road Improvements	August 2023		30% completed – On hold due to crew being moved to more urgent work
Denham Street / Murray Street - Intersection Upgrade - Blackspot Funding	*January 2024*	*March 2024*	
Denham Street / Talford Street - Intersection Upgrade - Blackspot Funding	October 2023	*February 2024*	
Morgan Street, Kabra - Drainage Improvement	February 2024	May 2024	
Norman Road (Farm Street to Cedar Drive) – Footpath – CNLGGP Funding	August 2023	November 2023	*55% complete – delayed due to issues with traffic signal relocation and extra section added as requested by funding agency*
North Rockhampton Flood Mitigation (NRFM) – pumping points	*January 2024*	April 2024	
Quay Lane – North to Albert Street – Stormwater drainage	September 2023	*February 2024*	*60% complete*
River Rose Drive – New Road Construction (LRCI Funding)	December 2022	*January 2024*	Refer to Major Projects Update below
Scrubby Creek Bridge – Old Capricorn Highway (Bridge Rehabilitation Program)	August 2023	February 2024	Refer to Major Projects Update below
Stanwell-Waroula Road - Sealing (RRUPP Funding)	October 2023	August 2024	*Stormwater drainage on track for completion in December 2023*
St Joseph's Primary School – White Street Footpath (STIP Funding)	*October 2023*	*March 2024*	*50% complete*
Unsealed Road Gravel Program	July 2023	June 2024	*Refer to Unsealed Roads Network Update above*

Completed Projects
Caribea Estate - Drainage - Stage 3 (Inlets)
Eton Street (Denham Street to end) – Road Reconstruction
Hanrahan Crossing – Floodway Construction
Limestone Creek Diversion - Stormwater - Open Channel Construction
Lower Dawson Road, Allenstown (No. 311 Lower Dawson Road to Jellicoe Street) - Footpath
North Rockhampton State High School – Robinson Street – Footpath (STIP Funding)
Stanley Street / East Street - Intersection Upgrade (Blackspot Funding)

MAJOR PROJECTS UPDATE

Stanwell-Waroula Road Upgrade

Scope	This project will upgrade an approximate 5km road segment along Stanwell-Waroula Road between chainages 9650-14400 and 18670-18930. This project will also construct a 6.5m wide bitumen seal carriageway for the traffic, widen 30 culverts and replace one floodway to improve the road safety.						
Commencing Estimate	$2.1M	**Total Estimated Project Cost**	$2.1M	**Last Month**		**This Month**	

On the Horizon – Key Milestones & Deliverables

November	December	January
• Culvert extensions	• Culvert Replacements and new concrete floodway construction	• Road widening work in section 1 (chainages 9650-14400) • Culvert extensions in section 2 (chainages 18670-18930)

Comments	Design completed on 28 August 2023 and construction commenced on 2 October 2023. Construction work in progress.

Scrubby Creek Bridge Replacement							
Scope	The works to be undertaken will include the demolition of the existing single lane bridge on Scrubby Creek, Old Capricorn Highway and replacement with a double lane box culvert. This will also include the reconstruction of approximately 150m of the Old Capricorn Highway. This will improve safety and remove the load limit currently in place. This project is 80% funded by the Federal Government under the Bridge Renewal Program.						
Commencing Estimate	$1.95M	**Total Estimated Project Cost**	$1.95M	**Last Month**		**This Month**	

On the Horizon – Key Milestones & Deliverables		
November	**December**	**January**
• Finish placing precast culverts wingwalls and construct upstream and downstream aprons/cut off walls	• Construct headwalls • Backfilling structure	• Roadworks • Guardrail

Comments	When the design was completed the estimate of costs was $1.2M based on the most recent data available. Prior to commencement of work this was revised to $1.95M based on updated pricing of materials, contractors, and internal costs. Extra excavation and concrete works will be necessary. This is due to a watermain which conflicts with the bottom of the downstream wingwall. There was a delay caused by waiting on Ergon's scheduling an appointment for their crews to temporarily drop an overhead electrical service to a nearby resident. This drop was required so that we could safely crane in the culverts from the Rockhampton side of Scrubby Creek. In the end an alternative crane access was established as the Ergon's appointment date was too late.

Culverts, link slabs and Pre-Cast Wingwalls in place

Upstream wingwalls

Installing Downstream Wingwalls

River Rose Drive – New Road Construction							
Scope	The works to be undertaken to link the two existing sections of River Rose Drive, Norman Gardens include the construction of a new road (including all underground services) and a roundabout with a connection point for a future extension to Stringybark Avenue, Norman Gardens.						
Commencing Estimate	$2.25M	**Total Estimated Project Cost**	$2.5M	**Last Month**		**This Month**	

On the Horizon – Key Milestones & Deliverables

November	December	January
• Commence pavement excavation for Stringybark Avenue. • Complete power and communication conduiting in River Rose Drive excluding the bunnings section. • Complete stormwater infrastructure in Stringybark Avenue. • Continue Street lighting River Rose Drive. • Watermain on Stringybark Drive complete.	• Complete kerb and channel for River Rose Drive and Stringybark • Continue pavement excavation for Stringybark Avenue • Commence street lighting for Stringybark Avenue • Construct pavement for Stringybark Avenue • Complete street lighting for River Rose Drive	• Complete pavement on River Rose Drive and Stringybark Drive • Spray seal River Rose Drive and Stringybark Drive • Commence Centre Median River Rose Drive.

Comments	With works on Stringybark Drive well underway, an additional crew has been established to install the electrical conduiting and footings for the streetlights. An FRW crew was engaged to complete the Stringybark Drive watermain.

Street lighting conduit at River Rose Drive

Stormwater at Stringybark Drive

Campbell Street (Albert Street to Cambridge Street) - Reconstruction							
Scope	The works to be undertaken will include replacement of the kerb and channel on both sides of the road. Pavement replacement and improvements followed by an asphalt seal and garden beds. The project is 100% funded under the Local Roads and Community Infrastructure Program.						
Commencing Estimate	$1.0M	**Total Estimated Project Cost**	$1.5M	**Last Month**		**This Month**	
Comments	Works complete						

Before

After

Before

After

10.7 PROJECT DELIVERY CAPITAL PROJECT REPORT - NOVEMBER 2023

File No:	**7028**
Attachments:	**1. Dashboard Report⇩**
Authorising Officer:	**Peter Kofod - General Manager Regional Services**
Author:	**Andrew Collins - Manager Project Delivery**

SUMMARY

Monthly Status Report on all projects currently managed by the Project Delivery Unit.

OFFICER'S RECOMMENDATION

THAT the Project Delivery Monthly Report for November 2023 be received.

COMMENTARY

The Project Delivery section submits a monthly project report outlining the status of capital projects managed by the Unit. The following projects are reported on for the month of November 2023:

- Botanic Gardens & Zoo Redevelopment
- Botanic Gardens & Zoo Redevelopment (Enclosure Renewal)
- Botanic Gardens Internal Pathway Network
- Athelstane Reservoir Roof Replacement
- Walter Reid Redevelopment
- Glenmore Water Treatment Plant Roof Replacement
- Mount Morgan Pool
- Airport AHU Replacement
- North Rockhampton Sewage Treatment Plant Upgrade
- Gracemere & South Rockhampton STP Strategy
- Glenmore Water Treatment Plant Upgrade
- Glenmore Water Treatment Plant Solar Farm

PROJECT DELIVERY CAPITAL PROJECT REPORT - NOVEMBER 2023

Dashboard Report

Meeting Date: 5 December 2023

Attachment No: 1

Regional Services – Project Delivery

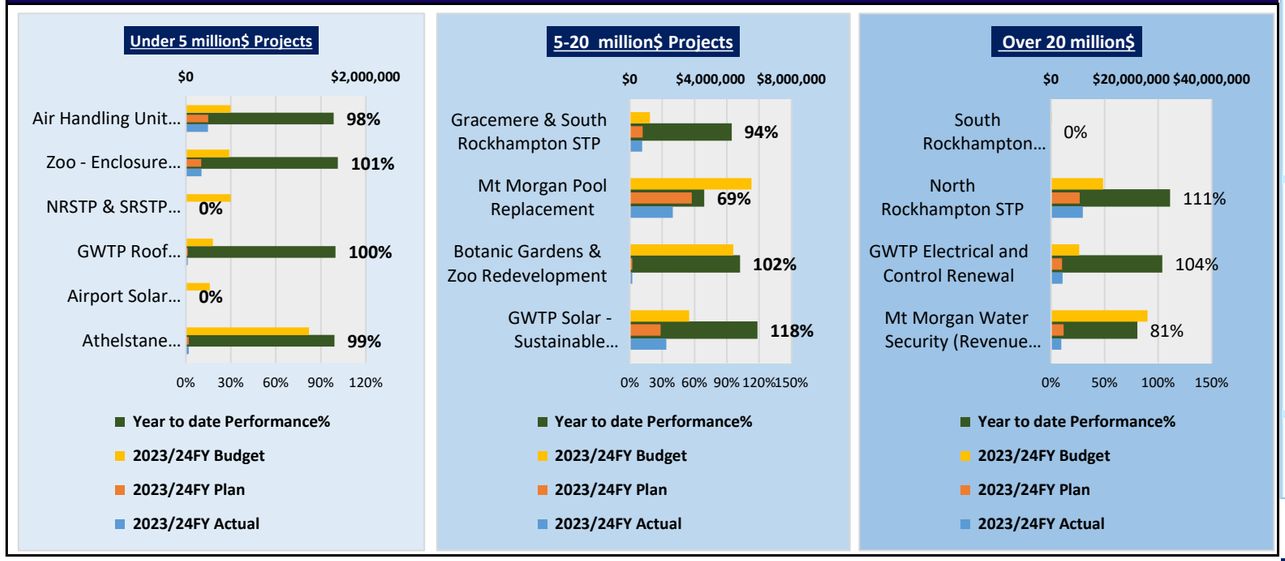
Monthly Dashboard Update

Reporting Period: November 2023

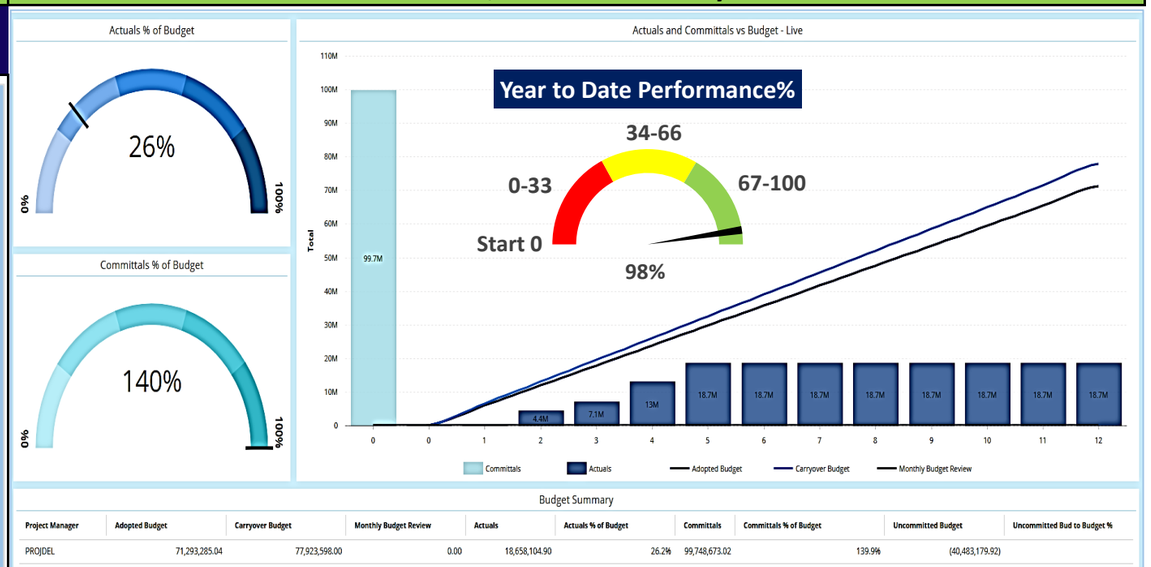
Scope

Deliver *the annual capital works program, achieving a capital program within 95% of the budget.*

Ensure *the delivery of infrastructure projects meet objectives set out in the 2023/24 Operational Plan.*



2023/24FY R1 Summary



Carryover Budget	$77,923,598

Actual	$18,658,105

ID	Project Name	Status Overview	Three Month Horizon		
		Key Milestones & Deliverables This Month	Dec-2023	Jan-2024	Feb-2024
1	**Botanic Gardens Zoo Redevelopment**	Stage 1a Amenities and Deck, Tender was closed and favourable pricing was received. Project delivery have released tender to contractors of 1a to price stage 1b.	Award Contract	Prestart meeting and give possession of site	Start construction
2	**Botanic Gardens Zoo Enclosure Renewals**	Stakeholder meetings with zoo team regarding enclosure animal management details. Scope changes have been asked by zoo team which has had minor impacts to design Program.	Project 3 - Work through detailed design of Dome Enclosure	Project 3 - Work through detailed design of Dome Enclosure	Project 3 - Finalisation of detailed design of Dome Enclosure
3	**Botanic Gardens Internal Pathway Network**	Completion of Pathways	Handrail to bridge installation	-	-
4	**Athelstane Reservoir Roof Replacement**	Ordering of materials and fabrication of structural steel.	Secure materials for Early 2024	Fabrication	Fabrication
5	**Walter Reid Redevelopment**	Working through scoping detail design documentation	Finalise Accommodation office design	Trade waste design documentation	Façade Scoping documentation
6	**GWTP Roof replacement**	Start site works with roof replacement.	Completion of Admin building and Chemical store roof replacement	Nil	Nil
7	**Mt Morgan Pool**	Complete Pool Shell, Commence Blockwork for Building	Commence Construction of Amenities Continue Pool Construction	Continue Construction of Amenities Continue Pool Construction - Commence tiling	Fit out Pool Plant Fit out Amenities Building
8	**Air Handling Unit Replacement**	Site establishment	Installation of AHU 1	Complete installation and commission AHU 1 Demolition and installation of AHU 2	Complete installation and commission AHU 2
9	**North Rockhampton Sewage Treatment Plant**	Energisation of the site.	Completion of Part A, New Process Plant	Commence dry commissioning	Dry commissioning
10	**Gracemere & South Rockhampton STP Strategy**	Mechanical & electrical designs for SRSTP in progress. GSTP installation of new switchboard for areation system underway.	Mechanical design and electrical design to continue	Drawings, Reports & Specifications to be submitted	RRC review
11	**Glenmore Water Treatment Plant Upgrade**	Completion of upgrades to Filter No. 7 and No. 4 upgrades.	Filter Upgrades	Air Scour Blower replacement/ Filter Upgrades	Filter Upgrades
12	**Glenmore Water Treatment Solar Farm**	Installation of HV Electrical Conduit via underbore.	HV and Communications cable install	Electrical Works for HV Kiosk	Electrical Works for HV Kiosk and commence commissioning
13	**Mt Morgan Water Pipeline Project**	Contractor has commenced site establishment	Early works and site establishment underway	Commencement of construction	Construction in progress

Regional Services – Project Delivery

Monthly Dashboard Update

Reporting Period: November 2023

ID	Project Name	%Total Budget Spent	% Budget Spent 23/24FY	Current Status	Traffic Light			Monthly Update
					Scope	Budget	Schedule	
1	Botanic Gardens & Zoo Redevelopment	22%	2.4%	Detail Design	G	G	G	Project 1 - Visitor Hub Construction: Project and design documentation staging has been completed. (Stage 1: Visitor Hub, Stage 2: Animal Operations Centre).
				Construction	R	G	R	Project 2 - A revised tender package for stage 1a was released to market and closed on the 18 October 2023. The Project tendering received was favourable from market. Stage 1b - multipurpose building was released to tenderers of stage 1a and closes 22 November 2023.
				Design & Construction	A	G	A	Project 3 - Includes the design and construction of a renewed playground facility. This was completed on the 30th March 2023.
2	Botanic Gardens Zoo Enclosure Renewal Program	76%	36.0%	Design & Construction	G	G	A	Project 1 - Gibbon Enclosure Renewal was completed in September 2022.
				Design & Construction	A	G	A	Project 2 - Design and Construction of New Eagle enclosure reached Practical completion on 11th of August. The Eagle was relocated to new enclosure on 24th August.
				Detail Design	A	G	A	Project 3 - Detailed design for Dome Aviary enclosure is underway and funding application is processed and waiting for approval.
								Project 4 - New Enclosure Preliminary Evaluation has been completed and a budget put forward for consideration.
				Preliminary Evaluation	A	G	A	Project 5 - Project estimation for the Dome refurbishment is $2,000,000. A funding application has been submitted to Growing Regions Program.
3	Botanic Gardens Pathway Renewal	25%	79.0%	Construction	G	G	G	Pathways completed, minor handrail to be installed. Variation works for replacement of pavers with concrete to bridge adjacent to floral clock carpark.
4	Athelstane Reservoir Roof Replacement	14%	2.3%	Design & Construction	G	G	G	Order placed on Contractor, Due to unavailability of materials in Australia till late 2023, Project has been rescheduled to start April 2024 and completed by 30 June 2024, to align with lower water demand periods.
5	Walter Reid Redevelopment	0.2%	2.5%	Design & Construction	G	G	G	Currently working through scoping detail design documentation with consultants.
6	GWTP Roof replacement	1.03%	6.9%	Design & Construction	G	G	G	Airconditioning contractor is 95% complete with some minor commissioning outstanding. One half of admin roof is complete, some rain delays have held up schedule.

Regional Services – Project Delivery

Monthly Dashboard Update

Reporting Period: November 2023

ID	Project Name	%Total Budget Spent	% Budget Spent 23/24FY	Current Status	Traffic Light			Monthly Update
					Scope	Budget	Schedule	
7	Mount Morgan Pool	40%	35.2%	Design & Construction	G	G	G	Pool base slabs poured, Shallow end walls poured. Pump room and Amenity block footings complete. Under slab services being installed. Forming and reinforcement works for the slabs ongoing. Pump room and Amenity under slab drainage and floor slabs complete.
8	Air Handling Unit Replacement	50%	49.2%	Design & Construction	G	G	G	Cutover between AHU ducts completed. Demolition of AHU 1 Ongoing - 90% Complete.
9	North Rockhampton Sewage Treatment Plant Upgrade	43%	61.1%	Construction	G	G	G	Part A of the project is nearing the commissioning stage. Work continues on site with the installation of plant and equipment to the inlet and ditch structures, in particular controls. Work has commenced on the epoxy coating of the Clarifier launder. A major milestone has been achieved with the cut over of the HV power to the site and energisation of the main switchboard on the 24 November 2023. New Part B blower room, all piles completed and all columns FRP. Waiting completion of Part before further demolition of existing inlet works can be undertaken. VPR's for new centrifuge building, Control building, road network, new dosing building and potable water line, have been processed. Execution of the works now being planned.
10	Gracemere & South Rockhampton STP Strategy	16%	60.5%	Design & Construction	G	G	G	GSTP – Some measures have been implemented and others currently underway as follows: - Aeration - To improve the current operations of the plant. Modifications and improvements have been made to the aeration system on site. This project is now commissioned and put into service. Training of FRW staff completed. - Dewatering - Sludge removal has been completed to this site. Lagoons now back in operation. SRSTP – A number of measures have been undertaken and further are required. Status as follows: - Penstocks - New penstocks have been installed to allow for future flow control of ditches and required works. - Dewatering - Sludge removal has been completed to this site. Lagoons now back in operation. - Power Upgrade – Council have been working with Ergon and a designer in relation to power upgrade requirements for the site. - Design currently underway for caustic and sugar dosing system, aeration upgrade, Gravity drainage deck (GDD), Polymer dosing systems, Service pipe reticulation, sludge lagoon reconstruction and new pump stations on site.

Regional Services – Project Delivery

Monthly Dashboard Update

Reporting Period: November 2023

ID	Project Name	%Total Budget Spent	% Budget Spent 23/24FY	Current Status	Traffic Light			Monthly Update
					Scope	Budget	Schedule	
11	Glenmore Water Treatment Plant Upgrade	26%	40.5%	Design & Construction	G	G	R	New main switch room construction complete [in old dosing area] Switchboard installed - connection progressing. Filter No.7 – Completed - back online. Filter No.4 – Completed - back online. Filter No.5 – Base slab poured. Underdrain set out and installation commenced. Filter No.6 - Pre-works completed. Media removal imminent. Lime System Upgrade commenced. SCADA and Network cutover commenced. Stage 2 Sedimentary Tanks. Detailed planning underway for upgrade package.
12	GWTP Solar Farm	82%	61.5%	Design & Construction	G	G	G	GEM Liaising with Ergon energy for connection to grid. Civil works for Inverter pad completed. Installation of Tracking system equipment completed. Installation of the Solar panels has been completed. Inverter station completed.
13	Mount Morgan Water Pipeline Project	9%	10.5%	Design & Construction	G	R	A	Prestart meeting with Contractor held on the 2 November 2023. All pipes and fittings delivered in the Lucas Street yard and Moonmera. Contractor has commenced site establishment in the Lucas Street holding yard. Temp Power and water connected. Initial Razorback Road work shop conducted with Council Design lead.

10.8 REQUEST FOR EXPRESSIONS OF INTEREST – ORGANICS PROCESSING SOLUTION

File No:	**13511**
Attachments:	**Nil**
Authorising Officer:	**Peter Kofod - General Manager Regional Services**
Author:	**Giselle Parsons - Coordinator Resource Recovery Strategy** **Michael O'Keeffe - Manager Rockhampton Regional Waste and Recycling**

SUMMARY

The purpose of this report is to seek approval under section 225(3) of the Local Government Regulation 2012 (Qld), to call an Expression of Interest for an Organics Processing Solution pursuant to section 228(5).

OFFICER'S RECOMMENDATION

THAT Council resolves to invite public Expressions of Interest for an Organics Processing Solution as provided for in section 228(3) of the *Local Government Regulation 2012* to allow for greater ability to refine the best organics processing solution for the community.

COMMENTARY

In line with Queensland's *Waste Reduction and Recycling Act 2011* and *Queensland's Waste Management & Resource Recovery Strategy*, RRWR operates under the Council's Resource Recovery Strategy. The Resource Recovery Strategy outlines Council's vision and targets for waste reduction and diversion from landfill setting a clear path forward by driving behaviour change, building resource recovery capacity, and restructuring the market. Key actions within the Strategy include the implementation of a kerbside organics service and the procurement of an organics processing solution, actions which are contingent on each other.

The Request for Expressions of Interest (EOI) aims to address Strategic Priority 2: Building Resource Recovery Capacity and Key Action:

2.1.2 Procure an organic processing solution – Establish an organics processing facility in the region that meets the needs of the chosen organic collection service delivery model. Explore viable ownership and partnership models.

In June 2023, RRWR presented a report to Council regarding barriers delaying the finalisation of a business case for a Food Organics Garden Organics (FOGO) kerbside collection service which detailed regulatory uncertainty around organics processing including:

- The release of the Organic Feedstock Odour Rating Assessment Report published by the Department of Environment & Science which determines obligations to be imposed on processors to mitigate odour impacts including appropriate processing technology.
- The risk of new composting facilities inability to comply with strict licensing conditions imposed on Environmental Authorities regarding site specifications.
- Potential impacts of restrictions to Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) limits within composting end products.

The EOI aims to identify an organic processing solution that may address these barriers.

BACKGROUND

RRWR currently provides approximately 33,000 residential properties with a weekly kerbside general waste bin and a fortnightly kerbside commingled recycling bin. Under the implementation of a kerbside organics collection service, RRWR intend to provide 29,000 kerbside organics bins (FOGO or GO) split between 28,000 domestic residents and as an opt-in allowance, 1,000 commercial customers. The roll out of this service has the potential to divert over 8,500 tonnes per annum of organic material currently going to landfill via the general waste bin.

As part of the procurement process of a kerbside organics service, a business case will soon be finalised and presented to Council for approval within the 2023/24 financial year. The preferred kerbside collection service (either GO or FOGO) to be presented for consideration will be dependent on the availability and feasibility of an organics processing solution for each service. The EOI seeks to identify a processing solution for the organic waste materials collected under each respective service.

In addition to organic material collected under a kerbside service, the EOI will also offer the addition of the unprocessed green waste accepted across RRWR Waste Facilities. The EOI will require Respondents to submit processing solutions for both FOGO and GO wastes as separate proposals. In addition, Respondents may also provide a proposal for the addition of self-haul unprocessed green waste.

RRWR would like to invite interested parties to provide a viable solution to assist with the processing of organic waste at a site within the Rockhampton Regional Council Area. The suitability of the organics processing solution and associated facility/site will be dependent on compliance with *Model Operating Conditions ERA 53(a) – Organic material processing by composting*, relevant Environmental Authorities, and appropriate land use planning approvals.

The EOI process has the following primary objects:

1) To align Council diversion rates with national and state targets including halving the amount of organic waste sent to landfill by 2030.
2) Establish an organics processing solution for FOGO waste, GO waste with the optional inclusion of self-haul unprocessed green waste.
3) Identify interested parties that can provide viable solutions to assist Council with avoiding disposal of kerbside organic waste currently sent to landfill.
4) Identify proven technology, proven contractors and organics processing solutions. A key aspect of this will be Respondents ability to fully articulate compliance with Model Operating Conditions.
5) Gain a clear understanding of the commercial opportunities, risks and costs associated with organics processing solutions for RRWR.
6) Identify what Council may need to do to facilitate and optimise the organics processing solution eg inclusions/exclusion of compostable materials, proteins and commercial organic waste materials.

This process will assist Council in the identification of a suitable organics processing solution and the development of the Written Tender Process. Respondents to the EOI process will be shortlisted and those selected will become eligible to participate in the Written Tender Process. Companies that do not participate in the EOI process will not be eligible to participate in the Written Tender Process.

LEGISLATIVE CONTEXT

Section 228 of the *Local Government Regulation 2012 (Qld)*:

"Tender Process"

(3) However, the local government may invite expressions of interest under subsection (5) only if the local government –

(a) decides, by resolution, that it would be in the public interest to invite expressions of interest before inviting written tenders; and

(b) records its reasons for making the resolution in the minutes of the meeting at which the resolution was made.

(5) The invitation for expressions of interest must –

(a) be published on the local government's website for at least 21 days; and

(b) allow written expressions of interest to be given to the local government while the invitation is published on the website.

(6) Also, the local government must take all reasonable steps to publish the invitation for tenders or invitation for expressions of interest in another way to notify the public about the tender process.

(7) If the local government invites expressions of interest under subsection (5) or (6), the local government may –

(a) prepare a short list from the persons who respond to the invitation for expression of interest; and

(b) invite written tenders from those persons.

CONCLUSION

To enable the finalisation of the business case for a kerbside organics service and gain certainty regarding the availability and feasibility of a processing solution to manage the collected organic materials, the EOI aims to identify options suitable for the Rockhampton region that comply with all legislative and licencing requirements. Respondents will be required to make clear how their organic processing solution will be applied including any supplementary feedstocks, technology to be used, other processes which may be undertaken at the processing facility, funding opportunities, commercial aspects and scale of the processing activity. RRWR will encourage both large scale and smaller niche solutions and acknowledges that responses to this EOI will vary accordingly.

It is recommended that Council grant a resolution to invite public Expressions of Interest for an Organics Processing Solution as provided for in section 228(3) of the *Local Government Regulation 2012*. It is anticipated that the EOI for an Organics Processor will be released to the public January 2024.

11 NOTICES OF MOTION

Nil

12 QUESTIONS ON NOTICE

Nil

13 URGENT BUSINESS/QUESTIONS

Urgent Business is a provision in the Agenda for members to raise questions or matters of a genuinely urgent or emergent nature, that are not a change to Council Policy and can not be delayed until the next scheduled Council or Committee Meeting

14 CLOSED SESSION

In accordance with the provisions of section 254J(3) of the *Local Government Regulation 2012,* a local government may resolve to close a meeting to the public to discuss confidential items, such that its Councillors or members consider it necessary to close the meeting.

RECOMMENDATION

THAT the meeting be closed to the public to discuss the following items, which are considered confidential in accordance with section 254J(3) of the *Local Government Regulation 2012,* for the reasons indicated.

15.1 Green Waste Management and Potential Future Risks

In accordance with section 254J(3)(g) of the *Local Government Regulation 2012* it is considered necessary to close the meeting to discuss negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

15 CONFIDENTIAL REPORTS

15.1 GREEN WASTE MANAGEMENT AND POTENTIAL FUTURE RISKS

File No: **13511**

Attachments: **1. Model Operating Conditions ERA 53(a) - Organic material processing by composting**

Authorising Officer: **Peter Kofod - General Manager Regional Services**

Author: **Giselle Parsons - Coordinator Resource Recovery Strategy**
Michael O'Keeffe - Manager Rockhampton Regional Waste and Recycling

In accordance with section 254J(3)(g) of the *Local Government Regulation 2012* it is considered necessary to close the meeting to discuss negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

SUMMARY

The purpose of this report is to provide an overview of potential processing solution and financial risks associated with Council's green waste management in relation to Contractor compliance with Model Operating Conditions ERA 53 (a) – Organic material processing by composting.

16 CLOSURE OF MEETING