



Notice of Meeting

Notice is hereby given that the **Ordinary Meeting** of the **Whitsunday Regional Council** will be held at the Council Chambers 67 Herbert Street, Bowen on **Wednesday 28 April 2021** commencing at **9:00 a.m.** and the Agenda is attached.

Councillors: Andrew Willcox, Jan Clifford, Al Grundy, John Collins, Michelle Wright, Gary Simpson and Michael Brunner.

Local Government Regulation 2012

258.(1) Written notice of each meeting or adjourned meeting of a local government must be given to each councillor at least 2 days before the day of the meeting unless it is impracticable to give the notice.

(2) The written notice must state:

- (a) the day and time of the meeting; and
- (b) for a special meeting – the business to be conducted at the meeting

(3) A **special meeting** is a meeting at which the only business that may be conducted is the business stated in the notice of meeting.

Rodney Ferguson

CHIEF EXECUTIVE OFFICER





Agenda of the Ordinary Meeting to be held at
the Council Chambers, 67 Herbert Street Bowen
on Wednesday 28 April 2021 commencing at **9:00am**

Council acknowledges and shows respect to the Traditional Custodian/owners in whose country we hold this meeting.

9:00 am

- Formal Meeting Commences

10:00 am - 10.30 am

- Morning Tea and Presentation of Elite Athlete

Agenda of the Ordinary Meeting to be held at
the Council Chambers, 67 Herbert Street Bowen
on Wednesday 28 April 2021 commencing at **9:00am**

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1. Apologies

No Agenda items for this section.

2. Condolences

2.1 CONDOLENCES REPORT

AUTHOR: Melanie Douglas - Governance and Councillor Support Officer

RESPONSIBLE OFFICER: Jason Bradshaw - Director Corporate Services

RECOMMENDATION

Council observes one (1) minutes silence for the recently deceased.

The following report has been submitted for inclusion into Council's Ordinary Council Meeting to be held 28 April 2021.

SUMMARY

Council has received advice of the passing of community members within the Whitsunday Region.

PURPOSE

To acknowledge and observe a minute silence for the recently deceased throughout the Whitsunday Region.

BACKGROUND

Bereavement cards have been forwarded to the families of the deceased by the Mayor and Chief Executive Officer on behalf of the Whitsunday Regional Council.

STATUTORY MATTERS

N/A

ANALYSIS

N/A

STRATEGIC IMPACTS

N/A

CONSULTATION

Andrew Willcox - Mayor

DISCLOSURE OF OFFICER'S INTERESTS

N/A

CONCLUSION

Councillors, committee members, staff, general public and anyone participating in the meeting are to stand and observe a minute silence for the recently deceased.

ATTACHMENTS

N/A

3.1 Declarations of Interest

No Agenda items for this section.

4.1 Mayoral Minute

No Agenda items for this section.

4.2 Mayoral Update

Verbal update will be provided at the meeting.

5. Confirmation of Previous Minutes

5.1 CONFIRMATION OF MINUTES REPORT

AUTHOR: Melanie Douglas - Governance and Councillor Support Officer

RESPONSIBLE OFFICER: Jason Bradshaw - Director Corporate Services

RECOMMENDATION

That Council confirms the Minutes of the Ordinary Meeting held on 14 April 2021.

The following report has been submitted for inclusion into Council's Ordinary Council Meeting to be held 28 April 2021.

SUMMARY

Council is required to confirm the minutes of the Ordinary Council Meeting Minutes held on 14 April 2021.

PURPOSE

At each Council meeting, the minutes of the previous meeting must be confirmed by the councillors present and signed by the person presiding at the later meeting. The Minutes of Council's Ordinary Meeting held on 14 April 2021 are provided for Councils review and confirmation.

BACKGROUND

In accordance with s272 of the Local Government Regulation 2012, minutes were taken at Council's Ordinary meeting held on 14 April 2021 under the supervision of the person presiding at the meeting. These unconfirmed minutes once drafted were submitted to the Chief Executive Officer for review and are available on Council's website for public inspection.

STATUTORY MATTERS

In accordance with the Act, Council must record specified information in the minutes of a meeting regarding any declared material personal interests or conflicts of interest. At the Ordinary Meeting held on 24 March 2021, the following interests were declared and recorded in the minutes:

Councillor	MPI/COI	Report No.	Particulars of the interest
No Declarations of Interest were made at the meeting of 14 April 2021			

All required information regarding declarations of interest under the Act is recorded in the minutes and consolidated in Council's Councillor COI and MPI Public Register, which is available on Council's website at the following link:

<https://www.whitsunday.qld.gov.au/DocumentCenter/View/5358>

Additionally, the chairperson of a local government meeting must also ensure that details of an order made against a Councillor for unsuitable meeting conduct at a Council meeting are

recording in the minutes of the meeting. At the Ordinary Meeting held on 24 March 2021, the following orders were made:

Councillor	Order Made
No Orders were Made for the Meeting of 14 April 2021	

All required information regarding orders made about the unsuitable meeting conduct of councillors at Council meetings under the Act is recorded in the minutes and consolidated in Council's Councillor Conduct Register. This register is available on Council's website at the following link: <https://www.whitsunday.qld.gov.au/DocumentCenter/View/5302>

Local Government Regulation 2012

Section 272 of the Regulation stipulates that the Chief Executive Officer must ensure that minutes of each meeting of a local government are taken under the supervision of the person presiding at the meeting.

Minutes of each meeting must include the names of councillors present at the meeting and if a division is called on a question, the names of all persons voting on the question and how they voted.

At each meeting, the minutes of the previous meeting must be confirmed by the councillors present and signed by the person presiding at the later meeting.

A copy of the minutes of each meeting must be available for inspection by the public, at a local government's public office and on its website, within 10 days after the end of the meeting. Once confirmed, the minutes must also be available for purchase at the local government's public office(s).

ANALYSIS

Council's options are:

Confirm the Minutes of the Ordinary Meeting held on 14 April 2021.

If Council is satisfied that the unconfirmed minutes are an accurate representation of what occurred at the meeting held on 14 April 2021 and comply with legislative requirements outlined in this report, no further action is required other than to confirm the minutes as per the recommendation.

Confirm the Minutes of the Ordinary Meeting held on 14 April 2021 with amendments.

If Council is not satisfied that the unconfirmed minutes are an accurate representation of what occurred at the meeting held on 14 April 2021 and comply with legislative requirements outlined in this report, then they move a motion that they be confirmed but with a list of amendments to ensure they are correct and compliant.

STRATEGIC IMPACTS

Alignment to Corporate Plan

Outcome 1.1: Our Leadership engages with the community and provides open, accountable and transparent local government.

Alignment to Operational Plan

KPI: Council agendas and business papers are delivered to Councillors within required timeframes.

Financial Implications

The price for a member of the public to purchase a copy of the minutes must not be more than the cost to the local government of having the copy printed and made available for purchase, and if the copy is supplied to the purchaser by post, the cost of the postage.

Risk Management Implications

Council risks non-compliance with the local government legislation by not confirming minutes of the previous meeting.

TABLED MATTERS

Unresolved Tabled Matters			
Date of Meeting	Resolution Number	Summary	Resolved
13/05/2020	20191416 - Development Permit for Material Change of Use - Showroom - 2-12 Central Avenue Cannonvale - Yoogalu Pty Ltd 2020/05/13.07	That the application lie on the table as the applicant has 'Stopped the Clock.	On hold pending the outcome of the intersection funding and discussion with DTMR - Corner Galbraith Park Road and Shute Harbour Road.
13/05/2020	20140012 - Request to Extend Currency Period - Reconfiguration of A Lot One (1) Lot into Two (2) Lots - 106 Patullo Road, Gregory River - 12 Rp744909 2020/05/13.08	That the application lie on the table until the application is properly made.	Remains on hold pending receipt of fees.
25/11/2020	Cantamessa Road Bridge 2020/11/25.27	That the item be tabled pending further investigations for temporary access, replacement, or closure of the bridge and to seek further information regarding funding.	Council has visited the site and is arranging for geotechnical investigations. Upon receipt of the geotechnical advice a preliminary design will be prepared.

CONSULTATION

Jason Bradshaw - Director Corporate Services

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

These minutes from the 14 April 2021 are therefore submitted for adoption of their accuracy by the Councillors at this meeting of Council.

ATTACHMENTS

Attachment 1 - Copy of the minutes from Ordinary Meeting held on 14 April 2021.

Attached separately

6. Business Arising

There have been a number of matters sitting on the table that require further action, some of these actions are external to Council. As a result it is recommended that the matter be removed from the table and included into the action items outstanding for monitoring.

OFFICER'S RECOMMENDATION

That the Tabled Matters be taken from the table as they are unlikely to be resolved in the short or medium term and that when the matters are ready for further consideration, fresh reports be prepared for Council.

(These matters will be added to the Council resolutions and actions outstanding lists that are presented to Council on a periodic basis)

TABLED MATTERS

Unresolved Tabled Matters			
Date of Meeting	Resolution Number	Summary	Resolved
13/05/2020	20191416 - Development Permit for Material Change of Use - Showroom - 2-12 Central Avenue Cannonvale - Yoogalu Pty Ltd 2020/05/13.07	That the application lie on the table as the applicant has 'Stopped the Clock.	On hold pending the outcome of the intersection funding and discussion with DTMR - Corner Galbraith Park Road and Shute Harbour Road.
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7. Deputations

No agenda items for this section.

8. Petitions

No agenda items for this section.

9. Notice of Motion

No agenda items for this section.

10. Questions on Notice

No agenda items for this section.

11. Questions from Public Gallery

PUBLIC QUESTION TIME

In each Meeting, time shall be set aside to permit members of the public to address the Council on matters of public interest related to local government. Questions from the Public Gallery will be taken on notice and may or may not be responded to at the Meeting and must be received in writing by the Chief Executive Officer no later than 12 noon two (2) clear business days prior to the Council Meeting. The time allotted shall not exceed fifteen (15) minutes and no more than three (3) speakers shall be permitted to speak at any one (1) meeting.

The right of any individual to address the Council during this period shall be at the absolute discretion of the Chairperson.

12. Office of the Mayor and CEO

12.1 LAKE PROSERPINE CAMPGROUND BUSINESS PLAN

AUTHOR: Craig Turner - Chief Operating Officer Aviation and Tourism

Adam Hagy - Acting Director Infrastructure Services

RESPONSIBLE OFFICER: Rodney Ferguson - Chief Executive Officer

OFFICER'S RECOMMENDATION

That Council resolves to:

- a) implement Scenario A from the Lake Proserpine Campground Business Plan, from 1 July 2021 which includes advertising a contract for temporary caretaker management services of the Lake Proserpine Campground facilities;
 - b) implement Scenario B from the Lake Proserpine Campground Business Plan to undertake further upgrades upon successful notification of grant funding;
 - c) notify Sunwater of their intent to implement Scenario A as listed; and
 - d) implement the Community Engagement Plan attached to the report.
-

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on Wednesday 28th April 2021.

SUMMARY

Whitsunday Regional Council engaged a consultant (Colin Balfour, Balfour Consulting Pty Ltd) to deliver a business plan for the operation of the Lake Proserpine Campground. The purpose of this project was to identify a commercial model for the operation of the existing Lake Proserpine facilities and how to best leverage planned improvements from delivery of the Lake Proserpine Master Development Plan.

PURPOSE

Project objectives and parameters

The purpose of this project was to identify a commercial operation model for the next five years taking into account the following scenarios:

- Scenario A: Adoption of a pay per use operation model for the current Lake Proserpine facilities
- Scenario B: Adoption of a pay per use operation model for the Lake Proserpine facilities if the planned \$2.5M additional commercial improvements are undertaken.

The plan had to incorporate the current trends RV and Caravan industry in Australia in addition to other primary target markets.

BACKGROUND

Consultant Analysis and Recommendation

Scenario A

Analysis of Scenario A found that WRC could proceed with the scenario, but cash flow projections suggest as a commercial entity it would be unlikely to break even. This means that ongoing upgrades of the facility could not be undertaken. It will also mean that Council would not significantly mitigate the risk and liability issues over the next five years.

A basic camping ground at Lake Proserpine envisaged by Scenario A will create economic benefit for the Whitsundays region but also creates risk and liability issues for WRC and may not be an asset to the Whitsundays Tourism Brand. Please note, different charging scenarios have also been included in the cash flow models. With the higher rate being charged, it improves the commercial outcomes of the facility.

It is recommended Whitsunday Regional Council seek to access funding needed to progress the Lake Proserpine camping ground from Scenario A to Scenario B as a priority.

Note, Scenario A would include temporary on-site contractors to manage the facility however they would be required to provide their own accommodation for the 12-month period ie. Caravan.

Scenario B

Analysis of Scenario B found that an investment by government of \$2.5 million into developing infrastructure at Lake Proserpine Camping Ground will maximise the value of this asset and have a significant economic impact for the Whitsundays region.

Development of the Lake Proserpine Camping Ground will directly facilitate the development of new tourism businesses associated with the Lake, create a focus on the Whitsundays hinterland as a tourism sub-region, and create new opportunities for nature-based tourism and farm-stay products within that region to complement existing coastal development. This will in turn substantially lift economic activity in Proserpine.

A fully developed camping ground at Lake Proserpine should be a priority of WRC as it will provide a world-class camping and nature-based tourism experience and an opportunity to extend the Whitsundays Tourism Brand.

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009 and Local Government Regulation 2012

ANALYSIS

All content within the Lake Proserpine Business Plan, which was prepared by Belfour Consultancy, and presented at briefing on the 7th of April, considered a range of options with a recommendation to progress with the resolution being sort above.

In the event of a “do nothing” position, Council has significant financial, legal and reputational risk if it continues to operate the facility in the currently form.

STRATEGIC IMPACTS

Alignment to Corporate Plan

Outcome 1.2 - Our leadership partners with government, industry, business and community to deliver positive outcomes.

Outcome 4.4 - Our tourism and small business sectors are strong, sustainable and actively promoted.

Financial:

Officers recommend implementing the Lake Proserpine Business Plan in order to minimise the impact on Council's operating budget.

CONSULTATION

Rodney Ferguson - Chief Executive Officer

Adam Hagy - Acting Director Infrastructure Services

Julie Wright - Director Community Services

Paul Hanlon - Economic Development Research Officer

Donna Foster - Economic Development Coordinator

Elouise Lamb - Project Officer Economic Development and Major Grants

ELT - Friday 19th March 2021

WRC Communications Team - Greg Martin, Lisa Maher, Joanne Vlismas, Sara Collins

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

Based on the above report findings implementation of Scenario A and then in the event of successful grant funding, implementation of Scenario B, will mitigate Council's financial and operational risk at the Lake Proserpine Camp Facility.

As part of the implementation of Scenario A, Council's Communications Team, have completed a Community Engagement Plan. The Community Engagement Plan is a critical piece, given the facility is going from a free camp of three nights to a pay-to-stay model with an increase to a seven-night camping limit.

These outcomes, once implemented, will deliver a strong economic benefit to the Proserpine business community through an increase of trading and commerce directly related to the Lake Proserpine operation.

ATTACHMENTS

Attachment 1 - Lake Proserpine Campground Business Plan

Attachment 2 - Community Engagement Plan

Lake Proserpine

Camping ground

Strategic Business Plan

2021 - 2026



February 2021

Prepared by



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1 DEFINITIONS

These definitions are for the purposes of this report. While they are generally recognised across the RV traveller community, they are by no means universally recognised and may be challenged by some groups or organisations.

RV	Recreational Vehicle - any towed or self-propelled vehicle specifically built for “in-vehicle” overnight accommodation, including all types of campervans, motorhomes, caravans, camper trailers, slide-ons and 5th wheelers. This category does not include rooftop tents/campers.
Free camping	A camping facility for RVs that provides relatively unstructured camping options (not formal allocated sites), primarily for self-contained vehicles, at low or no cost. Minimal amenities would include a dump point for offloading grey and black water waste, a wash down water point and access to potable water.
Self-contained RV	A recreational vehicle with the capacity to contain all waste matter, including black water, grey water and hard waste, within the vehicle for a minimum of three nights. These vehicles have a toilet, shower, kitchen sink, freshwater tank, grey water tank and black water tank/cassette fitted within the vehicle. The Campervan & Motorhome Club of Australia definition allows for RVs to use external grey water tanks (totes) under specific conditions and a portable toilet stored in the vehicle.
Camping ground	A commercial or non-commercial facility (free or low-cost) targeted to all types of camping, including both RVs and tent camping, either free or at a price point under that of commercial caravan parks. Camping grounds usually provide minimal facilities, including limited access to showers, toilets and potable water, but may also provide barbecue/kitchen facilities, cabins, recreational facilities and a dump point.
Dump point	A location specifically for the dumping of grey and black water from an RV that also provides a potable water point.
Long-haul RV tourists	These are RV tourists undertaking trips longer than three weeks and possibly up to a year or more. They are predominantly retirees (grey nomads), but also include couples on long service leave, families, international visitors and vanpackers.
Vanpackers	Travellers in campervans or similar types of vehicles, with the same demographic and socio-graphic traits as backpackers, but generally

	using either their vehicle or tents for accommodation rather than hostels.
Nature-based tourism	Nature-based tourism is leisure travel undertaken largely or solely for the purpose of enjoying natural attractions and engaging in a variety of nature-based activities – from scuba diving and bushwalking to simply going to the beach.

2 EXECUTIVE SUMMARY

Whitsunday Regional Council (WRC) seeks to identify a commercial model for the operation of the existing Lake Proserpine camping ground and how to best leverage planned improvements arising from delivery of the Lake Proserpine Master Development Plan.

To achieve this, Balfour Consulting Pty Ltd was required to complete a strategic business planning process that considered two scenarios with a five year outlook.

These two scenarios are:

Scenario A

- Adoption of a pay per use operation model for the current Lake Proserpine facilities with development expenditure based on revenue generated. It is assumed current facilities will include the ability to deliver potable water, wash down water and sewerage treatment on site.

Scenario B

- Adoption of a pay per use operation model for the Lake Proserpine facilities if the following planned \$2.5M additional commercial improvements are undertaken:
 - i) Camping ground kiosk fit out and manager's quarters.
 - ii) Extension of the current lakeside camping area into Stage 2.
 - iii) Refinement of planned cabin configuration and associated access arrangement.
 - iv) Location of the proposed playground in the vicinity of kiosk/cabins.
 - v) Expansion of the existing amenities building to accommodate additional camping and cabins.
 - vi) Extension of the existing pontoon to accommodate greater boat access and possible water recreation operation.
 - vii) Solar panels to be located on all built form/structures.
 - viii) Identify four BBQ areas and covered dining/gathering areas (two lakeside/two land side).
 - ix) Remove references in the current master plan to recreational activities within the quarry.

Analysis of current tourism markets identified two broad target market segments for the Lake Proserpine camping ground, being:

- 1) **Fly/stay tourists** - tourists flying into Whitsunday Airport whose stay could include accommodation at Airlie Beach and nearby islands, but who may also consider a one or two night Whitsunday hinterland experience in a cabin at Lake Proserpine.
- 2) **Drive tourists** - a diverse market that would include:
 - i) **The long-haul domestic RV tourism market**- the key market from May to October, including but not limited to grey nomads.
 - ii) **The local/regional market** - mainly families from the region between Mackay and Townsville.

- iii) **International RV tourists** - predominantly from the UK, Europe and New Zealand travelling in motorhomes.
- iv) **Vanpackers** - mobile backpackers in commercial campervans or other vehicles with tents.

The severe disruption of both the international and domestic tourism markets caused by Covid-19 is predicted to impact tourist behaviours up to and possibly beyond 2023. The expectation is that increases in domestic tourism will substantially fill the void left by a severe drop in international tourism across most destinations.

Research indicates 72% of Australians are planning a holiday between July and December 2021 and the majority of these will be to domestic destinations. Researchers also found that international tourism dropped by 98.8% in 2020 and full recovery could stretch beyond 2023. The prediction is that as Australians return to international destinations in 2023 and beyond, so will the international market return to Australia.

Analysis of Scenario A found that WRC could proceed with the scenario, but cash flow projections suggest as a commercial entity it would be unlikely to break even. This means that ongoing upgrades of the facility could not be undertaken. It will also mean that Council would not significantly mitigate the risk and liability issues over the next five years.

A basic camping ground at Lake Proserpine envisaged by Scenario A will create economic benefit for the Whitsundays region but also creates risk and liability issues for WRC and may not be an asset to the Whitsundays Tourism Brand.

It is recommended Whitsunday Regional Council seek to access funding needed to progress the Lake Proserpine camping ground from Scenario A to Scenario B as a priority.

Analysis of Scenario B found that an investment by government of \$2.5 million into developing infrastructure at Lake Proserpine Camping Ground will maximise the value of this asset and have a significant economic impact for the Whitsundays region.

Development of the Lake Proserpine Camping Ground will directly facilitate the development of new tourism businesses associated with the Lake, create a focus on the Whitsundays hinterland as a tourism sub-region, and create new opportunities for nature-based tourism and farm-stay products within that region to complement existing coastal development. This will in turn substantially lift economic activity in Proserpine.

A fully developed camping ground at Lake Proserpine should be a priority of WRC as it will provide a world-class camping and nature-based tourism experience and an opportunity to extend the Whitsundays Tourism Brand.

3 PROJECT SCOPE & OBJECTIVES

Whitsunday Regional Council (WRC) seeks to identify a commercial model for the operation of the existing Lake Proserpine facilities and how to best leverage planned improvements arising from delivery of the Lake Proserpine Master Development Plan.

In developing this strategic business plan, WRC requires identification of a commercial operation model for the next five years, considering the following scenarios:

Scenario A

- Adoption of a pay per use operation model for the current Lake Proserpine facilities with development expenditure based on revenue generated. It is assumed facilities will include the ability to deliver potable water, wash down water and sewerage treatment on site.

Scenario B

- Adoption of a pay per use operation model for the Lake Proserpine facilities if the following planned \$2.5M additional commercial improvements are undertaken:
 - 1) Camping ground kiosk fit out and manager's quarters.
 - 2) Extension of the current lakeside camping area into Stage 2.
 - 3) Refinement of the planned cabin configuration and associated access arrangement.
 - 4) Location of the proposed playground in the vicinity of the kiosk/cabins.
 - 5) Expansion of the existing amenities building to accommodate additional camping and cabins.
 - 6) Extension of the existing pontoon to accommodate greater boat access and possible water recreation operation.
 - 7) Solar panels to be located on all built form/structures.
 - 8) Identify four BBQ areas and covered dining/gathering areas (two lakeside/two land side).
 - 9) Remove references in the current master plan to recreational activities within the quarry.

It is anticipated that the development of Scenario B will specifically include:

- Modular pontoon finger
- Recreational water sports concession
- Food truck amenities
- Formalised fire pit locations
- Skillion undercover areas with BBQ's
- Unstructured non-powered camping spots
- 30 powered sites
- 10 cabins
- Playground
- Extra ablution amenities as required.

This project will therefore provide two separate business plans, one for each identified scenario, with an analysis of each providing a five-year outlook and including identification of key issues impacting development of the camping ground facility. It will also include a cash flow analysis to highlight potential growth of the facility and how this growth will impact the economic, social and environmental well-being of the Whitsunday Region.

The other issue to be highlighted through this analysis is the impact on regional employment, directly through servicing and maintaining the camping ground and indirectly through the impact of projected tourism spend by camping ground users during their visit to the Whitsunday Region.

The project will also seek to identify and analyse:

- options to maximise development of the Lake Proserpine camping ground;
- options to maximise revenue from the camping ground facility;
- options to increase visitation numbers and length of stay for the drive tourism market;
- particularly RV tourists and camping; and
- potential markets and their behaviours.



4 OVERVIEW

The impact of Covid-19 on the domestic drive tourism market during 2020 has been significant and unfortunately there is little research available to provide a proper understanding of how this market has been impacted and how it will perform over the next 3 to 5 years. However, what we know or can reasonably assume is:

- Production of recreational vehicles Australia was down approximately 25% over calendar year 2020.
- Long-haul RV tourism to Queensland dropped substantially, possibly as much as 50%, due to closure of the Queensland border and state border closures elsewhere.
- Australian international tourism, both inbound and outbound, will be significantly reduced over the next two years (2021, 2022) and is likely to be impacted through to 2024.
- Many Australians will switch from international to domestic holidays over the next two years or longer.
- There will be an increase in the domestic drive tourism market across all segments of this market over the next two years.
- Long-haul RV tourists will spend more time travelling and more time in regional and remote areas of Australia.
- There will be significant pressure placed on RV and drive tourism facilities in and around major cities, particularly on long weekends and school holidays, as families, couples and other employed demographics take short-term RV and drive tourism trips generally limited to 2 to 4 hours from their place of residence.

Information from the Caravan Industry Association of Australia reported by ABC news in June 2020 claimed there was a “boom” in caravan sales, with one third of these sales to newcomers, young couples and families. The report suggested acceptance of working from home during the peak of the Covid-19 lockdowns has increased opportunities to undertake an extended road trip, as a couple or family, while maintaining employment. An earlier report in the Australian Financial Review highlighted the increase in caravan sales and particularly growth in the sales of second-hand vehicles, as production of new vehicles dropped due to availability of imported components.

Changes to the retiree or grey nomad market are also likely to impact travel patterns and the drive tourism market over the next 3 to 5 years. The baby boomers, those born between 1946 and 1964, started reaching retirement age in 2011 and now dominate that market. They are significantly more affluent than their predecessors and as the last of these baby boomers reach retirement age in 2029, they will be the first Australians to retire with the benefit of accumulating superannuation over the full term of their working life. These travellers are not mum and dad pensioners doing it on the cheap, as was the nature of the grey nomad market 10 to 15 years ago; these are affluent travellers who are driving technological change in RV production and design while at the same time bringing higher levels of social and environmental awareness to their travel behaviours.

Research in 2010¹ found that 22% of RV tourists using free rest areas spent \$100 a day or more. Member research by the Campervan & Motorhome of Australia (CMCA)² found over 20% of members spend \$1000 a week or more when travelling, with over 50% spending more than \$100 per day. This makes long-haul RV tourists the biggest spenders in the Australian tourism market. They are a market worth attracting, and the Lake Proserpine camping ground offers the accommodation facility and tourism experience they prefer. CMCA member research³ also found that 40% of their 50,000 plus members were prepared to pay \$15 a night for overnight unstructured camping with basic facilities.

4.1 MARKET OUTLOOK

The market outlook for the camping ground at Lake Proserpine is positive. If the quality and ambience of the built product developed by WRC is in keeping with the quality of the natural environment and the camping experience this environment creates, then the challenge will be managing rather than attracting visitation.

An additional attraction is that the facility is pet friendly. Over 20% of long-haul RV travellers travel with a pet⁴, and for the local/region market there are limited options for pet friendly camping destinations as pets are not allowed in national parks or most caravan parks.

There are a limited number of free camping locations across the greater North Queensland area that can be considered destinations and offer the specific natural and recreational benefits provided at Lake Proserpine, ie. locations that are as interesting and attractive to the local market as they are to other visitors.

It should be noted that in the regions from Mackay to Townsville, there are only four camping grounds controlled by Queensland Parks and Forests that allow access by caravans and motorhomes, none in the Whitsundays region and none are pet friendly. Therefore, Lake Proserpine could become a priority destination for RV tourists travelling the Bruce Highway between Mackay and Townsville, as well as being attractive to the local/regional market.

While domestic tourism trips dropped 31% in the year ending September 2020⁵, research suggests Australia will experience above average growth over the next two years. A recent report by KPMG⁶

¹ CMCA – Member Research 2010 (Balfour Consulting)

² CMCA – Member Research 2016 (Colmar Brunton)

³ Ibid

⁴ Ibid

⁵ National Visitor Survey 2020

⁶ KPMG Feb 2021- Could COVID-19 unlock more of Australia's passion for travel?

found domestic tourists have the desire, the time and the means to fill the gap left by international tourists, with 61 % of Australian respondents saying they were planning on booking a holiday between January and June 2021 and 72 % saying they would book a holiday between July and December 2021. The report also found that newfound freedoms in how we work because of COVID-19 make working from holiday destinations acceptable – creating a new category of working holiday.

In the year ending December 2020, the international inbound tourism market to Australia decreased 98.8% relative to the previous year⁷ and is unlikely to recover before 2023. Research undertaken at Monash University⁸ found that “the loss in the international arrivals market is expected to be substantially higher and the recovery period substantially longer, stretching to possibly beyond 2023”.

Considering the overall size of the potential domestic market, any reduction in international travellers wanting to visit Lake Proserpine will be more than compensated by domestic demand.

WRC must keep in mind that, over time, the challenge will not be creating market demand - the challenge will be managing that demand, particularly during school holidays and long weekends between April and October.

4.2 KEY TARGET MARKETS

The major target market for the Lake Proserpine camping ground will be the drive tourism market with a peak season from June to September. This market breaks down into four key segments with the domestic long haul likely to be the mainstay of visitors for the next two years, along with the local/regional market during school holidays and long weekends. The international market will slowly return and start creating demand from 2023/2024.

Also, development of the cabins provides an opportunity to diversify the fly/stay market, with interstate and international arrivals to Whitsunday Airport looking to spend one or two nights at Lake Proserpine as part of their overall Whitsundays experience.

These key target markets are:

4.2.1 Drive Tourism

- 1) The long-haul domestic RV tourism market - as mentioned previously this market is dominated by retirees but also includes families, couples or individuals on long service leave or taking extended holidays, and others working remotely while travelling. CMCA estimates

⁷ Tourism Research Australia - International Visitor Survey

⁸ The road to recovery from COVID-19 for Australian tourism – Athanasopoulos et al. January 2021

an average RV spend is over \$100 per day, with over 25% spending more than \$1000 per week while they travel⁹.

- 2) The local/regional market - this basically covers the area from Townsville in the north to Mackay in the south, which has a population of approximately 350,000 people. All those in or adjacent to the Whitsunday Region could access the camping ground on weekends; those further away are most likely to access the facility during school holidays or long weekends, mainly between April and October. This will be market that drives events and will also be the major users of cabins.
- 3) International RV tourists - International visitors travelling in an RV (usually a motorhome or campervan) generated around 18,500 predominantly long-haul RV tourism arrivals to North Queensland in 2016¹⁰, with more than half of these visitors aged between 15 and 34 years. Older international visitors travelling in a motorhome or caravan are predominantly from the UK, Europe or NZ and would likely be attracted to the Lake Proserpine experience.
- 4) Vanpackers - Approximately 70,000 backpackers visit the North Queensland region annually, and it is estimated 14% were travelling in an RV or other vehicle and spending on average \$72 a day¹¹.

4.2.2 Fly/Stay Tourism

As the Lake Proserpine tourism product is refined and the cabins with landscaping are fully developed, it presents an opportunity to market Lake Proserpine as a Whitsundays hinterland experience to the more than 313,000 holiday or leisure tourists¹² who visit the area each year. It also provides an extension of the overall Whitsundays tourism experience, the opportunity to combined Airlie Beach and other coastal destinations with one or two nights at an inland setting. With the development of water-based activities and nature-based tourism options, Lake Proserpine may be attractive to families seeking to maximise the value of their Whitsundays visit.

It is likely some international visitors will also be attracted to the area for the unique tropical experience on offer. The development of specific nature-based tourism experiences along with direct involvement in activities such as sailing, fishing and canoeing could attract international visitors to spend extra nights in the Whitsundays region. However, fly/stay international tourists will not be a significant segment over the next five years.

⁹ CMCA – Member Research 2016 (Colmar Brunton)

¹⁰ IVS - 2016

¹¹ Ibid

¹² NVS – YE June2020

5 STRATEGIC BUSINESS PLAN

5.1 ANALYSIS - SCENARIO A

Scenario A

Adoption of a pay per use operation model for the current Lake Proserpine facilities with development expenditure based on revenue generated.

According to the brief received, Scenario A also includes installation of a sewerage system and water treatment system as part of the current facilities. This will significantly reduce existing costs from approximately \$600,000 a year to \$200,000 a year as potable water and water for the wash down facility is currently being tanked into the camping ground and sewerage tanked out. It also assumes some type of payment process will be in place.

5.1.1 SWOT Analysis

Strengths	Weaknesses
▪ Economic driver - Proserpine and region ▪ Direct community benefit – Whitsunday Region residents ▪ No capital costs to maintain existing facility ▪ Spectacular natural beauty of location ▪ Barramundi fishing ▪ Isolated - away from capital and regional cities, not overrun. ▪ Existing amenities - showers and toilets ▪ Supports WRC tourism diversification ▪ All weather access, sealed road ▪ Offers camping 12 months of the year ▪ Excellent free (unstructured) RV camping facilities ▪ Size - up to 12 ha of available land ▪ Wash down facility - Mimosa prevention ▪ Pet friendly.	▪ No on-site management ▪ No accommodation for on-site management ▪ No kiosk operation ▪ Risk and liability issues for WRC through lack of direct management, information provision and signage ▪ Limited potential to generate revenue for WRC ▪ Lack of visible, acceptable visitor information and associated signage ▪ Isolated - away from capital and regional cities ▪ No cooking/fire facilities ▪ No specific accommodation facilities (cabins, on-site tents, powered sites, etc) ▪ Telecoms blackspot - mobile phone reception only available at dam wall ▪ Area shared with grazing cattle ▪ Layout - minimal control of vehicle direction, ensuring vehicles move through wash down ▪ Infrastructure - limited camping ground infrastructure for visitors ▪ Inefficient use of WRC resources - local laws officers visiting daily

Strengths	Weaknesses
	- Wash down facility - not necessarily supporting Mimosa prevention due to poor signage and management of exiting vehicles - No payment collection mechanism.

In Scenario A, the Lake Proserpine camping ground demonstrates significantly more weaknesses than strengths. The strengths lie mainly in the natural attractions of the location and the scope of the area available. The weaknesses demonstrate the lack of direct management by WRC and general lack of visitor control through driveways, signage and information provision.

The strengths of the Scenario A site make it ideal for RV tourists seeking an unstructured camping experience and are comfortable with the facilities and oversight. The main problem for other campers is a lack of cooking and washing up facilities.

The weaknesses that will impact most on WRC are the lack of on-site management and through this the ability to control the range of issues that impact the visitor experience, a lack of additional revenue-generating facilities such as a kiosk and cabins and an inability to provide direct and timely information to visitors.

Opportunities	Threats
- Commercialise - provide revenue streams for WRC - Manage access, payment and visitor numbers through online booking system. - Job creation - directly and indirectly through provision of a range of products and services for users - Partner with Sunwater - moved to freehold access and improved communications. - Group bookings - schools, community groups, weddings, etc - Events - sailing regattas, fishing competitions, music weekends, water skiing, etc - Diversify the experience - diversified accommodation options including cabins and powered sites - Create product that is financially sustainable overall - Provide on-site management - better operational control and reduced risk - Create user pay model for amenities	- Drop-off in visitation - failure to meet user expectations - Accident/injury risk - limited ability to mitigate risk factors due to no on-site management, telecoms, etc - Reputational risk - poor tourism outcomes damages WRC brand - Mimosa pigra outbreak - not enough signage/information for visitors and failure to use wash down - Pollution - current waste management systems unable to meet demand, no on-site management. - Livestock - create accidents or injury - Sunwater - WRC failure to meet legal requirements.

Opportunities	Threats
▪ Use online booking system to create user database - marketing to local/regional market ▪ Develop third-party services - licence concessions for dinghies, paddle boards, canoes, etc ▪ Food truck operations ▪ Develop targeted marketing and communications strategy ▪ Establish user specific camping areas - tent camping, self-contained RVs, non-self-contained RVs, powered sites, etc ▪ Create new recreational experiences.	

Although a range of opportunities have been identified, most of these can only be realised with additional investment in the facility. Under this scenario, any further investment must come from the generation of a revenue surplus. While there are only seven identified threats, these are substantial and could result in WRC being in breach of its agreements with Sunwater.

5.1.2 Key Issues

- **No on-site management** - a lack of on-site management will create risk and liability issues for WRC and also make it difficult to collect payments and manage access. Management could be undertaken by someone living off-site, but this would mean no management services on a daily basis or outside business hours. Alternatively, an on-site caretaker using mobile accommodation (caravan, 5th wheeler, etc) could be engaged, but this would likely require two or even three individuals or couples rotating through to maintain a 24/7 presence.
Any management must be supported by a comprehensive set of policies and procedures to guide issues like pets, generators, dumping greywater, noise, lake access, appropriate use of fire pits, etc. This could have an impact on the relationship with and support from Sunwater.
- **Booking and payment system** – on-site collection of fees could require collecting up to \$1000 or more cash payments per day at the season peak. Use of a locked honesty box could be an option but may not be effective in capturing all fees payable.
- **Length of stay** - With limited management capacity and no facility for disposing of greywater on-site, WRC should maintain a maximum 72 hour (three night) stay. Most caravans with built-in grey water tanks should be able to retain kitchen greywater up to five days, with three days ensuring easy compliance.

- **Fees** - Cash flow projections (see section 6) are based on a fee of \$6 per person per night and families with three to six children charged \$24 per night. This is slightly below the fees charged by Queensland Parks and Forests for a similar facility.
- **Amenities** - There is a limit to the number of people that can access the camping ground based on the availability of shower and toilet amenities. Considering the caravan park regulations, for around 50 campers WRC would need to provide approximately three female and two male toilets and two female and two male showers with hand basins. In 2019, the camping ground was attracting up to 200 people per night, and this peak will likely increase in 2020. Current amenities can handle up to 100 campers per day.
- **Cooking/washup facilities** - The lack of cooking facilities will see campers either use in-vehicle facilities, portable gas barbecues or the available fire pits. Use of in-vehicle facilities will likely result in kitchen greywater being dumped on the ground, which is illegal in Queensland, while the use of portable gas barbecues and fire pits for cooking could create fire hazards.
- **Kiosk** - As there is a building in place for a kiosk operation, it may be possible to engage someone off-site to operate the facility. There may be challenges in providing seven-day operation, and there could be security issues outside business hours.
- **Signage and information** - there is limited available signage and no available on-site printed information to ensure that campers use the facility as required by WRC. This limits the ability of WRC to undertake effective management of the camping ground.
- **Internal driveways** - The ability to control traffic accessing camping areas is limited due to the lack of formed internal roads. Also, the exit is not set up to ensure all vehicles go through the wash down area for leaving.
- **Pets** - pets are allowed at the camping ground, but there is no signage or other information describing the requirements or responsibilities of pet owners using the facility.
- **Cattle** - The implications of having cattle grazing through the camping ground need to be considered. There is an obvious risk factor, particularly if there are dogs on-site that are not properly restrained.

5.1.3 Conclusions

While Scenario A provides a range of opportunities, these are counterbalanced by an equally large range of weaknesses. The strengths relate mainly to the natural assets of the location with some structural strengths also being weaknesses, such as the wash down facility, showers and toilets and unlimited access, as they require management support and create operational costs.

The identified threats are significant, and it would be prudent for WRC to eliminate or at least mitigate these threats if it intends to operate a camping ground. However, this will require capital costs over and above the potential offered by Scenario A (see Cash Flow Projections – Section 6).

The main issues identified indicate a lack of key facilities and a lack of management tools to address these issues. While there are showers and toilets on-site, supported by sewerage and freshwater systems, under Scenario A Lake Proserpine remains a basic camping ground and lacks the funding needed to develop further.

WRC could proceed with Scenario A, but cash flow projections suggest as a commercial entity it would be unlikely to break even. This means that ongoing upgrades of the facility could not be undertaken. It will also mean that Council would not significantly mitigate the risk and liability issues over the next five years.

With no on-site management, the ability of Council to oversee policies and procedures related to camping ground operations will remain restricted. A failure by Council to meet its responsibilities for managing the camping ground could have a detrimental impact on the relationship between WRC and Sunwater.

Scenario A could possibly create up to two FTEs directly and possibly a further two FTEs in Proserpine through visits by food trucks.

As the only access to and from Lake Proserpine is through the township of Proserpine, Scenario A would on average have 48 vehicles a day travelling through the town during peak season, spending an average of \$325 on provisions and services per vehicle. This would create an estimated economic impact in the first five years of up to \$5.7million a year, with the potential to create up to an extra 40 jobs.

A basic camping ground at Lake Proserpine will create economic benefit for the Whitsundays region, but also creates risk and liability issues for WRC and may not be an asset to the Whitsundays Tourism Brand.

Whitsunday Regional Council must seek to access funding needed to progress the Lake Proserpine camping ground from Scenario A to Scenario B as a priority.

5.2 ANALYSIS - SCENARIO B

Scenario B

Adoption of a pay per use operation model for the Lake Proserpine facilities if the following planned \$2.5M additional commercial improvements are undertaken:

- ***Camping ground kiosk fit out and manager's quarters.***
- ***Extension of the current lakeside camping area into Stage 2.***
- ***Refinement of the planned cabin configuration and associated access arrangement.***
- ***Location of the proposed playground in the vicinity of the kiosk/cabins.***
- ***Expansion of the existing amenities building to accommodate additional camping and cabins.***
- ***Extension of the existing pontoon to accommodate greater boat access and possible water recreation operations.***
- ***Solar panels to be located on all built forms/structures.***
- ***Identify four BBQ areas and covered dining/gathering areas (two lakeside/two land side).***
- ***Remove references in the current master plan to recreational activities within the quarry.***

Scenario B is based on WRC achieving grant funding of \$2.5 million to upgrade the Lake Proserpine camping ground facility and, as identified above, address a range of infrastructure issues that will allow WRC to provide effective management of the location, significantly increase the quality of the amenities and provide opportunities for ongoing revenue generation.

5.2.1 SWOT Analysis

Strengths	Weaknesses
▪ Economic driver - Proserpine and region ▪ Direct community benefit - Whitsundays region residents ▪ Spectacular natural beauty of location ▪ Barramundi fishing ▪ Natural beauty of location ▪ Isolated - away from capital and regional cities, not overrun ▪ Existing amenities - showers and toilets ▪ Supports WRC tourism diversification ▪ All weather access, sealed road ▪ Offers camping 12 months of the year ▪ Excellent free (unstructured) RV camping facilities ▪ Size - up to 12 ha of available land	▪ Some risk and liability issues for WRC possible through systems or organisational failures ▪ Ability to manage arrivals and through this avoid issues of overcrowding ▪ Isolated - away from capital and regional cities ▪ No dump point for self-contained RVs - nearest in Proserpine ▪ No specific events area with specific facilities and land area to support marquees, stages, lighting, displays, etc. ▪ No online booking and information distribution system ▪ Area shared with grazing cattle

Strengths	Weaknesses
- Wash down facility - Mimosa prevention - On-site management - effective 24/7 management of the facility - Significant mitigation of risk to WRC - Significant cost reduction for WRC through development of water and wastewater management facilities - Generation of revenue for WRC - continuous development/upgrade of the facility - Creation of sustainable long-term regional jobs - directly and indirectly - Enhanced opportunities to develop water-based concessions - Enhanced visitor experience through direct on-site management - Enhanced amenities - kitchen/BBQs, fire pits, children's play area - Additional accommodation facilities - cabins, and powered sites - Telecoms access - smart phones and Internet - Good quality directional and informational signage.	Poor awareness of the facility among key target markets.

Scenario B exhibits many of the strengths of Scenario A, but with the injection of capital funding it can significantly extend the strengths exploits the opportunities identified in Scenario A and converts them to strengths. There will still be some existing infrastructure weaknesses, but these can be addressed over time as increased revenue allows the camping ground to self-fund ongoing development.

Opportunities	Threats
- Commercialise - provide revenue for WRC - Manage access, payment and visitor numbers through online booking system - Job creation - directly and indirectly through local provision of a diverse range of products and services for users - Partner with Sunwater - move to freehold access and improved communications.	- Drop-off in visitation - failure to meet user expectations - Pollution - current waste management systems unable to meet demand, no on-site management. - Livestock - create accidents or injury - Sunwater - WRC failure to meet legal requirements - Overuse/overcrowding

Opportunities	Threats
▪ Group bookings - schools, community groups, weddings, etc ▪ Events - sailing regattas, fishing competitions, music weekends, water skiing, etc ▪ Provide on-site management - better operation and reduced organisational risk ▪ Use online booking system to create user database - marketing to local/regional market ▪ Develop third-party services - licence concessions for dinghies, paddle boards, canoes, sailboats, etc ▪ Food truck operations ▪ Develop targeted marketing and communications strategy ▪ Establish user specific camping areas - tent camping, self-contained RVs, non-self-contained RVs, powered sites, cabins ▪ Identify/create new recreational experiences (mountain bikes, lake tours, nature-based tourism experiences, etc) ▪ Continue risk mitigation processes through improved infrastructure and amenities ▪ Work with Tourism Whitsundays to promote Lack Proserpine as part of the Whitsundays experience ▪ Refine user pays access to on-site amenities - gas BBQ, showers, toilets, powered sites, etc ▪ Sustainable energy model - solar panels on all buildings ▪ Develop and extend cabins to 20 on-site ▪ Work toward supporting zero emissions with sustainable energy generation and storage, and electric vehicle charging points. ▪ FOC shuttle bus to Proserpine	▪ Ineffective oversight of camping ground management ▪ Failure to manage costs of asset maintenance and management ▪ Failure to maintain facility standards/KPIs in terms of maintenance, hygiene, waste management, etc ▪ Failure to continually monitor and enhance the local/regional community experience as a priority ▪ Environmental failure – Mimosa or water contamination.

Scenario B identifies a range of opportunities that will enhance the user experience and increase revenue opportunities for WRC. Further opportunities will undoubtedly arise as the camping ground develops and continues to attract new and diversified markets. These opportunities can only be realised through effective on-site management and proper oversight of management activities by WRC.

The threats identified in Scenario B will likely arise if there are failures of management and failures by WRC to develop, maintain, update and constantly review effective management policies and procedures to ensure the facility operates to the highest possible standards.

5.2.2 Key Issues

- **On-site management** - Having management living on-site will allow WRC to exert control of the camping ground and ensure visitors are aware of all identified policies and procedures in relation to camping ground operations and follow these as required. It will also ensure timely identification of any problems or concerns and rectification of these as quickly as possible.
- **Fees** - Cash flow projections (see section 6) are based on a fee of \$6 per person per night and families with three to six children charged \$24 per night. This is slightly below the fees charged by Queensland Parks and Forests for a similar facility. Cash flow projections are also based on charging cabins at \$120 per night and powered sites at \$30 per vehicle per night.
- **Kiosk** - with on-site management the kiosk can be opened at times suitable to visitors but allowing managers opportunities to complete the required tasks. It will provide a service to visitors seven days a week and a substantial revenue stream for WRC and may include a part-time/casual position for an off-site employee.
- **Online booking and payment service** - developing an online booking and payment service for the camping ground linked to the WRC website, or possibly app based, would ensure this revenue stream goes straight to WRC, provide a mechanism for WRC to manage access and avoid overcrowding, provide an easy check-in/check-out facility for camping ground management and an opportunity for WRC to capture user data for marketing and management purposes.
- **Amenities** - a further two additional amenities buildings plus a camp kitchen/barbecue area will provide enough services to allow the camping ground to achieve maximum occupation as identified in the master plan (see Master Plan Fig 1) of 188 sites or up to 400 visitors.
- **Cabins** - the development of key cabins with boat and car parking as part of Scenario B will open the Lake Proserpine experience to new market segments and enhance accessibility for the elderly, people with disabilities and those not interested in tent or RV camping. It provides the opportunity to market Lake Proserpine as Whitsundays hinterland and part of the Whitsundays fly/stay experience. The servicing and maintenance of the cabins will also increase employment opportunities in the local/regional market.
- **Events** - events will drive occupancy and should therefore be targeted for shoulder seasons when attendance by the local/regional market will balance drop-offs in the long-haul and international markets. A specific period for event operation should be considered with space to erect marquees, stages or the like and with access to three-phase power.
- **Concessions** - Completion of the extension to the existing pontoon will allow WRC to establish commercial arrangements with operators of water-based recreational activities at the camping ground. There may be other opportunities including the provision of firewood, mountain biking, food trucks and others that will enhance the visitor experience. This will

also increase employment opportunities in the local/regional market, particularly from Proserpine.

- **Powered sites** - the development of 30 powered sites will provide alternative options for RV tourists in vehicles without have effective on-board power generation facilities. These sites will also generate revenue for WRC and can potentially be converted to cabins in the future.
- **RV camping vs tent camping** - while the Master Plan shows an integration of RV camping sites and tent camping, WRC may want to consider more separated areas for these two groups as they are not necessarily the same demographic. Most long-haul RV tourists prefer unstructured free camping and have vehicles to support this. They may prefer to be separated from tent campers, who are likely to be young and/or families who will obviously have different lifestyle preferences.
- **Greywater** - Dropping greywater at camping grounds is not unusual but should be unacceptable. It is not allowed in camping grounds controlled by Queensland Parks and Forests. WRC should ban dropping greywater in the camping ground but could consider a greywater dump point. This would allow RVs to use on-board cooking facilities and dump greywater when their tanks become full. There is also the opportunity to hire portable greywater tanks to allow dumping without moving the vehicle.
- **Length of stay** - With a greywater dump point on-site and visitors using camping ground showers and toilets, not those in their vehicles, extended stays would be acceptable. However, WRC should limit length of stay to avoid attracting squatters, usually non-tourist vehicles happy to pay the low costs to access extended accommodation facilities.
- **Linkage to Proserpine** - to maximise the benefits of the Lake Proserpine camping ground to the Whitsundays region there needs to be linkage, by a shuttle bus or the like, to provide campers direct access to Proserpine, especially for dinner.

5.2.3 Conclusions

The strengths of Scenario B extend beyond the natural assets location and include substantial infrastructure development and the ability to generate both ongoing revenue for WRC and sustainable jobs for the Whitsundays community. The weaknesses will be addressed over time, although others may become apparent as the facility grows and diversifies.

The opportunities identified can be realised as WRC focuses on marketing and promotion of the facility and local business operators develop products specifically targeted to the needs of camping ground visitors. Threats can be nullified or mitigated through proper management of the facility, and this must be led by WRC.

Under Scenario B, the Lake Proserpine facility becomes a semi-commercial camping ground. The provision of powered sites creates a similar model to a caravan park, which may be a concern to commercial caravan park operators in the region, but as it is more than 30 km from any existing caravan parks it complements rather than competes with caravan park operators.

Under this scenario, WRC would have the future option to outsource management of the camping ground to a commercial operator.

Estimated employment opportunities suggests Scenario B could create up to 6 FTEs directly and a further 8 FTEs indirectly through direct management, maintenance and servicing activities, along with accessing goods and services through camping ground operations and visitors from Proserpine.

As the only access to and from Lake Proserpine is through the township of Proserpine, having hundreds of vehicles a day travelling through the town during peak season with an estimated average spend of \$385 on provisions and services per vehicle, will create an estimated economic impact in the first five years of up to \$7.95 million a year, with the potential to create an extra 58 jobs. This is based on research undertaken by CMCA in 2016 ¹³ that found their members spent on average \$770 per week.

An investment by government of \$2.5 million developing infrastructure at Lake Proserpine Camping Ground to the level outlined in Scenario B will maximise the value of this asset and have significant economic impact for the Whitsundays region.

In particular, the Lake Proserpine Camping Ground will directly facilitate the development of new tourism businesses associated with the Lake, create a focus on the Whitsundays hinterland as a tourism sub-region and create new opportunities for nature-based tourism and farm-stay products within that region to complement existing coastal development. This will in turn substantially lift economic activity in Proserpine.

A fully developed camping ground at Lake Proserpine should be a priority of WRC and will provide a world-class camping and nature-based tourism experience as well as the opportunity to extend the Whitsundays Tourism Brand.

¹³ CMCA – Member Research 2016 (Colmar Brunton)

5.3 STRATEGIES

5.3.1 Scenario A

1. ***To develop an overall management plan to provide on-site management of the camping ground is the only credible option to ensure risk and liability factors are mitigated and to effectively oversee compliance with camping ground regulations, collect fees, undertake maintenance and cleaning of amenities and oversee rubbish removal.***

WRC will need to provide on-site management using temporary (mobile) accommodation and may need to consider rotating contractors in order to maintain a 24/7 presence. This approach could also allow for kiosk operations, but it may only operate a few hours a day to allow the caretaker to complete other duties.

2. ***To develop an information flyer that can be distributed to campers by WRC staff outlining all camping ground regulations covering issues such as use of generators, control of pets, dumping greywater, length of stay, use of wash down facility, access to the lake, use of amenities and waste disposal.***

Even if additional signage is in place, without an on-site manager it will be important to ensure all campers have written information on the rules and regulations governing use of the Lake Proserpine camping ground. As part of the management activities, WRC staff or appointed contractors should be providing this information to campers at the same time as they collect camping fees.

3. ***To continue the 72 hour limit on length of stay to facilitate better management of the facility.***

WRC will need to specify limitations on length of stay in order to ensure there are no permanent or semi-permanent vehicles in the camping ground. These length of stay rules should not only specify the length of time for a stay at the campground but also the length of time between stays. Length of stay will need to be monitored WRC staff or contractors as part of their management activities.

4. ***Establish a fee collection system that could include WRC staff collecting fees in person, payments being made in Proserpine before accessing the camping ground or using an honesty box.***

Without on-site management to collect camping fees on arrival, the best option for WRC is likely to have a staff member or contractor collect fees from arrivals after they have set up camp in mid to late afternoon. An honesty box is another option, but anecdotal feedback from other locations suggests it is likely to only collect around 60% of eligible payments. Setting up payments through a business in Proserpine could be an option, but there would be a need for signage and other

information to ensure people understood where to make payment before travelling to Lake Proserpine.

5. To identify options to operate the kiosk, particularly at weekends and during school holidays.

It may be possible to engage a contractor to operate the kiosk for seven days a week over the peak season on behalf of WRC. The same contractor could also distribute information flyers and collect camping fees. The contractor could then have an on-site presence from 8.30am to 5pm. The feasibility of this approach will be dependent on revenue generated and any costs to WRC.

6. Work with Proserpine businesses to create a linkage between the town and the camping ground to provides local businesses direct opportunities to sell goods and services to campers, which could include free transportation to and from the town for shopping, dining and entertainment activities.

Having up to 200 campers on-site creates a range of opportunities for businesses in Proserpine to provide goods and services to campers, and this could be coordinated through the on-site management. This could involve bringing campers to Proserpine for dining and entertainment or taking goods and services to the camping ground for sale to campers.

5.3.2 Scenario B

1. Develop an overall WRC management plan for the Lake Proserpine Camping Ground that catalogues all policies and procedures for operation of the site, defines the role and responsibilities of the camping ground manager, defines KPIs for camping ground management operations including operation of the kiosk and identifies key risk issues with options for risk mitigation.

With the development of Scenario B, the Lake Proserpine camping ground could accommodate up to 400 campers across 188 sites. This would have management dealing with a vehicle turnaround of up to 40 vehicles per day. Even if management takes just five minutes for each check-in, 3.5 hours a day would be required to manage 40 arrivals. This does not include cabin arrivals.

For the Lake Proserpine camping ground to succeed in becoming a world-class camping destination and an asset to the Whitsunday tourism industry, it will require thorough planning and professional management.

2. Develop an online booking and payment facility for camping ground users with the capacity to collect basic user information to provide WRC with ongoing information on user types and demographics.

An effective online booking and payment system will reduce the workload of the on-site management and reduce the risk of having cash on the premises. It will also allow management to plan the allocation of sites in advance (this could be a function of the system) and eliminate problems of tourists turning up at peak season without bookings.

- 3. Use camping ground fees as a means of managing overall demand with the future option of offering high season and low season rates, low season packages for the local/regional market and other product-based incentives to maintain demand outside of the main RV tourism season from May to September.**

Managing price is a fundamental aspect of marketing. While WRC should generally keep the maximum price per person comparable to other similar facilities, such as camping grounds in national parks, it will be a useful tool for promoting Lake Proserpine during shoulder seasons.

- 4. In association with sporting organisations and private sector operators, develop an events schedule for the camping ground particularly focused on attracting local/regional market visitors and creating demand between January to April and October/November. Develop a properly resourced site for event activities.**

Events at Lake Proserpine are likely to be more attractive to the local/regional market but could possibly attract interstate and international participants, who may bring an audience with them. The other advantage of events is media coverage and the promotion of Lake Proserpine to a broader national and international audience.

- 5. Encourage applications from local businesses to provide commercial, water-based recreation facilities, and identify operators with the capacity to maintain a product that is both sustainable and of acceptable quality.**

WRC will need to work closely with businesses to ensure their operations at Lake Proserpine are sustainable, ie. to ensure businesses do not overcommit and/or offer products and services that do not work with the camping ground audience. WRC needs to build a positive business environment at the camping ground.

- 6. Develop a food truck roster that provides local food trucks equitable access to the camping ground and ensures a sustainable revenue returns for the operators and reasonable variety for camping ground visitors.**

WRC, in association with camping ground management, will need to monitor food truck involvement to ensure servicing the camping ground is profitable. Monitoring will develop an understanding of the required ratio of trucks to campers to ensure profitability and, if needed, limiting the number of trucks on-site per day through a roster system.

7. *Develop length of stay restrictions as a means of managing demand and adjust these as required to allow local seasonality or other impacts on market growth and overall market demand.*

WRC will need to set limitations on length of stay in order to ensure there are no permanent or semipermanent vehicles in the camping ground. These length of stay rules should not only specify the length of time for a stay at the campground, but also the length of time between stays. An online booking system should simplify managing this process by informing the site manager which vehicles are due to leave on a particular day and blocking vehicles from rebooking within the specified period.

8. *Work with Proserpine businesses to provide a linkage between the town and the camping ground that provides local businesses direct opportunities to sell goods and services to campers, which could include free transportation to and from the town for shopping, dining and entertainment activities.*

Development of Scenario B would provide a broader range of opportunities for businesses in Proserpine to provide goods and services to campers as this could be coordinated through the on-site management. This could involve bringing campers to Proserpine for dining and entertainment or taking goods and services to the camping ground for sale to campers.

6 APPENDIX 1 – CASH FLOW PROJECTIONS

These cash flow projections are based on the median estimate by WRC of approximately 20 vehicles or 40 visitors per night on average for Scenario A and 30 vehicles or 60 visitors per night on average for Scenario B. Both scenarios anticipate a modest increase in visitation of 10% per annum.

Lake Proserpine Revenue Model Scenario A					
	2021/22	2022/23	2023/24	2024/25	2025/26
Revenue					
Visitor Numbers per night (av 2 per vehicle)	40	44	48.4	53.24	58.564
Camping Revenue (av \$6pp per night)	\$87,600	\$96,360	\$105,996	\$116,596	\$128,255
Shower revenue(av\$2ps)	\$29,200	\$32,120	\$35,332	\$38,865	\$42,752
Kiosk	\$109,500	\$120,450	\$132,495	\$145,745	\$160,319
BBQ Revenue * 1 to start	\$14,600	\$16,060	\$17,666	\$19,433	\$21,376
Total	\$240,900	\$265,034.00	\$291,489.00	\$320,637.90	\$352,701.69
*Other potential Revenue					
Water sports concessions	\$0	\$0	\$0	\$0	\$0
Expenditure					
On-site Caretaker - WRC	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000
Security *	\$20,000	\$22,000	\$24,200	\$26,620	\$29,282
Power*	\$20,000	\$22,000	\$24,200	\$26,620	\$29,282
Marketing	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Slashing	\$18,750	\$20,625	\$22,688	\$24,956	\$27,452
Water*	\$10,000	\$11,000	\$12,100	\$13,310	\$14,641
Sewerage (Conditional on treatment plant solution)	\$10,000	\$11,000	\$12,100	\$13,310	\$14,641
Road maintenance	\$10,000	\$11,000	\$12,100	\$13,310	\$14,641
Waste	\$8,000	\$8,800	\$9,680	\$10,648	\$11,713
Cost of Goods Sold (Kiosk)	\$32,850	\$36,135	\$39,749	\$43,723	\$48,096
Depreciation (assume \$1M capital assets)	\$66,667	\$66,667	\$66,667	\$66,667	\$66,667
Consumables	\$5,000	\$5,500	\$6,050	\$6,655	\$7,321
Repairs and maintenance	\$15,000	\$16,500	\$18,150	\$19,965	\$21,962
Total	\$361,267	\$376,227	\$392,683	\$410,784	\$430,696
Operational performance	-\$120,367	-\$111,193	-\$101,194	-\$90,146	-\$77,994

Lake Proserpine Revenue Model Scenario B

	2021/22	2022/25	2023/24	2024/25	2025/26
Revenue					
Camping	60	66	72.6	79.86	87.846
Powered Campsites (2 people)	15	16.5	18.15	19.965	21.9615
Cabins (2.5 people)	5	7	7	7	7
Visitors	102.5	116.5	126.4	137.29	149.269
Camping Revenue (av \$6pp per night)	\$131,400	\$144,540	\$158,994	\$174,893	\$192,383
Shower revenue(av\$2ps) assume 50% take up rate	\$32,850	\$36,135	\$39,749	\$43,723	\$48,096
Kiosk Revenue	\$280,594	\$318,919	\$346,020	\$375,831	\$408,624
BBQ Revenue * 1 to start	\$14,600	\$16,060	\$17,666	\$19,433	\$21,376
Cabins (@50% occupancy)	\$219,000	\$306,600	\$306,600	\$306,600	\$306,600
Powered Sites (@50% occupancy)	\$164,250	\$180,675	\$198,743	\$218,617	\$240,478
Total	\$842,694	\$1,002,929	\$1,067,771	\$1,139,097	\$1,217,557
*Other potential Revenue					
Water sports and other concessions	\$35,000.00	\$38,500.00	\$42,350.00	\$46,585.00	\$51,243.50
Expenditure					
Lake Proserpine Caretaker	\$130,000	\$143,000	\$157,300	\$173,030	\$190,333
Staffing 2 FTE (Level 3)	\$150,000	\$165,000	\$181,500	\$181,500	\$181,500
Marketing	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Security *	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Power* (assume solar upgrades)	\$40,000	\$42,200	\$44,400	\$46,600	\$48,800
Slashing	\$37,500	\$37,500	\$37,500	\$37,500	\$37,500
Water* (potable water solution required)	\$10,000	\$11,000	\$12,100	\$13,310	\$14,641
Sewerage* (Conditional on treatment plant solution)	\$20,000	\$22,000	\$24,200	\$26,620	\$29,282
Road maintenance	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Waste	\$24,000	\$26,400	\$29,040	\$31,944	\$35,138
Depreciation (assume \$3M capital assets)	\$200,000.00	\$200,000.00	\$200,000.00	\$200,000.00	\$200,000.00
Cost of Goods (Kiosk)	\$84,178	\$95,676	\$103,806	\$112,749	\$122,587
Consumables	\$5,000	\$5,500	\$6,050	\$6,655	\$7,321
Repairs and maintenance	\$50,000	\$55,000	\$60,500	\$66,550	\$73,205
Total	\$850,678	\$903,276	\$956,396	\$996,458	\$1,040,307
Operational performance	-\$7,984	\$99,653	\$111,375	\$142,639	\$177,250

Scenario B includes additional visitation due to use of cabins and powered sites.



Lake Proserpine Campground

Community Engagement Plan

Date: 31 March 2021

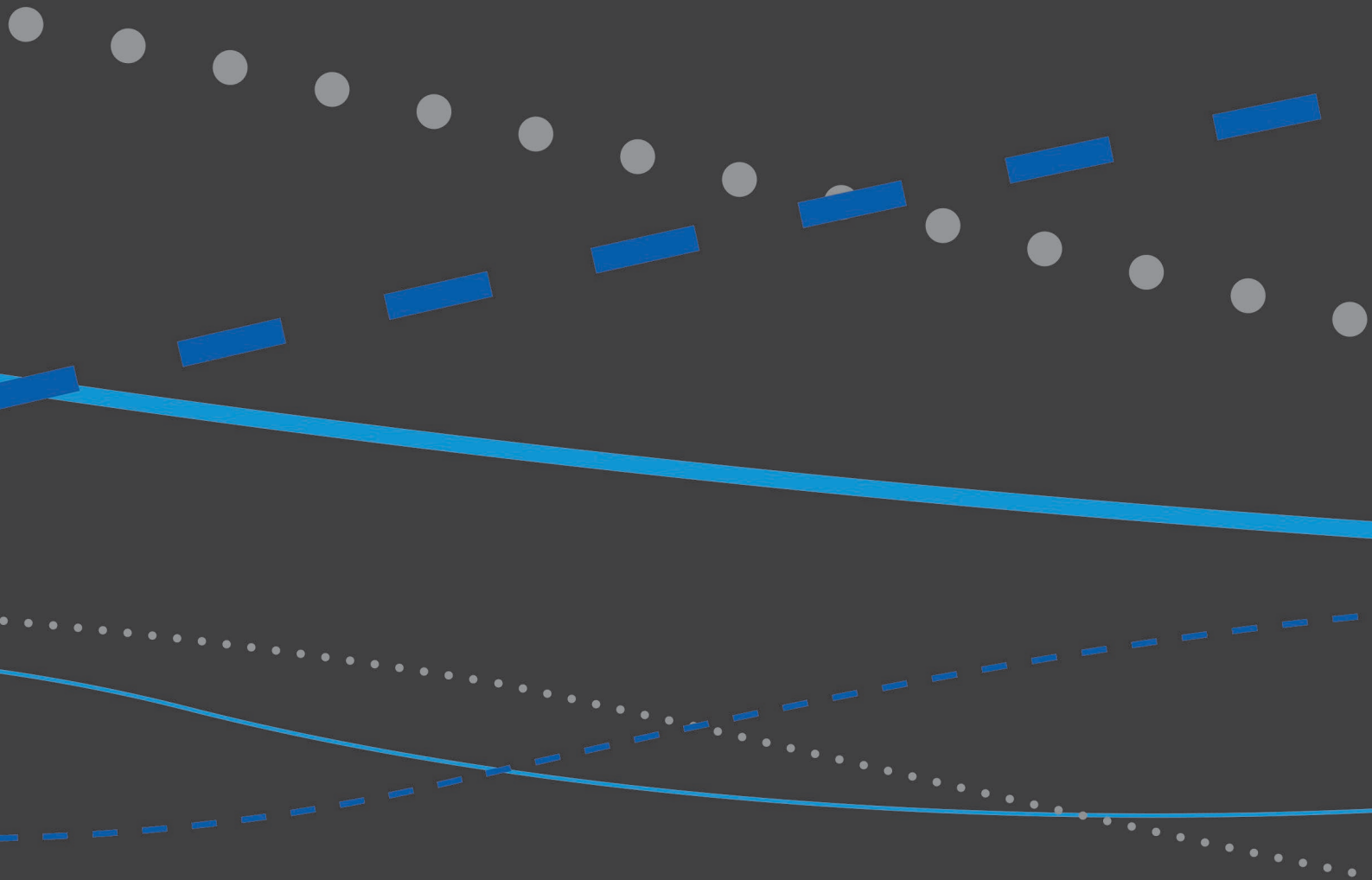


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Document History

Title	Version No.	Date	Author	Reviewer	Approved by
Report	1.0	31 Mar 2021	Joanne Vlismas	Craig Turner	Greg Martin

1. Introduction

1.1 Background

Whitsunday Regional Council (WRC) has prepared a five-year Strategic Business Plan for the Lake Proserpine Campground 2021 – 2026.

The Strategic Business Plan aims to identify a commercial model for the operation of the existing Lake Proserpine camping ground and how to best leverage planned improvements to the site, arising from the delivery of the Lake Proserpine Master Plan. The Master Plan outlines a range of additional facilities and improvements to the site, including cabin accommodation, powered sites and critical infrastructure.

Currently, there is free 72-hour lakeside camping available near the recently upgraded recreational facilities at Lake Proserpine, including toilet blocks and shower amenities.

Two options have been presented by the Strategic Business Plan, a basic camping ground and a fully developed camping ground as per the Master Plan. Both options identified in the Plan are pay per use models, and as such, a minimal fee to stay at the campground will be implemented from 1 July 2021.

Visitors will pay \$6 per person per night and will have no stay limit (within reason). This minimal fee will cover operational costs at the site and can be reinvested back into the facility. A live-in Site Manager will be appointed to undertake management and maintenance at the facility.

WRC will seek funding to further develop the campground which is the recommended outcome identified in the Strategic Business Plan.

This Communication Plan outlines the communication processes, methods and action plan to engage with the community on this project.

1.2 Purpose and Aim of the Community Engagement Plan

This Community Engagement Plan will support the project to ensure all communication activities are appropriate, consistent, and delivered in a timely manner. It outlines key messages and objectives and aims to increase participation by the community during the engagement process. This plan identifies and defines the roles of persons involved in this project, formally defining who should be given specific information, when information will be delivered and what communication channels will be used to deliver the information.

This Plan sets the communications framework for this project and will serve as a guide for internal and external communications throughout the life of the project. This will be a live document and will be reviewed and updated as required.

1.3 Communication Objectives

Open and transparent communication and stakeholder management plays a key role in enabling effective engagement. The key objectives of this Plan are to:

- Ensure a transparent and open process where all affected residents and key stakeholders are provided with information in a consistent and timely manner,
- Identify and manage communication issues and risks throughout the project, and
- Enhance stakeholder and community awareness, understanding and confidence by following best-practice communication and engagement principles.

1.4 Communication Objectives by Project Phase

The project will have several clear phases and communication objectives, outlined below:

Table 1 Communication Objectives

Project Milestones	Indicative Timing	Level of Engagement	Communication Objectives
1. Community Engagement Plan developed	Late Mar 2021	Involve	To engage with internal stakeholders during the planning process and develop a communications and engagement strategy.
2. Prepare Communication materials	April 2021	Involve	To prepare materials for the engagement process and gain relevant approvals.
3. Launch Communications	May-June 2021	Inform	To inform and engage with affected residents, visitors and key stakeholders.
4. Camping fees introduced	July 2021	Inform	To inform and engage with affected residents, visitors and key stakeholders.

1.5 Communication Principles

Several key consultation principles have been developed, summarised in Table 2 below:

Table 2 - Summary of Consultation Principles

Principles
1. Integrity and transparency – Engagement involves trust and transparency. Council will carefully consider and accurately portray the community's role in decision-making.
2. Respect – Council will facilitate a safe and respectful consultation environment that values individual opinions and input. Council values the contributions made and time given and will facilitate consultation processes that respect all participants and their contributions.
3. Inclusive – Council will use a range of opportunities and techniques to encourage the participation and awareness of all people who may be affected by the outcome of this process.
4. Informative – Effective engagement will ensure all parties understand the relevant legal, statutory, strategic and local context of this project and the process being undertaken.
5. Well planned – Engagement requires informed judgement and planning in its approach and implementation in order to be effective, practical and suitably resourced.
6. Meaningful – The community will have opportunities to participate in engagement processes in relation to project constraints, the scope of influence, and Council's decision-making process.
7. Closing the loop – Providing feedback is important in maintaining an open and transparent process. Council needs to ensure the community understand the reasons for the final decision.

2. Stakeholder Identification

A stakeholder is defined as any individual, group of individuals, organisation or political entity with an interest in the outcome of a decision. They may be, or perceive that they may be, affected directly or indirectly by the outcome of a decision. To ensure the best outcome when communicating, stakeholders must be identified and level of engagement determined.

2.1 Level of Stakeholder Participation

To ensure the best results from this engagement process, a series of participation levels has been determined, based on the International Association of Public Participation (IAP2) guidelines. Based on the levels of engagement, outlined below in Table 3, Council will:

- **Inform** affected residents, visitors, key stakeholders and the wider community throughout every phase of the project.

Table 3 – IAP2 Public Participation Spectrum

IAP2'S PUBLIC PARTICIPATION SPECTRUM



The IAP2 Federation has developed the Spectrum to help groups define the public's role in any public participation process. The IAP2 Spectrum is quickly becoming an international standard.

INCREASING IMPACT ON THE DECISION 					
	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision. We will seek your feedback on drafts and proposals.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will work together with you to formulate solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

2.2 Stakeholder Analysis

A summary list of potential stakeholders has been developed below, demonstrating the level of consultation and communication methods best suited to each stakeholder group.

Table 4 - Project stakeholders and level of consultation

Stakeholder Category	Representative/Member	Level of consultation
Local Government		
Whitsunday Regional Council executive leadership	Mayor, CEO & Councillors Communications & Marketing	Involve
Key Stakeholders		
Tourism Whitsundays	Tash Wheeler	Inform
Tourism & Events Queensland	Rachael Klitscher	Inform
Proserpine Chamber of Commerce	Bob Bogie	Inform
Proserpine Progress Association	Tracey Cameron	Inform
Whitsunday Chamber of Commerce	Allan Milostic	Inform
Wikicamps	TBD	Inform
Camp Kanga	Lions Proserpine	Inform
General Community		
Affected Residents	Proserpine residents and surrounds	Inform
Affected Businesses	Proserpine and surrounds	Inform
Visitors / Tourists	All Whitsunday Region visitors	Inform
Wider public	All Whitsunday Region residents	Inform

3. Roles and Responsibilities

The project team's roles and responsibilities have been outlined below in Table 5:

Table 5 – Roles and Responsibilities

Project Team Roles	Responsibilities
Whitsunday Regional Council	
Project Manager (Craig Turner)	Manage and coordinate the project's deliverables, keep project phases on track and budget. Approve all major planning and communications strategies prior to implementation. Act as media spokesperson when the Mayor is unavailable.
Project Support (Amy Humphries)	Assist the project team as needed with reporting, project documentation, meetings and meeting minutes.
Communications & Marketing Support (Joanne Vlismas)	Prepare strategy to communicate with key stakeholders and residents, prepare materials, coordinate engagement activities and prepare engagement reporting.
Communications & Marketing Manager (Greg Martin)	Manage all media enquiries and issues which may arise, act as liaison between Councillors and the Project Team, approve all media and external communications.

4. Identify Risks of Poor Communication

A communication risk or issue is any aspect, impact or result of a project that has potential to raise concerns or objections from stakeholders and adversely affect the progress and effectiveness of the project. Several potential risks may be associated with this project due to existing community concerns. These potential risks will require management throughout the communication process, and have been identified below in a risk assessment table:

Table 6 – Communications Risk Assessment

Identified Risk	Level of Impact (High, Medium, Low)	Mitigation Method
The Whitsunday community is unhappy about the introduction of fees.	Medium – Could impact WRC's reputation if WRC does not address community concerns.	Provide timely, consistent and accurate information to key stakeholders and the community. Promote the benefits of the project in all communications materials.
Lack of interest or awareness from out-of-region visitors.	Low – There is likely to be general interest from the drive market and residents.	Promote the project widely via WRC's communications channels and tourism networks. Target camping tourism networks and the drive market.
Visitors may not be aware of the introduction of fees until arriving on site.	Medium – Could impact WRC's reputation.	Ensure there is sufficient notification on site and via WRC's communications channels prior to 1 July. Target camping tourism networks and the drive market.

5. Communication Strategy

The Plan has been broken down into several different elements, enabling council to appropriately inform and engage with the regional community. The key elements of this section include communication management, communication tools, and an Action Plan.

5.1 Communication Management

5.1.1 Communication Protocol and Media Spokesperson

The following protocols will be followed throughout the consultation process:

- All media enquiries will be directed through Council's Communications & Marketing Manager and the Project Director.
- The Whitsunday Regional Council Mayor will be the key spokesperson for any media statements or releases; if the Mayor is not available, the Project Director will be media spokesperson for the project.
- All other enquiries will be directed to the Project Manager who will notify the Communications & Marketing Manager, if necessary.
- All formal external communication materials will be reviewed and approved by the Project Manager, Project Director, and the Communications & Marketing Manager.
- All incoming communication to Council from external stakeholders and the responses to these enquiries will be recorded and tracked using Enterprise Content Management (ECM) and Customer Request Management (CRM). Key information to be recorded will include name of person, contact details, query, action required, response and any other comments required.

5.2 Internal Communication Tools

Please note a separate Internal Communications Plan has been developed which outlines the strategy for communicating with staff.

The following tools will be used to facilitate effective communication within the project team to respond to and manage potential issues with the community:

- Email/phone updates
- Regular project team meetings

5.3 External Communication Tools

The following engagement tools will be used during the consultation process:

- Signage on site
- Billboards
- Direct Emails to Key Stakeholders
- Whitsunday Regional Council website
- Media Releases
- Social Media Campaign
- Our Whitsunday Community Update in local papers and Core Magazine
- Video for sharing via tourist networks

5.3.1 *Signage on site*

Signage will be installed in prominent locations at the Lake Proserpine campground to advise visitors of the change in fees, leading up to 1 July.

5.3.2 *Billboard*

Appropriate billboards will be identified which will promote the site to the drive market between Mackay and Townsville, advertising the facilities including minimal cost and lack of limits.

1.1.1 *Direct Emails to Key Stakeholders*

A direct email will be sent to all key stakeholders identified within this Plan, to inform and engage with those who are most likely to provide feedback within the community.

1.1.2 *Whitsunday Regional Council website*

Information about the project will be listed on the WRC website under the Public Notices.

1.1.3 *Media Releases*

Media releases will be used at strategic points throughout the project stages, announcing important milestones and information. Any media releases to be newsworthy and relevant.

1.1.4 *Social Media campaign*

Council's social media platforms, Facebook, Twitter and Youtube, will be used to distribute information to the public throughout the duration of the project. Paid promotion will advertise to drive market visitors between Mackay and Townsville.

1.1.5 *Our Whitsunday Community Update in local papers and Core Magazine*

Our Whitsunday Community Update is a dedicated page in the local newspapers every month for Council to share news and information with the community.

1.1.6 *Video for sharing via tourist networks*

A video will be produced which promotes the campground facilities and advertises the change in fees. The video will be distributed on social media and via tourist networks.

2. Action Plan

An Action Plan has been developed to provide a consistent structure to developing and implementing the communication strategy (**Table 7** below). This Action Plan will continue to be reviewed and updated as the project progresses.

Table 7 – Communications Action Plan

Step		Timing	Aim	Objective	How
1	Community Engagement Plan developed	Late Mar 2021	Develop a Community Engagement plan	To engage with internal stakeholders during the planning process	▪ Meetings with project team
2	Prepare Communications Materials	April 2021	Prepare engaging, easy-to-understand key messages and materials for distribution	To provide clear, consistent and engaging communications	▪ Signage ▪ Billboards ▪ Social Media campaign ▪ Video ▪ Public Notice ▪ Media materials
3	Launch Communications	May-June 2021	Engage and inform affected residents, visitors and key stakeholders	To provide advance warning of fee changes To promote the facility and changes to fees, including benefits of introducing a minimal fee	▪ Media & Social Media release ▪ Email to key stakeholders ▪ Web update ▪ Our Whitsunday newspaper article ▪ Core Magazine ▪ Signage installed ▪ Billboards installed
4	Camping fees introduced	July 2021	Engage and inform affected residents, visitors and key stakeholders	To promote the facility and changes to fees, including benefits of introducing a minimal fee	▪ Web updates ▪ Media Release ▪ Social media

13. Corporate Services

13.1 FINANCIAL REPORT - FY 2020/21 - PERIOD ENDING MARCH 2021

AUTHOR: Stephen Fernando - Chief Financial Officer/ Manager Financial Services

RESPONSIBLE OFFICER: Jason Bradshaw - Director Corporate Services

OFFICER'S RECOMMENDATION

That Council receive the unaudited financial statements for Whitsunday Regional Council for the period ended March 2021 of the Financial Year 2020/21.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

The report presents the financial performance of Council through the unaudited financial statements for the period ending March 2021.

PURPOSE

To inform Councillors of Council's financial performance and position for the relevant period.

BACKGROUND

The financial statements are being prepared and presented in keeping with the requirements of the Local Government Act and Regulations.

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009 (LGA)

152 Financial report

- (1) The local government must prepare a financial report.
- (2) The chief executive officer must present the financial report—
 - (a) if the local government meets less frequently than monthly—at each meeting of the local government; or
 - (b) Otherwise—at a meeting of the local government once a month.
- (3) The financial report must state the progress that has been made in relation to the local government's budget for the period of the financial year up to a day as near as practicable to the end of the month before the meeting is held.

ANALYSIS

This report provides the estimated financial performance and position of Council for the relevant period in the current financial year.

With a marginal year to date operating surplus, Council's financial position as at end March 2021 remains in stable position. The operating position is being impacted by the depreciation expense being over budget pending the revaluation of key assets (roads, water, sewerage)

being finalised. The timing of the depreciation expense calculations will be addressed through April to ensure that with two months of the year to go, any adjustments for depreciation expense are known.

With the completion of the revaluation (and the resulting depreciation adjustments), the difference in depreciation is expected to reduce given the amendments made to some classes of assets. The adjustment will be addressed through the third quarter budget review.

The key financial sustainability indicators (ratios), remain within acceptable and expected parameters (see Attachment 1 for more details). Council holds cash reserves in excess of minimum required levels.

Capital delivery remains a concern with actual delivery at around 75% of the budgeted capital program up to March. The quarter three revisions will most likely see the capital delivery program for the current year being reduced with more projects carried forward into next year.

Council continues to keep a close track of overdue rates, charges, and other debts. Reminders were sent out in March, which has resulted in additional collections which continuing in April.

The final land revaluations for properties within the region, conducted by the Department of Resources have been released. The rates regime for the next financial year will be recalibrated to manage the changes in property values for rating purposes.

The revaluation of Council's infrastructure assets has been completed with the revalued data uploaded into Council's asset management system. The revalued figures will be reflected in the financial statements for April 2021.

Attachment 1 contains a summary of the financial performance with commentary around key features.

Attachment 2 contains the full set of financial statements, including notes thereto.

Attachment 3 details the capital delivery for the period.

STRATEGIC IMPACTS

Presentation of this report aligns with maintaining transparency of Council activities and financial position. It also ensures that Council is compliant with the requirements of the LGA.

CONSULTATION

Julie Moller, Manager Strategic Finance
Katie Coates, Management Accountant

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

That the unaudited financial statements for the period be received by Council.

ATTACHMENTS

Attachment 1 - Monthly Financial Report – March 2021

Attachment 2 - Financial Statements for the Financial Year 2020/21 to March 2021
Attachment 3 - Capital Delivery Report - March 2021

FINANCIAL REPORT

Financial Year: 2020/21

Period Ending: March 2021



BACKGROUND

This report provides the estimated financial performance and position of Whitsunday Regional Council for the relevant period in the current financial year.

INCOME & EXPENDITURE

What was charged to our ratepayers/customers compared to what was spent in delivering our services.

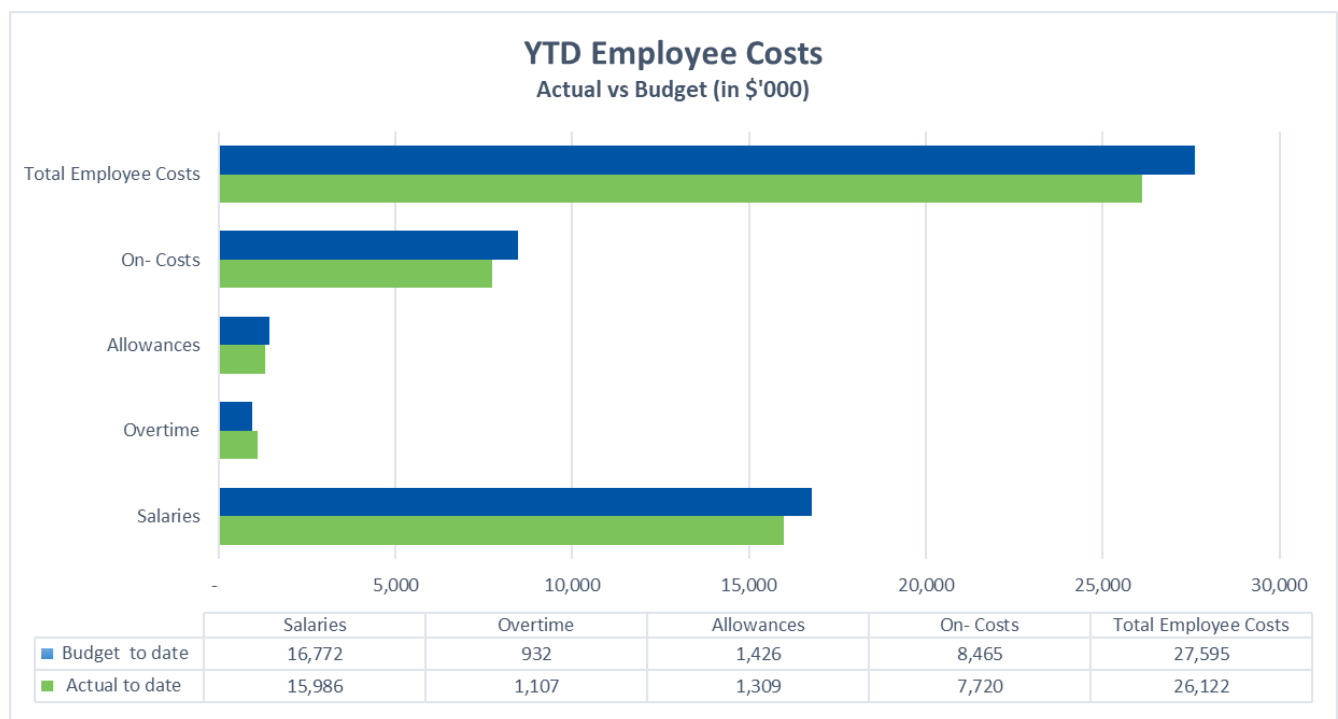
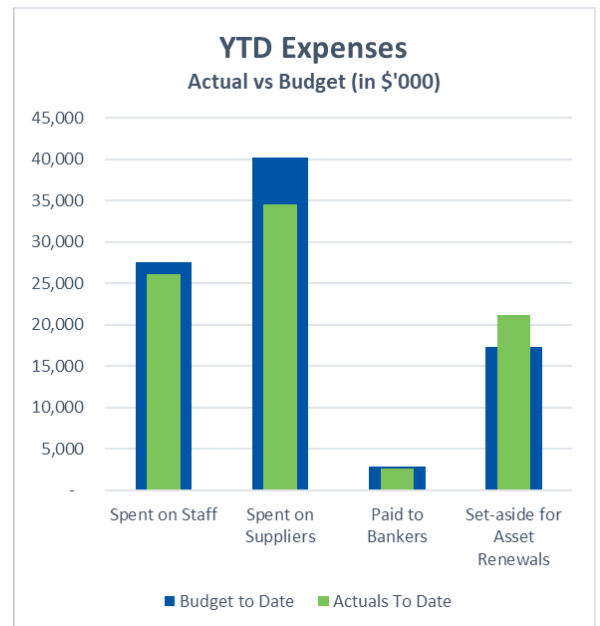
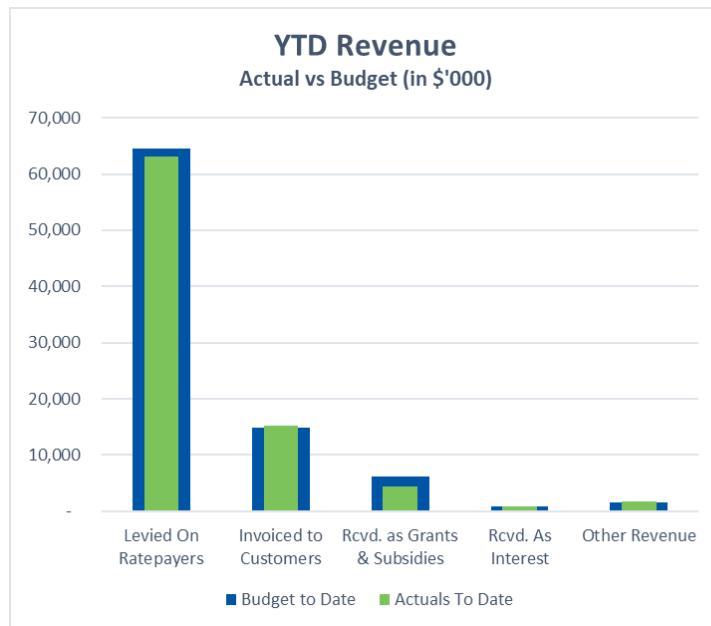
For the period under review, Council's operating surplus stood at just over \$891k, after charging depreciation (What We Set-aside for Asset Renewals) of \$21.1M.

Table 1 : Statement of Income & Expenditure

(in \$'000)	Prev. Yr. Audited	Current Budget	Current to date Actual to date	% Variance Current Bud v Actual
What We Levied Our Ratepayers	84,913	64,584	63,066	98%
What We Invoiced Our Customers	20,945	14,880	15,216	102%
What We Rcvd. as Grants & Subsidies	10,633	6,202	4,438	72%
What We Rcvd. As Interest from Investment	1,651	860	883	103%
Our Other Revenue	7,689	1,521	1,721	113%
Our Total Recurrent Earnings	125,830	88,047	85,323	97%
What We Spent on Our Staff	36,877	27,595	26,122	95%
What We Spent on Our Suppliers	52,881	40,178	34,519	86%
Our Total Direct Spend	89,758	67,773	60,640	89%
What We Paid Our Bankers	4,066	2,876	2,610	91%
What We Set-aside for Asset Renewals	29,181	17,252	21,182	123%
Our Operating Surplus/(Deficit)	2,825	146	890	611%
Our Capital Revenue	60,513	75,078	48,095	64%
Our Capital Expenses	26,417	12,395	-	0%
Our Capital Surplus/(Deficit)	34,097	62,684	48,095	77%
Our Net Earnings	36,922	62,829	48,986	78%

- Revenues are more or less in line with budget. Investment income may end up slightly below budget due to low interest rates.
- What we spent on suppliers is below budget by around 15%.
- What we set aside for asset renewals has been restated initially pending confirmation of the asset revaluation final outcomes. It is likely that the depreciation expense will be in excess of the budget pending the final timing of the revaluation. The depreciation expenses will be revised in the quarter three budget review.
- Council remains with an operating surplus for the period.

Additional details of revenue and expenditure and their comparison to budget are graphically presented below:



COMMUNITY WEALTH

The value of resources Council has, to service our community. Net Community wealth at the end of the period stood marginally over \$1.1 Bn.

Table 2 : Statement of Financial Position

(in \$'000)	Prev. Yr. Audited	Annual Budget	Actual to date
What We Own	1,137,128	1,228,979	1,176,749
Inventory We Hold	1,646	1,745	1,432
What We are Owed	27,789	21,266	29,269
What We Have in Bank	68,776	54,574	82,225
Our Total Assets	1,235,338	1,306,565	1,289,675
What We Owe Our Suppliers	47,053	44,824	56,094
What We Owe Our Lenders	86,507	76,191	82,796
Our Total Liabilities	133,560	121,014	138,890
Our Community Wealth	1,101,778	1,185,551	1,150,785

- Cash balances continue to be maintained at sound operating levels.
- The borrowings are above budget due to a change in accounting standards. Under the new standard, future lease payments are displayed as a form of borrowing.

Debtors & Borrowings

What We Are Owed (\$ '000)	
Category	Amount
Rates & Charges	10,786
General Debtors	4,732
GST Receivable/(Payable)	1,049
Advances to Community	1,052
SUB-TOTAL	17,619

Contract Assets	9,775
Water Charges not yet levied	1,827
Prepayments	658
Provision for Bad Debts	(610)
SUB-TOTAL	11,650

GRAND TOTAL	29,269
--------------------	---------------

What We Have Borrowed (\$ '000)		
Loan	Rate	Balance
81091 Gen5 05/06	7.08%	1,889
81092 Gen7 08/09	6.82%	4,369
81090 Gen8 09/10	6.33%	2,887
81089 Gen8 AMSU	5.07%	2,928
81093 STP Projects	5.25%	19,487
81094 WTP Projects	4.86%	9,505
Bowen STP 19/20	2.20%	9,307
WCA Run 19/20	2.20%	22,802
Bowen Cell 3 19/20	0.91%	2,275
Bowen STP 20/21	1.80%	5,495
TOTAL		80,944

What We Have Available to Borrow ('000)		
Facility	Rate	Limit
Working Capital Facility	0.25%	20,000
Term Loans		-
TOTAL		20,000

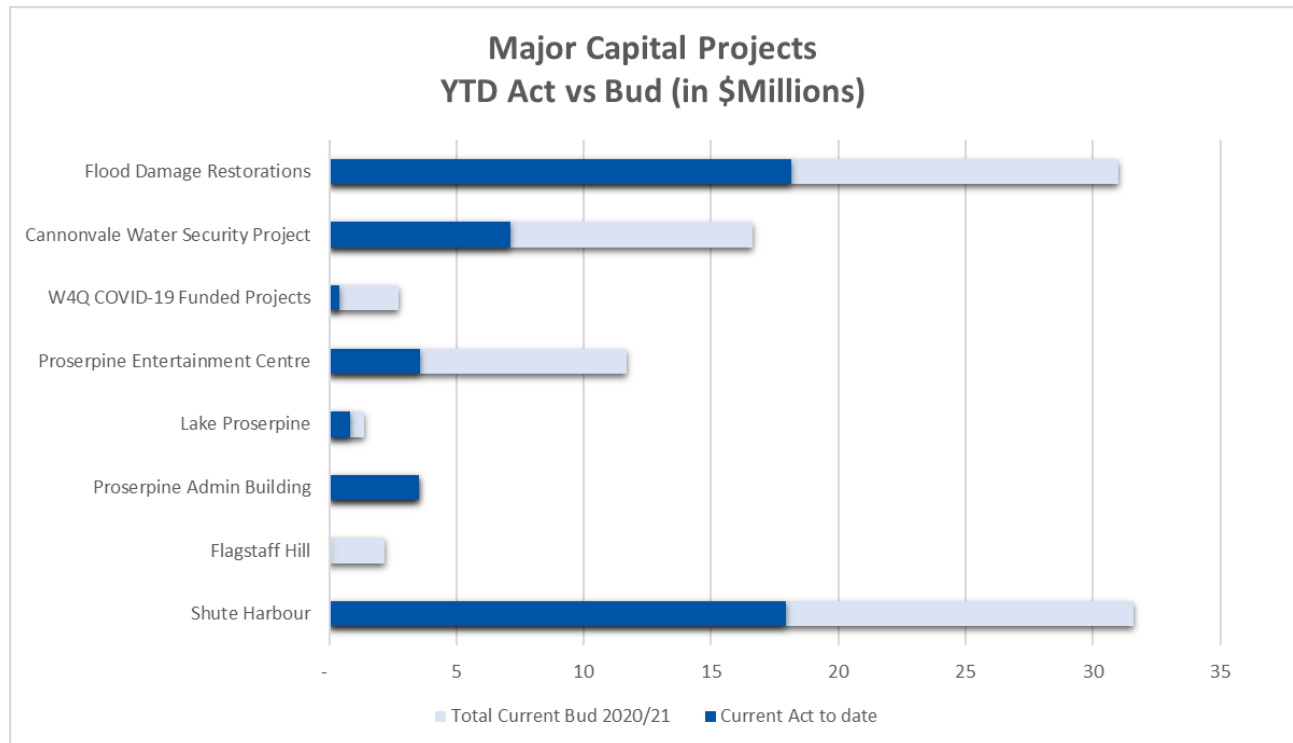
- With the expiry of due dates for both the Rates notice and the Water Notice, overall debtor balances are down to just under \$18M. Reminder letters have been sent out and follow-up activities on overdue accounts continue to be undertaken. Arrangements will be made with Council's collection agency to address long overdue accounts in the coming weeks.
- The short-term working capital facility remains unutilised.

Investments

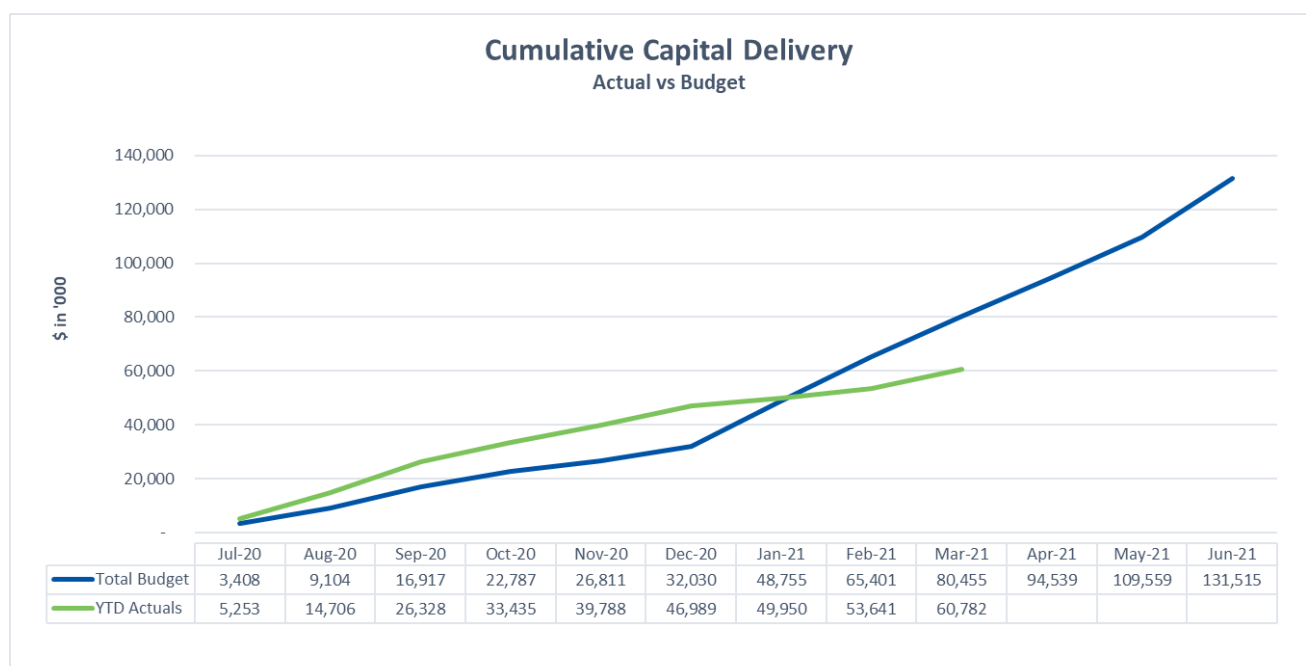
	Prev. Yr	Current
Queensland Treasury Corporation	68,776	82,225

- All excess cash is invested with Queensland Treasury Corporation (QTC), as QTC has been providing the best returns among the acceptable counterparty institutions. Investment interest remains down due the reduction in interest rates through the year.

CAPITAL DELIVERY

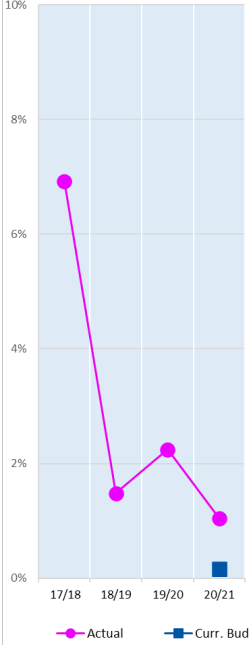
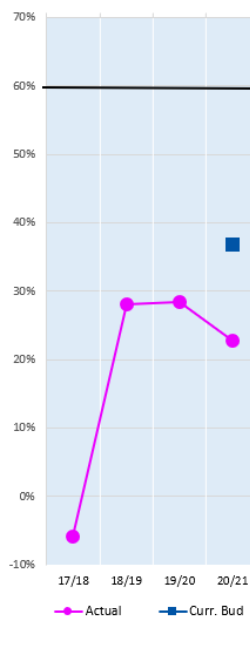
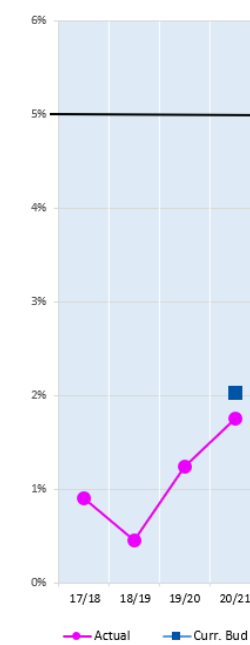
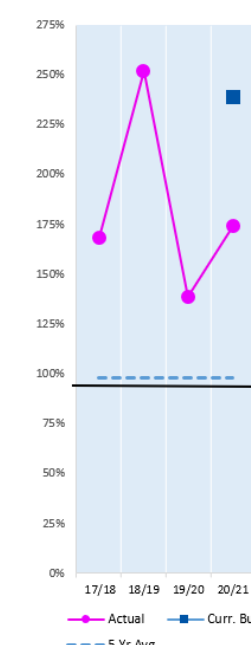


- Capital delivery has reduced to 75% of the YTD capital budget as at 31st March 2021. The program will be reviewed through the third quarter budget review



FINANCIAL CAPACITY

These Ratios indicate Council's financial capacity to fund operations and repay debt obligations, in the short to the medium term.

OPERATING SURPLUS RATIO  Legend: Actual (pink line), Curr. Bud (blue square)	NET FINANCIAL LIABILITIES RATIO (ADJUSTED)  Legend: Actual (pink line), Curr. Bud (blue square)	INTEREST COVERAGE RATIO  Legend: Actual (pink line), Curr. Bud (blue square)	ASSET SUSTAINABILITY RATIO  Legend: Actual (pink line), Curr. Bud (blue square), 5 Yr Avg. (dashed blue line)
<i>Net Operating Surplus/(Deficit) divided by Total Operating Revenue</i> Target: 0% - 10% Mar Actual: -0.01% Budget: 0.17%	<i>Total Liabilities less Current Assets divided by Total Operating Revenue</i> Target: below 60% Mar Actual: 22.82% Budget: 36.99%	<i>Net interest expense divided by total operating revenue.</i> Target: below 5% Mar Actual: 1.75% Budget: 2.03%	<i>Expenditure on Replacement Assets divided by depreciation expense.</i> Target: Avg. 90% Mar Actual: 174.47% Budget: 239.11%
This ratio is within the expected range and marginally above budget.	Financial liabilities are maintained at a steady level below the maximum recommended levels.	Well below the recommended maximum thresholds and in line with budget.	Will continue to remain above target levels due to continuing substantial reconstruction work.

BUDGET ACHIEVEMENT

Council's ability to meet annual budgeted revenue, contain costs within budgeted expenditure parameters and manage cash flows.

Item	Prev. Yr Act vs Bud	Curr. Yr. to date	Flag
Our Earnings	97%	72%	
Our Direct Expenditure	97%	74%	
Our Capital Delivery	87%	76%	
Our Cash on Hand	107%	151%	

- Capital delivery has dropped due to changes in the operational needs and delays with Shute Harbour and TMR works which have further deferred capital projects into the 2021/22 financial year.
- Further extensions to Works for Queensland projects were due to scope of works changes resolved by Council.

- The budgeting process for the financial year 2021/22 is underway.
- The capital budget for 2021-22 and the ten-year period first draft has been balanced.
- The revaluation process is completed, and the revised data will be uploaded into the Asset management system in April. Depreciation for the year will be revised due to the revaluation.
- The interim audit has been completed by the Queensland Audit office (QAO) with no major issues identified. The interim management letter is expected in April. QAO has indicated it will likely to a second interim audit before the final audit after the end of the financial year.
- Queensland Treasury Corporation (QTC) is yet to indicate dates for the credit review.
- The purchase card module of TechnologyOne is under implementation.
- Final testing of the upgraded version of Civica (Property & Rates + Customer request Management) is underway with a target go-live date in mid-May.

WHITSUNDAY REGIONAL COUNCIL

Financial Statements

For the nine months ending 31 March 2021

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WHITSUNDAY REGIONAL COUNCIL

Statement of Comprehensive Income

For the nine months ending 31 March 2021

		2021	2020	Revised Budget 2020/21	PTD Budget 2020/21	Variance to PTD Budget
	Note	YTD \$	30 June \$	\$	\$	%
Income						
Recurrent revenue						
Rates and levies	3 (a)	63,065,988	84,913,238	86,111,614	64,583,711	98%
Sale of goods and major services	3 (b)	8,444,200	12,367,742	11,174,916	8,381,187	101%
Fees and charges	3 (c)	3,239,797	3,232,050	3,138,496	2,353,872	138%
Lease, rental and levies		323,128	428,889	450,815	338,111	96%
Interest received		882,985	1,650,666	1,147,186	860,390	103%
Sales of contract and recoverable works	3 (d)	3,208,542	4,915,902	5,075,322	3,806,492	84%
Other recurrent income		1,720,963	7,689,235	2,027,650	1,520,738	113%
Grants, subsidies, contributions and donations	4 (i)	4,437,583	10,632,767	8,269,468	6,202,101	72%
Total operating revenue		85,323,186	125,830,489	117,395,467	88,046,600	97%
Capital revenue						
Grants, subsidies, contributions and donations	4 (ii)	47,213,283	60,449,475	99,153,627	74,365,220	63%
		47,213,283	60,449,475	99,153,627	74,365,220	
Total revenue		132,536,469	186,279,964	216,549,094	162,411,821	
Capital income		881,953	63,764	950,771	713,078	124%
Total income	2 (b)	133,418,422	186,343,728	217,499,865	163,124,899	82%
Expenses						
Recurrent expenses						
Employee benefits	5	(26,121,622)	(36,876,686)	(36,793,671)	(27,595,253)	95%
Materials and services	6	(34,518,741)	(52,881,261)	(53,570,743)	(40,178,057)	86%
Finance costs	7	(2,610,333)	(4,066,083)	(3,834,530)	(2,875,898)	91%
Depreciation and amortisation	15	(21,182,118)	(29,181,271)	(23,002,354)	(17,251,766)	123%
Total operating expenses		(84,432,814)	(123,005,300)	(117,201,298)	(87,900,973)	
Capital expenses						
Other capital expenses	8	-	(26,416,518)	(16,526,017)	(12,394,513)	
Total expenses	2 (b)	(84,432,814)	(149,421,818)	(133,727,315)	(100,295,486)	84%
Net result		48,985,608	36,921,910	83,772,550	62,829,413	
Other comprehensive income						
Items that will not be reclassified to net result						
Increase in asset revaluation surplus		-	683	-	-	
Total other comprehensive income for the year		-	683	-	-	
Total comprehensive income for the year		48,985,608	36,922,593	83,772,550	62,829,413	

The above statement should be read in conjunction with the accompanying notes and Summary of Significant Accounting Policies.

WHITSUNDAY REGIONAL COUNCIL

Statement of Appropriations

For the nine months ending 31 March 2021

		2021	2020	Revised Budget 2020/21
	Note	\$	\$	\$
Retained surplus (deficiency) from prior years		6,626,153	(3,777,717)	6,624,688
Adjustment for prepaid rates		-	7,819,074	-
Net result for the year		48,985,608	36,921,910	83,772,550
		55,611,760	40,963,267	90,397,238
Transfers (to) from capital account				
Transfer of capital income		(881,953)	(63,764)	(950,771)
Transfer of capital expenses	8	-	26,416,518	16,526,017
Non-monetary capital revenue	4 (ii)(b)	-	(1,323,848)	-
General revenue used for capital funding purposes	CFS*	(3,298,268)	-	(4,357,446)
Unspent capital revenue transferred from capital	CFS*	-	11,753,283	-
Adjustment for unfunded depreciation		2,978,910	7,506,997	6,649,770
Transfer to adjust the working capital cash		-	(495,163)	-
Net capital account transfers		(1,201,311)	43,794,023	17,867,570
Transfers (to) from restricted reserves				
Constrained grants and subsidy reserve		(15,168,972)	(26,385,462)	(38,202,686)
Constrained NDRRA grants reserve		(32,044,311)	(29,553,310)	(60,113,088)
Retained surplus (deficiency) available for transfer to reserves		7,197,166	28,818,517	9,949,034
Transfers (to) from reserves for future capital funding:				
Insurance reimbursed reserve		-	(2,616,000)	-
Capital works reserve		(2,438,508)	(20,013,314)	(3,276,360)
Transfers (to) from reserves for future recurrent funding purposes:				
Operational projects reserve		-	436,950	-
		-	-	-
		-	-	-
Retained surplus (deficit) at end of year		4,758,658	6,626,153	6,672,674

*CFS - Denotes Capital Funding Statement

WHITSUNDAY REGIONAL COUNCIL

Statement of Financial Position

As at 31 March 2021

		2021	2020	Revised Budget 2020/21
	Note	\$	\$	\$
Current assets				
Cash and cash equivalents	10	82,224,791	68,775,501	54,574,209
Receivables	12 (a)	16,987,696	13,584,141	11,082,014
Inventories	12	1,117,148	1,330,586	1,430,456
Contract assets		9,775,115	9,492,762	5,492,762
Other assets		2,485,457	4,691,452	4,691,452
		112,590,207	97,874,442	77,270,893
Non-current assets held for sale		315,000	315,000	315,000
Total current assets		112,905,207	98,189,443	77,585,893
Non-current assets				
Receivables		21,000	21,000	-
Investment properties	13	1,800,000	1,800,000	1,665,398
Property, plant and equipment	14	1,173,094,452	1,133,494,546	1,222,594,617
Intangible assets		-	-	2,885,823
Right of use assets		1,833,351	1,833,351	1,833,351
Total non-current assets		1,176,748,803	1,137,148,897	1,228,979,189
TOTAL ASSETS		1,289,654,010	1,235,338,340	1,306,565,082
Current liabilities				
Trade and other payables	15	30,951,448	22,189,713	21,887,753
Provisions	16	10,234,078	9,888,573	7,967,087
Borrowings	17	5,372,131	5,372,131	5,317,457
Contract liabilities		7,042,906	7,042,906	-
Total current liabilities		53,600,564	44,493,323	35,172,296
Non-current liabilities				
Provisions	16	7,865,956	7,931,719	9,651,394
Borrowings	17	77,423,671	81,135,085	76,190,630
Total non-current liabilities		85,289,627	89,066,804	85,842,024
TOTAL LIABILITIES		138,890,191	133,560,128	121,014,320
NET COMMUNITY ASSETS		1,150,763,819	1,101,778,212	1,185,550,762
Community equity				
Council capital -				
Investment in capital assets		733,663,913	690,352,594	787,338,597
Asset revaluation surplus		360,463,221	360,463,221	360,463,221
Retained surplus/ (deficiency)		4,758,658	6,626,153	6,672,674
Reserves		51,878,027	44,336,244	31,076,271
TOTAL COMMUNITY EQUITY		1,150,763,819	1,101,778,212	1,185,550,762

The above statement should be read in conjunction with the accompanying notes and Summary of Significant Accounting Policies.

WHITSUNDAY REGIONAL COUNCIL

Statement of Changes in Equity

For the nine months ending 31 March 2021

	Note	Total		Retained surplus (deficit) Note 25		Reserves Note 26		Asset revaluation surplus Note 24		Council Capital Note 23	
		2021 \$	2020 \$	2021 \$	2020 \$	2021 \$	2020 \$	2021 \$	2020 \$	2021 \$	2020 \$
Balance at beginning of the year		1,101,778,212	1,054,258,015	6,626,153	(3,777,717)	44,336,244	47,239,722	360,463,221	360,462,538	690,352,594	650,333,471
Adj on initial application of AASB 15 / AASB 1058		-	10,597,604	-	7,819,074			-		-	2,778,530
Restated opening balances		1,101,778,212	1,064,855,619	6,626,153	4,041,357	44,336,244	47,239,722	360,463,221	360,462,538	690,352,594	653,112,001
Net result		48,985,608	36,921,910	48,985,608	36,921,910	-	-	-	-	-	-
Other comprehensive income for the year											
Change in value of future rehabilitation costs		-	683					-	683		
Total comprehensive income for the year		48,985,608	36,922,593	48,985,608	36,921,910	-	-	-	683	-	-
Transfers (to) from retained earnings to capital		-	-	(1,201,311)	43,794,023	-	-	-	-	1,201,311	(43,794,023)
Transfers (to) from retained earnings and recurrent reserves		-	-	-	436,950	-	(436,950)	-	-		
Transfers (to) from capital reserves and capital		-	-	(49,651,791)	(78,568,086)	7,541,783	(2,466,529)	-	-	42,110,008	81,034,615
Net transfers in year		-	-	(50,853,102)	(34,337,114)	7,541,783	(2,903,478)	-	-	43,311,319	37,240,593
		-	-							-	-
Balance at end of the year		1,150,763,819	1,101,778,212	4,758,658	6,626,153	51,878,027	44,336,244	360,463,221	360,463,221	732,763,822	690,352,594

The above statement should be read in conjunction with the accompanying notes and Summary of Significant Accounting Policies.

WHITSUNDAY REGIONAL COUNCIL

Statement of Cash Flows

For the nine months ending 31 March 2021

		2021	2020	Revised Budget 2020/21
	Note	\$	\$	\$
Cash flows from operating activities				
Receipts				
General rates and utility charges		60,866,307	83,605,795	88,400,939
Sale of goods and major services		8,444,200	12,367,742	11,174,916
Lease, rental and levies, fees and charges		3,562,853	3,225,316	3,369,311
Other income		3,854,741	16,332,113	6,828,547
GST received		451,094	14,868,514	(1,037,544)
Receipts from customers		77,179,195	130,399,481	108,736,168
Operating grants, subsidies and contributions		4,437,583	12,359,971	8,269,468
Interest received		882,985	1,650,666	1,147,186
Payments				
Payments for materials and services		(24,565,810)	(59,932,128)	(53,670,613)
Payment to employees		(25,399,122)	(35,987,474)	(36,793,671)
GST paid		-	(14,476,754)	-
Payments to suppliers and employees		(49,964,933)	(110,396,356)	(90,464,284)
Interest expense		(2,379,986)	(3,250,982)	(3,600,988)
Net cash inflow (outflow) from operating activities		30,154,844	30,762,780	24,087,551
Cash flows from investing activities				
Commonwealth government grants		1,404,977	5,481,533	-
State government subsidies and grants arising from contract assets and liabilities		(282,352)	6,249,696	-
Other capital State government subsidies and grants		43,141,704	49,470,842	101,528,627
Capital contributions		2,666,603	4,173,252	1,625,000
Payments for property, plant and equipment		(60,782,024)	(95,288,067)	(131,515,238)
Payments for investment property		-	(135,576)	-
Proceeds from sale of property, plant and equipment		881,953	702,227	950,771
Net movement in loans to community organisations		(25,000)	(25,281)	1,027,000
Net cash inflow (outflow) from investing activities		(12,994,140)	(29,371,375)	(26,383,840)
Cash flows from financing activities				
Proceeds from borrowings		-	8,167,094	-
Repayment of borrowings	17	(3,711,414)	(4,226,926)	(4,997,672)
Repayments made on finance leases		-	(174,357)	-
Net cash inflow (outflow) from financing activities		(3,711,414)	3,765,810	(4,997,672)
Net increase (decrease) in cash and cash equivalents held		13,449,290	5,157,216	(7,293,961)
Cash and cash equivalents at beginning of the financial year		68,775,501	63,618,285	61,868,170
Cash and cash equivalents at end of the financial year	10	82,224,791	68,775,501	54,574,209

The above statement should be read in conjunction with the accompanying notes and Summary of Significant Accounting Policies.

WHITSUNDAY REGIONAL COUNCIL

Statement of Capital Funding

For the nine months ending 31 March 2021

	Note	2021	2020	Revised Budget 2020/21
		\$	\$	\$
Sources of capital funding				
General revenue used for capital purposes		3,298,268	-	4,357,446
Excess capital revenue provided in year		-	(11,753,283)	-
Finance leases for right of use assets		-	468,579	-
Loan monies expended		-	8,167,094	-
Funded depreciation and amortisation		17,357,006	21,674,274	16,352,584
Proceeds from the sale of capital assets		881,953	702,227	950,771
Donated and contributed physical assets		-	1,323,848	-
Constrained grants, subsidies and contributions		12,139,525	36,892,209	40,357,393
Insurance reimbursed reserve		837,652	-	70,000
Capital Works reserve		4,235,980	13,459,178	11,695,628
Insurance Restoration reserve		-	1,129,919	2,616,000
Constrained NDRRA grants reserve		25,743,052	29,553,310	60,113,088
		64,493,438	101,617,354	136,512,910
Application of capital funding				
Non-current capital assets				
Land and Improvements		-	126,461	-
Buildings and Other Structures		-	25,871,843	67,261,951
Plant and equipment		-	9,121,423	4,968,328
Intangible assets		-	-	2,885,823
Transport Infrastructure		-	46,103,096	62,150,546
Water		-	2,553,538	19,371,002
Sewerage		-	11,450,050	3,335,588
Right of use - Land		-	11,322	-
Right of use - Buildings		-	457,258	-
Movement in capital work in progress		60,782,024	1,385,503	(28,458,000)
Investment property		-	135,576	-
		60,782,024	97,216,070	131,515,238
Principal loan redemptions				
Queensland Treasury Corporation		3,711,414	4,226,926	4,997,672
Finance leases for right of use assets		-	174,357	-
		3,711,414	4,401,284	4,997,672
		64,493,438	101,617,354	136,512,910

The above statement should be read in conjunction with the accompanying notes and Summary of Significant Accounting Policies.

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements

For the nine months ending 31 March 2021

2 Analysis of results by program

(b) Income and expenses defined between recurring and capital, and assets are attributed to the following programs:-

Programs	Gross program income				Total income	Gross program expenses		Total expenses	Operating surplus/(deficit) from recurrent operations	Net result for year	Assets
	Recurrent revenue		Capital revenue			Recurrent	Capital				
	Grants	Other	Grants	Other							
	2021 \$	2021 \$	2021 \$	2021 \$							
Office of the Chief Executive	132,877	82,966	-	-	215,843	(6,564,423)	-	(6,564,423)	(6,348,580)	(6,348,580)	(0)
Corporate Services	1,929,955	36,369,676	6,515,733	878,135	45,693,499	6,014,013	-	6,014,013	44,313,644	51,707,512	190,197,366
Community Environmental Services	295,539	2,271,560	37,800	(198)	2,604,701	(9,212,996)	-	(9,212,996)	(6,645,897)	(6,608,295)	4,071,939
Engineering	1,307,520	3,106,869	18,094,042	1,915,380	24,423,811	(23,572,863)	-	(23,572,863)	(19,158,475)	850,947	568,844,780
Waste Management	126,133	5,959,679	25,000	-	6,110,812	(5,683,723)	-	(5,683,723)	402,089	427,089	10,109,408
Planning & Development Assessment	41,519	1,574,950	-	-	1,616,469	(2,841,957)	-	(2,841,957)	(1,225,489)	(1,225,489)	-
Customer Experience	-	-845,810	511,823	147,285	(186,702)	(9,413,540)	-	(9,413,540)	(10,259,349)	(9,600,242)	36,910,230
Airport Operations	602,000	3,198,122	800,100	-	4,600,222	(4,934,179)	-	(4,934,179)	(1,134,057)	(333,957)	78,055,676
Quarries & Pitts	-	2,808,379	-	-	2,808,379	(3,093,528)	-	(3,093,528)	(285,149)	(285,149)	2,988,421
Shute Harbour Operations	-	121,321	15,310,128	-	15,431,449	(186,707)	-	(186,707)	(65,386)	15,244,742	43,852,106
Water Services	-	14,662,167	2,540,000	766,631	17,968,798	(14,377,932)	-	(14,377,932)	284,235	3,590,866	158,024,394
Sewerage Services	-	11,577,763	712,055	(158,677)	12,131,141	(10,564,979)	-	(10,564,979)	1,012,784	1,566,162	193,663,834
Total	4,435,543	80,887,642	44,546,681	3,548,556	133,418,422	(84,432,815)	-	(84,432,815)	890,371	48,985,608	1,286,718,153

For the year ended 30 June 2020

Programs	Gross program income				Total income	Gross program expenses		Total expenses	Operating surplus/(deficit) from recurrent operations	Net result for year	Assets
	Recurrent revenue		Capital revenue			Recurrent	Capital				
	Grants	Other	Grants	Other							
	2020 \$	2020 \$	2020 \$	2020 \$							
Office of the Chief Executive	391,302	191,576	(42,802)	-	540,077	(8,643,212)	-	(8,643,212)	(8,060,333)	(8,103,135)	(0)
Corporate Services	4,235,802	55,895,573	11,319,609	-	71,450,984	6,851,933	(2,670,171)	4,181,762	66,983,308	75,632,746	194,583,356
Community Environmental Services	490,975	2,588,930	200,712	63,764	3,344,381	(12,474,090)	(48,366)	(12,522,456)	(9,394,185)	(9,178,075)	3,896,706
Engineering	4,452,316	4,036,309	19,471,944	1,743,717	29,704,286	(35,647,685)	(13,046,556)	(48,694,241)	(27,159,060)	(18,989,955)	554,464,491
Waste Management		7,998,668	137,185	-	8,135,853	(7,700,815)	(3,375,487)	(11,076,302)	297,853	(2,940,449)	9,187,951
Planning & Development Assessment		1,855,153	-	-	1,855,153	(4,946,863)	-	(4,946,863)	(3,091,710)	(3,091,710)	-
Customer Experience	957,439	143,607	4,560,313	61,973	5,723,332	(15,517,711)	(618,461)	(16,136,172)	(14,416,664)	(10,412,840)	37,477,649
Airport Operations		5,558,105	1,113,999	-	6,672,103	(7,217,847)	(4,562,897)	(11,780,743)	(1,659,742)	(5,108,640)	76,742,390
Quarries & Pitts		3,352,639	-	-	3,352,639	(3,606,501)	19,879	(3,586,622)	(253,862)	(233,983)	3,827,473
Shute Harbour Operations		-294,058	13,610,916	2,616,000	15,932,858	(489,202)	(308,896)	(798,098)	(783,260)	15,134,760	19,562,292
Water Services		18,393,161	394,118	606,355	19,393,634	(19,294,581)	(486,867)	(19,781,449)	(901,420)	(387,814)	143,397,321
Sewerage Services		15,582,992	4,186,380	469,054	20,238,426	(14,318,727)	(1,318,695)	(15,637,422)	1,264,265	4,601,004	188,807,002
Total	10,527,834	115,302,655	54,952,375	5,560,864	186,343,728	(123,005,300)	(26,416,518)	(149,421,818)	2,825,189	36,921,910	1,231,946,630

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements

For the nine months ending 31 March 2021

	Note	2021 \$	2020 \$
3 Revenue			
(a) Rates and levies			
General rates		37,926,850	50,181,421
Water		6,292,443	8,674,903
Water consumption, rental and sundries		6,427,476	7,743,833
Sewerage		12,881,113	16,586,925
Waste management		4,480,170	5,469,534
Rates and utility charge revenue		68,008,051	88,656,616
Less: Discounts		(4,424,282)	(3,074,746)
Less: Pensioner remissions		(517,782)	(668,633)
Net rates and utility charges		63,065,988	84,913,238
(b) Sale of goods and major services			
Parking and other ranger services		763,239	1,083,561
Refuse tips and transfer station charges		1,909,633	2,098,996
Aerodrome charges		2,045,932	3,980,384
Quarry charges		2,706,492	3,195,155
Shute harbour commercial activities		132,158	196,620
Caravan parks fees and charges		533,662	607,236
Water and sewerage fees and charges		353,084	1,060,363
Other		-	145,426
		8,444,200	12,367,742
(c) Fees and Charges			
Statutory fees and charges include			
Lodgement fees		1,379,905	1,176,419
Dog registrations		240,083	249,490
Inspection fees		66,155	501,496
Licences and permits		561,020	374,312
Fines and infringements		(152,093)	(147,676)
Other statutory fees		942,148	718,151
User fees and charges		202,579	359,858
		3,239,797	3,232,050
(d) Sales of contract and recoverable works			
Transport and Main Roads		3,208,542	4,915,902
		3,208,542	4,915,902
There are no contracts in progress at the year end. The contract work carried out is not subject to retentions.			
4 Grants, subsidies, contributions and donations			
(i) Recurrent			
General purpose grants		2,260,303	5,549,328
State government subsidies and grants		1,680,132	2,314,810
NDRRA flood damage grants for operational repairs		495,109	2,663,696
Contributions		2,040	97,853
		4,437,583	10,625,687
(ii) Capital			
(a) Monetary revenue designated for capital funding purposes			
Commonwealth government grants		1,404,977	5,481,533
State government subsidies and grants		11,097,392	19,917,531
NDRRA flood damage grants for capitalised repairs		32,044,311	29,553,310
Contributions		2,666,603	4,173,252
		47,213,283	59,125,627
(b) Non-monetary revenue received -			
Developer contributions of physical assets at fair value		-	1,323,848
		-	1,323,848
Total capital revenue		47,213,283	60,449,475

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements

For the nine months ending 31 March 2021

	Note	2021 \$	2020 \$
5 Employee benefits			
Total staff wages and salaries		18,407,545	27,220,897
Councillors' remuneration		427,641	559,059
Annual, sick and long service leave entitlements		3,941,220	5,577,686
Superannuation		2,595,218	3,554,302
		<u>25,371,624</u>	<u>36,911,944</u>
Other employee related expenses		2,222,469	3,182,626
		<u>27,594,093</u>	<u>40,094,570</u>
Less capitalised employee expenses		(1,472,471)	(3,217,884)
		<u><u>26,121,622</u></u>	<u><u>36,876,686</u></u>
6 Materials and services			
Audit of annual financial statements by the Auditor-General of Queensland		125,000	125,928
Community Donations, grants, subsidies & contributions		2,048,737	2,320,844
Legal services		369,534	987,123
Insurance		1,566,294	1,946,722
Consultants & Services		695,885	1,310,765
Contractors		12,017,819	17,237,975
Plant & Equipment		2,921,569	3,873,741
Advertising & Marketing		908,198	324,425
Cost of inventories		299,017	410,452
Communications & IT		2,796,071	4,188,212
Repairs & Maintenance & Utility charges		2,720,366	4,149,711
Raw materials & consumables		3,844,027	10,619,872
Registrations & subscriptions		270,210	278,073
Safety		560,061	948,971
Purchase of water		1,878,920	2,417,403
Rentals - Operating leases		370,209	396,480
Other material and services		1,126,824	1,344,563
		<u><u>34,518,741</u></u>	<u><u>52,881,261</u></u>
7 Finance costs			
Finance costs charged by the Queensland Treasury Corporation		2,379,986	3,211,095
Interest on finance leases		-	39,887
Bank charges		230,274	368,038
Impairment of receivables and bad debts written-off		72	435,623
Refuse sites - unwinding of discount on provision		-	0
Refuse sites - unwinding of discount on provision		-	11,439
		<u><u>2,610,333</u></u>	<u><u>4,066,083</u></u>
8 Capital expenses			
Loss on the sale of capital assets		-	319,509
Loss on write-off of capital assets	9	-	22,791,738
Increase in rehabilitation provision for future costs, on land not controlled by council, due to a change in discount rate		-	67,625
Change arising from revision of the future restoration expenditure		-	3,237,646
Total capital expenses		<u><u>-</u></u>	<u><u>26,416,518</u></u>
9 Loss on write-off of capital assets			
Investment property - Land and Buildings	13	-	48,366
Buildings and Other Structures		-	7,094,573
Plant and equipment		-	245,908
Transport Infrastructure		-	13,597,328
Water		-	486,867
Sewerage		-	1,318,695
		<u><u>-</u></u>	<u><u>22,791,738</u></u>

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements

For the nine months ending 31 March 2021

	Note	2021 \$	2020 \$
10 Cash and cash equivalents			
Cash at bank and on hand		1,277,889	975,280
Deposits at call		80,946,902	67,800,222
Total cash and cash equivalents per statement of cash flows		82,224,791	68,775,501
Total cash assets		82,224,791	68,775,501
Council's cash and cash equivalents are subject to a number of external restrictions that limit amounts available for discretionary or future use. These include externally imposed expenditure restrictions:			
Unspent government grants and subsidies	18 (a) (ii)	9,164,103	(0)
Unspent developer contributions	18 (a) (ii)	9,313,765	9,147,163
Rates in advance		1,757,248	2,591,430
Contract liabilities		7,042,906	7,042,906
<i>Council has resolved to set aside revenue to provide funding for specific future projects that will be required to meet delivery of essential services and meet day to day operational requirements.</i>			
Funds set aside by council to meet specific future funding requirements		50,188,110	43,367,849
Total cash held to contribute to identified funding commitments		77,466,133	62,149,348
Cash and deposits at call are held in the Westpac Bank and Queensland Treasury Corporation in a normal term deposits and Business cheque accounts. The bank currently has a short term credit rating of A1+ and long term rating of AA-.			
11 Receivables			
(a) Current			
Rateable revenue and utility charges		10,786,482	7,847,983
GST recoverable		1,048,678	1,683,384
Other debtors		4,731,949	3,657,186
Less impairment provision		(610,413)	(610,413)
		15,956,696	12,578,141
Loans and advances to community organisations		1,031,000	1,006,000
		16,987,696	13,584,141
(b) Non-current			
Loans and advances to community organisations		21,000	21,000
		21,000	21,000
12 Inventories			
Inventories for internal use-			
Quarry and road materials		572,651	772,465
Stores and materials		544,497	558,121
Land purchased for development and sale		(0)	(0)
		1,117,148	1,330,586
Valued at cost, adjusted when applicable for any loss of service potential.			
13 Investment properties			
Property held for rental income and capital growth			
Fair value at beginning of the financial year		1,800,000	1,650,000
Fair value of assets transferred from other asset category		-	(974)
Acquisitions		-	135,576
Value of the asset written-off		-	(48,366)
Revaluation adjustment to income statement		-	63,764
Fair value at end of the financial year		1,800,000	1,800,000

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements
For the nine months ending 31 March 2021

14 Property, plant and equipment

	Note	Land and Improvements	Buildings and Other Structures	Plant and equipment	Transport Infrastructure	Water	Sewerage	Works in progress	Total plant and equipment	Right of use - Land	Right of use - Buildings	Right of use - Plant	Total right of use assets
Basis of measurement		Valuation level 2	Valuation level 2	Cost	Valuation level 3	Valuation level 3	Valuation level 3	Cost		Cost	Cost	Cost	
		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021
Asset Values		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Opening gross value as at 1 July 2020		45,618,540	120,405,777	55,968,801	714,241,938	277,885,046	229,060,073	118,665,929	1,561,846,103	1,560,888	457,258	8,290	2,026,435
Minor correction to opening balance		-	-	-	-	-	-	-	-	-	-	-	-
Additions at cost		-	-	-	-	-	-	60,782,024	60,782,024	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-
Contributed assets at valuation		-	-	-	-	-	-	-	-	-	-	-	-
Internal transfers from work in progress		-	-	-	-	-	-	-	-	-	-	-	-
Disposals		-	-	-	-	-	-	-	-	-	-	-	-
Write-offs	9	-	-	-	-	-	-	-	-	-	-	-	-
Internal transfers between asset classes		-	-	-	-	-	-	-	-	-	-	-	-
Transfer to investment properties	13	-	-	-	-	-	-	-	-	-	-	-	-
Closing gross value as at 30 June 2021		45,618,540	120,405,777	55,968,801	714,241,938	277,885,046	229,060,073	179,447,953	1,622,628,127	1,560,888	457,258	8,290	2,026,435
Accumulated depreciation and impairment													
Opening balance as at 1 July 2020		23,664	39,971,387	28,423,185	140,474,866	146,230,294	73,228,161		428,351,557	36,051	152,419	4,613	193,084
Minor correction to opening balance		-	-	-	-	-	-		-	-	-	-	-
Depreciation provided in year		-	2,837,288	2,577,856	8,187,142	4,244,088	3,335,744		21,182,118	-	-	-	-
Depreciation on disposals		-	-	-	-	-	-		-	-	-	-	-
Depreciation on write-offs	9	-	-	-	-	-	-		-	-	-	-	-
Internal transfers between asset classes		-	-	-	-	-	-		-	-	-	-	-
Transfer to investment properties	13	-	-	-	-	-	-		-	-	-	-	-
Accumulated depreciation as at 30 June 2021		23,664	42,808,675	31,001,041	148,662,008	150,474,382	76,563,905		449,533,675	36,051	152,419	4,613	193,084
Total written down value as at 30 June 2021		45,594,876	77,597,103	24,967,760	565,579,929	127,410,664	152,496,167	179,447,953	1,173,094,452	1,524,837	304,838	3,676	1,833,351
Range of estimated useful life in years		0 - 50	0 - 120	0 - 60	0 - 500	0 - 100	5 - 100			7 - 100	7 - 100	7 - 100	
Addition of renewal assets		-	-	-	-	-	-	38,527,086	38,527,086	-	-	-	-
Addition of other assets		-	-	-	-	-	-	22,254,938	22,254,938	-	-	-	-
Total additions in year		-	-	-	-	-	-	60,782,024	60,782,024	-	-	-	-

* ARS denotes - Asset Revaluation Surplus

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements
For the nine months ending 31 March 2021
14 Property, plant and equipment - prior year

Note	Land and Improvements	Buildings and Other Structures	Plant and equipment	Transport Infrastructure	Water	Sewerage	Works in progress	Total plant and	Right of use - Land	Right of use - Buildings	Right of use - Plant	Total right of use assets
Basis of measurement	Valuation level 2	Valuation level 2	Cost	Valuation level 3	Valuation level 3	Valuation level 3	Cost		Cost	Cost	Cost	-
	2020 \$	2020 \$	2020 \$	2020 \$	2020 \$	2020 \$	2020 \$	2020 \$	2020 \$	2020 \$	2020 \$	2020 \$
Asset Values												
Opening gross value as at 1 July 2019	45,782,079	130,595,920	35,186,258	678,932,762	278,451,049	219,960,213	117,280,426	1,506,188,708	1,549,566	-	8,290	1,557,856
Minor correction to opening balance	-	35,000	312,123	2,331,001	550,631	146,880	-	3,375,635	-	-	-	-
Additions at cost	-	-	-	-	-	-	95,559,219	95,559,219	-	-	-	-
Addition by way of finance lease	-	-	-	-	-	-	-	-	11,322	457,258	-	468,579
Contributed assets at valuation	-	9,040	-	988,166	180,338	146,303	-	1,323,848	-	-	-	-
Internal transfers from work in progress	126,461	25,862,803	9,121,423	45,114,930	2,373,200	11,303,748	(94,038,140)	(135,576)	-	-	-	-
Disposals	-	-	(3,215,105)	-	-	-	-	(3,215,105)	-	-	-	-
Write-offs	-	(16,101,800)	(517,769)	(20,360,019)	(1,186,979)	(2,668,277)	-	(40,834,844)	-	-	-	-
Internal transfers between asset classes	(290,000)	(20,004,980)	15,081,870	7,235,097	(2,483,193)	171,206	-	(290,000)	-	-	-	-
Transfer to investment properties	-	9,795	-	-	-	-	(135,576)	(125,781)	-	-	-	-
Closing gross value as at 30 June 2020	45,618,540	120,405,777	55,968,801	714,241,938	277,885,046	229,060,073	118,665,929	1,561,846,103	1,560,888	457,258	8,290	2,026,435
Accumulated depreciation and impairment												
Opening balance as at 1 July 2019	22,419	52,750,923	20,758,481	132,738,558	142,753,536	70,018,368	-	419,042,286	-	-	-	-
Minor correction to opening balance	-	2,265	19,494	415,402	103,841	56,102	-	597,105	-	-	-	-
Depreciation provided in year	1,245	3,555,630	3,278,110	12,039,848	5,678,783	4,434,571	-	28,988,187	36,051	152,419	4,613	193,084
Depreciation on disposals	-	-	(2,193,369)	-	-	-	-	(2,193,369)	-	-	-	-
Depreciation on write-offs	-	(9,007,227)	(271,862)	(6,762,691)	(700,111)	(1,349,582)	-	(18,091,472)	-	-	-	-
Internal transfers between asset classes	-	(7,339,024)	6,832,329	2,043,748	(1,605,755)	68,702	-	(0)	-	-	-	-
Transfer to investment properties	-	8,821	-	-	-	-	-	8,821	-	-	-	-
Accumulated depreciation as at 30 June 2020	23,664	39,971,387	28,423,185	140,474,866	146,230,294	73,228,161	-	428,351,557	36,051	152,419	4,613	193,084
Total written down value as at 30 June 2020	45,594,876	80,434,390	27,545,616	573,767,072	131,654,752	155,831,911	118,665,929	1,133,494,546	1,524,837	304,838	3,676	1,833,351
Range of estimated useful life in years	0 - 50	0 - 120	0 - 60	0 - 500	0 - 100	5 - 100	-	-	7 - 100	7 - 100	7 - 100	-

* ARS denotes - Asset Revaluation Surplus

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements

For the nine months ending 31 March 2021

	Note	2021 \$	2020 \$
15 Trade and other payables			
Current			
Accruals		188,535	425,123
Creditors		27,984,335	18,410,975
Rates in advance		1,757,248	2,591,430
Employee related accruals		686,172	243,415
GST payable		335,158	518,771
		<u>30,951,448</u>	<u>22,189,713</u>
 16 Provisions			
Current			
Annual leave		3,971,503	3,931,696
Long service leave		4,386,402	4,035,391
Other entitlements		171,498	216,811
Property restoration:			
(i) Refuse sites		<u>1,704,675</u>	<u>1,704,675</u>
		<u>10,234,078</u>	<u>9,888,573</u>
Non-Current			
Long service leave		2,046,188	2,111,951
Property restoration			
(i) Refuse sites		5,183,407	5,183,407
(ii) Quarry rehabilitation		<u>636,361</u>	<u>636,361</u>
		<u>7,865,956</u>	<u>7,931,719</u>
 (i) Refuse sites			
Balance at beginning of the year		6,888,082	3,579,902
Increase due to change in time		-	0
Increase (decrease) due to change in discount rate		-	44,657
Increase (decrease) in estimate of future cost		-	3,263,523
Balance at end of the year		<u>6,888,082</u>	<u>6,888,082</u>
 Current portion		1,704,675	1,704,675
Non-current portion		<u>5,183,407</u>	<u>5,183,407</u>
		<u>6,888,082</u>	<u>6,888,082</u>
 Cash funds committed to meet this liability at the reporting date are		<u>1,500,000</u>	<u>1,500,000</u>
 (ii) Quarry rehabilitation			
Balance at beginning of the year		636,361	628,514
Increase due to change in time		-	11,439
Increase (decrease) due to change in discount rate		-	28,355
Increase (decrease) in estimate of future cost		-	(31,947)
Balance at end of the year		<u>636,361</u>	<u>636,361</u>
 Current portion		-	-
Non-current portion		<u>636,361</u>	<u>636,361</u>
		<u>636,361</u>	<u>636,361</u>

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements

For the nine months ending 31 March 2021

	Note	2021 \$	2020 \$
17 Borrowings			
Borrowings at balance date are			
Current			
(i) Queensland Treasury Corporation		5,114,670	5,114,670
(iii) Finance leases for right of use assets		257,462	257,462
		5,372,131	5,372,131
Non-current			
(i) Queensland Treasury Corporation		75,829,055	79,540,469
(iii) Finance leases for right of use assets		1,594,616	1,594,616
		<u>77,423,671</u>	<u>81,135,085</u>
Movements in borrowings			
(i) Queensland Treasury Corporation			
Balance at beginning of the year		84,655,139	80,714,971
Loans raised		-	8,167,094
Principal repayments		(3,711,414)	(4,226,926)
Balance at end of the year		<u>80,943,725</u>	<u>84,655,139</u>
Classified as			
Current		5,114,670	5,114,670
Non-current		75,829,055	79,540,469
		<u>80,943,725</u>	<u>84,655,139</u>
18 Reserves			
(a) Restricted capital reserves			
(i) Future capital sustainability reserve			
Balance at beginning of the year		-	-
Funded depreciation on capital assets in year		18,203,208	21,674,274
Less: Funds utilised in the year		(17,357,006)	(21,674,274)
Balance at end of the year		<u>846,202</u>	<u>-</u>
(ii) Constrained grants and subsidy reserve			
Balance at beginning of the year		9,147,163	19,653,910
Transfer from retained earnings non reciprocal grants, subsidies and contributions received and allocated to specific capital projects		15,168,972	26,956,317
Transfers to the capital account funds expended in the year		(12,139,525)	(36,892,209)
Transfer to retained earnings funds expended		-	(570,855)
Balance at end of the year		<u>12,176,609</u>	<u>9,147,163</u>
(ii)(b) Constrained NDRRA grants reserve			
Balance at beginning of the year		(0)	(0)
Transfer from retained earnings for future expenditure		32,044,311	29,553,310
Transfer to the capital account funds expended in the period		(25,743,052)	(29,553,310)
		<u>-</u>	<u>-</u>
Balance at end of the year		<u>6,301,259</u>	<u>(0)</u>

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements

For the nine months ending 31 March 2021

		2021	2020
	Note	\$	\$
(b) Other reserves			
(1) Summary of capital reserves held for funding future projects			
(i) Insurance reimbursed reserve		2,191,968	3,029,621
(ii) Capital Works reserve		26,452,139	28,249,612
(iii) Insurance Restoration reserve		784,953	784,953
		<u>29,429,061</u>	<u>32,064,185</u>
(2) Summary of recurrent reserves held for funding future projects			
(i) Operational Projects reserve		3,124,896	3,124,896
(ii) Operational NDRRA Grants reserve		(0)	(0)
		<u>3,124,896</u>	<u>3,124,896</u>
Total other reserves		<u>32,553,956</u>	<u>35,189,081</u>
Total reserves		<u>51,878,027</u>	<u>44,336,244</u>
19 Reconciliation of net result for the year to net cash inflow (outflow) from operating activities			
Non-cash operating items			
Impairment of receivables and bad debts written-off	7	72	435,623
Depreciation and amortisation	15	21,182,118	29,181,271
Change in restoration provisions expensed to finance costs		-	11,439
		<u>21,182,191</u>	<u>29,628,333</u>
Capital grants, subsidies and contributions	4	(47,213,283)	(60,449,475)
Capital income		(881,953)	(63,764)
Capital expenses	8	-	26,416,518
		<u>(48,095,237)</u>	<u>(34,096,721)</u>
(Increase) decrease in receivables		671,942	(4,479,984)
(Increase) decrease in inventories (excluding land)		213,438	(280,456)
(Increase) decrease in other assets		(1,194,006)	3,592,101
Increase (decrease) in payables		8,900,035	(3,737,700)
Increase (decrease) in provisions		325,056	623,868
Increase (decrease) in other liabilities		(834,182)	2,591,430
		<u>8,082,282</u>	<u>(1,690,741)</u>
Net cash inflow from operating activities		<u>30,154,844</u>	<u>30,762,780</u>

WHITSUNDAY REGIONAL COUNCIL

Notes to the Financial Statements

For the nine months ending 31 March 2021

	2021	2020
Financial indicators and ratios of the accounts	\$	\$
Maintenance of council's physical operating capability		
This indicates whether the opening capital value of the council has been maintained by operational activities during the year.		
A continual decline in capital value will lead ultimately to a decline in services to the provided to the community.		
Opening capital value	1,094,073,245	1,050,815,815
Operating surplus/(deficit) in year	890,371	2,825,189
Transfers from operating reserves to retained earnings in year	-	436,950
Retained surplus/(deficit) brought forward from prior year	6,626,153	(3,777,717)
Closing balance of the opening capital value	1,101,589,769	1,050,300,236
Change in the opening capital value	7,516,523	(515,579)
	%	%
Asset sustainability ratio		
Expenditure on replacement assets divided by depreciation expense	181.9%	138.5%
Target range >90%		
Operating surplus ratio		
Net operating surplus/(deficit) divided by total operating revenue	1.04%	2.2%
Guidance range is between 0% and 10%		
Net financial liability		
Total liabilities less current assets divided by total operating revenue	30.8%	28.4%
Guidance range is not greater than 60%		
Asset consumption ratio		
Book value of infrastructure assets divided by there gross value		
Target range is between 40% and 80%	69.2%	70.5%
Interest cover ratio		
Net interest expense divided by total operating revenue	1.75%	1.2%
Target range is between 0% and 5%		
Working capital ratio		
Unrestricted current assets available to meet current liabilities	1.8 : 1	2.0 : 1
Guidance range 1:1 to 4:1		
Change in community equity ratio		
The percentage change in the net wealth of the Council.	4.4%	4.5%
Debt servicing ratio		
The percentage that the Council's total recurrent revenue that is used to service loan interest and principal repayments	7.1%	6.1%
General rate revenue ratio		
The Council's dependence on general rate revenue as a percentage of total recurrent revenue	44.5%	39.9%
Revenue ratio		
The Council's dependence on net rates and utility charges as a percentage of total recurrent revenue	73.9%	67.5%
Debt exposure ratio:		
The percentage of Council's capital debt to total community equity	7.2%	7.9%

13. Corporate Services

13.2 CORPORATE SERVICES MONTHLY REPORT - MARCH 2021

AUTHOR: Jason Bradshaw - Director Corporate Services

RESPONSIBLE OFFICER: Jason Bradshaw - Director Corporate Services

OFFICER'S RECOMMENDATION

That Council receive the Corporate Services Monthly Report for March 2021.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

To provide an overview the Corporate Services Directorate for the month of March 2021. The Directorate's purpose is to lead innovation and organisational change in information technology, information management, asset management, project management and procurement to improve organisational outcomes. It seeks to improve Council's organisational capability to augment resilience to future business disruption and increase productivity whilst demonstrating empathy where required.

PURPOSE

To provide an overview the Corporate Services Directorate for the month of March 2021.

BACKGROUND

The Corporate Services Directorate has a vision to positively contribute to a prosperous, liveable, and sustainable Whitsundays.

The Directorate's vision is delivered by bringing together the functions of managing Assets, Procurement, Fleet, Property and Facilities, Project Management, Information Technology, Information Management, Rates and Finance, Strategic Finance and Governance.

STATUTORY/COMPLIANCE MATTERS

This report is provided to support enhanced transparency and accountability in accordance with the local government principles outlined in the Local Government Act 2009.

ANALYSIS

The month of March 2021 saw the continued focus on budget process and development for the upcoming financial year and a commitment to ensuring active projects were planned and for the most part was able to be delivered prior to the 30 June 2021.

Whilst I was absent for most of the month on unplanned leave, the department continued to deliver the day-to-day operations and Manager's worked together to ensure that corporate services were not impacted and the daily transactions that support other departments remained in focus.

Momentum continues to build in the delivery of the ICT program of works with key initiatives well advanced against the project schedule and some projects nearing completion. The upgrade of the Civica Authority ERP system remains largely on target for go-live in May/June, with training and testing well advanced. This will realise some productivity gains in improved processes and functionality, which will translate in savings of time and effort across some functions.

Governance remains focussed on policy renewal and development but has been occupied with the usual transaction-based activities including processing Right to Information (RTI) applications which become a time intensive activity. Recruitment has commenced for the replacement of the Manager Governance and Administration role with the incumbent Manager's term to expire in June 2021.

Across the department several staff movements have been finalised with some vacancies still to be filled.

Procurement have been focussing on the improvements driven from external reviews with the selection of a new system to be implemented over coming months and the rewrite of the procurement policies to better address issues raised from audit and to provide more effective mechanisms for staff to follow as well identifying areas to better engage and work with suppliers in more consistent and repeatable outcomes to move away from historical practices.

Property and Fleet teams remain committed to delivering the capital projects and purchases to ensure that minimal carry over is provided into the forward 2021/22 year pending deliver time on fleet into and across the country.

The Department continues to work towards delivering better solutions to ensure efficient and effective support to the operational and service delivery departments of Council.

STRATEGIC IMPACTS

Alignment to Corporate Plan

Outcome 1.1: Our leadership engages with the community and provides open, accountable, and transparent local government.

Alignment to Operational Plan

Strategy 1.1.1: Provide sound, competent leadership as to maximise the organisation's operational performance, productivity, and efficiency.

Financial Implications

Managed within existing budget allocations as amended.

Risk Management Implications

Regular reporting on the Department's progress and achievements ensures accountability and fosters a positive culture, whilst managing identified corporate risks.

CONSULTATION

Peter Shuttlewood - Executive Manager of Procurement & Assets

Melanie Humphries - Team Leader Operational Accounting

Patricia Jago - Rates Coordinator

Libby Humphrey - Assets and Project Management Coordinator

Scott Wilkinson - Information Technology Manager

Norman Garsden - Manager Governance & Administration
Stephen Fernando - Chief Financial Officer/Manager Financial Services

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

No action is to be taken as this is an information only report.

ATTACHMENTS

Attachment 1 - Corporate Services Monthly Report – March 2021.



CORPORATE SERVICES

Information Technology
Information Management
Strategic Finance
Project and Asset Management
Procurement
Property & Facilities
Fleet Management
Governance

Monthly Report | March 2021

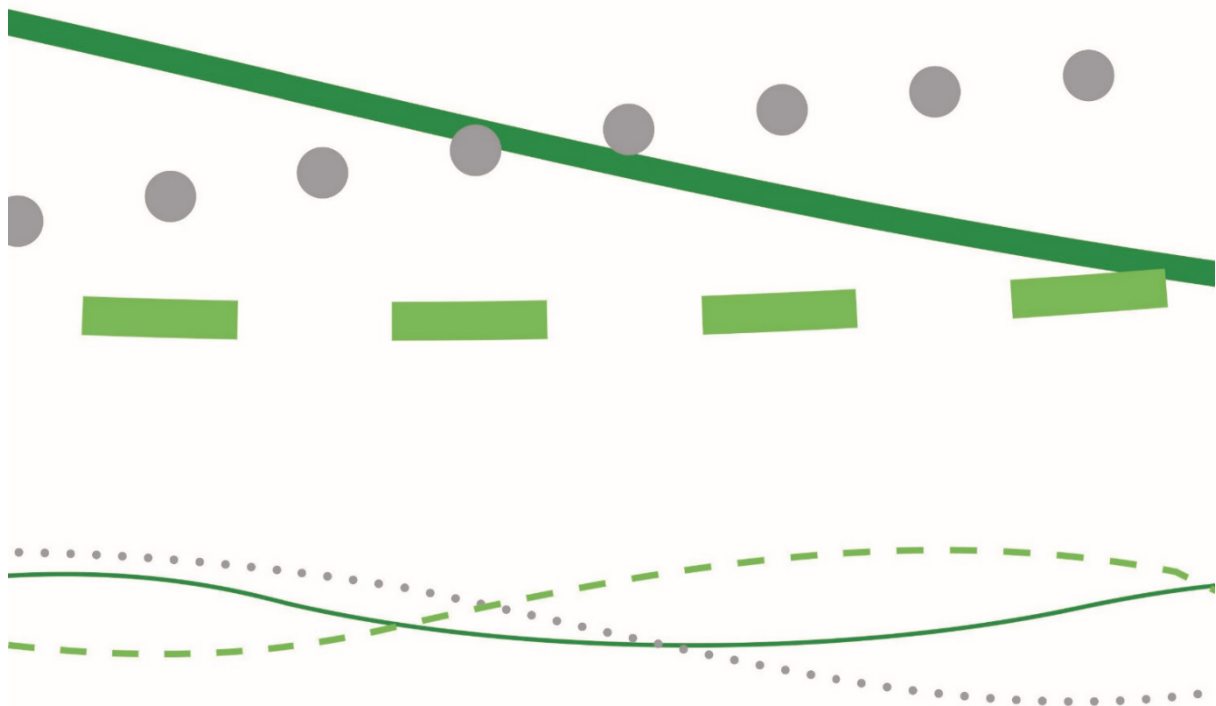


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Directors Report

The month of March 2021 saw the continued focus on budget process and development for the upcoming financial year and a commitment to ensuring active projects were planned and for the most part was able to be delivered prior to the 30 June 2021.

Whilst I was absent for most of the month on unplanned leave, the department continued to deliver the day-to-day operations and Manager's worked together to ensure that corporate services were not impacted and the daily transactions that support other departments remained in focus.

Momentum continues to build in the delivery of the ICT program of works with key initiatives well advanced against the project schedule and some projects nearing completion. The upgrade of the Civica Authority ERP system remains largely on target for go-live in May/June, with training and testing well advanced. This will realise some productivity gains in improved processes and functionality, which will translate in savings of time and effort across some functions.

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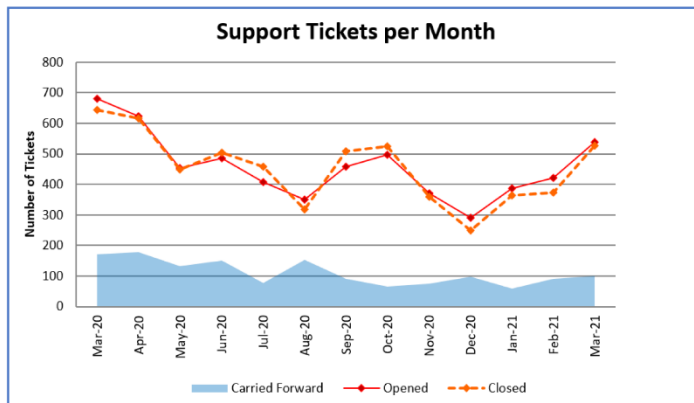
The Department continues to work towards delivering better solutions to ensure efficient and effective support to the operational and service delivery departments of Council.

Jason Bradshaw

Director Corporate Services

Information Technology

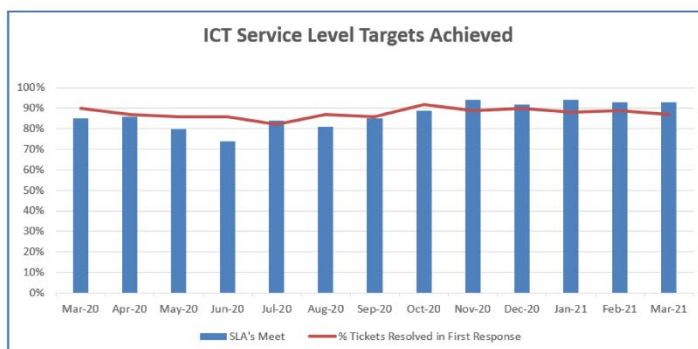
Support Tickets



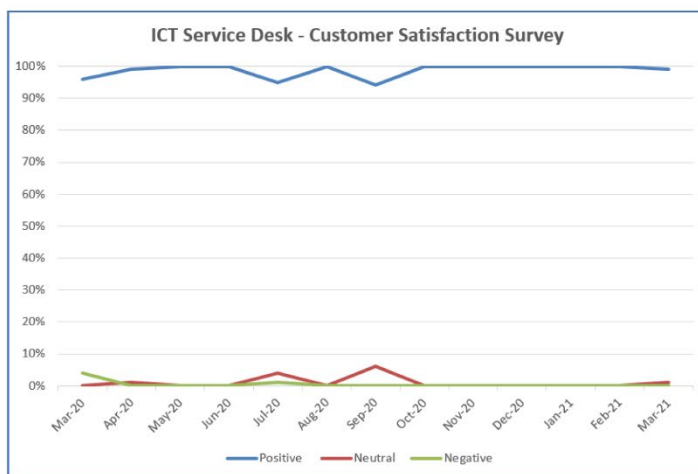
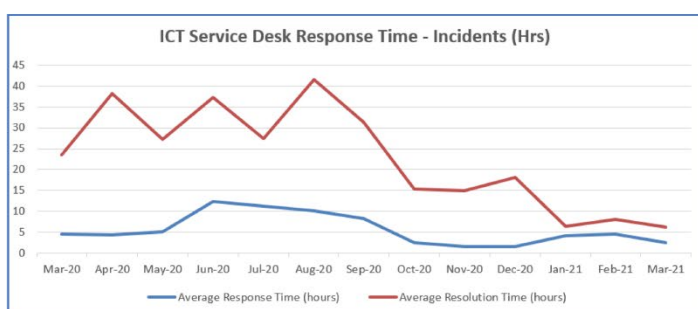
539 support requests for the month of March 2021, with 526 resolved.

A total of 100 support tickets remains open from the previous months.

Top 10 Support Categories Opened				
CATEGORY	MAR	FEB	JAN	
CCTV Network	13	21	16	↓
CCTV Requests	12	30	1	↓
Computer/Laptop/Tablet	21	18	12	↑
Computer Monitors	15	6	1	↑
Parking Meter Alarms	8	4	8	↑
Network Performance	9	12	2	↓
Printer/Scanner	14	22	10	↓
Security/ Access	46	30	34	↑
Telstra Network Notifications	4	0	11	↑
Telephones - Desk/Soft Phones	14	16	13	↓
Telephones - Mobile	19	15	8	↑
Video Conferencing	6	0	2	↑
Applications - Adobe	10	6	8	↑
Applications - Amazon Workspaces	15	19	6	↓
Applications - Assestic	0	1	2	↓
Applications - Authority	46	23	35	↑
Applications - DUO 2FA	3	5	2	↓
Applications - ECM	33	26	19	↑
Applications - Email	37	32	24	↑
Applications - OneCouncil	23	19	13	↑
Applications - Reflect	4	1	3	↑
Applications - Sharepoint, Office, One Drive	43	20	11	↑
Applications - Website	3	2	4	↑
Applications - Other	57	25	38	↑
Other	84	68	103	↑



SLA's 93%, with Tickets resolved in first response 87%.



Customer satisfaction 99% in March 2021 based on 74 respondents.

Project Activities

Note: Information Technology run multiple projects at any given point in time. This report details key projects only.

Strategic Initiatives						
23WRC_Ext Report: PROGRESS Strategic						
Primary	Update due	Status: Overall	Start Date	Baseline Due Date	Due Date	% Complete
SP4.5 - Implement a Supply Chain (Sourcing) system (Phase 1)	15/04/21	●	01/04/21	31/05/21	31/08/21	0%
Board papers	15/04/21	●	01/04/20	30/08/20	31/05/21	75%
SP4.8 - Provide an encompassing Human Resources Management system - Application Roadmap Incl. EMS.	15/04/21	●	TBC 03/05/21	TBC 30/05/21	03/05/21	0%
W4Q Movie Screen CW1920	15/04/21	●	01/07/20	30/06/21	30/09/21	40%

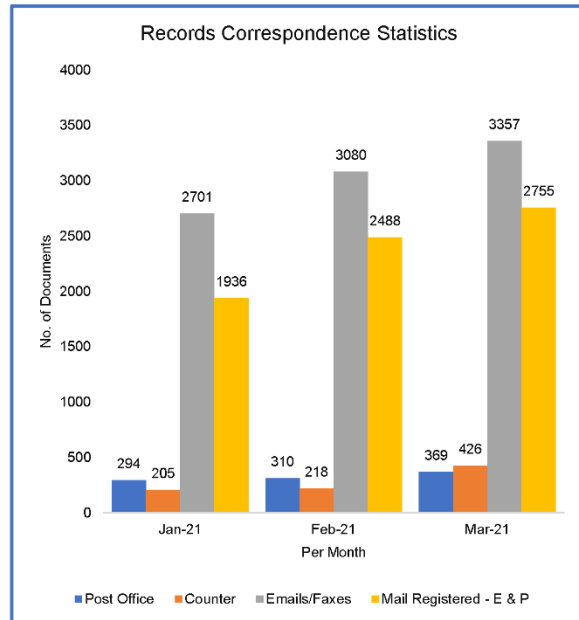
Tactical Initiatives						
22WRC_Ext Report: PROGRESS Tactical						
Primary	Update due	Status: Overall	Start Date	Baseline Due Date	Due Date	% Complete
Communication Towers Rationalisation - PART 2, Mt Devlin	15/04/21	●	29/03/21	31/08/21	31/08/21	0%
Parking and Infringement Additional Modules	15/04/21	●	01/02/21	30/04/21	30/04/21	75%
Purchase Card Module	15/04/21	●	07/12/20	30/06/21	30/06/21	50%
LGIDH010 - LG Illegal Dumping Hotspot Grant program	15/04/21	●	02/08/20	31/03/21	30/04/21	60%
Communication Towers Rationalisation (PART 1)	15/04/21	●	02/06/19	31/12/20	30/04/21	75%
WRC Website: Subsites	15/04/21	●	04/01/21	31/07/21	30/07/21	20%
Small Cell Site Proserpine Dam	15/04/21	●	01/08/19	30/09/20	30/06/21	40%
Authority Upgrade	15/04/21	●	08/06/20	30/04/21	31/05/21	86%
WRC NAD (Network Architecture Design Improvements)	15/04/21	●	04/05/20	31/05/21	31/05/21	63%

Information Management

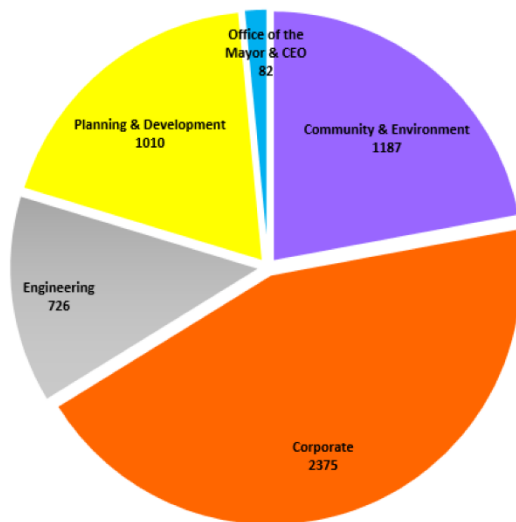
AUDIT / COMPLIANCE REQUIREMENTS		
Type	Frequency	Qtr. 3
Sentencing and disposal	Quarterly	50%

DOCUMENTATION / PUBLICATIONS REVIEW		
Type	Frequency	Qtr. 3
WRC Information Stds	Annual	95% dev
Physical Records Register	Quarterly	✓
Process & Sys Training	Bi-annually	80% dev
Enterprise Info Architect	Annual	50% dev
Information Asset Register	Annual	50% dev
IM Procedures	Annual	60% dev
Bus Info Continuity Plan	Annual	
Road Register	Bi-annually	On hold
Map layer data register	Quarterly	10% dev

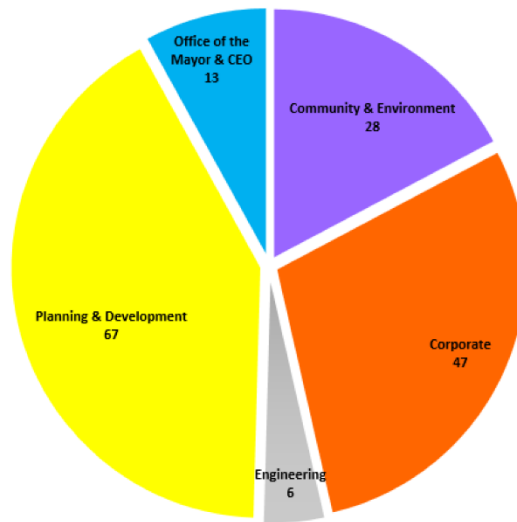
GIS ACTIVITIES	MAR	FEB	JAN
Asset Data Mtce (Hrs)	92	78	86
SSA Changes (Hrs)	35	26	22
GIS requests (No.)	54	52	98
Map layers mtce (no.)	33	80	39
New layers approved (no.)	-	-	-
Training (staff attended)	1	-	-
GIS STATISTICS			
Total Mapping Layers	2109		
RECORDS ACTIVITIES			
Search & CCTV requests	72	34	41
Record Dept Tasks	61	37	39
Training (staff attended)	-	1	1
NAR adjustments	880	761	756



Document Management Tasks Completed by Department (March)



Average Documents Registered per Person by Department (March)



Projects

Records System Review Project	
This project aims to modernise the recordkeeping systems to improve usability and compliance across the organisation.	
Review and recommendation	Investigation of available systems against Council's current applications architecture and functionality. A business requirements specification report has been reviewed by the ICT Governance committee and progressed to undertaking a proof of concept of the preferred solution. Proof of concept is complete with findings and recommendation to go to the January ICT Governance/Steering Committee. Approval provided to commence project.

Name and Address Data Improvement Project		
This project aims to implement software that will improve the quality of customer and address data captured and maintained in Council's systems. It does this by forcing validation on addresses when they are entered, running processes to identify duplicate records, and facilitating merging, standardizing the method of data presentation, and adding additional checks to prevent duplicate data entry. This will improve customer experience as we will have better quality information available for communication and reduce administrative overhead as we will spend less time fixing incorrect address details.		
NAR data formatting cleanse		
Data format cleanse	✓	27852 records fixed / 82075 total records
Audit data changes	65% complete	
NAR record duplication		
Identify no. of duplicate records	700 records	
Research duplicates and merge	541 unique records merged	
Delete records (no docs / ephemeral / infringement docs attached)	118 deleted	24600 records have no link in Authority, potentially half of these can be deleted if no significant documentation recorded in ECM

Physical Storage / Scanning	Mar-21	Feb-21	Jan-21	Dec-20	Nov-20	Oct-20	Sep-20	Aug-20
Boxes Scanned / Sentenced and Destroyed	-	-	-	-	-	-	20	-
Boxes at Council	257	257	257	257	257	257	257	277
Boxes at Remote Storage	1618	1618	1618	1618	1618	1618	1618	1618
Discs to review and register	-	-	-	-	-	-	-	-
Scanned files for registration	58,000 Prep files	58,000 Prep files	58,000 Prep files	58,000 Prep files	58,000 Prep files	58,000 Prep files	58,000 Prep files	58,000 Prep files
Plans scanned and registered	-	-	-	-	-	-	-	-

The team is continuing to work with the Water & Sewerage team to improve mapping of valves and fire hydrant asset data and working through asset work orders and capitalisation. GIS strategic review is underway to drive organisational direction in spatial systems and information. The records team are focusing on splitting and renaming digitised records and plans.

Financial Services

Financial Reporting

Financial Reporting KPIs:

KPI	Status	Comment
Month-end process completed within 5 working days	✓	Completed
Monthly Financial Statements presented at an Ordinary Meeting within 30 days from end of month	✓	Ordinary Meeting of 24 March 2021
Quarterly Budget Review adopted at an Ordinary Meeting within 60 days of end of quarter	✓	Not Applicable

Budgeting

After the capital budget bids for 21/22 being assessed for funding options and affordability, the first draft of the 21/22 capital budget was presented to the Councillors at a workshop on the 17th of March 2021. Additional Works for Queensland funding and some rationalisations enabled the maintenance of the capital budget within affordable limits. A revised draft will be re-presented to the Councillors at a future budget workshop.

The operational budget process for 21/22 is underway. The budgeting process is being undertaken using the recently implemented budgeting tool within the TechnologyOne ERP system. The directorates have presented the first drafts of their budgets and review sessions will be held during the first half of April with each of the directorates (directors and managers).

Council briefings on the operational budget are set for May 2021.

The templates for the third quarter review of the 20/21 operational budget has been submitted to the Responsible Officers. The deadline for submission of revisions is 12 April 2021. The Q3 revisions will also determine the capital carry-overs from 20/21 to 21/22. The Quarter 3 revisions will be presented for adoption during the month of May 2021.

The Department of Resources presented the details of property revaluations to Councillors on the 24th of March. The Whitsunday region will see significant variations, both positive and negative to property values across the different land types in the region. The revised property values have been uploaded in Council's Property & Rating System and rates modelling for 2021/22 will be carried out in preparing for the finalisation of rate categories for the upcoming budget.

Borrowings & Treasury Management

No additional borrowings are envisaged for 2020/21. All non-operating cash is invested with the QTC.

Initial preparatory work for the credit review to be conducted by QTC is underway. No specific date has been set yet for the review.

Systems

System configuration for the Purchase Card Module (including expense claims) within Technology1 has been completed and key user training is expected to take place in the second half of March 2021. Converting the current paper-based processes into a workflow-based process within a managed system will ensure improved controls and governance arrangements.

Financial Services staff have also been engaged in the configuration and testing process for the upgrade of the Property & Rating module of the Civa system. A parallel test rating run is being planned during April as a final test for the upgraded system before it is taken live in May 2021.

In align with the initiatives announces by the Federal Government, Council is exploring the options for implementing an e-invoicing process. In additional to operational efficiencies, this initiative is expected to improve payment time for small business suppliers and assist with the administrative tasks around the Payment Times Reporting Scheme, when that become applicable to local government entities.

Debtor Management

New Credit Applications

Name	Approved Limit
North Coast Cabinetmaking Pty Ltd	\$1,000
Dunnrite Plumbing Services	\$500
Bellwether Contractors Pty Ltd	\$45,000
Pollards Earthmoving Pty Ltd	\$2,000

Rates & Charges Debtors

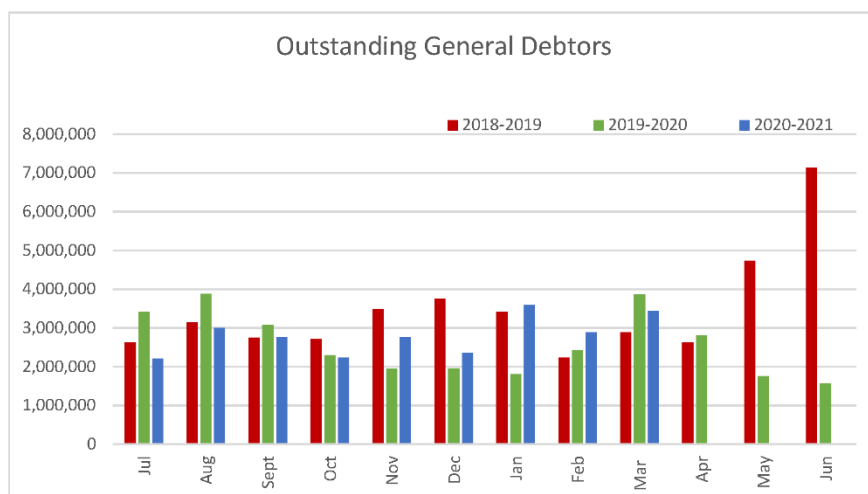
Month	2020/21		2019/20		2018/19 Outstanding
	Outstanding	%	Outstanding	%	
June			4,509,658	10%	3,844,767
May			5,739,965	13%	5,151,143
April			6,676,360	14%	6,368,476
March	7,696,368	16.23%	8,782,286	20%	8,297,513
February	30,185,445	68%	28,950,351	67%	14,745,314
January	46,515,003	95%	44,476,445	96%	44,828,908
December	3,974,938	9.29%	2,774,538	6%	3,905,999
November	4,909,318	10.39%	5,085,705	12%	4,692,691
October	6,205,134	14%	5,833,001	12%	5,798,615
September	9,841,158	20%	7,601,554	16%	7,791,985
August	40,432,288	83%	13,344,529	29%	9,778,676
July	3,440,135	8%	41,728,111	92%	43,825,116
Gross Revenue Budget	88,656,616		88,669,880		89,276,298

Note: The above amounts are net of rates credits.

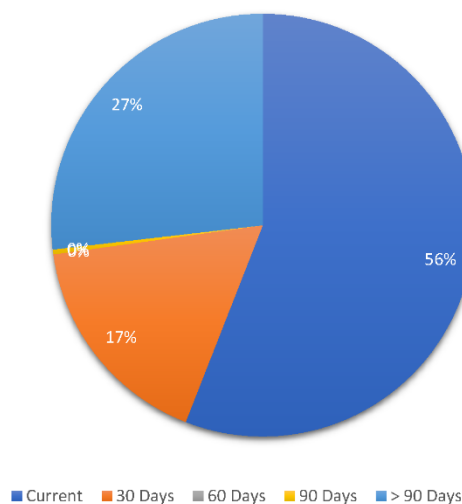
Reminder notices were issued in March to all property owners with overdue balances. Properties with long overdue balances, who have not made any arrangements with Council, will be referred Council's debt recovery agent R&R Australia (Pty) Ltd (R&R). R&R will make initial efforts to contact and negotiate with the debtors and failing which will consider more advanced legal options for the recovery of debts, after consultation with Council officers.

General Debtors

Month/Period	Current	30 Days	60 Days	90 Days	>90 Days	TOTAL
2020/2021						
March 2021	1,919,090	578,191	20	12,648	920,352	3,430,301
February 2021	1,529,982	277,526	36,510	157,862	880,290	2,882,171
January 2021	2,307,754	200,041	170,629	28,286	873,686	3,580,396
December 2020	463,390	957,704	42,759	87,207	809,200	2,360,260
November 2020	1,632,111	207,229	112,018	1,971	810,300	2,763,629
October 2020	655,569	609,264	27,245	489,207	446,034	2,227,319
September 2020	1,298,056	517,567	514,613	-13,088	435,297	2,752,445
August 2020	1,814,612	590,500	160,936	262,467	175,909	3,004,424
July 2020	1,046,675	696,390	268,234	18,326	178,000	2,207,625
June 2019/20	912,558	370,906	79,621	40,848	169,202	1,573,135
June 2018/19	5,408,713	1,549,732	90,492	19,341	56,372	7,124,650
June 2017/18	4,825,162	549,066	63,996	5,154	158,649	5,602,027



Ageing of General Debtors - March 2021



Insurance

Insurance Claims	Pub. Liability & Professional Indemnity	Third Party Damages	Motor Vehicle	Property	Theft	Total
2020/2021 YTD						
March 2021	2	6	0	0	0	8
February 2021	1	5	1	0	0	7
January 2021	0	1	0	0	0	1
December 2020	2	1	2	0	0	5
November 2020	2	1	1	1	0	5
October 2020	2	1	0	0	0	3
September 2020	1	0	1	0	0	2
August 2020	1	0	1	0	0	2
July 2020	1	2	1	1	0	5
2019/2020	12	30	25	8	0	75
2018/2019	18	36	19	7	0	80
2017/2018	19	0	71	13	1	104

Claims not Finalised – March 2021	
Public Liability	9
Professional Indemnity	3
Property	5
Motor Vehicle	6
Total	23

Asset Management

Asset Valuation

The re-valuation exercise was completed in March and the data has been handed over for uploading into the Council's Asset Management System, Assetic. This data will be tested and reconciled to ensure there are no gaps in the valuation.

The final draft of the revaluation report will be submitted to the auditors for their comments before finalisation. There is general acceptance of the methodology and approach, but the timing of the revaluation is still being negotiated. This timing may impact the operating budget this year as the value of the depreciation expense is finalised and this will be monitored through the quarter 3 budget review.

Capitalisation

The capitalisation process will recommence immediately after the data upload process has been completed.

The review of the capital asset register for information and communications assets will continue over the next 3-6 months in conjunction with the Innovation and Technology team.

Capital Project Delivery

As at end March 2021, capital delivery progress was as follows:

Value of Capital Delivered *	60,782,023
% of YTD Budget	75.55%

** actual expenditure, excludes commitments.*

Capital Budgeting

The draft of the capital program for 2021/22 has been completed to an advanced stage but will held until the quarter 3 review is finalised.

Procurement

Procurement Activity (Tenders and Significant Quotations)

Corporate Services

Contract Number	Details	Type	Status
500.2020.0089	Provision of Fleet Management Telemetric System	RFT	Currently being evaluated
500.2020.0109	Supply & Delivery of Three (3) 7.5 Tonne GVM Trucks	RFQ	Awarded on 28 th March 2021
500.2020.0111	W4Q – Wangaratta Caravan Park – Pool Refurbishment	RFQ	Awarded on 4 th March 2021
500.2020.0114	Supply and Delivery of One (1) 11t GVM Single Cab Truck	RFQ	Awarded on 17 th March 2021
500.2015.0058	Refresh of Preferred Supplier Arrangement for Provision of Plant & Equipment Hire – With (Wet) and Without (Dry) Operator	RFT	Closed on 15 th February 2021 and currently being evaluated
500.2021.0007	Provision of Superintendency Services for Property & Facilities Capex Projects	RFQ	Awarded on 8 th March 2021
500.2021.0008	Consultancy Services for Council's Solar Power Installation	RFQ	Closed on 3 rd March 2021 and currently being evaluated
500.2021.0013	Supply and Delivery of One (1) x Motor Grader	RFQ	Closed on 31 st March 2021 and currently being evaluated
500.2021.0014	Supply and Delivery of One (1) x Outfront Mower	RFQ	In draft
500.2021.0022	Bowen and Collinsville Demolition Works Package	RFQ	Released on 18 th March 2021 and due to close 9 th April 2021
500.2021.0023	Supply and Delivery of One (1) x Prime Mover and Water Tanker Trailer	RFQ	Released on 28 th March 2021 and due to close on 16 th April 2021
500.2021.0024	W4Q - Les Stagg Oval Grandstand Replacement	RFQ	Released on 18 th March 2021 and due to close on 9 th April 2021
500.2021.0025	W4Q - Bowen Aerodrome and Work Camp Refurbishments	RFQ	Released on 18 th March 2021 and due to close on 9 th April 2021
500.2021.0026	Supply and Delivery of One (1) ATV Utility Vehicle	RFQ	In Draft
500.2021.0031	Supply and Delivery of One (1) x Tractor with Reach Mower Attachment	RFT	Due to be released on 7 th April 2021
500.2021.0032	Design and Construct Deck at Airlie Beach Lagoon, including Installation of Ergon HV Conduit	RFT	In draft

Community Services

Contract Number	Details	Type	Status
500.2020.0137	Refurbishment and Extension of Wilson Beach Swimming Enclosure	RFT	Cancelled on 18 th March 2021 due to value of tender submissions exceeding funding

500.2021.0017	Provision of Management Services for Proserpine Pool & Water Park	RFT	On hold until Deed of Termination with incumbent has been negotiated and signed
500.2021.0018	Provision of Lifeguard Services for Airlie Beach Lagoon	RFT	On hold until Deed of Termination with incumbent has been negotiated and signed
500.2021.0019	Provision of Water Maintenance Services for Airlie Beach Lagoon	RFT	On hold until Deed of Termination with incumbent has been negotiated and signed

Development Services

Contract Number	Details	Type	Status
500.2021.0033	Climate Hub Communications	RFQ	Awarded on 31 st March 2021

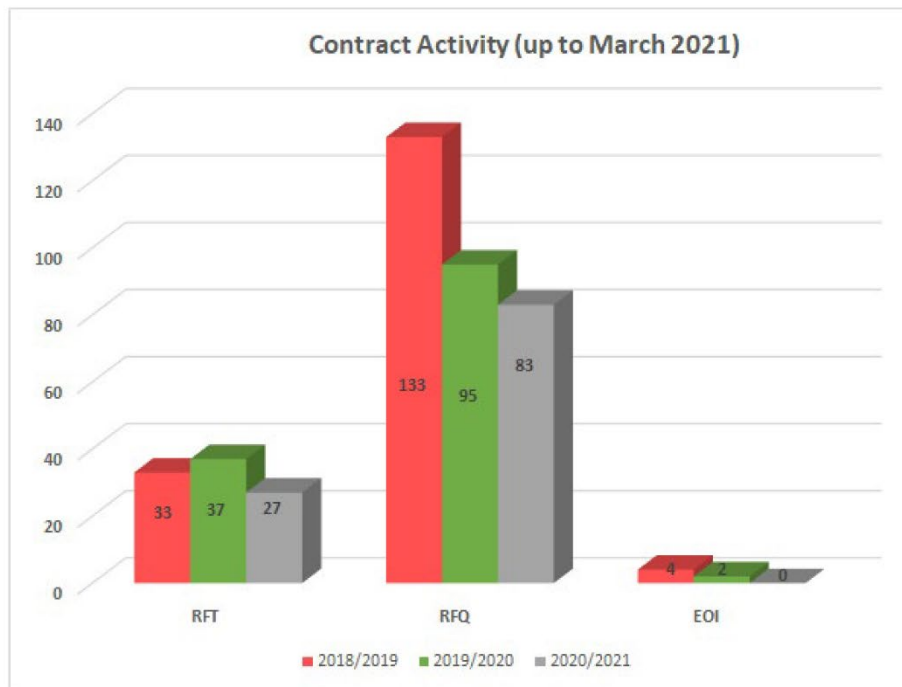
Infrastructure Services

Contract Number	Details	Type	Status
500.2020.0124	Stormwater Management Strategy	RFQ	Cancelled on 4 th March 2021 due to scope requirements, due to be re-released in April 2021
500.2020.0129	Provision of Quarry Plant Hire – Foxdale Quarry	RFT	Currently being evaluated
500.2021.0001	Provision of Waste and Recyclables Collection Services	RFT	Currently being evaluated
500.2021.0004	Whitsunday Coast Airport (WCA) - Design, Supply & Installation of Solar System	RFT	Awarded on 25 th March 2021
500.2021.0005	W4Q Lions Park Upgrade, Bowen	RFQ	Awarded on 19 th March 2021
500.2021.0009	Waste Facility Operation Services for Cannonvale Transfer Station	RFT	Closed on 18 th March 2021 and currently being evaluated
500.2021.0010	Design and Construction of Ted Cunningham Bridge	RFT	Closed on 31 st March 2021 and currently being evaluated
500.2021.0011	Green Waste and Mattress Processing at Council's Waste Facilities	RFT	In draft
500.2021.0012	Cannon Valley Reservoir Initial Excavations	RFQ	Awarded on 16 th March 2021
500.2021.0015	Proserpine RMPC Asphalt Repairs	RFQ	Awarded on 2 nd March 2021
500.2021.0020	Supply & Installation of Security Infrastructure – 7 Chapman Street Carpark	RFQ	Released on 25 th March 2021 and due to close on 9 th April 2021
500.2021.0021	W4Q - Park Playground Upgrades - Scottsville & Darcy Munro Parks, Collinsville	RFQ	Released on 17 th March 2021 and due to close on 31 st March 2021
500.2021.0027	Stormwater Network CCTV Survey and Condition Assessment	RFT	Released on 31 st March and due to close on 30 th April 2021
500.2021.0028	Design and Construct of Cannon Valley Water Reservoir	RFT	Due to be released on 7 th April 2021
500.2021.0029	Provision of Maintenance Services for Dingo Beach, Hydeaway Bay & Lake Proserpine	RFT	Released on 31 st March 2021 and due to close on 23 rd April 2021
500.2021.0030	Shute Harbour Marine Facility - Pontoon Berthing/Ticketing and Tourism Operators	RFT	Released on 26 th March 2021 and due to close on 7 th May 2021
500.2021.0035	Supply and Delivery of Pugmill for Foxdale Quarry	RFT	In Draft
500.2021.0036	Design of Damaged Stormwater Pipe - Golf View Court, Cannonvale	RFQ	In draft
500.2021.0037	Cannon Valley Reservoir Bulk Earthworks - Stage 2	RFQ	In draft

Office of the Mayor & CEO

Contract Number	Details	Type	Status
500.2021.0034	Implementation of an Integrated Management System	RFT	Due to be released on 7 th April 2021

Contract Activity



Property & Facilities

Covid19 Works for Queensland Projects

Consultation meetings have been held with asset owners and stakeholders to coordinate work packages. During the month of March 2021, the following Covid19 Works for Queensland Projects have progressed:

Project	Status	% Complete
Wangaratta Caravan Park Pool Refurbishment	Construction	50%
Proserpine Aquatic Facility Residence Demo & Kiosk Renewal	Design	100%
Bowen Aquatic Facility Town Pool Amenity Upgrade Stage 1 &	Design	100%
Cannonvale Depot Office Roof Replacement	Construction	100%
Les Stagg Oval Grandstand Renewal	Tender	100%
Collinsville Youth Coalition Amenities Renewal	Construction	50%
Bowen Water Park Renewal	Design	100%
Cannonvale Foreshore Hall Roof Renewal (PCYC)	Construction	100%
Cannonvale Foreshore Hall New Playground (PCYC)	Construction	100%
Proserpine Water & Sewer Admin Roof Renewal	Construction	100%
Bowen Aerodrome Sewerage Treatment Renewal	Construction	100%
Collinsville Pool Amenity & Kiosk Upgrade	Design	100%
Bowen Aerodrome Work Camp Dwelling Super Structure Renewal	Tender	100%

Capital Works

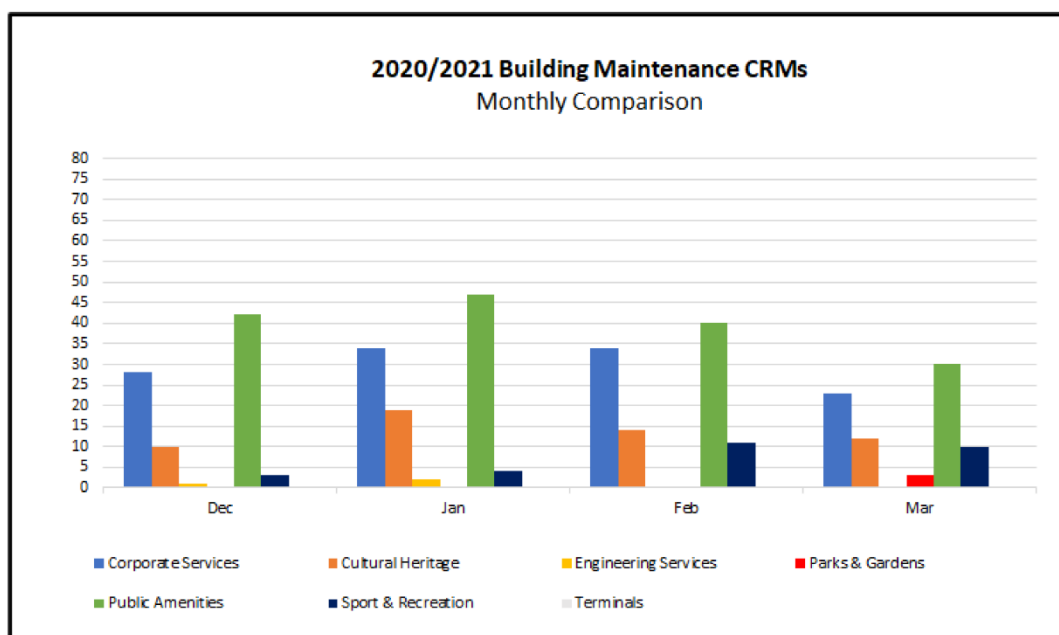
During the month of March 2021, the following Capital Works Projects have progressed:

Project	Status	% Complete
Demolish 58 & 60 Horseshoe Bay Road Residences	Tender	100%
Demolish 21 Station Street Residence	Tender	100%
Demolish Collinsville Depot Workers Quarters	Tender	100%
Demolish Bowen Basketball Clubhouse	Tender	100%

Operational

Building Maintenance CRMs	YTD	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Monthly Trend
Corporate Services									
CRM Received	283	33	40	36	28	34	34	23	↓
CRM Completed	236	28	36	29	22	31	27	22	↓
Cultural Heritage									
CRM Received	86	4	17	8	10	19	14	12	↓
CRM Completed	62	3	13	6	6	14	10	11	↓
Engineering Services									
CRM Received	13	2	2	3	1	2	0	0	↓
CRM Completed	12	1	2	3	1	2	0	0	↓

Building Maintenance CRMs	YTD	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Monthly Trend
Parks & Gardens									
CRM Received	2	0	0	0	0	0	0	3	↑
CRM Completed	2	0	0	0	0	0	0	2	↑
Public Amenities									
CRM Received	327	28	37	51	42	47	40	30	↓
CRM Completed	306	27	37	47	37	44	38	28	↓
Sport & Recreation									
CRM Received	62	8	16	7	3	4	11	10	↓
CRM Completed	54	7	14	7	3	4	9	8	↓
Terminals									
CRM Received	1	0	0	1	0	0	0	0	-
CRM Completed	1	0	0	1	0	0	0	0	-
Total CRMs - Building Maintenance									
CRM Received	774	75	112	106	84	106	99	79	↓
CRM Completed	674	66	102	93	69	95	85	72	↓



Lease Update

During the month of March 2021, Council received back from the Proserpine BMX their executed lease. Once executed by the CEO, it will be lodged with the Department of Natural Resources Mines and Energy to be recorded against the property. This lease has provided the Proserpine BMX 10 more years at their current location at 6 Les Stagg Street, Proserpine.

Draft leases have now been issued to the Collinsville Pony Club and the Collinsville Rodeo Association for their review and execution over their currently used areas of 8491 Bowen Developmental Road, Collinsville.

Various parcels of land in Collinsville have been identified as suitable for leasing for agistment purposes. Council has endorsed going to public tender for the leases over these parcels of land in accordance with the Local Government Regulation 2012. These will be advertised in April 2021 with the awarding of the leases expected to occur by mid-May 2021.

A meeting was held with the Bowen Sporting Complex Committee to discuss their requirements as Lessee under their lease, particularly in relation to maintenance and repairs.

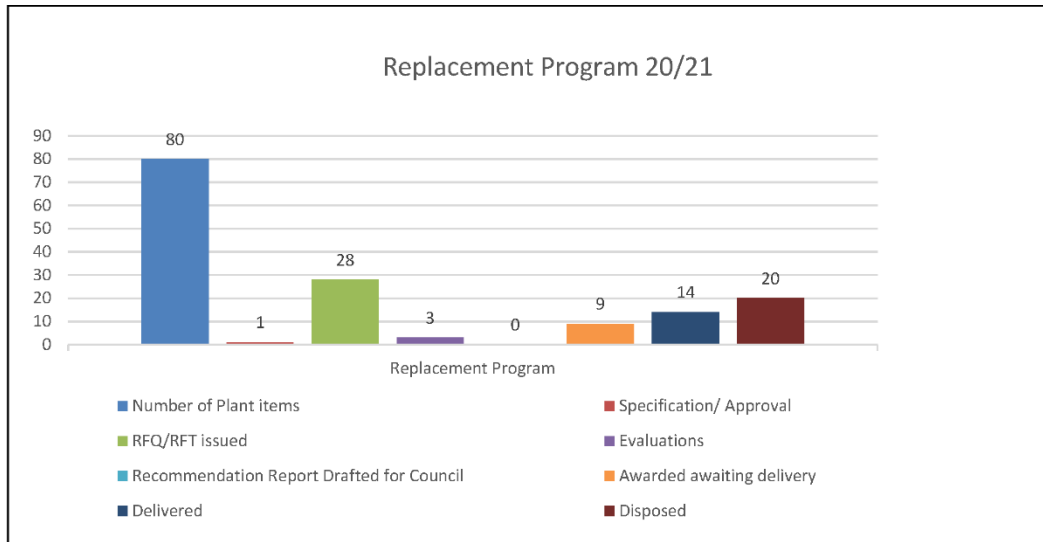
The Bowen PCYC and Queensland Rail Institute, in relation to the Bowen Basketball Courts have advised Council they wish to renew their leases; both leases expire at the end of July 2021. A report will be taken to an Ordinary Council Meeting for Council's consideration to enter into new leasing arrangements with these organisations.

Lease in action	Under Negotiation	Out for execution	Lease awaiting lodgment	Due to expire in 6 months	Comments
Bowen Seagulls Rugby League	•				Draft lease under discussion with Council and the Bowen Seagulls Legal Advisor
Proserpine Rugby League Football Club		•			Surveyor has been engaged to draft lease plan to incorporate the Oval.
Collinsville Pony Club		•			Draft leases have been issued to
Collinsville Rodeo Club		•			Draft leases to be issued
Collinsville Community Association		•			Report to be taken to Council for consideration to enter into a new lease
Anglicare Mackay Whitsunday Region		•			Lease currently with Anglicare for their execution

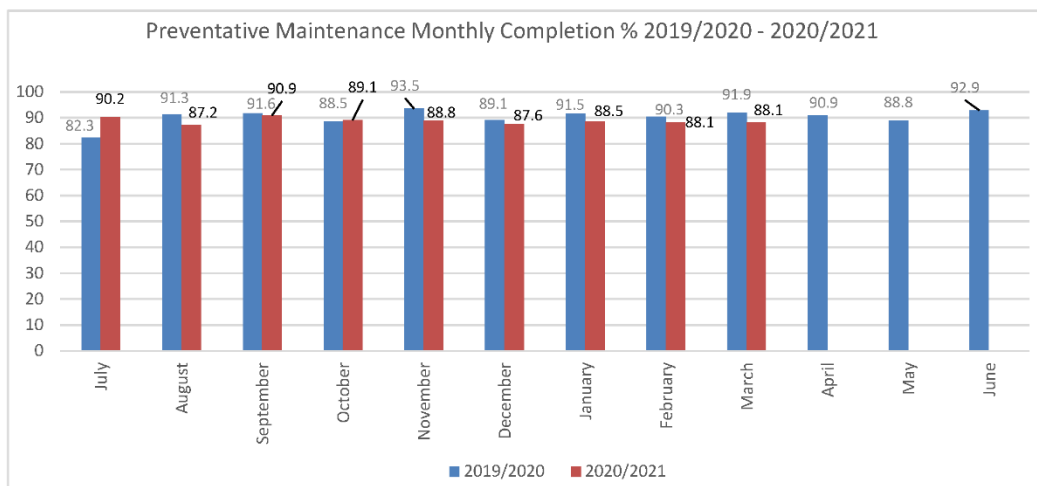
Proserpine BMX			•		Lease executed by Lessee, awaiting CEO execution and lodgment with DNRME.
Molongle Creek Boat Club			•		Previous lease surrendered; new lease entered into. Documents currently being reviewed by the Office of State Revenue prior to being lodged with DNRME.
Bowen PCYC	•				PCYC have advised of their intention to renew lease. Ordinary Council Meeting report to be drafted for Council's consideration.
Queensland Rail Institution (Basketball Courts)	•				QRI have advised of their intention to renew lease. Ordinary Council Meeting report to be drafted for Council's consideration.

Fleet Management

Fleet Replacement Program



Preventative Maintenance



Governance & Administration

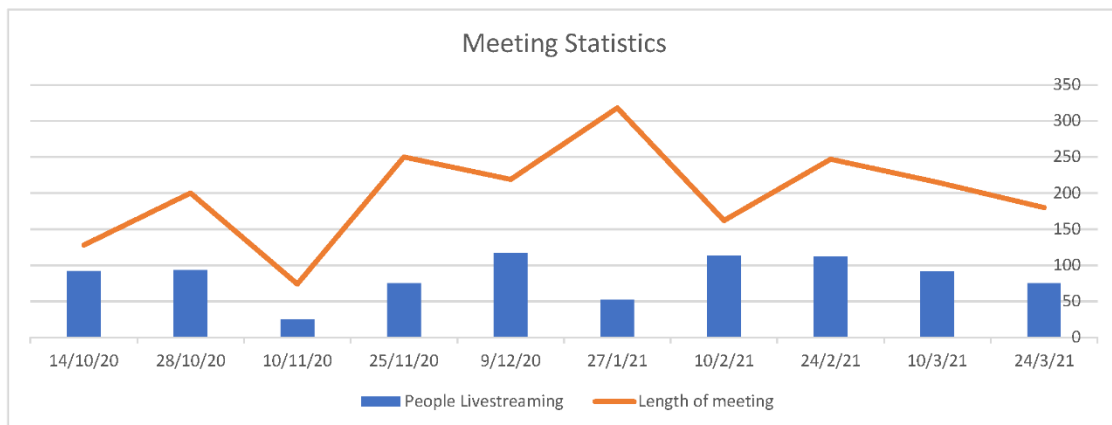
Legal Services

In February 2018, Council moved to a model to entirely outsource legal services and repurposed the internal staff positions. This model was further refined in August 2018 when after briefing council, the CEO entered into a trial arrangement with McKays Solicitors for the provision of core legal services, at a largely fixed cost. This arrangement is due to finish on 1 September 2021. A review of a new approach is underway with an approach to a panel of legal providers being investigated.

In addition to these arrangements, legal services are provided to Council via its insurers, where matters fall under the terms of its cover.

Council Meeting – Livestreaming

The number of people livestreaming Council's meetings and the meeting duration are shown below:



The current average number of people livestreaming Council meetings has been 85, with a maximum of 117 (9 December 2020) and minimum of 25 (10 November 2020), noting that the 10 November meeting was brought forward from 11 November and had a significantly smaller agenda and duration. The meeting length averages 3 hours 20 minutes with the longest meeting held running 5 hours 18 minutes (27 January 2021 - where this was the only meeting for the month) and the shortest, 1 hour 14 minutes (10 November 2020).

Council Policies

Council has adopted policies to support its vision for the region and allow for good decision-making processes. At the end of February 2021 Council had 90 Council policies, of which 30 were under review internally and to be reported to Council in due course.

Delegations

To enable local governments to focus on strategic issues, reduce the amount of meeting time required and address circumstances in which the majority of Councillors must leave a council meeting due to a material personal interest or conflict of interest, local governments can delegate many of those decisions by resolution. The Chief Executive Officer can delegate most powers to an appropriately qualified local government employee.

The Delegations are currently under active review and a report will be prepared for a meeting in mid-2021.

Right to Information and Information Privacy Access Applications

The Right to information Act is the Queensland Government's approach to ensure that the community is provided with greater access to information held by government agencies – unless on balance it is contrary to the public interest to provide that information. The following are the relevant statistics for June – March 2021:

Opening Balance of Applications	Applications Received	Applications Finalised	Closing Balance of Applications	Hours dedicated to task	Pages of documents released
Year to Date	11	9	2	150.5	10623
July 2020	1	0	0	5.25	0
August 2020	2	1	0	15	411
Sept 2020	2	2	0	21.5	2912
October 2020	2	2	0	5	1387
Nov 2020	1	3	0	7	48
December 2020	0	0	0	0	0
January 2021	0	0	0	0	0
February 2021	1	1	1	16.5	225
March 2021	2	0	2	84.5	4419

* Hours to date – additional hours expected.

Councillor Requests March 2021

	Received (New)	Resolved	Carry Forward - Unresolved
Year to Date	285	274	11
July 2020	37	37	0
August 2020	60	60	0
September 2020	50	50	0
October 2020	21	21	0
November 2020	38	36	2
December 2020	25	23	2
January 2021	29	22	7
February 2021	25	25	0
March 2021	55	47	8

Registers of Interest

Councillor	Date Register of Interest updated
Andrew Willcox	21 January 2021
Jan Clifford	25 November 2020
Al Grundy	9 November 2020
John Collins	11 November 2020
Michelle Wright	10 November 2020
Gary Simpson	9 November 2020
Mike Bruner	25 November 2020

14. Development Services

14.1 20140319 - REQUEST FOR MINOR CHANGE FOR DEVELOPMENT PERMIT FOR MATERIAL CHANGE OF USE - TRANSPORT TERMINAL - 17 BOWEN DEVELOPMENTAL ROAD, BOWEN - 42RP727501 - T & K BYERS - C/- VERIS

AUTHOR: James McEvoy-Bowe - Planner

RESPONSIBLE OFFICER: Neil McGaffin - Director Development Services

OFFICER'S RECOMMENDATION

That Council resolve to refuse the Request for Minor Change of the condition 4.6 of the Development Permit for Material Change of Use - Transport Terminal lodged by Veris on behalf of K T Byers & T Byers on land described as L: 42 P: PT ZZ RP: 727501, 17 Bowen Developmental Road Bowen, on the following grounds:

- a) Providing an all-weather seal for driveways, circulation roads, parking bays and manoeuvring areas in accordance with AS2890.2 has been a Planning Scheme requirement since the *Bowen Planning Scheme 2006* and is still a requirement for this use under the current *Whitsunday Regional Council Planning Scheme 2017*; and
 - b) The use commenced in November 2020 and the applicant has two (2) years to seal the lot in accordance with Condition 4.6.
-

SUMMARY

The applicant has requested through the Minor Change application process, the deletion of a development condition (Condition 4.6) that requires the sealing of driveways, circulation roads, parking bays and manoeuvring areas of the approved Transport Terminal at 17 Bowen Developmental Road, Bowen. For the reasons present within this report, the request for the deletion of Condition 4.6 from the Development Permit is recommended for refusal.

PURPOSE

Development Applications requiring decisions which are outside the Council officer delegated authority require Council consideration.

BACKGROUND

Council at its meeting of 8 October 2014 approved a development application for Development Permit for Material Change of Use for a Transport Terminal located at 17 Bowen Developmental Road, Bowen.

STATUTORY/COMPLIANCE MATTERS

Planning Act 2016

ANALYSIS

Approval History

The Development Permit was given under the Bowen Planning Scheme 2006. The General Development Code of the Scheme sets the required benchmarks for general engineering requirements for developments in Bowen at the time. Importantly, the code required industry and commercial uses to comply with AS2890.2 – Commercial Off-street Parking Requirements. The application material submitted stated that the development would have B-Doubles and Road Trains entering, manoeuvring through and exiting the site. Council at the time enforced the General Development Code and subsequently conditioned the development appropriately for sealed all-weather driveways, circulation roads, parking bays and manoeuvring areas.

The applicant submitted representations for a Negotiated Decision Notice to the Decision Notice issued by Council on 8 October 2014. The representations included reasons to change the timing of Condition 4.6 from providing an all-weather seal of the driveways, circulation roads, parking bays and manoeuvring areas 'prior to the commencement of the use', to 'within twelve (12) months of the use commencing.' Council accepted the request and issued the Negotiated Decision Notice on 14 November 2014.

On 28 June 2017, the applicant submitted a Permissible Change Request (*Sustainable Planning Act 2009* terminology for Minor Change) to further alter the timing of condition 4.6 from 'within twelve (12) months of the use commencing' to 'within two (2) years of the use commencing'. Council acknowledged the significant costs associated with the internal sealing and therefore was willing to provide the applicant the opportunity to commence the development to assist in financing the works.

The applicant requested a Compliance Certificate on 9 November 2020 to demonstrate that the development had been completed in full. The applicant's submitted documents stated that the use had not commenced. It was also found that Condition 4.6 had not been fulfilled and therefore Council was unable to give a Compliance Certificate to deem the development completed in full.

Request

On 23 March 2021, pursuant to section 78 of the *Planning Act 2016*, Council received a request for Minor Change for the deletion of Condition 4.6. This request has stated that the use has now commenced and therefore under the existing approval, the development is required to complete Condition 4.6 within the next two (2) years. The applicant's representations are included as **Attachment 3**.

Officer's Comment

The application satisfies the Planning Act's definition of a minor change insofar as it does not result in a substantially different development.

If the development were to be approved under the current *Whitsunday Regional Council Planning Scheme 2017*, similar conditions would be imposed requiring sealing. The relevant sections of the Planning Scheme do not provide any discretion in relation to sealing of parking and manoeuvring areas.

As the use commenced in November 2020, there are 2 more years to complete the development in accordance with the development permit conditions.

STRATEGIC IMPACTS

Alignment to Corporate Plan

Outcome 3.1: Our built environment is well planned, effectively managed and protects our region's heritage and character.

Outcome 3.2: Our Natural environment is valued and sustainable.

Outcome 3.3: Our infrastructure supports our region's current and future needs.

Alignment to Operational Plan

KPI: Development Applications are decided within statutory timeframes.

Financial Implications

N/A

Risk Management Implications

N/A

Strategic Impacts

N/A

CONSULTATION

James McEvoy-Bowe – Planner (Author)
Doug Mackay – Manager Development Assessment
Neil McGaffin – Director Development Services

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

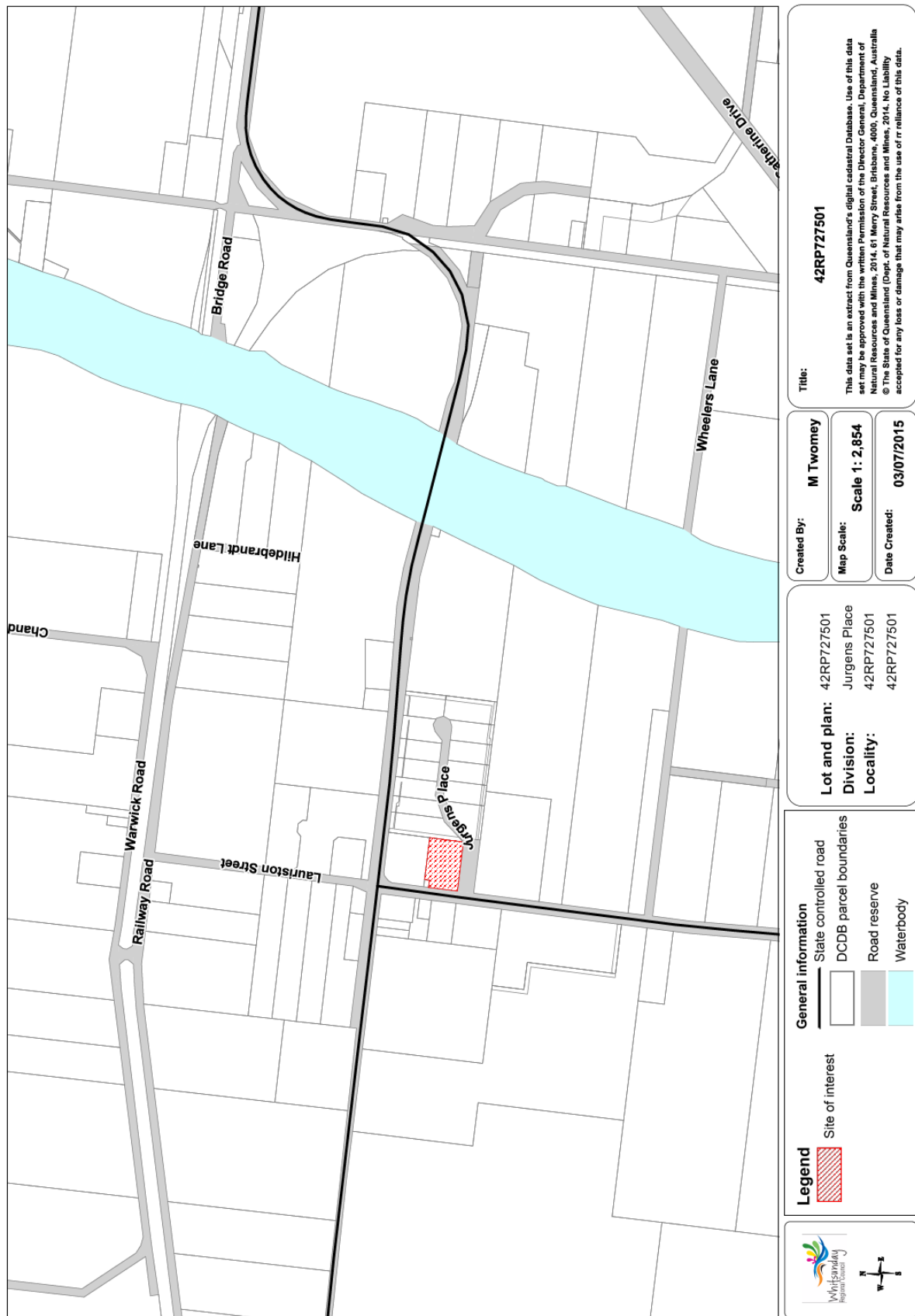
CONCLUSION

The request for a Minor Change to delete a condition requiring sealing of circulation areas is not supported, as the provisions in the relevant sections of the Planning Scheme seek compliance with the appropriate Australian Standard requiring an all-weather seal.

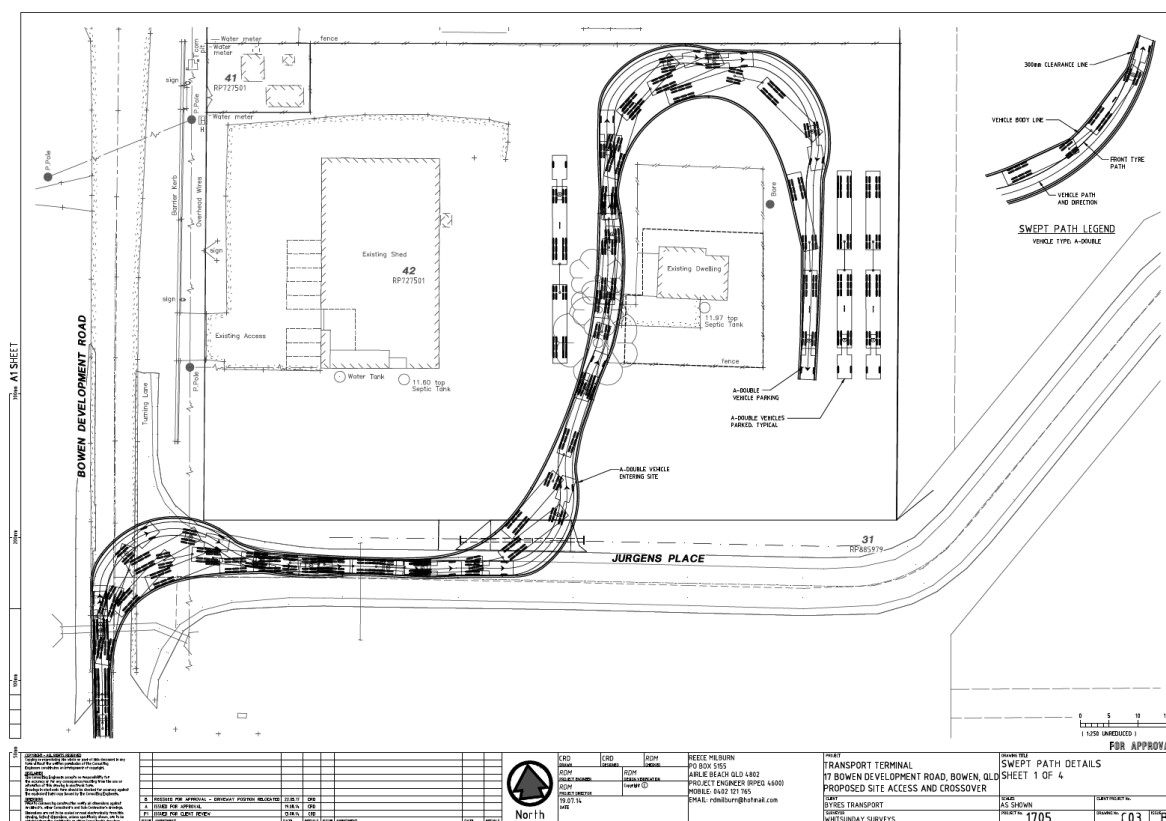
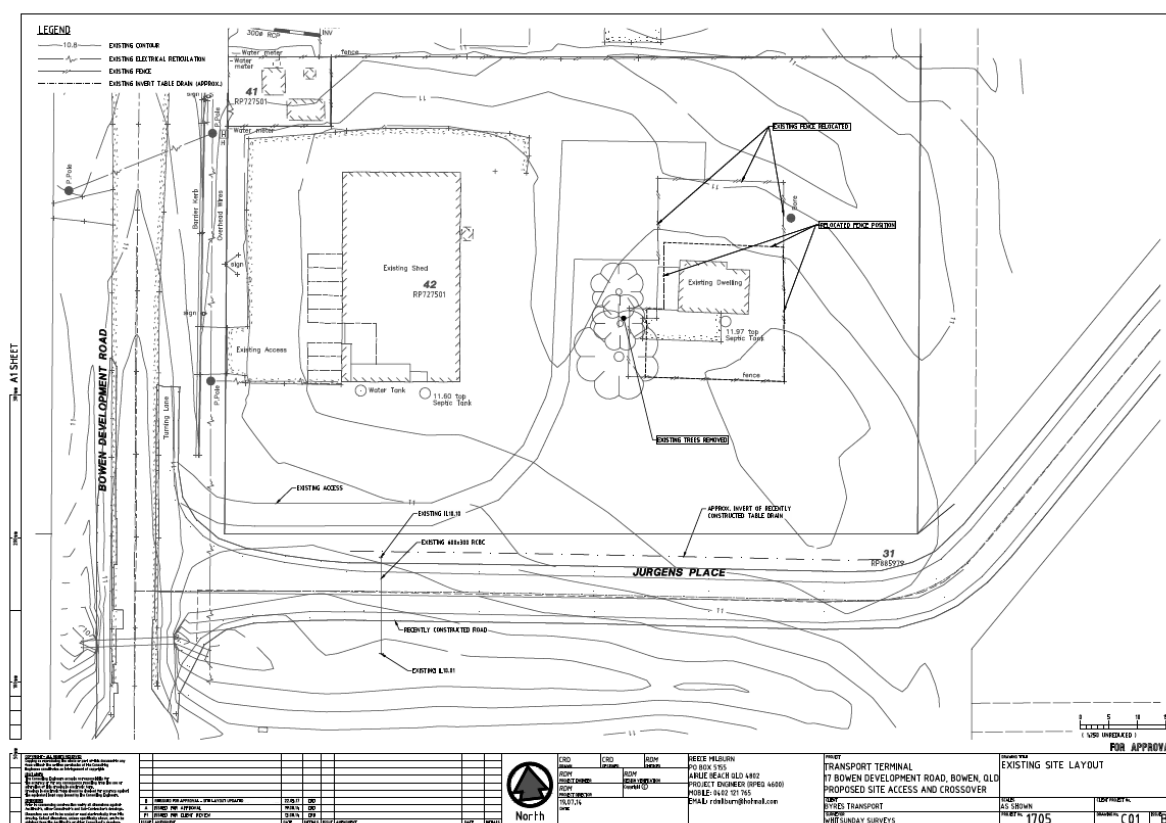
ATTACHMENTS

Attachment 1 - Locality Plan
Attachment 2 - Proposal Plan
Attachment 3 - Applicant's Representations

Attachment 1 - Locality Plan



Attachment 2 - Proposal Plan



Attachment 3 - Applicant's Representations

Justification supporting this request is as follows:

- There is very little precedence established by other industrial blocks within Bowen to require driveways, circulation roads, parking bays and manoeuvring areas of the subject site to be sealed. The applicant has provided a letter detailing at least 30 other industrial sites within Bowen which do not have sealed all weather surfaces.
- The approved transport terminal is relatively low in intensity and scale and does not experience a high number of vehicle movements associated with other types of industrial land uses.
- There are no sensitive land uses within close proximity to the site.
- The existing gravel surface is fit for purpose for the current operation and the combination of low vehicle movements and the building being located approximately 30m from the site entry will minimise any issues associated with dust.
- It is submitted that condition 4.6 is an unreasonable and financially cumbersome requirement that will provide very little benefit to Council, the applicant and adjoining properties and therefore warrants deletion.

This condition is of great concern to the applicant and conflicts with the usual and expected operation of an interstate transport terminal, as demonstrated by the many other industrial sites within the locality that have not been required to undertake the required all weather sealing.

It is noted that the applicants have met with their local Councillor to discuss the issues and have advised that initial support for this local family business was shown by that Councillor.

26/2/2021

BYERS TRANSPORT
17 COLLINSVILLE RD, BOWEN. QLD.

BYERS TRANSPORT LEASED YARD FROM
1/9/2015 TO 1/4/2016

LINDSEY TRANSPORT AND RURAL LEASED
THE YARD FROM 1/4/2016 TO 31/12/2018
THEY RUN B/DOUBLES AND ROAD TRAINS OUT
OF THIS YARD FOR THAT PERIOD OF TIME
WITH NOT ONE COMPLAINT FROM DUST OR
NOISE OR OPERATIONAL HRS. THESE DRIVE
WAYS AND TURNING CIRCLES ARE ALL SCREEN
DECO.

① ALL COUNCILS YARDS IN BOWEN, DRIVE
WAYS, TURNING CIRCLES ARE DECO IN
RICHMOND RD. ÷ SAME AS ALL THESE YARDS

- | | | |
|---|---------------------|------------------|
| ② | Hillery Group | RICHMOND RD |
| ③ | ROADTEK | " " |
| ④ | Hillery Group B.I.H | 19101 BRUCE HWY. |
| ⑤ | PACIFIC NATIONAL | " " |
| ⑥ | R.T.M. | COLLINSVILLE RD |
| ⑦ | S & W CRANES | " " |

8	BYERS TRANSPORT	COLLINSVILLE RD
9	ULTRA STACK	" "
10	SNELL SAND BLASTING	" "
11	H.L.M. "HEAVY INDUSTRIAL"	" "
12	JEFF RICHARDS TRANSPORT	4 LAUISTON ST
13	SHELL PETROLEUM	" " "
14	OLD MATES REMOVALIST	BOOTOOLOO RD
15	FOLLOWMONT TRP	" "
16	BOOTOOLOO TRP	" "
17	B.N.T. TRP	" "
18	PAT MC DONALD TRP	" "
19	BOWEN TRUSS AND FRAMES	" "
20	BOWEN VAC PUMPS	" "
21	CLEAN AWAY	REYNOLD RD
22	EAST COAST CIVIL	NORRIS ST
23	PACIFIC PETROLEUM	BETZELS LN.
24	BOWEN TRANSIT	DON ST
25	HILLERY GROUP	" "
26	AUSTRALIAN SALT WORKS	" "
27	TAG LINE CONSTRUCTION	" "
28	NEIL MANSELL CONCRETE	" "
29	TOLL TRP	LOWER DON RD
30	ORORA/OPAL CARDBOARD	" " "
31	J.J. RICHARDS	FLEMINGTON RD

BYERS TRANSPORT HAS OPERATED OUT OF THIS YARD SINCE NOVEMBER 2020. DRIVEWAYS, TURNING CIRCLES, PARKING BAYS ARE SCREEN DECO.

NOT ONE COMPLAINT ABOUT DUST, NOISE, OPERATIONAL HRS. THERE ARE NO HOUSES NEAR US WHERE WE OPERATE OUT OF. ÷ 5 K/H SPEED LIMIT IN YARD. AT ALL TIMES. [SIGNED]

W.R.C. 2 YARDS, ROADTEK, HILLERY GROUP, RICHMOND RD. HAVE 10 HOUSES IN FRONT OF THEM. AND THEY ARE ALL SCREEN DECO, DRIVEWAYS, TURNING CIRCLES.

THE COST TO PUT DRIVEWAYS, TURNING CIRCLES IN MY YARD IS APP \$300,00:00

THE REFERENCES I HAVE ARE.

- | | |
|-----------------------------------|-----------------|
| ① BROOKER MOTORS | Collinsville Rd |
| ② BOWEN DIESEL. | " " |
| ③ NUTRIEW SOLUTIONS | " " |
| ④ SHANE MORRISON "CARDBOARD" | " " |
| ⑤ ULTRASTACK | " " |
| ⑥ DARREN SPANNIKER,
SCRAP YARD | " " |

14. Development Services

14.2 UNITING CHURCH PROSERPINE - DE-REGISTRATION OF LOCAL HERITAGE ITEM

AUTHOR: Leonie Meurant - Strategic Planner

RESPONSIBLE OFFICER: Neil McGaffin - Director Development Services

OFFICER'S RECOMMENDATION

That Council:

- a) follow the *Queensland Heritage Act 1992* process of removal of an item from the Local Heritage Register;
 - b) notify the owner of the Uniting Church Proserpine of the potential removal of the local heritage registration;
 - c) place a notice in the newspaper and undertake public notification for a period of 20 business days; and
 - d) following the public notification period return to Council with a recommendation after considering any submissions that may be received.
-

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

There has been a request from the owners of 89 Main Street Proserpine to deregister the historic building on the site (the Uniting Church), due to damage sustained from Cyclone Debbie in 2017.

The building was constructed in 1935 and included on the Local Heritage Register in 2014 due to the continuous use of the site as a place of worship in the region and demonstrating the progress of Proserpine as a cane growing town.

PURPOSE

To request approval from Council to commence public notification as per the *Queensland Heritage Act 1992* for the removal of the Uniting Church in Proserpine from the Local Heritage Register.

BACKGROUND

On 10 March 2021 Council approved the request to follow the *Queensland Heritage Act* process to remove the Hook Island Underwater Observatory, the Proserpine War Memorial and the Palace Hotel from the Local Heritage Register.

STATUTORY/COMPLIANCE MATTERS

Queensland Heritage Act 1992

ANALYSIS

The applicant CRD Building Consultants and Engineers, have on behalf of the owner (the Uniting Church in Australia), lodged an application to deregister the church due to major structural defects.

The applicant has submitted the following information:

1. A quote dated 10 December 2020 from Advanced Building for the rebuild of the church;
2. 'Scope of Works' by CRD Building Consultants and Engineers, dated 15 June 2020;
3. 'Structural Engineering Investigation and Report prepared for Proserpine Whitsunday Uniting Church' by GW Goddard and Associates dated 4 February 2020; and
4. Letter requesting 'Application for Exemption Certificate relating to Proposed Demolition of Proserpine Uniting Church – 89 Main Street Proserpine' dated 22 March 2021 by McLarens Brisbane.

Note: The exemption application is premature and cannot be considered until Council has resolved to remove the place from the register.



Figure 1: Current State of Church February 2021

The Structural Report details has found the building sustained significant cyclone damage and recommends demolition of the building, including foundations.

As quoted from the letter to summarise the report:

'There is cyclone damage to the Church roof frame and remedial method involves full replacement of the roof framing and roof covering. The roof frame ties directly to the load

bearing walls and columns which have structural inadequacies. As a result, a new compliant roof structure cannot be tied back to the existing piers and walls. G.W Goddard, Structural Engineers have determined that the roof and walls require replacement.'

The report goes on to detail each area and the current state of disrepair, including large cracks in the walls, fascia's being held on by screws alone, and the foundations, due to their age, being unfit for use in a new building as they show mould and limited ventilation.

The conclusion of the report is that the Church cannot be 'made safe' or renovated and an entire rebuild would be required.

The cultural heritage significance of the property is in the use of the place, not in the bricks and mortar. As identified in the report, the building is not able to be repaired due to the significant structural and roof defects. It is recommended to follow the *Queensland Heritage Act 1992* to remove the Uniting Church from the Local Heritage Register.

Queensland Heritage Act 1992

Steps to adhere to under the Act:

- 1. Notify the owner of the place with the notice of proposal;*
- 2. Notify the public via newspaper advertisement stating:*
 - a. That the place is under consideration for removal from the local heritage register;*
 - b. reasons for removing the Church from the local heritage register;*
 - c. identify how to make a submission;*
 - d. identify the closing date for submissions (20 business days after notification)*
- 3. Consider submissions;*
- 4. Resolve to remove the church from the local heritage register;*
- 5. Respond to submitters notifying of decision.*

Following completion of these steps, a further report will be presented to Council to review submissions received and whether the removal of the Church from the Local Heritage Register is appropriate.

STRATEGIC IMPACTS

The community may object to the removal of the Uniting Church from the Local Heritage list. The church is significantly damaged effecting its heritage value. Therefore, removing the heritage listing will make any works an easier application process for the landowner.

The community will be provided opportunity to comment on the proposed heritage places de-listing during the 20 business day public notification period.

CONSULTATION

Neil McGaffin - Director Development Services
Shane Neville - Manager Strategic Planning

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

Due to the current state of the Uniting Church, to rebuild the church the building would have to be taken off the Heritage Register. This must be done following the *Queensland Heritage Act 1992* process.

ATTACHMENTS

Attachment 1 - Letter requesting 'Application for Exemption Certificate relating to Proposed Demolition of Proserpine Uniting Church – 89 Main Street Proserpine' dated 22 March 2021 by McLarens Brisbane

McLarens Brisbane
Suite 3A, Level 3, 5 Cribb Street
PO Box 1360
MILTON QLD 4064
Tel +61 (0)7 3367 5900 brisbane@mcclarens.com



McLarens Holdings Pty Ltd
ABN 98 004 575 053

Our Ref MAU.179393

Date 22 March 2021

Whitsunday Regional Council
Manager Strategic Planning
PO Box 104
PROSERPINE QLD 4800

Atten: Shane Neville
Via Email: info@whitsundayrc.qld.gov.au

Dear Mr Neville,

**RE: APPLICATION FOR EXEMPTION CERTIFICATE RELATING TO PROPOSED DEMOLITION OF
 PROSERPINE UNITING CHURCH – 89 MAIN STREET, PROSERPINE QLD 4800**

We represent Uniting Church in Australia Queensland Synod Insurers in connection with a claim for cyclone damage to the above noted property.

It is understood that work cannot commence without appropriate approval from local Council as the property is listed on the Heritage Significance Register.

As part of the claim it has been confirmed that the cyclone damage necessitates demolition of the building including foundations and rebuild.

There is cyclone damage to the Church roof frame and remedial method involves full replacement of the roof framing and roof covering. The roof frame ties directly to the load bearing walls and columns which have structural inadequacies. As a result, a new compliant roof structure cannot be tied back to the existing piers and walls. G.W Goddard, Structural Engineers have determined that the roof and walls require replacement. A copy of this Report is attached as attachment 1.

Based on the Engineer advice, Consultants have prepared a Reinstatement Scope of Works which involves demolition including foundations and rebuild. A copy of this Scope of Works is attached as attachment 2.

Quotations for demolition and reinstatement of the structure in accordance with the consultant's Scope of Works is attached as attachment 3.

McLarens Brisbane

Suite 3A, Level 3, 5 Cribb Street

PO Box 1360

MILTON QLD 4064

Tel +61 (0)7 3367 5900 brisbane@mcclarens.com

McLarens Holdings Pty Ltd

ABN 98 004 575 053



Our Ref MAU.179393

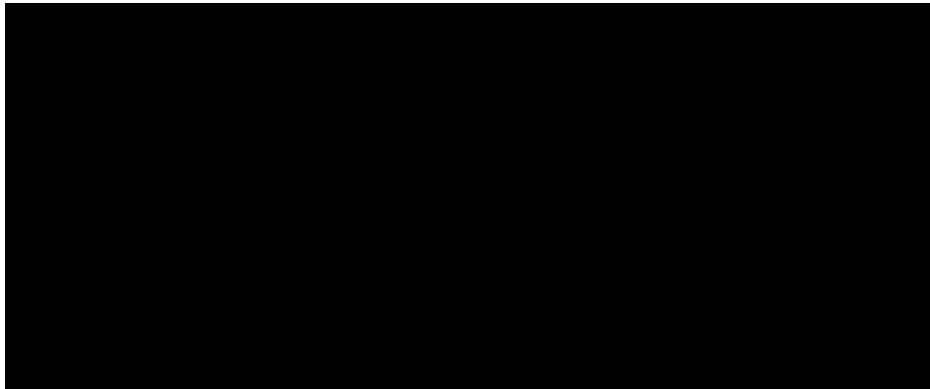
Date 22 March 2021

A Heritage Assessment and Interpretation Strategy has not been completed. As outlined within the Engineers Report, the integrity of the Church Structure is compromised requiring the Building to be demolished.

As part of the claim, we are requesting that the above property be removed from the Heritage Significance Register to allow demolition to be undertaken.

We look forward to this application being favourably processed.

Kind regards,



Attachment 1 G W Goddard Structural Engineers Report

Attachment 2 CRD Scope of Works

Attachment 3 Advanced Buildings Quotation

Attachment 4 Heritage Assessment and Interpretation Strategy

14. Development Services

14.3 REVIEW OF FACADE IMPROVEMENT POLICY

AUTHOR: Leonie Meurant - Strategic Planner

RESPONSIBLE OFFICER: Neil McGaffin - Director Development Services

OFFICER'S RECOMMENDATION

That Council adopt the Revised Façade Improvement Policy.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

Council's Façade Improvement Policy was effective from 11 December 2019. The previous policy has been reviewed with an updated version drafted into the current format.

PURPOSE

To update and review the Façade Improvement Policy that was adopted in 2019.

BACKGROUND

The Façade Improvement Policy arose from an Action in the Proserpine Sustainability and Future Growth Masterplan compiled in 2017. It now encompasses all four major towns in the region. The policy was last updated in 2019 and needs to be reviewed.

STATUTORY/COMPLIANCE MATTERS

N/A

ANALYSIS

The purpose of this policy is to give a cash grant incentive for businesses within the main business districts of each town to improve their shopfronts through façade improvements such as painting, new signage and/or other improvements.

The proposed review for the Policy has only minor changes to ensure efficient assessment of each application through minor wording changes. The Director of Development Services is the delegated officer on behalf of Council to approve general applications, and any application may be taken to Council if requested.

STRATEGIC IMPACTS

Reputational Risk - To not update the policy and ensure the best outcome for the community.

CONSULTATION

Neil McGaffin - Director Development Services
Norman Garsden - Manager Governance and Administration

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

The update to the Façade Improvement Policy aligns with Council's policies and procedures.

ATTACHMENTS

Attachment 1 - Revised Façade Improvement Policy

COUNCIL POLICY			
Date Adopted by Council	24 April 2021	Council Resolution	
Effective Date		Next Review Date	April 2023
Responsible Branch	Strategic Planning	Revokes	Façade Improvement Policy (adopted 11 December 2019)

Purpose

The purpose of this policy is to incentivise landlords and/or business owners in Bowen, Proserpine, Collinsville and Airlie Beach to improve their individual shopfronts through the grant assistance outlined in this policy.

Scope

This policy is applicable to:

- all commercial premises fronting the street from 1 Main Street to 140 Main Street, Proserpine, encompassing both sides of the street.
- all commercial premises within the Major Centre Zone in Bowen, being shops in Herbert Street, Powell Street, Williams Street, George Street, Dalrymple Street and Gregory Streets facing the street.
- all commercial premises within the CBD in Collinsville, being shops in Stanley Street facing the street.
- all commercial premises fronting the Airlie Beach Main Precinct from the Star Fish roundabout to Coconut Grove / Shute Harbour Rd roundabout including Airlie Esplanade.

See Appendix 1 for Maps.

Applicable Legislation

N/A

Policy Statement

1.0 Levels of Funding Available

Council's contribution to each grant will be to up to 50% of the eligible works and will be capped depending on the following factors:

- For shopfronts up to and including 12 metres long: a maximum Council contribution of \$3,000 may be granted; or
- For shopfronts over 12 metres: a maximum Council contribution of \$5,000 may be granted.

No more than \$500 can be attributed to landscaping.

2.0 Eligible Works

Eligible works on commercial properties only include:

- Lighting;
- Redecorating exterior walls;
- Upgrades to windows and doors;
- Enhancing entranceways of shops;
- Awning/canopies;
- Exterior architectural and/or artistic features;
- Landscaping (to a maximum of \$500);
- Façade painting and murals;
- Removal of cladding from presently concealed historic character buildings;
- Reinstatement of lost elements or fabric to the façade of the building; and
- Signage; or
- Any combination of the above.

3.0 Ineligible Works

Ineligible works exclude:

- building & planning applications;
- application fees; and
- shopfronts facing laneways.

4.0 Rules for Assessment

- An application cannot be accepted if there are outstanding fees and charges to Council on the subject property.
- Council reserves the right to seek further information or clarification of a proposal to facilitate a balanced assessment.
- Grants are awarded based on merit and not all applications that meet the assessment criteria may be funded.
- An application for the Policy must be made before any works commence onsite.
- Applications will be assessed against the Objective Criteria.
- The applicant must obtain all necessary planning and building approvals before any Policy approvals can be given or commencement of works.
- Council will not grant funds for operational or administrative costs related to the project.
- Grants will not be paid for business marketing or promotion (this does not include if an application is made for fixed signage).

- Council will not provide grants for capital purchases (for example ladders, gurneys, scaffolding and safety barriers).
- Applicants must fund the costs of the works upfront and Council will reimburse the agreed funding amount in accordance with the funding agreement.
- Only one grant application is lodged per business/individual shopfront; however, a number of business owners may jointly make a combined application.
- Applicants must submit two formal quotes from local licenced contractors for proposed works.
- The applicant must provide their matched contribution in cash and not in-kind.

5.0 Objective Criteria

- Improvements proposed must be to the façade of the building that is visible from the street but do not include that part of a building fronting any laneway.
- The applicant must demonstrate how the project will benefit the building's presentation and streetscape appeal.
- Colours and landscaping must create visual interest or be in keeping with the surrounding area.
- Applicants must submit a plan detailing the proposed improvements.
- Applicants must submit 'before photos' of the proposed building with the completed application.

6.0 Application Process

- a) Applicant is required to complete an application form. The application form will require:
 - i. A clear description stating what proposed works will be undertaken including sketches or rendered images.
 - ii. A minimum of two (2) quotes from local licenced contractors.
 - iii. Before photos taken of the building's current façade, elevation and closeup of the area to be affected by the works. Successful applicants will be required to take photos showing final completed works from the same locations as the 'before' photos.
 - iv. If a building is Heritage Listed or adjoins a Heritage Listed place, applicants will be required to seek advice relating to the potential heritage impacts and refer the proposal to Council's Development Assessment unit for consideration.
 - v. Project plan and timing of proposed works.
 - vi. Owner's consent.
- b) Council or the delegated officer will be briefed on the application.
- c) Applying does not automatically result in approval, each application is subject to assessment and approval.
- d) Works to Heritage Listed buildings that require planning approval through Council's Development Assessment department or the State Assessment and Referral Agency must obtain the necessary permits prior to works commencing and all work must be carried out as per these approvals.

- e) An applicant will be required to enter into a Funding Agreement with Council. The Agreement will outline the level of funding approved and the timeframes for works to be undertaken and completed.
- f) The applicant has 3 months after completion of the work to lodge a Grant Acquittal Form, tax invoices and proof of payment to Council. Before and after photos must be provided prior to Council releasing funding.
- g) The proposed works should be completed as detailed in the approved proposal within 12 months of the date of the Funding Agreement.

Definitions

CEO refers to the Chief Executive Officer of the Whitsunday Regional Council appointed in accordance with the *Local Government Act 2009*.

Council refers to the Whitsunday Regional Council

Employee refers to any employee, contractor, volunteer etc. of Council.

Related Documents

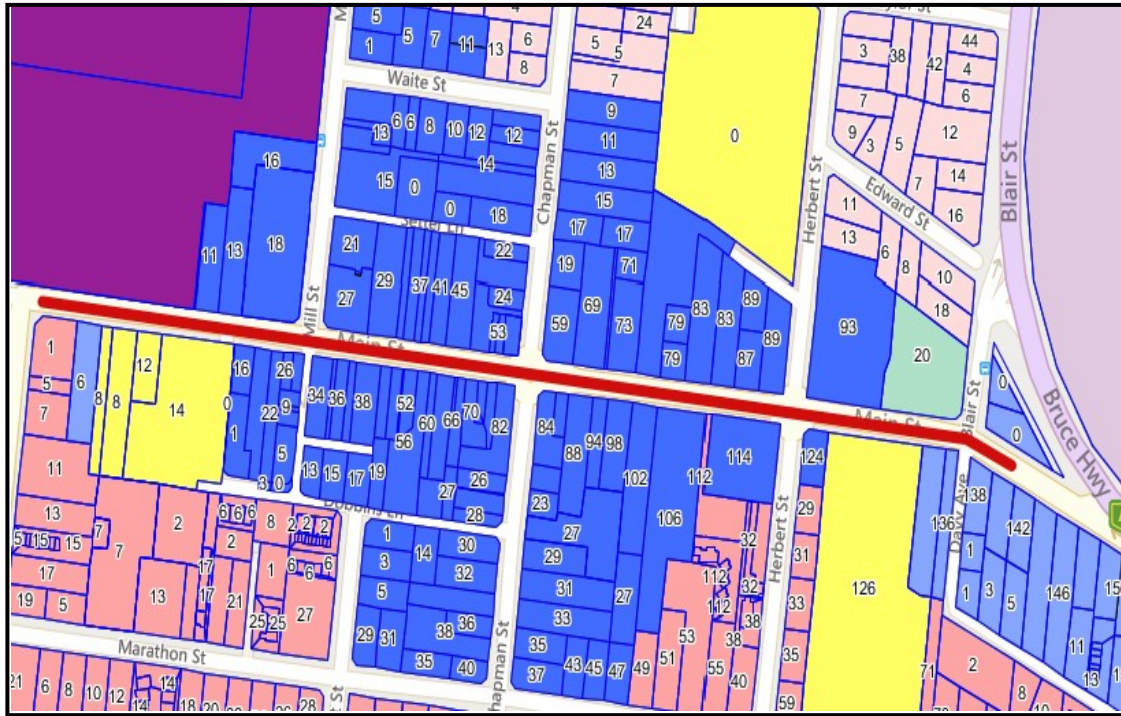
- Façade Improvement - Funding Agreement
- Façade Improvement Application Form
- Grant Acquittal Form

Human Rights Compatibility Statement

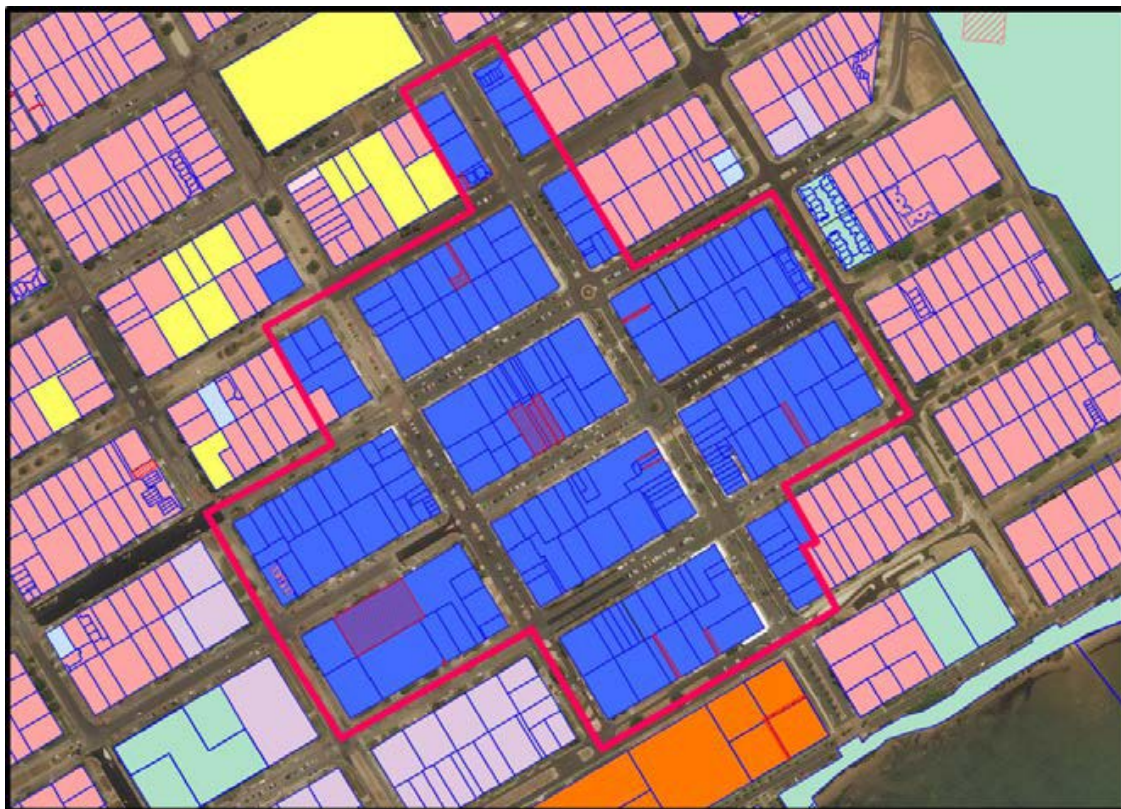
This policy has been assessed as compatible with the Human Rights protected under the *Human Rights Act 2019*.

Appendix 1

Mapping of Applicable Areas



Proserpine



Bowen

Façade Improvement Policy

Development Services

LSP_DEV_01



Collinsville



Airlie Beach

15. Community Services

15.1 DRAFT COASTAL HAZARD ADAPTATION STRATEGY (CHAS) - COMMUNITY CONSULTATION

AUTHOR: Scott Hardy - Coordinator Natural Resource Management & Climate

RESPONSIBLE OFFICER: Julie Wright - Director Community Services

OFFICER'S RECOMMENDATION

That Council:

- a) approve the Community Consultation for a duration of 30 days, for the Draft Coastal Hazard Adaptation Strategy (CHAS); and**
 - b) request the results of the Community Consultation to be reported to Council.**
-

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

The Queensland Government is coordinating the QCoast₂₁₀₀ program which is designed to assist coastal Councils to plan for future predicted sea level rise which is attributed to the processes of "Climate Change". The State Government has invested over \$13 million over the last four years into more than 30 Councils to assist Local Governments to undertake the necessary technical studies to inform future land use decision making in coastal areas.

In 2016, Whitsunday Regional Council was awarded a grant to assist with the funding of a Coastal Hazard Adaptation Strategy (CHAS). The purpose of the CHAS is to assist Council to plan for future sea level rise in coastal areas. There are eight stages or phases to the development of the CHAS. The stages of the CHAS are:

- 1) Stakeholder communication and engagement
- 2) Identifying coastal hazard issues
- 3) Identify areas at risk to coastal hazards
- 4) Identify key assets which are at risk
- 5) Risk assessment of key assets
- 6) Identify key adaption options
- 7) Socio-economic adaption options
- 8) *Strategy development and implementation and review (CHAS report)*

Council consultants have developed the draft Coastal Hazard Adaptation Strategy (CHAS) which is now ready for broad community consultation.

PURPOSE

To seek Council's endorsement of the proposed Coastal Hazard Adaptation Strategy (CHAS) to be released for broad community consultation.

BACKGROUND

Council commenced the development of its Coastal Hazard Adaptation Strategy (CHAS) in 2016. In 2016, Council signed an agreement with the Local Government Association of Queensland (LGAQ) to undertake the various stages of the CHAS in response to receiving a QCoast₂₁₀₀ grant to conduct the range of required works.

Council has received a number of presentations throughout the four years when project milestones have been achieved and reports completed.

More recently, Council reviewed the CHAS Phase 6 and 7 reports in September 2020. In November 2020, a briefing report was presented to Council to summarise the CHAS Phase 8 process and timelines for development.

STATUTORY/COMPLIANCE MATTERS

Local Governments have a role in land use planning and providing services to their community. The predicted sea level rise associated with Climate Change will bring new challenges to coastal Councils over the next 80 years (and beyond) which will need to plan for these coastal changes. Councils will need to consider whether defend options or retreat options are suitable for their coastal communities. There may be future legal risks for Councils not planning for sea level rise.

There is no legislative requirement for Council to develop a Coastal Hazard Adaptation Strategy (CHAS), however Council is contractually obliged to prepare a final CHAS as part of this project, as grant funding of over \$500,000 to undertake the work has been received.

ANALYSIS

The Queensland Government and the LGAQ have developed the QCoast₂₁₀₀ program to assist coastal Councils to assess and prepare for sea level rise associated with the processes of "Climate Change".

The QCoast₂₁₀₀ program is a Queensland Government initiative and has committed \$13.234 million to assist Councils advance coastal hazard adaptation planning. The main mechanism for this adaptation planning is the development of a Coastal Hazard Adaptation Strategy (CHAS).

The QCoast₂₁₀₀ program is being administered by the LGAQ, which is working with eligible Councils to support their proposals and assist them in preparing potential projects. There are 31 Councils involved and funded through the QCoast₂₁₀₀ and 48 projects approved. To date, six Councils have completed their CHAS with another four in the final stages of developing their Phase 8 CHAS report.

Whitsunday Regional Council was one of the first Councils to have funding approved through the QCoast₂₁₀₀ program which occurred in October 2016. Council was granted \$513,500.00 in QCoast₂₁₀₀ funding to develop its Resilient Whitsunday: Coastal Hazards and Response project. The Council has co-contributed funds towards various stages of the CHAS.

The projects approved through the QCoast₂₁₀₀ need to comply with a minimum standards guideline. This means that flood studies and economic assessments need to comply with government approved standards.

The CHAS Implementation Plan (Phase 8) is designed to provide guidance to Council in planning for future changes to our coast caused by sea level rise.

In July 2016, Council adopted a Climate Change Adaptation Policy and Coastal Hazard Adaptation Strategy (CHAS). The strategy provides direction on the identification and response to coastal hazards. The development and implementation of the CHAS will assist Council in implementing its Climate Change Adaptation Policy.

The development of the CHAS Report and Implementation Plan is where the science and politics merge. The CHAS Report will summarise the general proposed strategy to manage sea level rise at each of the nine main Council coastal settlements. The narrative in the CHAS will be important to moderate community expectations, summarise the issues and make a statement on how Council is proposing to manage the issue of sea level rise over the next 80 years.

Donovan Burton from Climate Planning has worked with Council Officers to develop the draft CHAS Report and Implementation Plan. The CHAS outlines the proposed strategy to plan and manage for sea level rise at the following locations:

- Bowen – Queens Beach, Rose Bay/Kings Beach, Front Beach/CBD.
- Airlie Beach
- Cannonvale
- Conway
- Wilsons Beach
- Dingo Beach
- Hydeaway Bay

One of the main general principles which has guided the development of the broad strategies for the 9 coastal settlements is that the funding for any planned response whether it be protection measures such as rock walls or softer measures such as the development of planning scheme tools will be borne by the Whitsunday Regional Council rate payer opposed to relying on the Commonwealth and State Governments. It is thought that the funds required to provide hard engineering solutions to protect communities against sea level rise for all coastal areas would be an enormous cost and may not be practical. Hence, the decision to assume that all sea level rise responses for the Whitsunday Regional Council area will be borne by the Whitsunday rate payer. Consequently, the adaptation response pathways for the nine coastal settlements are more aligned to the planned retreat, transition, or accommodation strategies than the development of sea walls due to the initial cost/benefit analysis.

The other important strategies in the draft CHAS Plan are:

- The suggestion that the CHAS will be reviewed every 5 years and any new science and political views will be used to fine tune the CHAS adaptation pathways for each settlement over the next 80 years, an adaptive management approach.
- There is a list of future investigations and studies needed to provide more guidance on how the proposed planned retreat, transition and accommodation strategies can be implemented, but also how to prolong the need for residents to move from coastal areas which could be over a couple of generations in some locations.

Council Officers have developed a draft Communications Plan to guide the release of the draft CHAS. The CHAS Communications Plan will include:

- Community consultation period for 30 days.

- Community meetings/stalls at:
 - Bowen - Queens Beach, Rose Bay and Front Beach
 - Cannonvale/Airlie Beach
 - Wilson Beach/Conway
 - Dingo Beach and Hydeaway Bay
- Main objective of community meetings/stalls will be to discuss the proposed CHAS and explain.

The Whitsunday CHAS will be provided to the LGAQ one month before project finalisation.

STRATEGIC IMPACTS

Corporate Plan

Outcome 3.2 – Our natural environment is valued and sustainable

Strategy 3.2.1 – Develop and implement policies and strategies that protect and enhance the Whitsunday region's natural environment.

Operational Plan

Action 3.2.1.4 – Develop a Coastal Hazard Adaptation Plan (CHAS) that identifies coastal hazards and considers the impacts of climate change on our coastal communities.

Financial Implications – The Phase 8 report, final CHAS Report and Implementation Plan has a risk to impact positively and negatively on property values, based on potential buyer perception of the risks. The information is not detailed enough for annual insurance premiums.

Risk Management Implications – The CHAS Report deals with the physical and financial risks associated with a predicted rising sea level to infrastructure. The CHAS will also outline the financial risks associated with doing nothing, but also the option of “defend all areas” due to the high costs.

CONSULTATION

Julie Wright – Director Community Services
 Donovan Burton – Climate Planning
 Council's Communications Team

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

It is recommended that Council:

- a) approve the Community Consultation for a duration of 30 days, for the Draft Coastal Hazard Adaptation Strategy (CHAS), and
- b) request the results of the Community Consultation to be reported back to Council before implementation.

ATTACHMENTS

Attachment 1 – Draft Coastal Hazard Adaptation Strategy (CHAS): Resilient Whitsunday Strategy

Attachment 2 – Coastal Hazard Adaptation Strategy (CHAS) Communications Plan



WHITSUNDAY REGIONAL COUNCIL COASTAL HAZARD ADAPTATION STRATEGY (CHAS): RESILIENT WHITSUNDAY STRATEGY



Date/ Version:

8 April 2021 Version 1

Citation:

WRC (2021) Whitsunday Regional Council
Coastal Hazard Adaptation Strategy (CHAS):
Resilient Whitsunday Strategy, February
2020

Contact:

xxx

Mayor's Message

Short message from the Mayor here ...

DRAFT

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DRAFT

1 Introduction

1.1 Our Coastline

The Whitsunday region coastline extends 500 km across numerous coastal communities and adjacent to 74 islands which form a gateway to the Great Barrier Reef. The Whitsunday coastal zone is home to approximately 35,500 permanent residents. The region features a diverse range of natural landscapes such as beaches, reefs, rainforests and national parks which place the Whitsunday in prime position to become a world-class tourism destination.

The coastline is composed of a range of coastal landforms including sandy beaches, low beach-ridge plains, tidal mud flats, wetlands, rocky headlands, islands, near shore reefs and mangrove forests. The coastal zone provides valuable ecosystem services and a unique collection of terrestrial and aquatic species which support the region's economic and social wellbeing. The coastal environment is continuously changing as a result of dynamic natural processes such as tides, waves, erosion, inundation, storms and cyclones, and changes in sea level. However, coastal erosion and storm tide inundation have been identified as coastal hazards for the Whitsunday region because of their potential adverse impacts on people, the built environment and infrastructure.

1.2 The Resilient Whitsunday Strategy

Context

Whitsunday Regional Council was successful in its funding application under the Coastal Hazards Adaptation Program (QCoast₂₁₀₀). The QCoast₂₁₀₀ program is a state-wide initiative of the Queensland Government and the Local Government Association of Queensland (LGAQ) to help coastal councils plan for and address climate change related coastal hazard risks over the long-term. Through their 'Resilient Whitsunday: Coastal Hazards and Responses' program, Whitsunday Regional Council have developed a Coastal Hazard Adaptation Strategy (CHAS), which is presented as the Resilient Whitsunday Strategy.

The Resilient Whitsunday Strategy:

- has been developed to proactively manage the current and future impacts of coastal erosion and storm tide inundation
- was developed in partnership with communities and other stakeholders
- encompasses eight coastal communities including Airlie Beach, Bowen, Cannonvale, Conway Beach, Dingo Beach, Hydeaway Bay, Shute Harbour and Wilson Beach.

Purpose

The purpose of the Strategy is to:

- understand how climate change and coastal hazards affect coastal communities, local economy, natural environment and WRC operations (current and future impacts);
- identify areas likely to be exposed to current and future coastal hazards (e.g. storm tide, coastal erosion and inundation and sea level rise);

- assess the vulnerabilities and risks to key Council and community assets through a comprehensive data collection and spatial analysis process;
- develop potential coastal adaptation options to mitigate the impact of these hazards; and
- assess the viability of adaptation options through stakeholder engagement and economic analysis.

Approach

The Resilient Whitsunday Strategy has been developed using an eight-phase process which align with the QCoast₂₁₀₀ Minimum Standards and Guidelines provided by LGAQ (see Figure 1). The process included a series of deliverables such as studies, spatial mapping, risk assessments and reports which aimed to:

- identify and assess areas at risk from coastal hazards
- engage the community to raise awareness of climate change impacts and offer a range of adaptation options
- propose priority adaptation options to address short-term impacts
- determine costs, priorities and timeframes for implementation of adaptation actions



Figure 1: Diagram of project phases from Minimum Standards and Guidelines

1.3 Engagement

Process

The Resilient Whitsunday Strategy has been developed through a transparent engagement process with key stakeholders and the Whitsunday community. Initial community presentations were held in July 2017 at Bowen and Proserpine to encourage the community to participate and share their stories and memories of past weather events. During the early phases of the process, stakeholder engagement meetings were also held with representatives from:

- Dingo Beach Progress Association
- Hydeaway Bay Progress Association
- Whitsunday Catchment Landcare
- Department of Agriculture and Fisheries
- Mackay Regional Council
- Reef Catchments
- Urban Development Institute of Australia
- Queens Beach Action Group

Whitsunday Regional Council facilitated an engagement workshop with Indigenous and Aboriginal stakeholders from the Whitsunday community in November 2018. The workshop enabled sharing of relevant coastal hazard information and allowed the Juru People to provide meaningful engagement about the potential impacts of adaptation options.

The results of an online survey completed by stakeholders and Council staff members was also used to determine preferences for weighting the criteria in the Multi-Criteria Analysis.

Throughout the process, residents from seven of Whitsunday's coastal communities joined community consultation events to explore the coastal processes shaping our coastlines, and to provide feedback on coastal management and adaptation options for the future.

Communication

Throughout the development of the Resilient Whitsunday Strategy, regular updates were posted on Council's website to inform the wider community about the progress of the project. The 'Your Say Whitsunday' website also provided an online platform for the community to upload photos of past weather events, participate in online survey, engage in presentations and events and provide feedback about the project. A Communication Plan and Stakeholder Engagement Plan created in Phase 1 guided the engagement and communication process across all phases of the 'Resilient Whitsunday' project.

2 The Whitsunday Region

2.1 Coastal Landscape

Whitsunday's coastline is environmentally diverse. The land was the traditional home of the Gia People and Juru People. The coastline and islands are sprinkled with pristine sandy beaches which are one of the major natural drawcards for visitors. The natural landscapes offer diverse rainforests and large tracts of national parkland. The beautiful tropical coastline is protected and rejuvenated by extensive mangrove forests and river deltas. Whitsunday is right in the heart of the Great Barrier Reef, where fringing reefs adjoin the region's 74 islands. These features provide a range of ecosystem services critical to the region's economy, social well-being and ecosystems.

2.2 Social Features

There were approximately 33,778 permanent residents recorded living in the Whitsunday region in 2016 (ABS 2016). A strong local economy and relative favourable climatic conditions (Bell and Moran 2016) are expected to drive an increase in population going forward with an annual rate of 2.3% projected for the next twenty years. Socio-economic indicators show that the Whitsunday region's is relatively advantaged compared to the State average, which is likely driven by the superior economic resources maintained by the Whitsunday population (in contrast to the State).

In June 2018, regional unemployment in the Whitsunday region was estimated to be 3.4%. This is a significant improvement from the 2015 'unemployment crisis' when a reduction in mining operations in the west of the region drove unemployment beyond 10% (WRC 2016).

2.3 Economic Drivers

The Whitsunday region boast a strong and diverse economy which is supported by 15,805 jobs and a total of economic output of \$5.6 billion per year (REMPPLAN 2020). The Whitsunday regional economy is driven by three pillar industries - mining, tourism and agriculture.

Mining

The mining sector is the biggest contributor to the Whitsunday region's economy, worth \$996.3 million or 17.9% of the region's total industry output (REMPPLAN 2020). With mining generating approximately \$926.6 million in regional exports, it is the Whitsunday's largest exporter and will continue to be a significant economic contributor going forward.

Tourism

Tourism industry supports around 3,284 jobs which makes it Whitsunday's biggest employer, representing 20.8% of total employment (REMPPLAN 2020). Many of these jobs (79%) are from the Accommodation and Food Services which are supported by tourist expenditure. This presents opportunities to build on the region's rich indigenous and European history, food tourism and nature-based experiences.

Agriculture

The Agriculture, Forestry & Fishing industry is the second largest contributor to the region's economic output, generating 1,646 jobs and \$599.4 million per year (REMPPLAN 2020). In 2017-18, the wider Mackay Isaac Whitsunday Region contributed over \$1.1 billion in gross value to Queensland's agriculture production, which equates to 8.5% of the State (ABS 2019). Areas of the Whitsunday region also have a well-established horticulture industry that supports 13 major crop varieties. With around 22,000 hectares of cane-growing land currently under cultivation in Proserpine, there is also opportunity for region's sugar industry to grow.

2.4 Vulnerability and Resilience

Vulnerability is how susceptible exposed elements, such as people and assets, are to suffer adverse effects when impacted by a hazard. The concept of vulnerability is closely linked with resilience.

Building resilience involves maximising the capacity of systems to adapt to stressors (i.e. climate change) in a way which maintains their purpose and function. For Whitsunday to build a resilient coastal region, this project first explored characteristics of the region's ecosystems and the socio-economy which may influence their capacity to absorb and recover from coastal hazard impacts.

An economist conducted a vulnerability assessment to identify the social and economic susceptibilities of the eight coastal communities. Bowen and Conway Beach were identified as areas with high socio-economic vulnerability. The assessment also identified five key drivers of regional vulnerability:

1. Resource vulnerability
2. Financial sustainability
3. Access to affordable insurance
4. Council leadership
5. Climate change governance

3 Coastal Hazards

3.1 Hazards

Coastal hazards include erosion of the coastal foreshore and storm tide inundation of low-lying coastal land. However, these naturally occurring processes are considered coastal hazards because they have the potential to negatively impact communities, development and natural assets along the coastline.

The Whitsunday region also experiences impacts from sea level rise and Tropical Cyclones which are drivers associated with coastal hazards and therefore have the potential to exacerbate coastal erosion and storm tide inundation.

3.2 Coastal Erosion

Coastal erosion is the removal of beach and dune material which results in a loss of land along the coastline. This process occurs naturally and is typically driven by strong winds, changing wave conditions, high tides and severe storms (DILGP 2017).

Short-term erosion is a temporary cycle where beaches move naturally over periods of decades without causing a permanent change in the position of the shoreline. Through periods of short-term erosion, the coastline shifts backwards and forwards over many years. However, this erosion is not permanent, and the coastline, beaches and dunes can rebuild over time.

Furthermore, climate change is predicted to worsen coastal erosion. Sea level rise will speed up the process as waves reach higher up on the beach and cause permanent inundation of low-lying areas. This is likely to result in coastal recession which is the landward movement of the coastline over a longer period of time.

With a history coastal erosion events in the Whitsunday region, both short-term erosion and coastal recession may impact on Whitsunday's coastal assets, depending on their proximity to the shoreline.

3.3 Storm Tide Inundation

Storm tide inundation is the temporary flooding of coastal land by unusually high sea levels. A storm tide occurs when a storm surge, a normal tide and wave action are combined to elevate the water levels well above normal tidal levels (DILGP 2017). The worst inundation impacts are likely to occur when the storm surge coincides with a high tide or king tide. This interaction creates a compounding effect which can lead to increased severity of a storm tide inundation. Storm tides are a prominent occurrence in the Whitsunday region during severe storm events and Tropical Cyclones.

3.4 Coastal Hazard Mapping

Updated Mapping

Part of the 'Resilient Whitsunday' project included an update to Whitsunday Regional Council's coastal hazard mapping. Engineering consultants were tasked with producing coastal erosion mapping and storm tide inundation modelling of the entire Whitsunday coastline. These mapping updates included:

- New mapping of coastal erosion prone area for the entire coastline¹
- New mapping of permanent inundation due to sea level rise for the entire coastline²
- Updated mapping of storm tide inundation for Bowen³
- Updated mapping of storm tide inundation for the Town of Whitsunday⁴

¹ Whitsunday Regional Council Hazard Mapping Refinement (BMT WBM 2018)

² Ibid.

³ Bowen Water Hazards Assessment Stage 1: Storm Tide Modelling Basis Report (BMT WBM 2018)

⁴ Town of Whitsunday Drainage Study (BMT WBM 2017)

In accordance with Queensland Government requirements, a sea level rise of 0.4m by 2050 and 0.8m by 2100 has been adopted for the Whitsunday Resilient Strategy.

Planning Horizons

Planning horizons were considered in the creation of coastal hazard maps to ensure that the adaptation options undertaken by council encompass short, medium, and long-term actions. The mapping for coastal erosion and storm tide inundation includes three planning horizons: current day, 2050 and 2100 (see Table 1). Two sea level rise allowance were adopted for future planning horizons, including 0.4m of sea level rise for 2050 and 0.8m for 2100, relative to present-day mean sea level (BMT WBM 2018). Storm tide inundation was also mapped using three levels of probability called Annual Exceedance Probability (AEP), which represent different chances of inundation occurring. For each planning horizon, maps were generated for 1% AEP, 0.5% AEP and 0.2% AEP storm tide inundation events.

Table 1: Coastal hazard maps

Coastal Hazard	Planning Horizon	Sea Level Rise Allowance	AEP Scenarios
Coastal Erosion	Current Day	-	-
	2050	0.4 m	-
	2100	0.8 m	-
Sea Level Rise Inundation	2050	0.4 m	-
	2100	0.8 m	-
Storm Tide Inundation	Current Day	-	1%, 0.5%, 0.2%
	2050	0.4 m	1%, 0.5%, 0.2%
	2100	0.8 m	1%, 0.5%, 0.2%

These coastal maps illustrate the areas that may be exposed to coastal erosion and storm tide inundation under current and future planning horizons. This does not mean that the land inside the exposure are will be lost, rather that the assets and people within these areas are likely to be impacted by coastal hazards. For more information on the mapping approached used, see the technical reports developed in Phase 3.

4 Assets Exposed to Coastal Hazards

4.1 Total Exposure

The spatial mapping indicates that Whitsunday's coastal communities are expected to experience increased exposure to coastal erosion and storm tide inundation by 2050. These communities will likely see double the area exposed to coastal erosion by 2050, which will reach 1.9 km² by 2100 (see Table 2). At present, around 10km² of land is at risk of exposure to a 1 in 100 year storm inundation (1% AEP) event. Under this scenario, there is a 58% increase in the total area exposed to storm tide inundation by 2100. For more severe storm tide inundation events, up to 21 km² of land is predicted to be exposed for the 2100 planning horizon. Additional information on exposure is provided in the summary report produced in Phase 4.

Table 2: Total area exposed to coastal hazards for all coastal communities (each planning horizon)

Coastal Hazard	Current Day	2050 Planning Horizon	2100 Planning Horizon
Coastal Erosion	0.7 km ²	1.4 km ²	1.9 km ²
1% AEP Storm Tide Inundation	10 km ²	13 km ²	16 km ²
0.5% AEP Storm Tide Inundation	11 km ²	14 km ²	17 km ²
0.2% AEP Storm Tide Inundation	13 km ²	17 km ²	21 km ²

4.2 Assets Exposed to Coastal Erosion

Coastal erosion is likely to have the greatest impact on sandy beaches and buildings situated along the shoreline. All coastal communities will experience increases in the number of building exposed to future coastal erosion, with Bowen showing the highest risk (see Figure 2). In Bowen it is estimated that 38 buildings will be exposed in 2050, which more than doubles by 2100 to 93 buildings.

By 2100, there will be approximately 0.448 km² of council parks exposed to coastal erosion, which is equivalent to the area of 25 sporting ovals. There are also over 190 km of roads and around 222 km of both sewer and water mains at risk of coastal erosion by 2100. Sandy beaches are the most at risk from future coastal erosion, with over 66% of beaches exposed in 2050 and 2100.

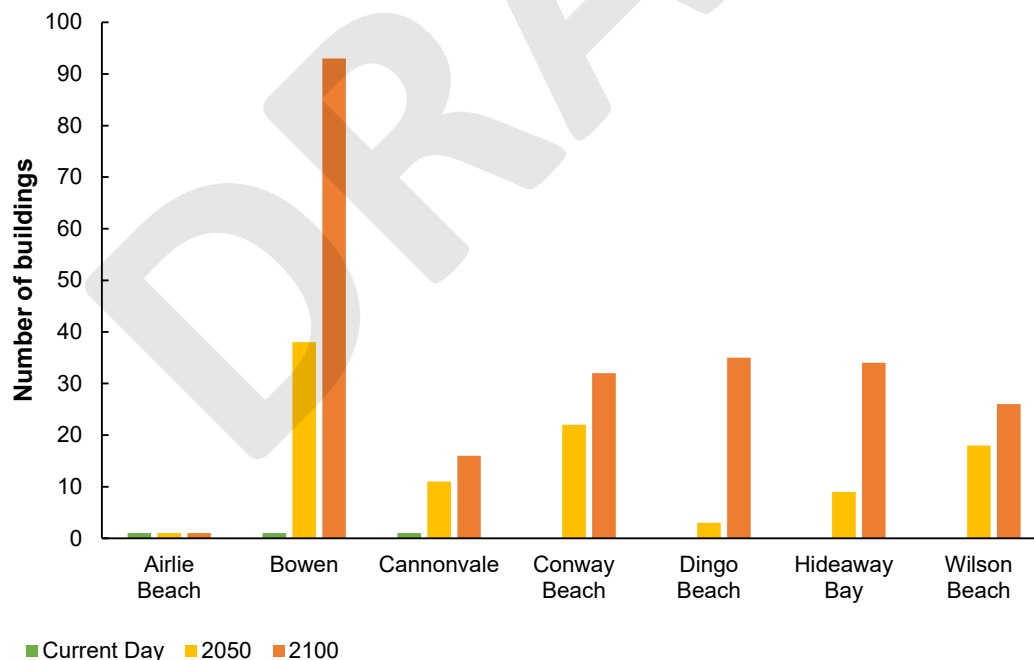


Figure 2: Number of buildings exposed to coastal erosion in each coastal community

4.3 Assets Exposed to Storm Tide Inundation

A storm tide inundation event is likely to have considerable impacts on property, infrastructure, social and environmental assets both now and in the future. Under a current day 1% AEP storm tide inundation event there are 44 buildings exposed with most of these properties located in Bowen (see Table 3). By 2050, coastal communities can expect around 224 buildings to be at risk of a 1 in 100 year storm tide inundation event. If this scenario were to occur in 2100, it is estimated that 583 buildings would be exposed, with around 80% originating in Bowen.

Table 3: Number of buildings exposed to a 1%AEP storm tide inundation event in each coastal community

Interest Area	Number of buildings		
	Current Day	2050	2100
Airlie Beach	5	13	19
Bowen	34	172	466
Cannonvale	2	7	32
Dingo Beach	-	-	17
Hydeaway Bay	1	2	3
Shute Harbour	-	1	1
Wilson Beach	2	29	45
Total	44	224	583

Over half of the council parks are at risk of storm tide inundation by 2100, which is a 63% increase from current day exposure and equates to the area of 71 sporting ovals. At least 2.9 km of sandy beach is exposed to both current and future storm tide inundation. In 2018, there are 13 km of infrastructure potentially impacted by a 1% AEP storm tide inundation event. This increases 7-fold by 2100 with over 90 km of infrastructure exposed (see Figure 3). By 2100, there could potentially be 25 km of roads, 33 km of sewer mains, 23 km of water mains, and 9 km of stormwater exposed to storm tide inundation across all coastal communities.

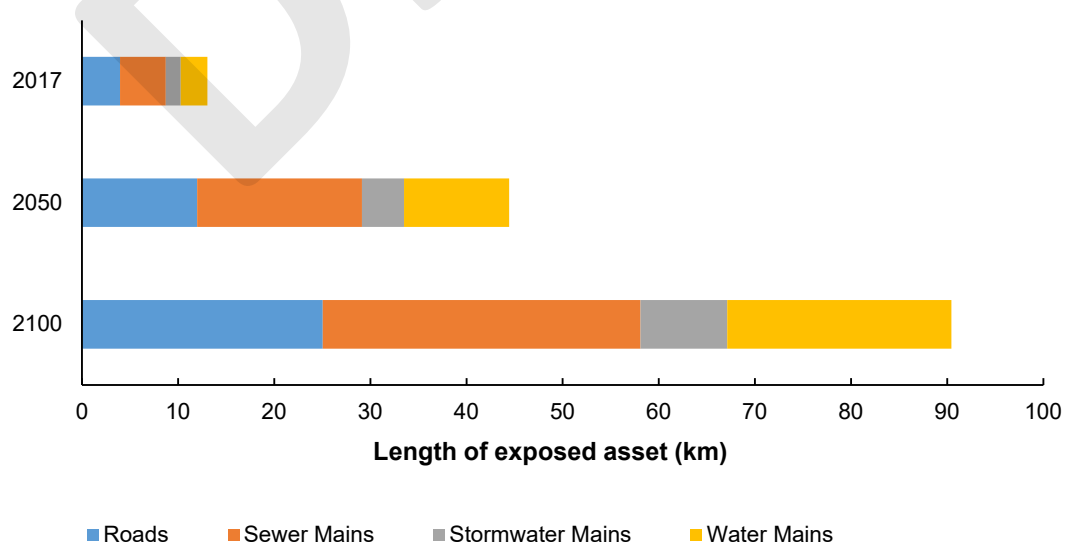


Figure 3: Length of assets exposed to storm tide inundation for each scenario (by asset subclass)

4.4 Economic Cost of Exposure

During this project, economic values sourced from Council's financial databases were assigned to a range of assets, including property, transport, water, sewer and social assets. The results show the present value of assets exposed, which represents the current cost required to replace the assets.

For each coastal hazard, the economic cost of assets exposed is estimated to increase substantially in the future, under both the 2050 and 2100 planning horizons (see Figure 4). The replacement cost of assets exposed to coastal erosion is likely to rise by \$123 million dollars from current day to reach over \$126 million dollars in 2100.

For Whitsunday coastal communities, the present value of assets exposed to a current day 1% AEP storm tide inundation event is estimated to be \$14 million. In the absence of adaptation, this is predicted to increase to \$89 million dollars by 2050, and over \$188 million dollars by 2100. These economic costs are likely to be higher for more intense storm tide inundation events (i.e. 0.5% and 0.2% AEP).

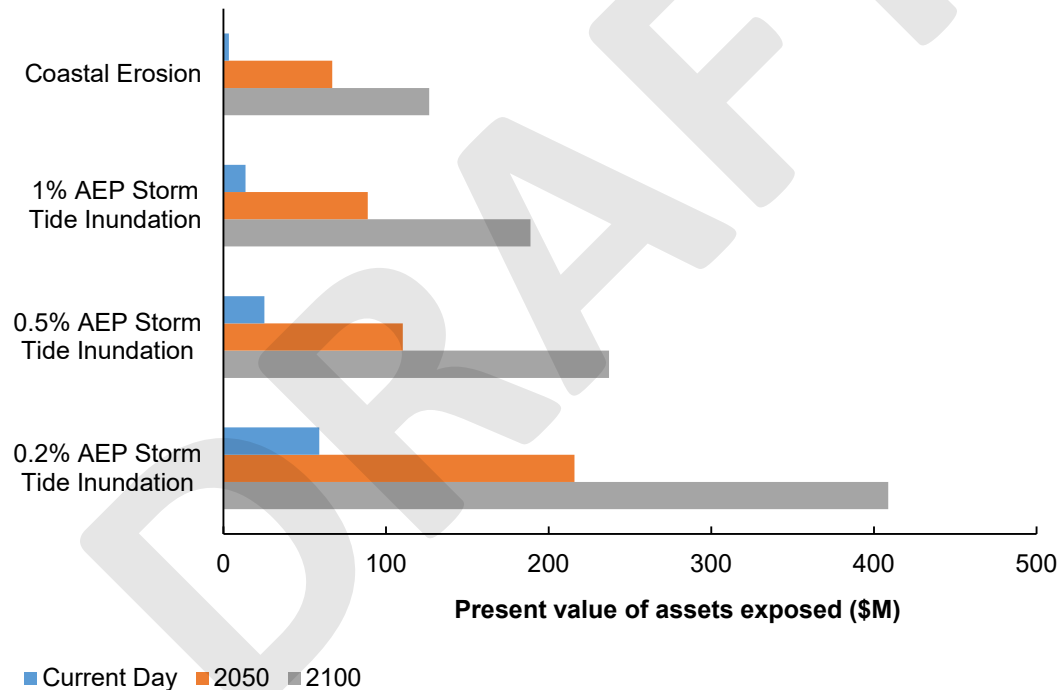


Figure 4: Present value of assets exposed to coastal erosion and storm tide inundation (across planning horizons)

Bowen is the coastal community with the highest economic risk to future coastal hazards (see Table 4). If a 1% AEP storm tide inundation event were to occur in 2100, 66% of the economic costs would originate from Bowen, making it the largest contributor to economic exposure compared with the other coastal communities (see Figure 5). In 2100, it is estimated to cost \$51 million dollars to replace the assets exposed to coastal erosion and a further \$117 million dollars from a 1 in 100 year storm tide inundation event (1% AEP).

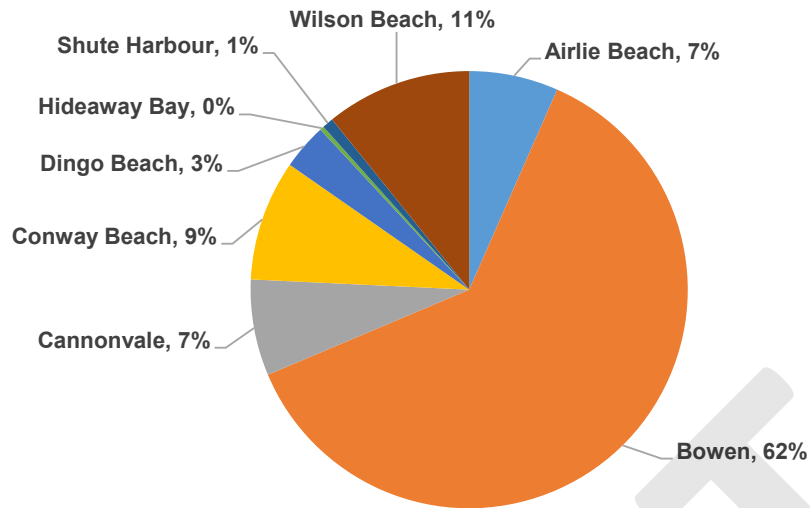


Figure 5: Percentage of economic costs to each coastal community from a 1% AEP storm tide inundation event in 2100

In Wilson Beach, it is likely to cost over \$20 million dollars for assets exposed to a 1% AEP storm tide inundation event. Although, with few permanent residents this may present as an economic challenge for a small coastal town.

Table 4: Present value of assets exposed to coastal erosion and storm tide inundation in 2100 (each coastal community)

Coastal community	Present value of assets exposed (\$M)			
	Coastal erosion	1% AEP storm tide inundation	0.5% AEP storm tide inundation	0.2% AEP storm tide inundation
Airlie Beach	0.9	12.4	13.7	15.1
Bowen	50.9	117.1	158.3	318.0
Cannonvale	6.5	13.4	18.2	23.4
Conway Beach	24.4	16.8	16.9	17.0
Dingo Beach	19.3	6.4	8.4	12.5
Hydeaway Bay	11.1	0.6	0.7	1.0
Shute Harbour	-	1.6	0.0	0.0
Wilson Beach	13.4	20.4	21.0	21.8
Total	126.5	188.8	237.2	408.8

Environmental assets

The 'Resilient Whitsunday' project also estimated the economic loss that ecosystem services in Whitsunday's coastal communities would experience from coastal hazards. It focussed on four key environmental assets, these included: coastal forests, mangroves/saltmarshes, reefs/shoals and seagrass, and sandy beaches.

The environmental assets at greatest risk of coastal hazards are sandy beaches. For Whitsunday's coastal communities, the loss of sandy beaches to coastal erosion is estimated to cost around \$65

million dollars in 2100. The expected losses of sandy beaches to a 1 % AEP storm tide inundation event is estimated to exceed \$30 million dollars in 2100.

Sandy beaches affect three key stakeholder groups in the Whitsunday region, including:

- **Tourism businesses:** Tourism businesses rely on the regions unique and pristine environment as the primary tourist attraction to the region. Degradation of sandy beaches assets is likely to reduce tourist satisfaction which may result in less repeat visitation, reduced numbers of tourists visiting the region, and/or tourists staying for shorter periods of time (Stoeckl 2014). These risks are very important for the broader Whitsunday economy.
- **Local residents:** Local residents receive significant enjoyment from ecosystem-based recreation activities (such as fishing, diving and walking) as well as the visual aesthetic provided by these assets.
- **Whitsunday Regional Council:** Council currently maintain and remediate sandy beach areas in some key locations (e.g. Airlie Beach). If these responsibilities are to continue, then damage to these assets represents a substantial cost impost.

5 Assessing Risks to Assets

5.1 Approach

An important part of the 'Resilient Whitsunday' project was to identify key assets exposed to coastal erosion and storm tide inundation and estimate the level of risk posed by these coastal hazards. A risk assessment was conducted using information about an assets' exposure (consequence) combined with the probability of a hazard event occurring (likelihood) to determine the risk level to each asset. The risk assessment included an analysis of:

- Council-owned infrastructure assets (buildings, roads, water, sewer)
- Council-owned buildings and open space assets (buildings, coastal structures, open spaces)
- Building footprints (residential, community and industry buildings) created through spatial mapping
- Cultural sites and heritage places
- Environmental and ecosystem assets

The process aligned with the Australian standard for risk management AS/NZS ISO 31000:2009. The risk assessment followed three steps:

1. **Assess likelihood of occurrence:** The probability of each coastal erosion and storm tide inundation scenario occurring was determined (see Table 5). Five likelihood levels (consistent with the Australian standard) were considered. These include almost certain, likely, possible, unlikely, and rare.

Table 5: Risk likelihood rating for each coastal hazard scenario

Hazard Category	Planning Horizon	AEP (%)	Likelihood
Coastal Erosion	Current day	-	Almost certain

Hazard Category	Planning Horizon	AEP (%)	Likelihood
Storm Tide Inundation	2050	-	Possible
	2100	-	Unlikely
	Current day	1%	Unlikely
	2050	1%	Unlikely
	2100	1%	Unlikely
	Current day	0.5%	Unlikely
	2050	0.5%	Unlikely
	2100	0.5%	Unlikely
	Current day	0.2%	Rare
	2050	0.2%	Rare
	2100	0.2%	Rare

2. **Assess level of consequence for assets:** The anticipated impact on each asset was identified based on the severity of exposure. To achieve this, two consequence matrices (for erosion and inundation) were developed based on workshops with department stakeholders to identify key asset groups (i.e. property, transport, sewer, water, social, cultural and environment). Five levels of consequence were adopted including insignificant, minor, moderate, major and catastrophic.
3. **Assign the level of risk:** the risk to each asset (for erosion and inundation) was calculated using a risk matrix which combined the likelihood and consequence levels (see **Error! Reference source not found.**). The matrix includes four risk levels: low, medium, high and extreme.

Table 6: Risk matrix

		CONSEQUENCE				
		Insignificant	Minor	Moderate	Major	Catastrophic
LIKELIHOOD	Almost Certain	Low	Medium	High	Extreme	Extreme
	Likely	Low	Medium	High	Extreme	Extreme
	Possible	Low	Medium	High	High	Extreme
	Unlikely	Low	Medium	Medium	High	Extreme
	Remote	Low	Low	Medium	Medium	High

5.2 Summary of Risks to Assets

The Project Team assessed a total of 3,472 risks to assets exposed to coastal hazards in the identified areas of interests. Since a plethora of information was obtained from the analysis, not all the results can be presented in this report. This section provides a collective summary of the

number of asset subclasses assigned to each risk level for a current day event and 2100 planning horizon.

The hazard identified with the greatest risk was sea level rise inundation in 2100, with 20 assets receiving an 'extreme' level of risk (see Figure 6). There were also three asset subclasses which recorded an 'extreme' risk for a current day coastal erosion event. For a current day event, there are 12 assets with a 'high' risk for coastal erosion and 16 assets which received a 'high' level of risk under the 0.2% AEP storm tide inundation event (see Table 7). However, there are numerous assets which received a 'high' risk level for all coastal hazards under a 2100 planning horizon. In particular, there were 51 asset subclasses with a 'high' risk for the 1% AEP storm tide inundation scenario. This is of importance because these 'high' risk assets are considered to have a 'tolerable' risk which means they still require immediate to short-term action to reduce the risk to acceptable levels. Site specific risk summaries are presented in Section 7.

Table 7: Number of asset subclasses assigned to each risk level for coastal hazards under a current day event

Hazard Type	Number of asset subclasses assigned to each risk level				
	None	Low	Medium	High	Extreme
Coastal erosion in 2018	195		38	12	3
1% AEP storm tide inundation in 2017	149	82		17	
0.5% AEP storm tide inundation in 2017	145	81		22	
0.2% AEP storm tide inundation in 2017	142	77	16	13	

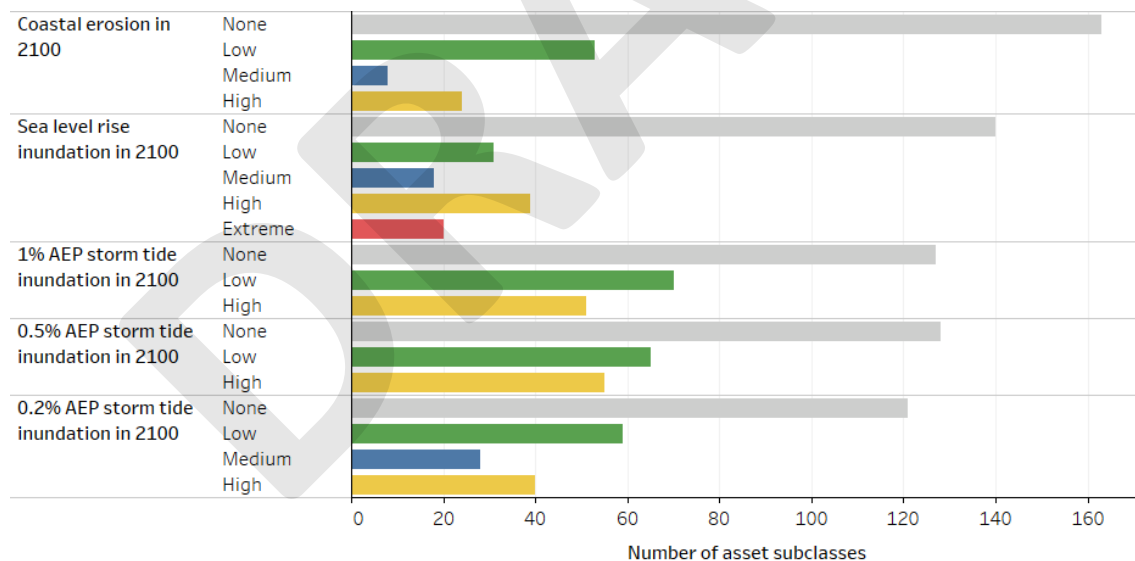


Figure 6: Number of asset subclasses assigned to each risk level for coastal hazards under a 2100 planning horizon

6 Approach to Adaptation

Adaptation response

MONITOR

At localities where the coastal hazard risk profile is low (according to the Strategic Plan), the adaptation response is to monitor risk and undertake existing maintenance/asset management activities. If, over time, the risk profile is observed to increase (as indicated by local trigger levels), then the adaptation response may shift to mitigate.

MITIGATE

At localities where coastal hazard risks have been identified the adaptation response is to actively mitigate the risk through implementing a range of adaptation options. Mitigation will be tailored to each locality, incorporating site-specific processes, community input, and statutory planning considerations. If, over time, the risk profile is observed to increase (as indicated by local trigger levels), and mitigation becomes infeasible (due to economic or other factors), then the adaptation response may shift to transition.

TRANSITION

In some specific areas within a locality, if the coastal hazard risk profile is very high (according to the Strategic Plan), and mitigation becomes infeasible (due to economic or other factors), a strategic decision may be made to transition to an alternative land use. Transition is likely to be a gradual process over time, where mitigating hazards for a period is part of the transition process.

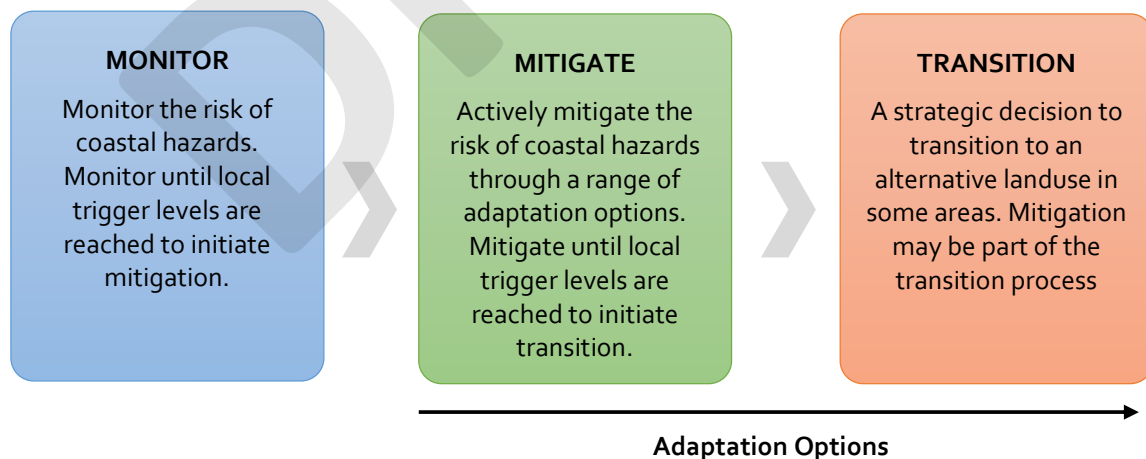


Figure 7 Adaptation response for Council owned land and assets

6.1 Regenerative Options

Regenerative adaptation options are solutions which aim to mimic natural processes and are typically designed to “either improve or create existing coastal ecosystems and landforms [which] reduce the risk of coastal hazards” (Griffith University Centre for Coastal Management and GHD 2012). The regenerative options reviewed include beach nourishment, dune construction and regeneration, riparian corridors restoration and generation, and mangrove forests.

6.1.1 Beach Nourishment

Beach nourishment is primarily used as a soft engineering approach in response to coastal erosion, which involves the artificial addition of sand to a beach system that has a sediment deficit (Zhu, Linham and Nicholls 2010). This nourishment of a beach helps to dissipate wave energy, and when combined with dune regeneration, can provide protection from coastal recession and inundation from storm surges.

Beach nourishment not only maintains the natural values and aesthetics of the beach and coastline (Griffith University Centre for Coastal Management and GHD 2012) but also provides ecological benefits such as restoring dune habitat, and creating nesting sites and spawning areas. For example, the Ocean City Beach replenishment project (see Figure 8 and Figure 4) was initiated in 1988 to prevent further erosion to the beaches, and required periodic replenishment of beach sand every three years to maintain a stable beach profile (Van Ryswick 2016).

Beach nourishment is expensive and must be repeated periodically to maintain an adequate sand profile. The current cost of beach nourishment is estimated to be between \$55 - \$80 per cubic metre. These values were supplied by WRC who estimate it to cost \$55 per cubic metre for Bowen and \$80 per cubic metre for Airlie Beach for sourcing of sand from Don River, as well as delivery, spreading, and sand pushing and scraping.

Depositing sand onto beaches can also cause a range of adverse environmental impacts including burial of animals and organisms, increase in water turbidity, altered sediment compositions, and disruption of beach and ocean habitats (Dean 2002).



Figure 8: Ocean City Beach after storm in 1988



Figure 9: Ocean City Beach after replenishment project

6.1.2 Dune Construction and Regeneration

Sand dunes are a naturally formed vegetation barrier which store sand deposits and provide stability to the shoreline (CRD n.d.). Dune construction is when engineering solutions are used to create artificial dunes which mimic the functioning of a natural dune system (Griffith University Centre for Coastal Management and GHD 2012). Dune regeneration is the restoration of natural dunes to improve their overall ecosystem function (Zhu, Linham and Nicholls 2010), whilst also reducing the risk to coastal erosion and storm tide inundation.

The regeneration of sand dunes provides a range of coastal protection benefits including increased stability of dunes, habitat for specialised plants and animals, shade for beach users, and wildlife corridors (NCCARF 2016). For example, in Cronulla New South Wales, high foot traffic and damaged dune vegetation had resulted in areas of exposed, unconsolidated sands which were highly vulnerable to coastal erosion (see Figures 5 and 6). In 2015, regeneration works were commenced to restore the affected sand dunes which included installing new barricade fencing and wind barriers as well as revegetating the bare dunes with salt tolerant plants (Southern Habitat 2015).



Figure 10: Cronulla sand dunes before dune rehabilitation in 2014 (Southern Habitat 2015)



Figure 11: Cronulla sand dunes after dune rehabilitation in 2015 (Southern Habitat 2015)

The current costs for dune stabilisation can range from \$5,800-\$23,200 per hectare (Zhu, Linham and Nicholls 2010). This includes the depositing sediment onshore, shaping of sand using bulldozer, dune grass planting and fencing. In 2012, the dune restoration of Merimbula Beach cost a total of \$40,833 including a project officer (Office of Environment and Heritage 2012).

Since sand dunes also pose a barrier to beach access, reconstruction of dunes may receive opposition from developers or the local community (Zhu, Linham and Nicholls 2010). In some cases, it may be unfeasible to restrict public access to areas of a beach which are frequently used for tourism and recreation.

6.1.3 Riparian Corridors Restoration and Generation

Riparian corridors are vegetated zones which run alongside wetlands, rivers, estuaries and waterways (Land for Wildlife 2011). These systems are typically “comprised of vegetation (trees, shrubs, grasses and herbs), soils and topography” which regulates ecological processes and supports diverse biological communities (Beesley, et al. 2017). Restoration and generation projects reinforce the healthy functioning of riparian zones, allowing them to provide protection against rising sea levels and storm tide inundation (Zhu, Linham and Nicholls 2010).

Riparian corridors deliver a wide range of ecological and societal services including absorbing incoming storm energy and high river flows, providing recreational opportunities, and encouraging relaxation and connection with nature (Zhu, Linham and Nicholls 2010). For example, a large-scale restoration project was commenced in 2015 to protect, enhance and expand riparian vegetation along a section of the Maroochy River catchment (Sunshine Coast Council 2019). Over a four-year period, approximately 4.2 ha of land was restored with 11,000 native plants, and 9 ha rehabilitated through weed control and assisted regeneration techniques (see Figures 7 and 8).

Riparian corridor regeneration is generally expensive, and the costs can vary depending on the extent and characteristics of vegetation to be restored (Griffith University Centre for Coastal Management and GHD 2012). For this reason, community involvement is usually employed to reduce costs. The success of revegetation is also dependent on careful planning to avoid inappropriate selection of plant species and problems with stream stability (Land for Wildlife 2011).



Figure 12: Mary River Project before planting in 2016



Figure 13: Mary River Project 2 years after planting in 2018

6.1.4 Mangrove Forests

Mangrove forests are increasingly being used as a natural coastal defence system to protect shorelines from coastal hazards (Spalding, et al. 2014). These natural systems bind and build up soils to help prevent coastal erosion, reduce wave damage from storm surges, and can contribute to sustaining land as sea levels rise.

A key benefit of mangroves forests over hard engineering structures is that they can adapt to changes in climate and self-repair after a coastal erosion or storm tide inundation event (Morris, et al. 2018). Mangroves also provide valuable resources (e.g. fish, timber) which can improve social resilience by helping communities recover after a natural disaster.

For example, University of Melbourne scientists are trialing mangrove forests as natural coastal defence structures to protect the shoreline of Port Phillip Bay. The project will use a 'hybrid' approach which "involves planting the mangroves within concrete cultivars that attenuate waves, accrete sediment and provide the right conditions for the forests to grow" (Morris, et al. 2018) (see Figure 14). Scientists believe these mangrove forests will reduce wave height and energy by trapping sediment and increasing the elevation of the land relative to sea level (Morris, et al. 2018).



Figure 14: Mangroves planted within concrete cultivars (Morris, et al.

Restoration of large areas of mangrove forest can be an expensive solution, with current costs calculated to be approximately US\$6,200 (AU\$9,000) per hectare (Tran and Tinh 2013). This was source from the Thi Nai Lagoon project which cost US\$850,000⁵ to restore 150 ha of mangrove forest. Natural coastal defence systems also require ongoing protection and management, and without appropriate planning, mangrove forests may not achieve the desired level of protection for the coastline (Morris, et al. 2018).

6.2 Coastal Engineering Options

Coastal engineering adaptation options are hard engineering solutions which are constructed with the primary purpose of protecting the shoreline from coastal erosion and storm tide inundation (Griffith University Centre for Coastal Management and GHD 2012). Coastal engineering options reviewed include artificial reefs, detached breakwaters, groynes and artificial headlands, sea dykes or levees and seawalls.

6.2.1 Artificial Reefs

Artificial reefs are submerged structures designed to reduce the force of breaking waves and dissipate the energy which hits the beach (Cummings et al. 2012). They are typically constructed with either sand filled geotextile bags or rock/concrete blocks which are transported offshore and dropped at pre-determined locations based on design requirements (Griffith University Centre for Coastal Management and GHD 2012). A well-engineered artificial reef can protect the shoreline from coastal erosion, wave action and storm surges, whilst also promoting the growth of marine organism on reef structures.

⁵ labour costs are likely to be higher in Australia

Artificial reefs also provide recreational benefits through the improvement in surfing conditions, and creation of diving and snorkelling opportunities (Griffith University Centre for Coastal Management and GHD 2012). For example, in the 1999 an artificial reef was constructed off the coast of Narrowneck to protect the Gold Coast shoreline from coastal erosion (see Figure 15). The positioning of 400 prefabricated geotextile bags into a split-V pattern has successfully reduced the velocity of incoming waves and now accommodates a great abundance and diversity of marine species (Gold Coast City Council 1999).



Figure 15: Aerial view of Narrowneck artificial reef (Gold Coast City Council 1999)

The design and construction costs of building an artificial reef can vary considerably depending on the size and shape of the structure (Griffith University Centre for Coastal Management and GHD 2012). The Narrowneck artificial reef cost approximately \$2.5 million in 2000 (Gold Coast City Council 1999), however City of the Gold Coast is currently constructing an artificial reef in Palm Beach, Gold Coast, which is estimated to cost \$18.2 million (City of Gold Coast 2019).

Furthermore, a poorly managed artificial reef can cause damage to natural habitats through increase visitation presence, overexploitation of the reef resources or introduction of invasive species (Fabi, et al. 2015). Artificial reefs will require management costs to regulate such potential adverse impacts.

6.2.2 Detached Breakwaters

Breakwaters are hard coastal structures which protect the shoreline from extreme wave energy and minimise coastal erosion by modifying wave transmission to the beach (Cummins, et al. 2012). Detached breakwaters are sloping walls which are constructed from rocks or concrete units and detached from the coast, forming an offshore structure (Webb 2016).

Detached breakwater can benefit a coastline by maximising sediment transport patterns and maintaining coastal stability. Innovative ecological designs can also be incorporated into these hard engineering structures to improve the functioning of coastal ecosystems and increase the diversity of aquatic habitats (New York State 2016). For example, living breakwaters were constructed off the coast of Staten Island in New York City using bio-enhancing concrete, a geotextile seabed, reef streets, reef ridges and oyster shell gabions (see Figure 16).



Figure 16: Bio-enhancing concrete used to grow ecological resilience (New York State 2016)

Although breakwaters require low maintenance, their construction costs are high with the current price estimated between EUR\$11,000 and EUR\$58,000 per linear metre or around AU\$19,000 - \$94,000 per linear metre (Climate-ADAPT 2015b). This is consistent with the Living Breakwaters project which cost around US\$60 million (AU\$86 million) to construct (New York State 2016).

The primary adverse impact of detached breakwaters is that they reduce the longshore transport of sand which has the potential to cause or significantly increase erosion on neighbouring stretches of beach (Griffith University Centre for Coastal Management and GHD 2012). Additionally, breakwaters may have a negative impact on the coastal landscape when they are designed to protrude above the sea level (NCCARF 2016).

6.2.3 Groynes and Artificial Headlands

A groyne or artificial headland is a coastal protection structure that is built perpendicular to the shoreline and extends from the shore, over the beach and into the ocean (Climate-ADAPT 2015a). Groynes are designed to trap sand moving along the coast which makes them effective in controlling coastal erosion and longshore drift (Zhu, Linham and Nicholls 2010).

Their function increases the amount of sand on to the updrift side of the groyne which helps stabilise beaches, provides public space for recreation and fishing, and improves resilience of a beach against a coastal erosion event (Griffith University Centre for Coastal Management and GHD 2012). For example, in 2018 the City of Greater Geraldton constructed two low-crest 40m long groynes on the Drummond Cove Foreshore to reduce the impacts of coastal erosion (City of Greater Geraldton 2019) (see Figure 17). These geotextile groynes have been successful in retaining sand and reducing reliance on temporary sand nourishment operations (Everything Geraldton 2019).



Figure 17: Geotextile groyne on Drummond Cove foreshore (City of Greater Geraldton 2019)

A small geotextile groyne such as the ones built for the Drummond Cove Foreshore project are expected to cost around \$3,100 per linear metre (City of Greater Geraldton 2019). However, costs are highly influenced by the size of the groyne, the type and availability of material used and transport rates. Groynes constructed from rock are more expensive and can start from around EUR\$3,400 which is equivalent to AU\$5,600 per metre (Climate-ADAPT 2015b).

There are numerous side effects to constructing groynes including reduced aesthetics of the coastal landscape, altered surfing conditions, restricted access to walking along the beach, and changes to coastal ecosystems (NCCARF 2016).

6.2.4 Sea Dykes or Levee

A sea dyke is a coastal structure designed to “protect low-lying, coastal areas from inundation by the sea under extreme conditions” (Zhu, Linham and Nicholls 2010). A sea dyke consists of a sand core, a protective waterproof outer layer and a drainage channel (Page and Thorp 2010). Since sea dykes are primarily used to control extreme water levels associated with storm tides and sea level

risk, they do not preserve beaches from the effects of coastal erosion (Zhu, Linham and Nicholls 2010). Sea dykes may also be referred to as embankments, levees, floodbanks and stopbanks.

The main benefit of sea dykes is they are often the cheapest hard defence solution which means they can provide a high degree of protection in low-lying coastal areas when the value of coastal land is low (Griffith University Centre for Coastal Management and GHD 2012). For example, the Scheveningen Boulevard is a curved dike which has been integrated with the esplanade to form a wave design (see Figure 18), separating the various uses of public space and maximising public recreational opportunities in the coastal zone (de Solà-Morales 2012).

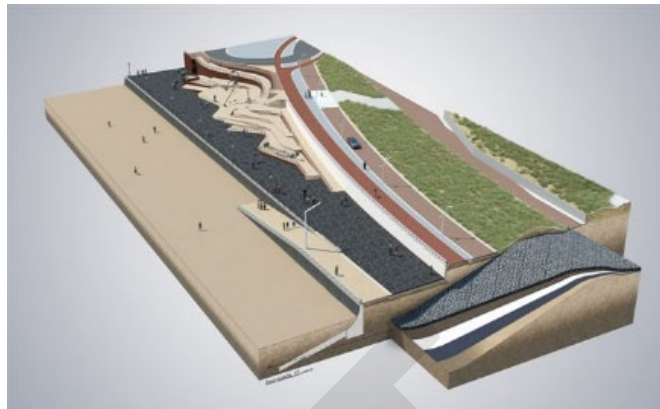


Figure 18: 3D model of dike redevelopment in The Hague (de Solà-Morales 2012)

Sea dykes can be expensive structures to construct with costs ranging between US\$1 and 7.6 million per kilometre (AU\$1.4 - \$10.9 million per kilometre) depending on type and size of infrastructure and global location (Linham and Nicholls n.d.). Since sea dykes are elevated structures, their presence may act as a visual barrier between the community and the shore, causing negative impacts on the social connectivity and access to the beach (SGS Economics and Planning 2011).

6.2.5 Seawalls

Seawalls are hard engineered structures constructed as a last line of defence against coastal erosion and to protect the foreshore against storm tide inundation (Cummings, et al. 2012). Although seawalls can take many different physical forms (i.e. vertical, sloping) and be constructed from a range of materials (i.e. rock, concrete) (Zhu, Linham and Nicholls 2010), they are all designed to be a strong and durable barrier that can withstand the erosive forces of the ocean (Cummings, et al. 2012). Seawalls may also be referred to as revetments, which can be constructed from either rock or geotextile materials.

The primary advantage of seawalls is that they prevent any further erosion of beaches and protect against damage to coastal infrastructure during extreme storm surge events (NCCARF 2016). A well-designed seawall can also have ecological benefits such as providing potential marine habitats and promoting colonisation of species on hard substrates. For example, in 2016 the Elliott Bay Seawall was restored using various ecological features such as cobbled surfaces, shelves and native riparian vegetation on the wall's surface (see Figure 19). It also integrated light penetrating surfaces and shallower water habitats to promote marine growth (Seattle Department of Transportation 2016).

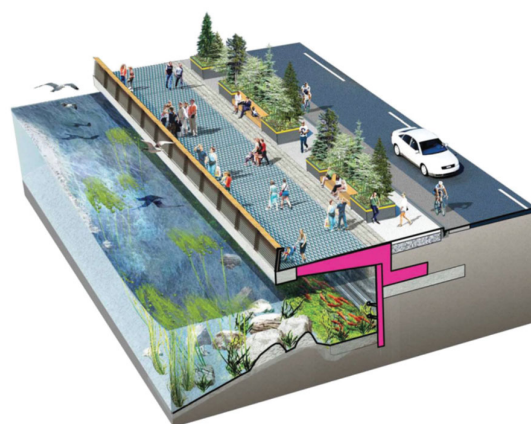


Figure 19: Illustration of the sea wall's ecological design (Seattle Department of Transportation 2016)

Construction of a sea wall is predicted to cost between \$2,500 - \$5,600 per linear metre. These values were supplied by WRC who calculated the cost of a 105m sea wall at Wilson Beach to cost \$600,000 and also priced the 85m seabee seawall on the Bowen Golf Course at \$330,000. They also noted that the Rose Bay sand bag sea wall cost about \$2,500 per linear metre.

A key negative impact of seawall construction is the displacement of sediment from beaches, which can potentially affect the local economy through reduced scenic amenity and a loss of tourism and recreational opportunities (NCCARF 2016).

6.3 Coastal Settlement Design Options

Coastal settlement design options are innovative and sustainable solutions which respond to coastal hazards and facilitate the integration of appropriate development ideas within the coastal environment (Norman 2014). Coastal settlement design options reviewed include climate resilient design, elevated buildings, and raise land levels.

6.3.1 Climate Resilient Design

Climate resilient design involves using retrofitting and design measures to “improve the resilience of current buildings or to apply new standards to future developments” (Griffith University Centre for Coastal Management and GHD 2012). It is a successful tool in adapting a range of impacts brought on by climate change and, in the coastal environment, is particularly useful in protecting against sea level rise, coastal erosion and storm tide inundation.

A major benefit of these design measures is that they seek to reduce the vulnerability of a home to coastal hazards, allowing residents to safely live in these communities despite the known risks.

The SURE HOUSE is a great example of sustainable design and technology that allows for the development of resilient homes in coastal areas that may be at risk due to rising sea levels and more damaging storms (see Figure 20). The features include roof integrated solar panels, a photovoltaic electric hot water system, triple-paned windows and a heat recovery ventilator (SURE HOUSE 2014). The SURE HOUSE also has marine design features such as durable plastic sheathing on the exterior walls and fibre-composite storm shutters which allow it to be more resilient against coastal inundation.

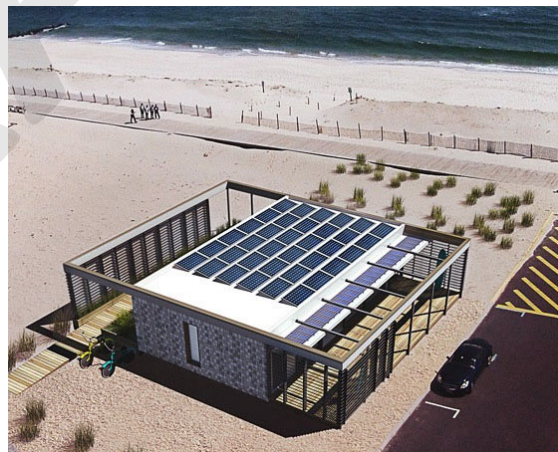


Figure 20: Aerial view of SURE HOUSE (SURE HOUSE 2014)

The estimated cost of climate resilient design is highly variable and depends on the type and size of infrastructure and the materials and design elements chosen. While a climate resilient design can improve the performance of a building, this comes with increased construction costs to meet design standards and adequately mitigate the future risk (Wang, et al. 2016). There are no known adverse impacts from adopting climate resilient design as an adaptation option.

6.3.2 Elevated Dwellings

Elevated dwellings are houses which have been raised so that the living space is located above the predicted height of inundation (Federal Emergency Management Agency 2014). Elevation involves raising the building onto walls, piles or stilts and can occur either during the initial construction phase or as a retrofitting method for an existing house. This adaptation option is suitable to accommodate for rising sea levels and inundation from storm tide events.

The key advantages of elevated dwellings are that they reduce the inundation risk to the property and its contents and therefore may also lower home insurance premiums (Federal Emergency Management Agency 2014). For example, the Brooke Peninsula Lowestoft project has transformed an existing marina site into a waterfront community which incorporates 850 private houses, which are elevated dwellings (Assael 2016). These houses are constructed on three-metre-high stilts above the ground and are designed to allow floodwaters to rise and fall underneath the houses whilst also providing a natural habitat for wildlife (see Figure 21).



Figure 21: Illustration of elevated dwellings in Brooke Peninsula Lowestoft project (Assael 2016)

The estimated costs are dependent on the size and design of the building; the type of engineering elements used to elevate the structure; and the extra construction required to ensure plumbing, electrical, and the energy systems align with building codes. Aside from the high construction costs, elevated dwellings may also limit access to the property or adversely affect the structure's appearance (Federal Emergency Management Agency 2014).

6.3.3 Raise Land Levels

Raising the level of low-lying land above a predicted inundation level can be an effective option to adapt to impacts caused by sea level rise and storm tide events (Zhu, Linham and Nicholls 2010). The purpose of raising land levels is to avoid inundation of new developed land or redevelopments within high coastal hazard areas.

An advantage of raising land level is that this response can be combined with other adaptation options such as beach nourishment to provide coastal defence benefits (Zhu, Linham and Nicholls 2010). The cost of raising land levels will depend on a range of factors including individual location, adaptation needs, and availability and cost of fill. However, it is estimated to cost between \$12 and \$35 per square metre to raise the land level by one metre (Griffith University Centre for Coastal Management and GHD 2012). There may be some cases where Council is able to source the fill material for free.

It should be noted that any raising of land may have adverse impacts. Depending on the design and the scale of the raised land levels, adverse impacts including displacement of inundation water into neighbouring properties.

6.4 Planning Options

Planning adaptation options are solutions which seek to control development and reduce the current urban footprint in high hazard risk areas (Griffith University Centre for Coastal Management and GHD 2012). Planning options reviewed include land use planning, development setbacks, limited development, redefining planning objectives (rezoning), land swap, land buy-back, land surrender, and compulsory land acquisition.

6.4.1 Development Setbacks

Development setbacks are defined as a prescribed distance to a coastal feature within which all or certain types of development are “restricted, prohibited or regulated by specific development controls” (Griffith University Centre for Coastal Management and GHD 2012). They provide protection against coastal erosion, sea level rise and storm tide inundation by restricting the placement of buildings, structures or uses within an area susceptible to these hazards (see Figure 22). A buffer can also be added to the development setbacks as an additional safety margin which allows for ongoing utilisation of the lot but reduces the chance of the hazard affecting the building.

Development setbacks are not only highly effective at minimising property damage, but they also help to maintain the shoreline access and protect the natural appearance of the coastline (Zhu, Linham and Nicholls 2010). By preventing development directly on the seafront, development setbacks serve to provide added public open space for recreation and tourism. For example, in Florida the construction of major structures is prohibited seaward of a 30-year erosion-based setback line (NOAA 2012). This development setback is determined by multiplying the average erosion rate by 30 and referencing the minimum setback distance from the seasonal high water line.

The expense of development setbacks is related to conducting a reliable technical study which is estimated to cost between \$58,000 and \$580,000, depending on data availability and length of the shoreline (Griffith University Centre for Coastal Management and GHD 2012). Additional costs may arise from any requirements to enforce existing policies within the developed areas.

A major disadvantage of development setbacks “is that they are vulnerable to a changing sea line and specifically sea level rise” (Risc-kit 2019). Over time, as the sea level increases the size of the buffer zone between buildings and the coastal hazard will reduce. As such “setbacks will need to be periodically reviewed to ensure that buffer zones continue to provide sufficient protection” (Climate Tech Wiki 2019). Council should also ensure that the provision of utilities and servicing to the site can still be maintained (e.g. sewerage systems).

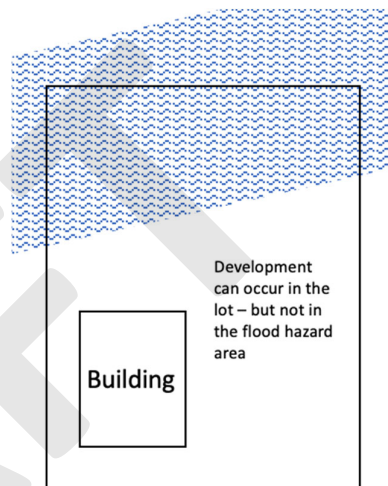


Figure 22: Diagram of development setback

6.4.2 Limited Development

Councils can adopt and use time and/or trigger limited development consent conditions to accommodate for coastal risks on future development. For example, section 65 of the *Planning Act 2016* states that “A development condition may (a) limit how long (i) a lawful use may continue; or (ii) works may remain in place” (The State of Queensland 2019). Time limited consents allow for

continued use of coastal areas “until such times as coastal risks threaten life and property” (Department of Planning 2010). Whereas trigger limited measures often use a trigger point (i.e. the erosion receding to a calculated distance from the property boundary) to prompt the review of a development (Department of Planning 2010).

Furthermore, Council can, in their planning scheme, specify a limited development zone which restricts the ability of at-risk land to be developed for urban purposes. This was a recommendation brought forward by the Queensland Floods Commission of Inquiry (2012) who suggested that “Councils should consider using the limited development (constrained land) zone in their planning schemes for areas that have a very high flood risk”. For example, Moreton Bay Regional Council has implemented a limited development zone code into their planning scheme which seeks to:

- a). “Identify land known to be affected by extremely unacceptable intolerable flood and/or storm tide risks which pose severe restrictions on the ability of land to be developed for urban purposes.
- b). Limit any further urban development and promote transition of existing uses away from the areas of extremely unacceptable intolerable risk.” (Moreton Bay Regional Council 2019)

6.4.3 Redefining Planning Objectives (Rezoning)

Rezoning is a process by which land or property is assigned a different category (zone) which changes the purpose and permitted uses of the property (Farlex 2019). Under the Queensland planning system, very little development is ‘prohibited’ which essentially enables a development application to be lodged for anything (Consult Planning 2017). Since there is no need to rezone land under this performance-based system, rezoning is not available in Queensland. This places the responsibility on local governments to ensure their planning schemes have clear policies to restrict or control inappropriate uses (Consult Planning 2017).

When making or amending a local planning instrument, local governments must redefine their planning objectives to ensure that a development approval can be refused in areas which are at risk from coastal hazards. Currently, local governments are required to appropriately integrate all relevant state interests in the *State Planning Policy* into their local planning instruments (The State of Queensland 2017). This includes the state interest of ‘natural hazards, risk and resilience’ which ensures that:

The risks associated with natural hazards, including the projected impacts of climate change, are avoided or mitigated to protect people and property and enhance the community’s resilience to natural hazards. (The State of Queensland 2017)

To achieve this, a local planning instrument should include clearly define planning objectives which control the extent or type of development in a coastal hazard area in a way which mitigates the risks to people and property.

6.4.4 Land Use Planning

Land use planning is a mechanism which allows local governments to prevent inappropriate development in areas vulnerable to coastal hazards (Norman and Gurran 2016). While some of the planning options, such as development setbacks, land swap, land buy-back etc, are effective for hazards that affect small-scale areas other visionary strategic planning may be warranted for larger communities. These land use planning measures generally involve zoning, building codes (i.e. minimum floor heights) and land use permits (Climate-ADAPT 2015a).

Because of its broad scope of application and flexibility, land use planning is a valuable vehicle for implementing strategic adaptation options (Maddocks 2010). Some of the benefits include enhancing prevention and preparedness against coastal erosion and sea level rise and/or facilitating the response and recovery from a storm tide event (Bajracharya, Childs and Hastings 2011). For example, planners in the neighbourhood of North Beach Village, Fort Lauderdale, explored a range of planning scenarios - from business-as-usual and soft defence to strategic retreat and land adjustment (see Figure 23) - to address the issues of inundation through drainage infrastructure during high tide events (Huber, et al. 2017).

No additional costs will be required above that associated with the already required planning scheme revision process (see statutory instruments in Appendix A for more details). However, there is potential for a lack of information, resourcing and tools within local government to result in failure to identify and implement policies and measures to address climate change risks (Downes and Storch 2014).

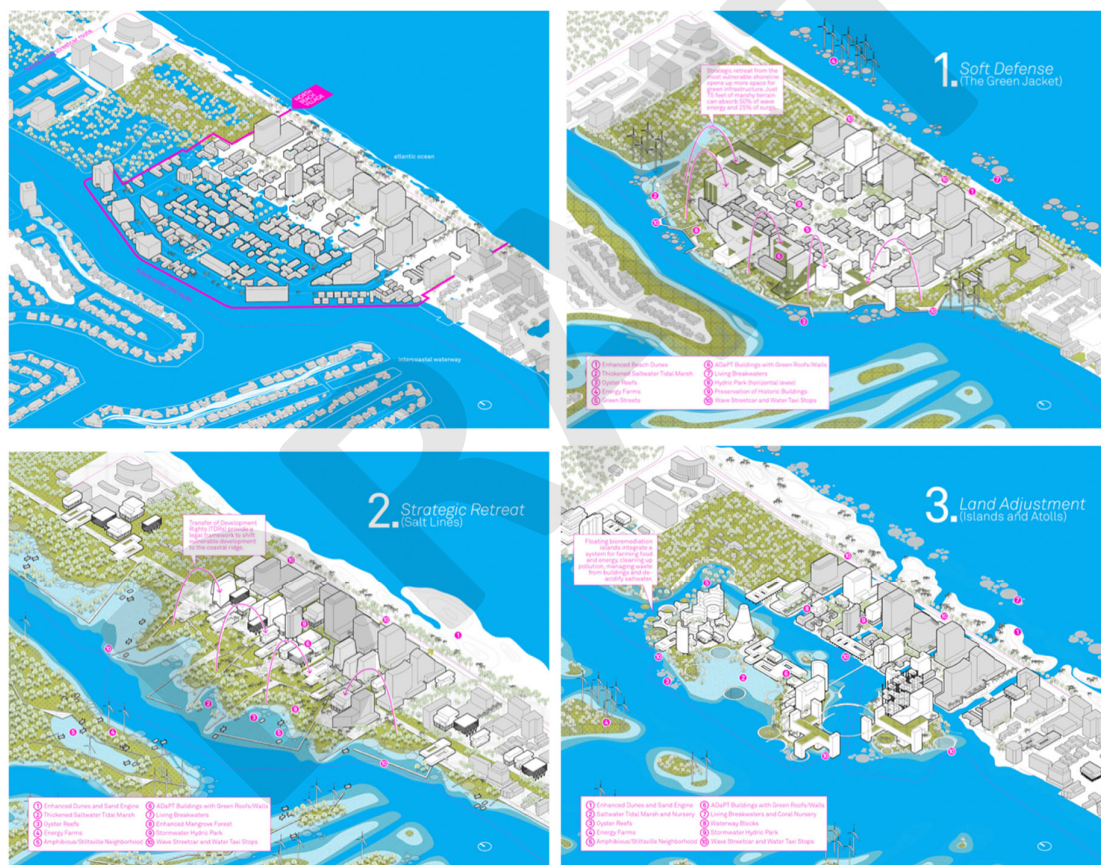


Figure 23: Land use planning scenarios to address inundation in North Beach Village (Huber, et al. 2017)

6.4.5 Land Swap

A voluntary land swap is an adaptation measure that allows a property owner to exchange their parcel of land in an at-risk location with another parcel provided by the government. They seek to protect land ownership whilst also mitigating the impacts of coastal erosion and storm tide inundation (Zhu, Linham and Nicholls 2010). The land swap can be triggered by an extreme event

(e.g. Grantham flood voluntary land swap) or through the identification of high-risk hazards (e.g. from new coastal modelling).

A land swap typically involves the exchange of land for mutually beneficial outcomes, whereby property owners receive land with improved development potential outside of the coastal hazard area and the government is provided with land which can be re-purposed for environmental and recreational uses (GHD 2016). In the Grantham example, Lockyer Valley Regional Council purchased freehold land outside a flood zone and offered land swaps to residents who were affected by the 2011 flood (see Figure 24). The land swap was done at a whole of community scale – which also provided social benefits as well as flood reduction measures (Lockyer Valley Regional Council 2012).



Figure 24: House relocation during Grantham land swap program

The estimated costs for land swap depend on the size of the land to be swapped, and the current value of properties in the local area, and the characteristics of the land or dwelling (Griffith University Centre for Coastal Management and GHD 2012).

With land swap programs there is a considerable risk that the “land may remain unused for any purpose for an extended period of time” (QFCI 2012). Appropriate planning is required to ensure a successful exchange of land, which includes decisions about the future use of the land exposed to coastal hazards.

Since land swaps are voluntary there is no legal framework for these programs in Queensland. However, the *Acquisition of Land Act 1967* provides provisions for land acquisition (see Section 5.8.9).

6.4.6 Land Buy-Back

Land buy-back is when a property owner willingly sells his or her property, usually to the local or State government (QFCI 2012). The buy-back of properties provides a solution to mitigate the impact to existing buildings which are exposed to coastal erosion, sea level rise and storm tide inundation.

A key benefit of land buy-back is that it mitigates risk to life from inundation which in some cases may be the only feasible and economically justified adaptation option (QFCI 2012). Not only does it allow local government to ‘lock-up’ vulnerable land and protect it from future development but it also facilitates the natural coastal processes in buffering the coastline against sea level rise and storm surge (Zhu, Linham and Nicholls 2010).

For example, the Blue Acres program, run by the New Jersey Government (USA), has purchased over 400 homes that are deemed to be in at-risk locations (State of New Jersey 2019).

The estimated costs for land buy-back depend on the size and location of the land parcel, and the characteristics and land value of the asset to be purchased. (Griffith University Centre for Coastal Management and GHD 2012).

Since land buy-back programs are expensive, a lack of available funding is the main factor limiting their implementation as an adaptation option (QFCI 2012). For this reason, they only occur when the government deems the property to be at too high a risk to allow ongoing or future use of the land. An option for council is to recoup some of the investment of purchasing the property through leasing the property out until the hazard becomes too high a risk to manage.

The mechanisms available to a local government for land buy-back include land surrender and compulsory land acquisition (see Sections 5.4.8 and 5.8.9).

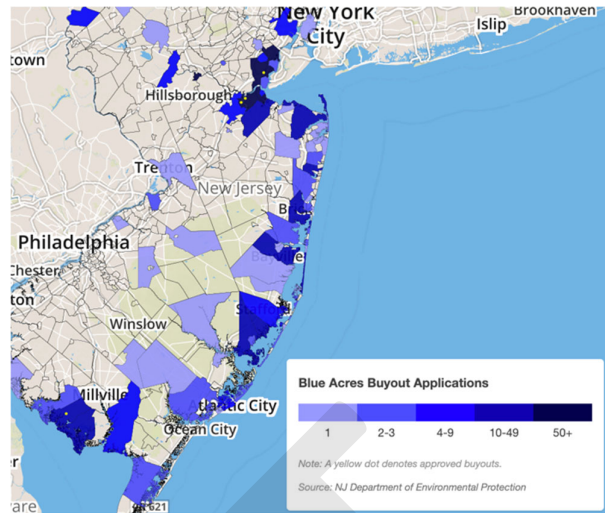


Figure 25: Blue Acres buyout applications in Philadelphia (State of New Jersey 2019)

6.4.7 Land Surrender

Legislative provisions in the *Coastal Protection and Management Act 1995* enable local government to “require the owner of prescribed land to surrendered all or part of their prescribed land to the State for coastal management.” (The State of Queensland 2019) Land surrender only applies when a landowner proposes to subdivide land to create new lots (i.e. reconfiguring a lot) that is located within a declared erosion prone area and a coastal management district – also known as ‘prescribed land’ (DES 2018).

The advantage of land surrender is that it uses statutory mechanisms to remove the risks of coastal erosion for future development by place vulnerability land into State ownership to be used as a reserve for coastal management. There is no compensation offered for land surrendered and the landowner must also comply with all requirements (DES 2018).

6.4.8 Compulsory Land Acquisition

The local government may exercise their power to compulsorily acquire, or resume land for various purposes (DSDMIP 2018). Section 5(b)(i) of the *Acquisition of Land Act 1967* states that land may be taken and subject to the Act “where the constructing authority is a local government... for any purpose set out in schedule 1 which the local government may lawfully carry out.” (The State of Queensland 2018a).

This means that local governments may compulsorily acquire land for “management, protection or control of the seashore, estuaries and land adjoining the seashore and estuaries” (Schedule 1 – Part 5) and for “flood prevention or flood mitigation” (Schedule 1 – Part 7) (The State of Queensland 2018a). This would be an effective option for councils to protect an area which is highly exposed to coastal erosion, sea level rise or storm tide inundation.

6.5.2 Maintaining the Status Quo

Maintaining the 'status quo' is where a local government "allows for continuation of the existing use in an area but prevents any further intensification of those uses" (Griffith University Centre for Coastal Management and GHD 2012). Under this approach a local government recognises that there are already existing planning controls in place to protect properties from coastal hazards, however, would not be taking any specific action (i.e. defend, accommodate, retreat) or proactively implement new activities to adapt to climate change. This adaptation option still permits landowners to apply for works to defend their land or to accommodate the impacts of coastal hazards using Council's existing planning mechanisms (Griffith University Centre for Coastal Management and GHD 2012).

The status quo will typically be maintained until there is a trigger which places pressure on a local government to respond. Such triggers may include number of cyclones within a short period of time, market shifts, changes in property insurance, decreased mortgage availability etc. In cases where defending, accommodating or retreating are not unfeasible or cost effective, maintaining the status quo may be the preferred option.

6.6 Social Options

Social options are educational, technological or serviced-based initiatives which consider vulnerability of communities to climate change and seeks to enhance their adaptive capacity (Nobel, et al. 2014). Social options reviewed include raising community awareness, knowledge sharing, hazard mapping, coastal imaging techniques, and communicating through social media.

6.6.1 Raising Community Awareness

Education and raising community awareness about climate change and coastal hazards impacts can help to build more resilient communities. Gaillard (2012) explains that most "community-based education programs focus on raising awareness, by disseminating information on climate change and related topics." A successful planned and administered education program not only achieves a high level of public awareness of climate change but also as the potential to facilitate action and social change (Gaillard 2012).

The advantages of raising community awareness are that it assists scientists and decision makers to prepare for future climate change risks, enables decision making, and increases the capacity of communities to adapt (UNESCO 2019). Witness King Tides is a great example of a projects which provides people with a platform where they can be engaged about coastal hazards affecting their community. Participants are encouraged to take photographs of their local shoreline during very high tide events and upload the images to an interactive map (see Figure 27). With over 5,300 photos uploaded since 2012, the Witness King Tides has created a community narrative which

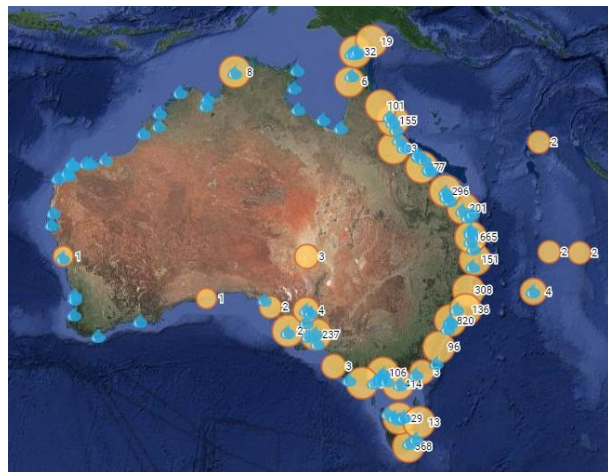


Figure 27: Interactive map of king tide events and pictures from Witness King Tides (Green Cross Australia 2016)

can help people imagine what future coastal inundation may look like as sea levels rise (Green Cross Australia 2016).

The costs for raising community awareness are related to planning, communication, set-up and delivery of the education program or engagement event. There are no known adverse impacts from raising community awareness about climate change and the associated coastal hazard impacts.

6.6.2 Knowledge Sharing

Knowledge sharing can be described as the mutual “exchange of ideas and experiences through networks of relationships”, with the goal of discovering new knowledge and insights (Blane 2009). There are a range of knowledge sharing tools which promote education and awareness of coastal hazards, engage the community about climate change risks, and facilitate decision making on adaptation options (NCCARF 2016).

Knowledge sharing is a powerful instrument for improving adaptive capacity and can have wide-reaching benefits for involved stakeholders. These include empowering community to learn about climate science, allow scientists to understand applications of their research, and encourage policy makers to consider and support all facets of the community (Sutherland 2013).

For example, in 2010 the Climate Adaptation Knowledge Exchange (CAKE) was launched by EcoAdapt “to build a shared knowledge base for managing natural and built systems in the face of rapid climate change” (EcoAdapt 2019). The online platform provides clearly organised case studies, a directory of practitioners to share knowledge and strategies, and community forums to discuss current issues on climate change adaptation (see Figure 28).

Costs are generally associated with planning, communication, set-up and delivery of the knowledge sharing platform which may take the form of an online information portal, desktop or mobile application, information session or public forum, or a permanent space for discussions (e.g. ‘Lab’). There are no known adverse impacts from implementing knowledge sharing as an adaptation option.

CAKE can be accessed from: <https://www.cakex.org/>

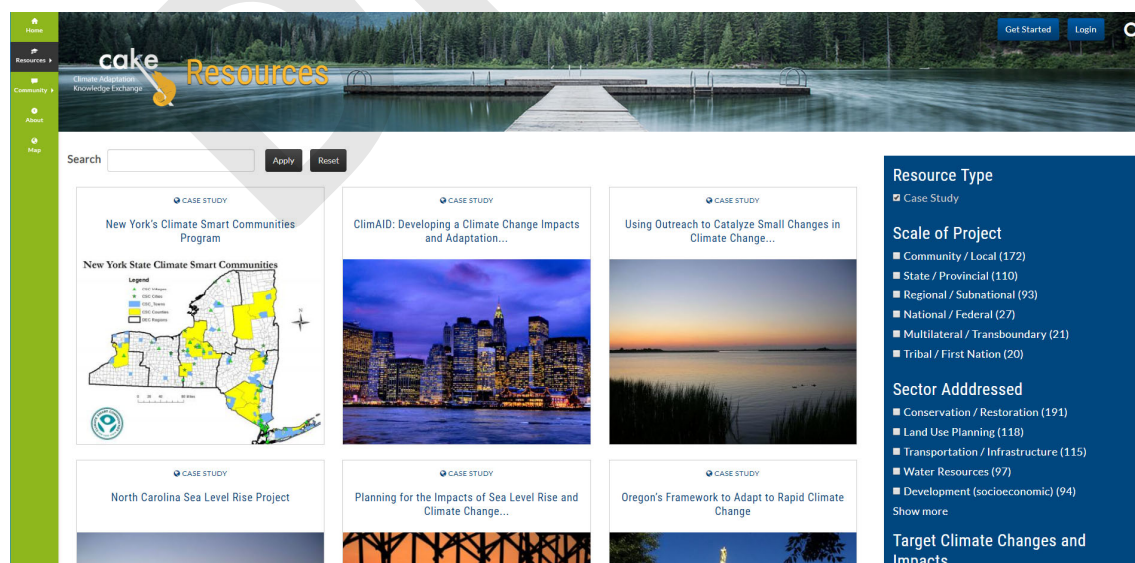


Figure 28: CAKE Resources portal (EcoAdapt 2019)

6.6.3 Hazard Mapping

Hazard mapping is defined as “the visual display of the spatial distribution of a natural hazard” (Champalle, et al. 2013). Maps are useful for spatially representing the distribution of current and future hazard events such as coastal erosion, sea level rise and storm tide inundation. Their purpose is to show differences in exposure of the hazards (i.e. variations in inundation depth) and consolidate knowledge of the hazards for a specific location (Champalle, et al. 2013).

Hazard maps offer a range of benefits including facilitating spatial planning, informing infrastructure design, and supporting emergency management (Champalle, et al. 2013). Recent advancements in GIS analysis techniques their integration with website interfaces have seen hazard mapping be adopted as an online decision support tool for climate change issues. For example, the Coastal Resilience project was launched in 2013 to enable communities and coastal managers to visualize the risks imposed by coastal hazards (The Nature Conservancy 2016) (see Figure 29). The web mapping tool uses Esri's ArcGIS API for JavaScript and ArcGIS Online base maps which supports the overlay social, economic, and coastal habitat data with sea level rise and storm surge scenarios (Ferdaña 2014).

The costs for hazard mapping are related to the collection and collation of information, analysis and manipulation of data, transformation of spatial layers, and presentation of desired information and mapping in an online platform. There are no known adverse impacts from implementing knowledge sharing as an adaptation option.

Coastal Resilience Australia can be accessed from: <https://maps.coastalresilience.org/australia/>

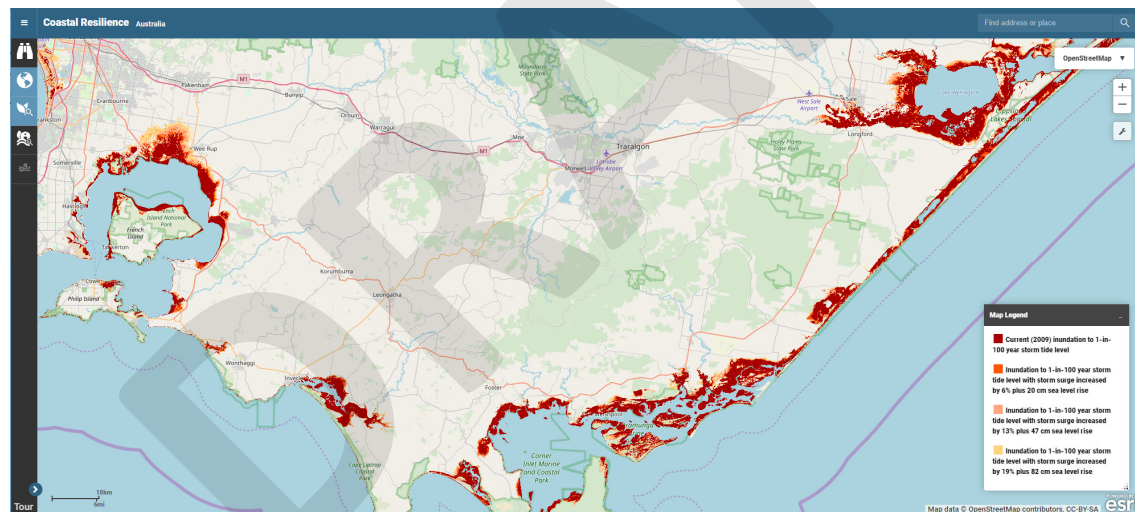


Figure 29: Inundation to 1-in-100 year storm tide level for current (2009), 2040, 2070 and 2100 (The Nature Conservancy 2016)

6.6.4 Coastal Imaging Techniques

Coastal imaging is a popular technique used by coastal manager to quantify and document coastline behaviour. It involves installing video cameras on high structure and programming them to automatically collect, analyse and store a time-series of images (Water Research Laboratory n.d.).

The key benefit of coastal imaging is that it provides 'real-time' reporting of the coastal processes and visual comparison of shoreline changes over time (Water Research Laboratory n.d.). Coastal imaging is also a valuable tool for coastal managers to understand how beaches respond to environmental drivers (i.e. waves, water levels and currents) and develop strategies to better protect beaches and manage coastal assets (Blacka 2017). For example, in 2004 Water Research Laboratory installed an ARGUS coastal imaging station to monitor the beaches of the Narrabeen-Collaroy (see Figure 31). The five monitoring cameras record images of the coastline every 30 minutes (Water Research Laboratory 2019). The station has automatically mapped over 50,000 high-resolution shoreline datasets, which is the most extensive dataset of shoreline change recorded (see Figure 30).



Figure 31: Location of the Narrabeen-Collaroy coastal imaging station (Water Research Laboratory 2019)

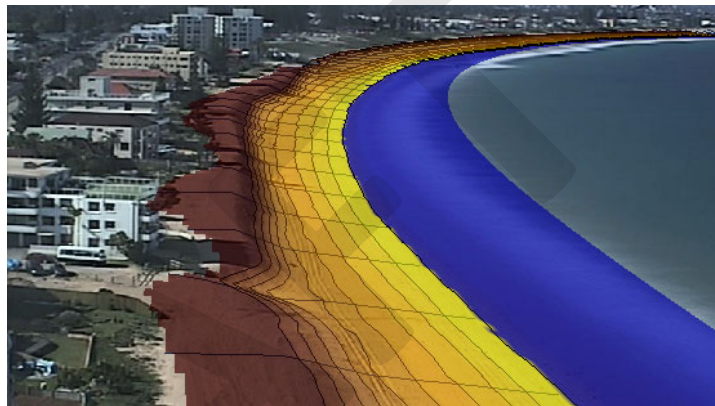


Figure 30: Tweed River Entrance Sand Bypassing Project camera locations (Water Research Laboratory 2019)

The initial costs of installing a coastal imaging station are likely to be expensive. In addition, a data technician with skills in photogrammetric processing may also be required to generate or analyse datasets, which introduces additional costs for data collection and processing (Westoby, et al. 2018). There are no known adverse impacts from conducting coastal imaging techniques as an adaptation option.

6.6.5 Communicating through Social Media

Social media is increasingly be used to communicate news and information about climate change. Such tools encourage greater knowledge sharing of climate change science, provide a platform for discusses complex issues and challenges, and facilities climate change action (Anderson 2017). Furthermore, lessons learned from natural disasters which have occurred around the world in recent years have shown social media to be an integral communication tool for emergency response (Simon et al. 2015).

A key benefit of using social media to communicate climate change is that it creates a more personalised experience about the impacts, discussion topics and current events, and therefore makes it easier for the user to engage with the issue on an individual level (Anderson 2017).

For example, during the 2010 Queensland floods residents turned to social media platforms such as Facebook and Twitter to find out information about road closures, flood warnings, offers of assistance and ways to donate. When flooding in Brisbane peaked there were up to 1,100 tweets recorded every hour on Twitter (Catriona Pollard Communications 2016) (see Figure 32). In addition, social media activity surged after the flash flooding events in Toowoomba, with 11-fold increase in the number of 'Likes' to the QPS Facebook page (Ehnis and Bunker 2012).

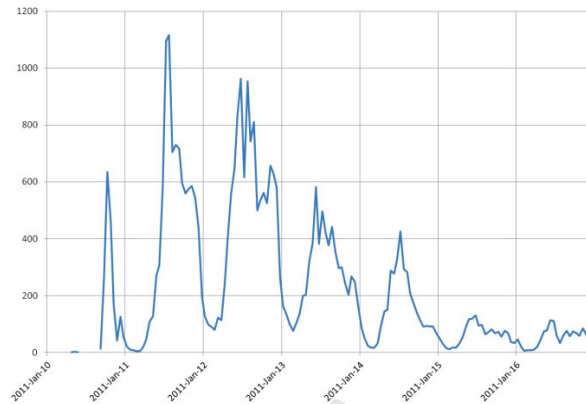


Figure 32: QPS Twitter tweets during Brisbane floods (Catriona Pollard Communications 2016)

The costs would largely depend on the purpose of the communication. It may include set up and monitoring social media platforms, online forums to increase community awareness, support during emergency events, or engagement for climate change initiatives.

The negative effects of social media are that it allows for opinion-based discussions which may not be supported by climate science and provides a place for framing of climate change from a sceptical viewpoint (Anderson 2017).

CHAS Adaptation Actions

The adaptation actions that are included in this Strategy follow four key themes:

1. Planning and governance
2. Region-wide resilience initiatives
3. Coastal infrastructure design
4. Coastal management and engineering

Theme		Adaptation Option	Description
1	Planning and governance	Land use planning	Preventing development in areas vulnerable to coastal hazards. This may also include development setbacks, limited development and rezoning.
		Mainstreaming climate change into Council decisions	Ensure climate change is embedded into asset management, financial planning and risk register.
		Monitoring of climate change adaptation governance	Integrating climate change into corporate operations and governance.
		Managed retreat	Planning for future relocation of a property or community. This may include land swap, land buy-back, land surrender and compulsory land acquisition.
2	Region-wide resilience initiatives	Raising community awareness	Raising community awareness about climate change through education program and social media.
		Knowledge sharing	Facilitating knowledge sharing and education on coastal hazards and adapting to climate change.
		Community stewardship	Developing programs and partnerships to enhance stewardship of the coastline.
		Monitoring	Monitoring changes in coastal hazard risk and effectiveness of adaptation (e.g. hazard mapping, coastal imaging)
		Explore financial options	Undertake research that explores financing adaptation. Focus on site specific options.
Theme		Adaptation Option	Description
3	Coastal infrastructure design	Climate resilient design	Using retrofitting and design measures to improve the resilience of buildings
		Elevated buildings	Raising existing buildings onto walls, piles or stilts.
		Raising land levels	Raising the level of low-lying land
		Modifying critical infrastructure	Modifying drainage, raising floor levels or relocating critical infrastructure
4	Coastal management and engineering	Beach nourishment	Adding sand to the beach which has a sediment deficit.
		Dune protection and maintenance	Restoring natural dunes and retaining coastal vegetation
		Coastal revegetation	Planting of riparian corridors or mangrove forests
		Structures to protect against coastal erosion	Constructing hard structures to assist with sand retention (e.g. breakwaters, groynes, artificial headlands or artificial reefs)
		Structures to minimise storm tide inundation	Constructing hard structures to protect from storm surges and sea level rise (e.g. seawalls, revetments, sea dykes or levees)

Table 8 Summary of general adaptation approach for each area of interest.

	Adaptation Response			
	Current day	2030	2050	2100
Airlie Beach	Monitor	Mitigate (Soft)e*	Mitigate (Hard)	TBC
Bowen (Queens Beach)	Monitor	Mitigate (Soft)*	Transition *	Transition *
Bowen (Rose Bay)	Monitor	Mitigate (Soft)*	Transition	Transition *
Bowen (Bowen South)	Monitor	Mitigate*	Mitigate*	Transition
Cannonvale	Monitor	Mitigate (Soft)*	Transition	Transition *
Conway Beach	Monitor	Monitor	Mitigate*	Transition
Dingo Beach	Monitor	Monitor	Transition	Transition
Hydeaway Bay	Monitor	Monitor	Transition	Transition
Shute Harbour	Monitor	Monitor	Monitor	Mitigate
Wilsons Beach	Monitor	Mitigate (Soft)	Transition	Transition

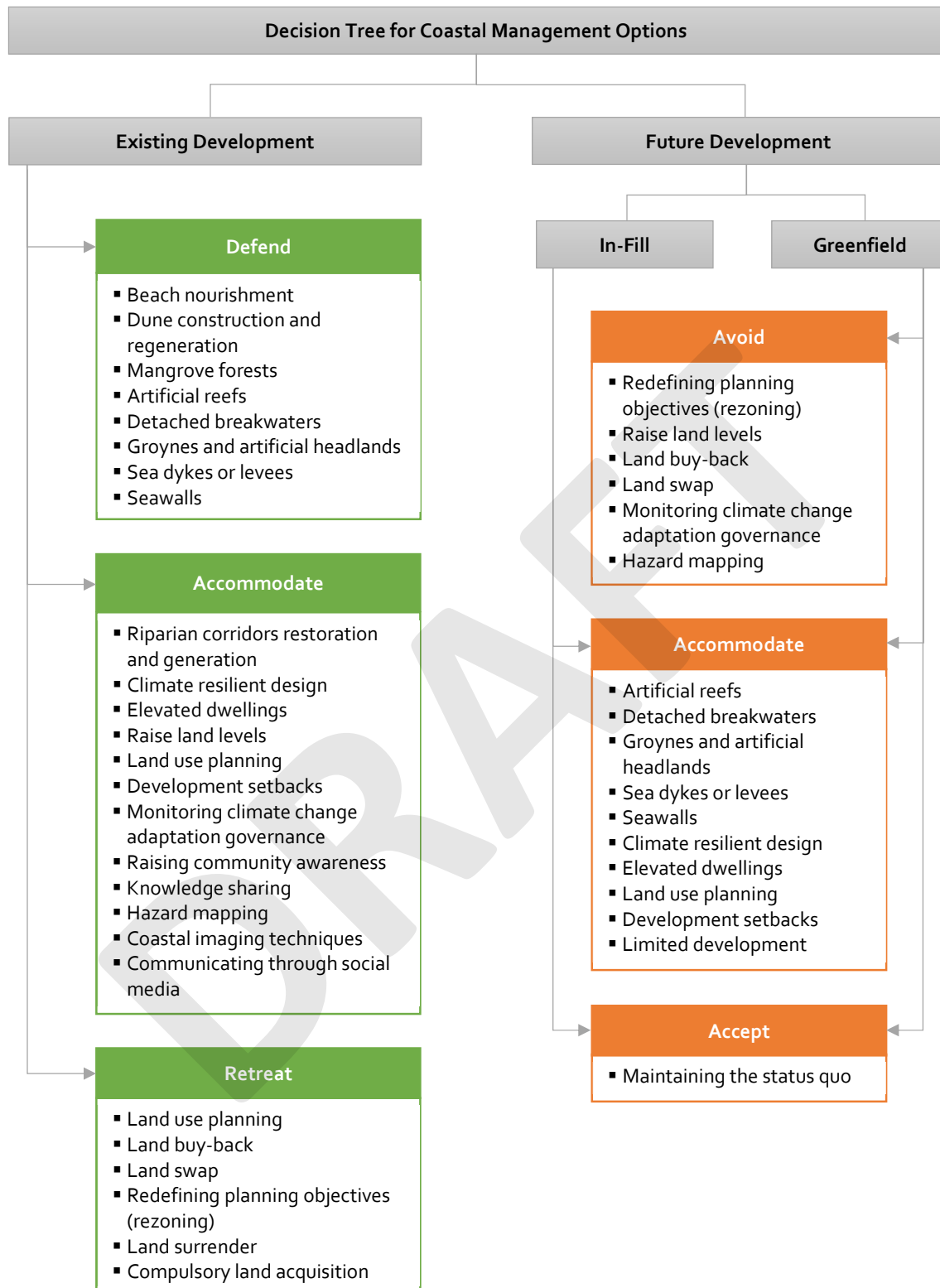


Figure 33: Decision tree for coastal hazard adaptation options

7 Location Summaries

The following information provides a summary of each of the key locations. The risks presented in this summaries are for the 2100 planning horizon. Other periods are provided in the supporting technical reports.

7.1 Airlie Beach

Summary of risks

In Airlie Beach, there are 20 asset subclasses (65%) with no immediate risk of coastal erosion under a 2100 planning horizon (see **Error! Reference source not found.**). In addition, there are 10 assets with a 'low' risk level as well as one asset, water mains, which recorded a 'high' risk and is therefore considered a 'tolerable' risk.

Of the assets potentially exposed to sea level rise inundation in 2100, six have a 'low' risk level and another six recorded a 'medium' risk. Furthermore, seven assets in Airlie Beach have a 'high' risk including community properties, council buildings, industry properties, bridges, heritage places, Queensland Threatened Species and sandy beaches. Since water mains have an 'extreme' level of risk it has also been categorised as an 'intolerable' risk which requires immediate action to reduce the risk to sea level rise inundation in 2100.

For storm tide inundation in Airlie Beach, only nine assets (29%) show no immediate risk for all AEP scenarios. There are 10 assets which received a 'low' risk level across all storm tide inundation events, some of which include council buildings, bridges, and heritage places etc. Under a 1% AEP storm tide inundation scenario, there are nine assets in Airlie Beach which recorded a 'high' level of risk and the exposure of those assets is as follows:

- 3 community buildings exposed to a water depth 1.2m or higher
- 4 industry buildings exposed to a water depth 1.2m or higher
- 11.7% of sewer mains
- 7.3% of sewer manholes
- 50.0% of sewer pump stations
- 12.1% of stormwater mains
- 5 electricity substations
- 57.9% of parks
- \$740,755 in replacement costs for sandy beaches

Also, there are eleven asset subclasses which recorded a 'high' risk under a 0.5% AEP storm tide inundation event, and seven assets for the 0.2% AEP scenario. For strategic planning, the 'high' risk assets are considered to have a 'tolerable' risk which means they still require immediate to short-term action to reduce the risk to acceptable levels. Under a 2100 planning horizon, there were no 'extreme' risks identified for storm tide inundation in Airlie Beach.

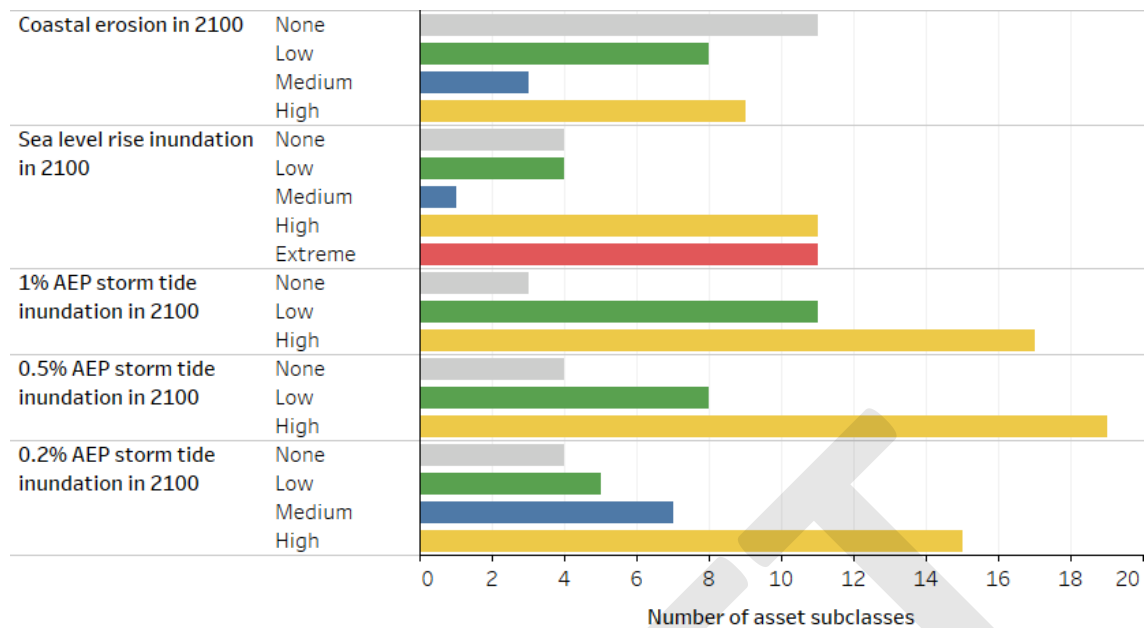


Figure 34 Number of asset subclasses at risk of coastal hazards in Airlie Beach

Community Insights



Two community workshops were facilitated in the Airlie/ Cannonvale area throughout the project. This was supported by individual interviews, an online survey and engagement over social media (Facebook).

The community views focussed on the environmental and amenity value of the area. The community indicated that they wanted adaptation responses to include awareness raising, improved land use planning, climate-resilient design and riparian corridors,

revegetation and the planting of mangroves. Some residents also stated that they would like to see beach nourishment and groynes as adaptation actions.

Relevant Issues and Adaptation Actions for Airlie Beach

Airlie Beach

- Investigate the cost and effectiveness of developing an artificial reef in Airlie Bay.
- Investigate the cost and effectiveness to install a buried sea wall seaward of Airlie CBD.
- Looking further past 2100, will Airlie CBD need to be relocated to Cannonvale – abandon Airlie CBD after 2100 sometime if sea level rise continues.
- If required, the water services re-routed may cost \$10-15million.

- Review the potential long-term option to build a services road, or “new” Airlie Main street landward of the CBD – behind the current buildings. This has been previously looked at by strategic planning for the Airlie Beach Master Plan.
- Review the possible development of a marina in Airlie Bay to provide protection but also functionality as a harbourage for sailing boats.
- Investigate the use of beach nourishment and its possible use for as long as cost effective and feasible.

7.2 Bowen

Vulnerability assessment findings

Bowen’s high vulnerability compared to all other CHAS study areas is driven predominantly by factors that impede the population’s ability to cope and both adjust proactively and reactively to coastal hazards. In particular, lower economic indicators show a level mostly unable to both finance and affect change if required. This is potentially further exacerbated by the relatively large proportion of single parents in the areas of interest; a demographic associated with lower access to financial resource. The Bowen area does appear to have a high proportion of new residents however. This demographic is often associated with lower understanding of local conditions and hence greater susceptibility to hazards. Additionally, whilst only at 5.7% the proportion of those people requiring assistance could complicate any efforts to evacuate the area thus increasing vulnerability further.

Summary of risks

In Bowen there are 11 asset subclasses (35%) with no immediate risk of coastal erosion under a 2100 planning horizon (see **Error! Reference source not found.**). There are eight assets with a ‘low’ risk level and three asset subclasses which recorded a ‘moderate’ risk. Additionally, nine assets in Bowen have a ‘high’ risk including community properties, residential properties, footpaths, roads, water mains, community facilities, electricity substations, parks and sandy beaches.

Bowen has the greatest risk to sea level rise inundation in 2100 of all the areas of interest. There are four asset subclasses with a ‘low’ risk level, one asset with a ‘moderate’ risk, 11 assets which recorded a ‘high’ risk, and another 11 assets that were considered an ‘extreme’ risk. This means that 70% of Bowen’s assets are require immediate to short-term action to reduce the risk to acceptable levels. Furthermore, the exposure of those assets in Bowen with an ‘extreme’ risk level is as follows:

- 10 community buildings
- 97 residential buildings
- 8,002m of roads
- 5 sewer pump stations
- 106 water mains
- 4 community facilities
- 9,353m of electricity cables
- 10 electricity substations
- 78.7ha of parks
- 10 cultural sites

- \$5,006,790 in replacement costs for mangroves and saltmarshes

For storm tide inundation in Bowen, only three assets (10%) show no immediate risk for all AEP scenarios. There are five assets which received a 'low' risk level across all storm tide inundation events, some of which include kerbs and channels, breakwaters and heritage places. Under a 1% AEP storm tide inundation scenario, there are 17 assets (55%) in Bowen which recorded a 'high' level of risk. In addition, there are 19 asset subclasses which recorded a 'high' risk under a 0.5% AEP storm tide inundation event, and 15 assets for the 0.2% AEP scenario. Under a 2100 planning horizon, there were no 'extreme' risks identified for storm tide inundation in Bowen.

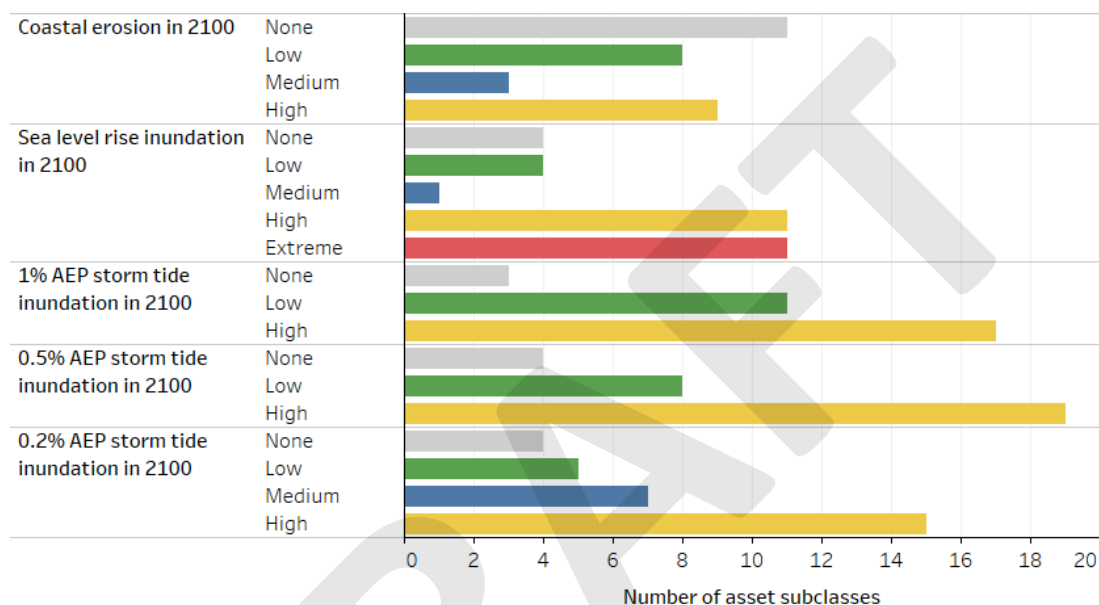


Figure 35. Number of asset subclasses at risk of coastal hazards in Bowen

Community Insights

Two community-based workshops were facilitated in Bowen throughout the project. This was supported by individual interviews, an online survey and engagement over social media (Facebook).



The community recognised the natural environment. Results from various community engagement approaches showed a strong preference for natural based solutions that protected / enhanced the scenic amenity and supported recreation activities.

Cost-benefit Analysis

A detailed cost-benefit analysis was carried out for Bowen. The results identified that defending all areas at risk would cost in excess of \$290

million if commenced now. This would result in a negative net benefit, even if the work commenced at a later date. Please refer to the Griffith University (2020) report for detailed analysis.

Site-specific Adaptation Actions for Bowen

For the entire Bowen area the key general actions over the next 5 years involve further details studies and on-going maintenance. The results of these further studies will determine the future application of the CHAS. It should be recognised that Bowen does face considerable coastal hazard risks and as such the area should be a priority action for Council consideration. Specific investigation for the whole of Bowen includes:

1. Undertaking a ground water reliability investigation – to understand how sea level rise may affect various sites, especially on the southern areas.
2. Explore opportunities for artificial reefs
3. Undertake a land use suitability study for cropping and other uses
4. Investigate floor levels design requirements for residential properties in predicted sea level rise areas. For example identify if an 300mm above Q100 flood levels is warranted and how that could be implemented in the planning mechanisms
5. As with the rest of the CHAS risks in Bowen should be reviewed every 5 years with improvements in data, science and politics. The review should also include a communication plan to ensure that risks are effectively disclosed to the community

Due to the size of Bowen and the fact that there are three distinct locations that differ in risk profile and broader context the site-specific actions were also workshopped for Bowen CBD, Rose Bay and Queens Beach. The adaptation actions for those locations are presented below.

Bowen CBD

1. The adapt and modify pathway should be implemented to accommodate the Brisbane Street and Port area. The port area should be prioritised for implementation of any resilience measures. Intensification of the Port area could help justify the modification/

adaptation of the area and help contribute to the costs of defending the access road to the port

2. The Thomas Street area is likely to be an area that requires a specific transition strategy that includes planned retreat over the coming decades. In the first instance an interim a limited development zone should be explored for this area
3. Due to cost effectiveness sand nourishment on main beach is ruled out as a solution, even for interim purposes. Sand nourishment has been used along Front Beach as a buffer over the last 10-15 years.
4. For Front Beach accommodation of sea level rise is the preferred option
5. Explore the option of a broader "limited Development zone" where future development does not intensify use over the next 50+ years unless costed adaptation actions have been included in any master plan assessment

Rose Bay Area

1. Council's preference is to accommodate the projected sea level rise in Rose Bay
2. Lift the access road and adapt servicing after 2050. This is to be reviewed as part of Council's usual capital works program
3. Permanent inundation in Rose bay is not so much an issue. Few residences are expected to be affected by Permanent Inundation due to the underlying granite bedrock.
4. Consider the potential need to re-route Horseshoe Bay Road in long-term planning

Queens Beach

1. Recognise that with rising sea level the impact of erosion coastal may worsen and storm surge will impact further landward.
2. Undertake further studies to investigate the cost of accommodation with sea dykes. Failing the viability of sea dykes to protect the at risk areas then the development a staged of transition plan over the next few decades should be developed as a priority.
3. Investigate off-shore options (e.g. artificial reefs) for the management of erosion
4. Consider storm tide in future investigation as well and environmental and social impact for Queen's Beach. Nature based solutions should be looked at for Queen's Beach. However, it should be noted that sand nourishment has been utilised along Queens Beach intermittently over the past 15 years with minimal sand retention – meaning it may be cost prohibitive as a long-term solution.
5. The cost of maintaining the rock wall on the Don River should be included in future investigations
6. The parking near the mouth of the Don in will need to be relocated or abandoned – this should be reflected in the asset management plan
7. Investigate the development of a land levee south of Horseshoe Bay Road along low lying sections.
8. Undertake an investigation the Euri Creek catchment groundwater as an alternative source of ground water if groundwater intrusion from saltwater becomes worse over-time.

7.3 Cannonvale

In Cannonvale, over half (55%) of assets have no immediate risk of coastal erosion under a 2100 planning horizon (see **Error! Reference source not found.**). Also, there are 10 assets with a 'low' risk level, two assets with a 'medium' risk, and another two assets (residential properties and water mains) which received a 'high' risk.

Of the assets potentially exposed to sea level rise inundation in 2100, three have a 'low' risk level, seven assets recorded a 'medium' risk and 10 assets have a 'high' level of risk. However, the two assets with the greatest risk to sea level rise in Cannonvale are water mains and sandy beaches, both of which scored 'extreme'. In Cannonvale, it is estimated that the present value of loss of sandy beaches from sea level rise inundation in 2100 will reach over \$2 million.

For storm tide inundation in Cannonvale, nearly one-third (32%) show no immediate risk for all AEP scenarios. Also, there are 15 assets which received a 'low' risk level across all storm tide inundation events, some of which include council buildings, roads, and stormwater mains etc. Under a 1% AEP storm tide inundation scenario, there are four assets in Cannonvale which recorded a 'high' level of risk and the exposure of those assets is as follows:

- 3.7% of sewer mains
- 42.9% of sewer pump stations
- 1 cultural site
- \$2,274,433 in replacement costs for sandy beaches

Also, there are five asset subclasses which recorded a 'high' risk under both a 0.5% AEP storm and 0.2% AEP storm tide inundation event, which are considered to have a 'tolerable' risk and require immediate to short-term action to reduce the risk to acceptable levels. Under a 2100 planning horizon, there were no 'extreme' risks identified for storm tide inundation in Cannonvale.

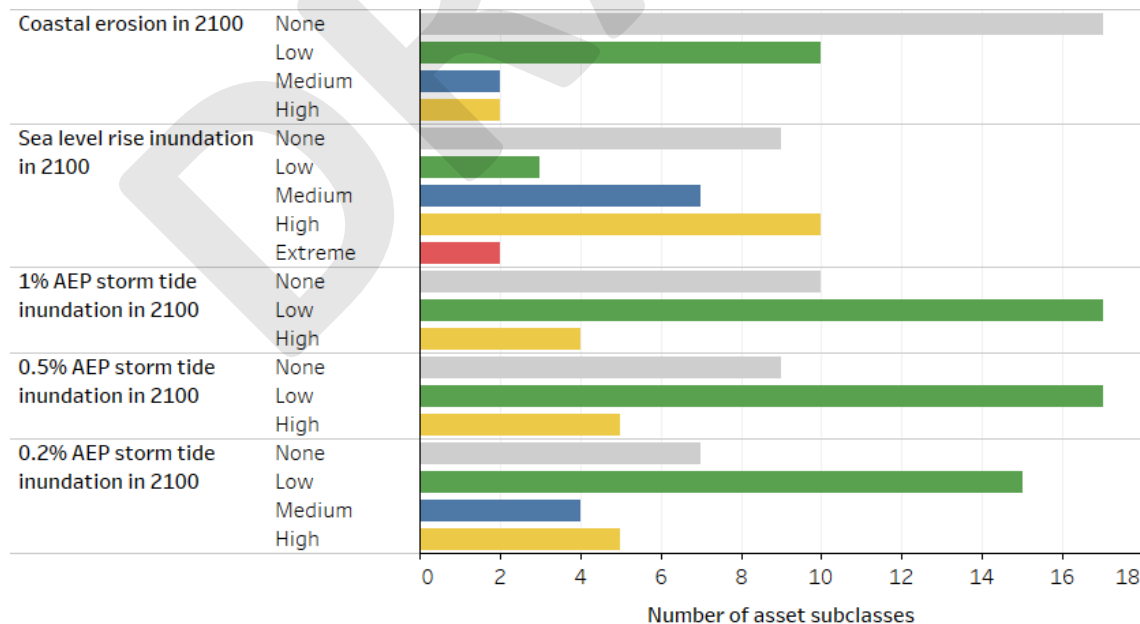


Figure 36: Number of asset subclasses at risk of coastal hazards in Cannonvale

Community Insights



Two community Airlie / Cannonvale-based workshops were facilitated throughout the project. This was supported by individual interviews, an online survey and engagement over social media (Facebook).

The community views focussed on the environmental and amenity value of the area. The community indicated that they wanted adaptation responses to include awareness raising, improved land use planning, climate-resilient design and riparian corridors,

revegetation and the planting of mangroves. Some residents also stated that they would like to see beach nourishment and groynes as adaptation actions.

Relevant Adaptation Options for Cannonvale

Cannonvale

- Water mains in the area will be impacted.
- The Cannonvale school was not identified as being at high risk.
- There may be 8 residential properties potentially impacted along Coral Esplanade – western end of Cannonvale beach. It is unlikely or financially feasible that engineered protection for these residential buildings could be implemented. A long term action may include accommodate at first then transition away from the risk.
- The Cannonvale waste facility and Council depot – maybe inundated around 2050. The preference here is to relocate these services, not defend.
- The Cannonvale foreshore park will eventually be inundated – accommodate naturally as required – there is a buffer of mangroves along this section now. Allow mangroves to naturally colonise when required.
- It should be recognised that if the Cannonvale beach area is turned to mangroves in the long term, then there will be no beach, which will affect the social utilisation of the area.

7.4 Conway Beach

Vulnerability assessment findings

Conway Beach's relatively higher income is potentially available to aid residents adapt to changing conditions. This potential is hindered by a relative concentration of jobs in those regional industries most vulnerable to coastal hazards: tourism and agriculture. In combination, this could well represent an AOI with relatively lower capacity to change jobs and hence derive income should agricultural and tourism employment decrease. In addition, whilst the AOI contains one of the most stable and physically mobile of populations, its relative attraction to visitors represents the presence of a demographic segment typically sensitive to hazards due to their ignorance about local conditions and characteristics.

Summary of Risks

In Conway Beach, there are 21 asset subclasses (68%) with no immediate risk of coastal erosion under a 2100 planning horizon (see **Error! Reference source not found.**). Also, there are seven assets with a 'low' risk level and three assets (residential properties, electricity substation and sandy beaches) with a 'high' risk.

Of the assets potentially exposed to sea level rise inundation in 2100, two have a 'low' risk level, one asset recorded a 'medium' risk, and another received a 'high' level of risk. However, the asset with the greatest risk to sea level rise in Conway Beach is sandy beaches which scored 'extreme'. In Conway Beach, it is estimated that the present value of expected losses of sandy beaches from sea level rise inundation in 2100 will exceed \$16 million. This is deemed to be an 'intolerable' risk which requires immediate action to reduce the risk to acceptable levels.

For storm tide inundation in Conway Beach, there are 22 asset subclasses (71%) which show no immediate risk for all AEP scenarios. Also, there are six assets which received a 'low' risk level across all storm tide inundation events, some of which include council buildings, roads, and heritage places etc. Under a 1% AEP storm tide inundation scenario, there are three assets in Conway Beach which recorded a 'high' level of risk and the exposure of those assets is as follows:

- 1 electricity substation
- 62.2% of parks
- \$16,367,363 in replacement costs for sandy beaches

Also, there are three asset subclasses which recorded a 'high' risk under both a 0.5% AEP storm and 0.2% AEP storm tide inundation event which include electricity substations, parks and sandy beaches. Under a 2100 planning horizon, there were no 'extreme' risks identified for storm tide inundation in Conway Beach.

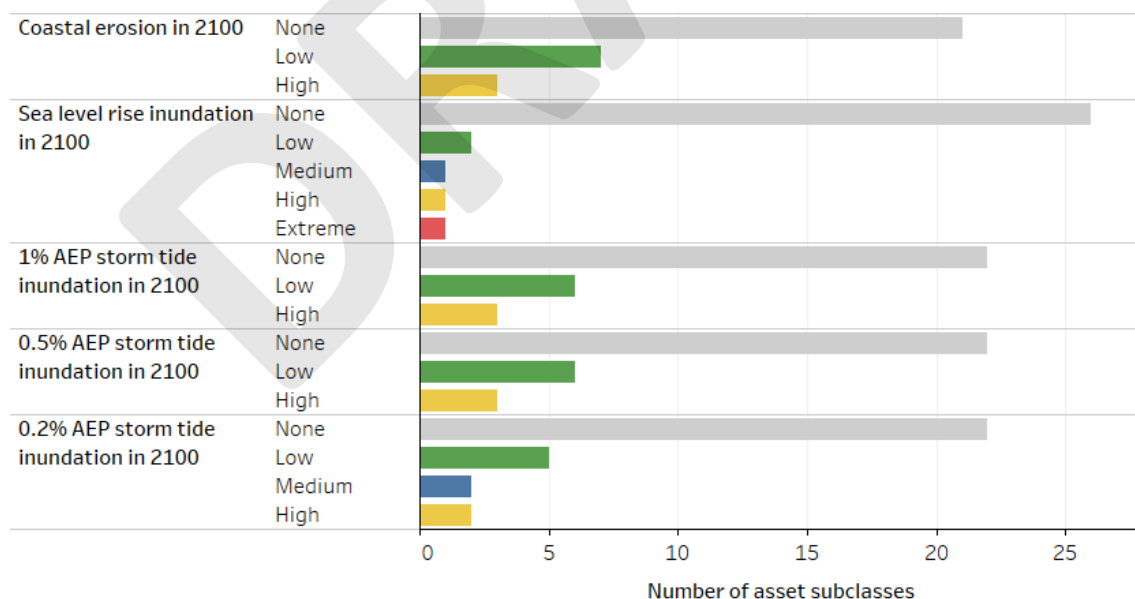


Figure 37: Number of asset subclasses at risk of coastal hazards in Conway Beach

Relevant Adaptation Options for Conway Beach

- The sea wall already protects Conway, the wall was designed to 2050, as such a review closer to 2050 will be warranted
- Investigate the cost of raising Conway Road to enable access from 2050 and review all of Conway's road to identify low points and future threats for transport and access.
- Monitor sand and rates of erosion at Conway over-time.

7.5 Dingo Beach

In Dingo Beach there are 19 asset subclasses (61%) with no immediate risk of coastal erosion under a 2100 planning horizon (see **Error! Reference source not found.**). Also, there are six assets with a 'low' risk level and another six recorded a 'high' risk. These 'high' risks include community properties, residential properties, stormwater mains, parks, cultural sites, and sandy beaches.

Of the assets potentially exposed to sea level rise inundation in 2100, five have a 'low' risk level and two assets received a 'high' risk. Since cultural sites have an 'extreme' level of risk it has also been categorised as an 'intolerable' risk which requires immediate action to reduce the risk to sea level rise inundation in 2100.

For storm tide inundation in Dingo Beach, 18 assets (58%) show no immediate risk for all AEP scenarios. There are six assets which received a 'low' risk level across all storm tide inundation events, some of which include roads, electricity cables, heritage places etc. Under a 1% AEP storm tide inundation scenario, there are six assets in Dingo Beach which recorded a 'high' level of risk and the exposure of those assets is as follows:

- 2 residential buildings exposed to a water depth 1.2m or higher
- 8.2% of stormwater mains
- 47.2% of parks
- 1 cultural site
- 1 endangered (EPBC Act) species and 2 vulnerable (EPBC Act) species
- \$1,896,529 in replacement costs for sandy beaches

Also, there are seven asset subclasses which recorded a 'high' risk under a 0.5% AEP storm tide inundation event, and five assets for the 0.2% AEP scenario. For strategic planning, the 'high' risk assets are considered to have a 'tolerable' risk which means they still require immediate to short-term action to reduce the risk to acceptable levels. Under a 2100 planning horizon, there were no 'extreme' risks identified for storm tide inundation in Dingo Beach.

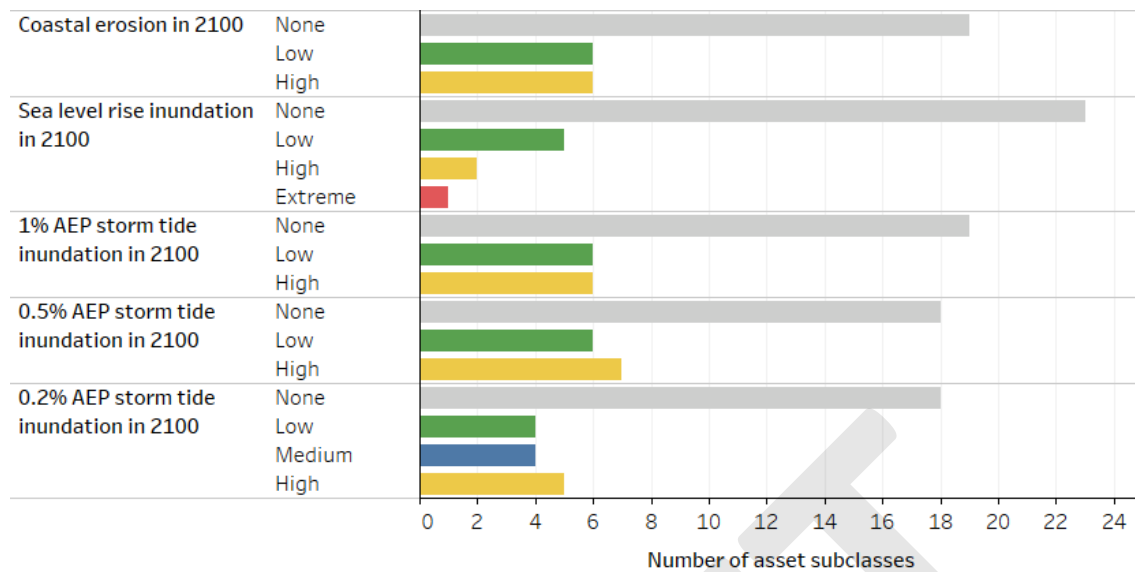


Figure 38: Number of asset subclasses at risk of coastal hazards in Dingo Beach

Community Insights



Two community-based workshops were facilitated at Dingo beach throughout the project. This was supported by individual interviews, an online survey and engagement over social media (Facebook).

The community views focussed on the recreational, environmental and amenity value of the area. The community indicated that they wanted adaptation responses to include awareness raising, dune reconstruction and regeneration, revegetation and beach nourishment. Some residents also stated that they would like to see hazard mapping and climate resilient design.

Relevant Adaptation Options for Dingo Beach

- Explore cost-benefit of beach nourishment. Include longevity, cost, effectiveness for coastal defence.
- Review functioning of septic system and determine when they may become human health / environmental nuisance.

7.6 Hydeaway Bay

In Hydeaway Bay, there are 23 asset subclasses (74%) with no immediate risk of coastal erosion under a 2100 planning horizon (see **Error! Reference source not found.**). Also, there are five assets with a 'low' risk level, two assets which recorded a 'medium' risk, and one asset (residential properties) with a 'high' risk.

Of the assets potentially exposed to sea level rise inundation in 2100, three have a 'low' risk level and one asset received a 'medium' risk, which suggests that the overall risk to this hazard in Hydeaway Bay is 'tolerable/ acceptable'.

For storm tide inundation in Hydeaway Bay, there are 21 asset subclasses (68%) which show no immediate risk for all AEP scenarios. Also, there are five assets which received a 'low' risk level across all storm tide inundation events, some of which include stormwater mains, parks, and coastal forests etc. Only residential properties received a 'high' level of risk, with one building exposed (to a water depth 1.2m or higher) for a 0.5% storm tide inundation event and two buildings inundated under a 0.2% AEP scenario. Under a 2100 planning horizon, there were no 'extreme' risks identified for storm tide inundation in Hydeaway Bay.

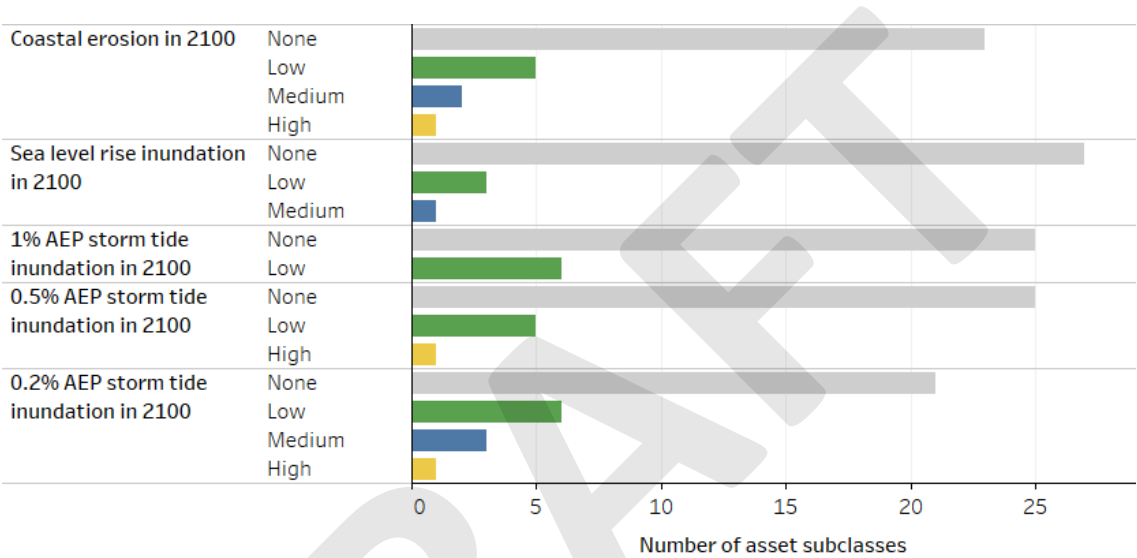


Figure 39: Number of asset subclasses at risk of coastal hazards in Hydeaway Bay

Community Insights



One community-based workshop was facilitated at Dingo beach during the project. This was supported by individual interviews, an online survey and engagement over social media (Facebook).

The community views focussed on the recreational, and visual amenity value of the area. The community indicated that they wanted adaptation responses to include awareness raising, dune reconstruction and regeneration, revegetation and beach nourishment.

7.7 Shute Harbour

There is no immediate risk to any assets in Shute Harbour under a 2100 coastal erosion event (see **Error! Reference source not found.**).

Of the assets potentially exposed to sea level rise inundation in 2100, five have a 'low' risk level, one asset recorded a 'moderate' risk and three assets have a 'high' level of risk. However, the two assets with the greatest risk to sea level rise in Shute Harbour are sewer manholes and water mains, both of which scored 'extreme'. Therefore, these assets are an 'unacceptable/ intolerable' risk which requires immediate action to reduce the risk to sea level rise inundation in 2100.

For storm tide inundation in Shute Harbour, 19 asset subclasses (61%) show no immediate risk for all AEP scenarios. In addition, there are seven assets which received a 'low' risk level across all storm tide inundation events, some of which include parks, heritage places, and mangroves and saltmarshes etc. Under a 1% AEP storm tide inundation scenario, there are five assets in Shute Harbour which recorded a 'high' level of risk and the exposure of those assets is as follows:

- 1 community building exposed to a water depth 1.2m or higher
- 1 council building
- 19.1% of roads
- 8.8% of sewer mains
- 22.2% of sewer manholes

In addition, there are two asset subclasses which recorded a 'high' risk under a 0.5% AEP storm tide inundation event, and one asset for the 0.2% AEP scenario. Under a 2100 planning horizon, there were no 'extreme' risks identified for storm tide inundation in Shute Harbour

7.8 Wilson Beach

In Wilson Beach there are 21 asset subclasses (68%) with no immediate risk of coastal erosion under a 2100 planning horizon (see **Error! Reference source not found.**). In addition, there are seven assets with a 'low' risk level, one asset which recorded a 'moderate' risk, and two assets (residential properties and sandy beaches) with a 'high' level of risk.

Of the assets potentially exposed to sea level rise inundation in 2100, three have a 'low' risk level, one asset recorded a 'moderate' risk, and five received a 'high' level of risk. However, the assets with the greatest risk to sea level rise in Wilson Beach are residential properties and sandy beaches, both of which scored 'extreme'. There are 19 residential buildings in Wilson exposed to sea level rise inundation in 2100. Furthermore, it is estimated that the present value of expected losses of sandy beaches from sea level rise inundation in 2100 will exceed \$16 million in Wilson Beach. These are deemed to be an 'unacceptable/ intolerable' risk and require immediate action to reduce the risk to acceptable levels.

For storm tide inundation in Wilson Beach, there are 19 asset subclasses (61%) which show no immediate risk for all AEP scenarios. In addition, there are five assets which received a 'low' risk level across all storm tide inundation events, some of which include council buildings, sea walls, coastal forests etc. Under a 1% AEP storm tide inundation scenario, there are seven assets in Wilson Beach which recorded a 'high' level of risk and the exposure of those assets is as follows:

- 25 residential buildings exposed to a water depth of 50cm - 1.2m
- 51.0% of roads
- 64.0% of electricity cables
- 1 electricity substation
- 66.9% of parks
- \$1,166,523 in replacement costs for mangroves and saltmarshes
- \$9,521,823 in replacement costs for sandy beaches

In addition, there are seven asset subclasses which recorded a 'high' risk under a 0.5% AEP storm tide inundation event, and four assets for the 0.2% AEP scenario. Under a 2100 planning horizon, there were no 'extreme' risks identified for storm tide inundation in Wilson Beach.

Community Insights

One community-based workshop was facilitated at Wilsons Beach during the project. This was supported by individual interviews, an online survey and engagement over social media (Facebook).

The community views focussed on the recreational, and visual amenity value of the area. The community indicated that they wanted adaptation responses to include awareness raising, dune reconstruction and regeneration, revegetation and beach nourishment.

Adaptation Actions for Wilsons Beach

- The cost of protecting the Wilsons Beach community from coastal hazards is estimated to be in excess of \$33 million, over \$1 million per property.
- Explore cost-benefit of beach nourishment. Include longevity, cost, effectiveness for coastal defence.
- Review functioning of septic system and determine when they may become human health / environmental nuisance.

8 General Adaptation Actions and Way Forward

The effects of climate change combined with natural processes mean coastal hazards will become an ongoing issue for Whitsunday. This will especially become more apparent in the coming decades as sea level rise projections show a non-linear increase after 2050 if global greenhouse gas emissions cannot be contained.

The findings of this project have identified a number of pressing and longer-term coastal risks. The actions identified in this strategy are more than likely to change over time, in response to changing regulatory requirements, market expectations and community needs.

The most fundamental element of this Strategy is for Whitsunday Regional Council to maintain a focus on the coastal environment. This means that Council will likely be incorporating management of coastal hazards (and climate change) in its key governance mechanisms. The community will be informed throughout the journey. The community have indicated through this project that the top three considerations when adaptation to climate change are impact on the natural environment, impact on homes and businesses, and effectiveness over time. Council will use these community preferences to help guide its decisions.

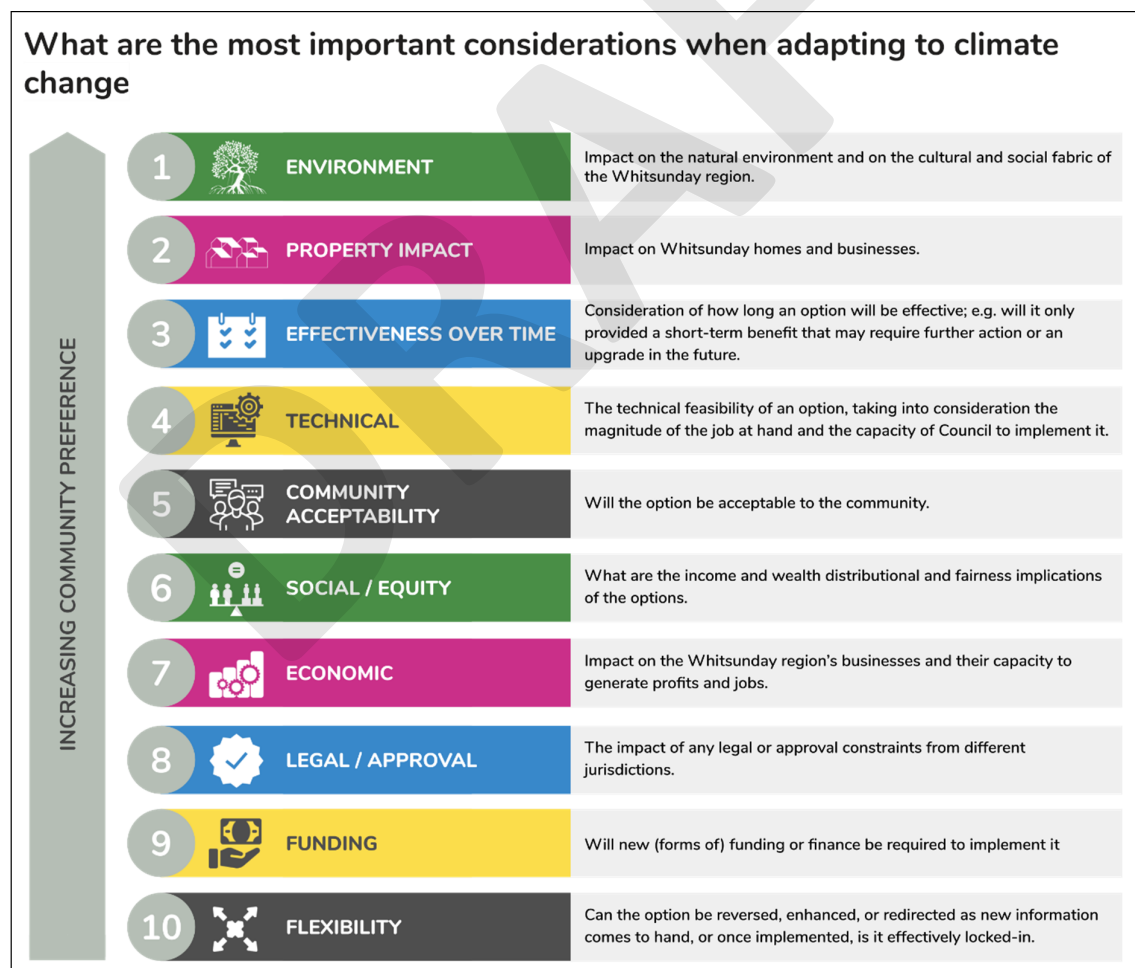


Figure 40 Whitsunday community indications of the most important considerations when adapting to climate change (Griffith University)

There are a number of difficult decisions that the community will face in the coming years and these include identifying what to do if a location is no longer able to be protected. At present Whitsunday Regional Council is developing an implementation strategy that it can resource and focus on over the next few years.

The key principals on the Coastal Hazard Adaptation Strategy Implementation Plan will include:

- Council is committed to facilitating a resilient community and economy.
- Council recognises that coastal hazards require a dynamic and ongoing response.
- Council will only implement actions that are financially viable.
- Council commits that all ratepayers will share an equal burden of risk management, regardless of location or risk type.
- Council will continue to lobby the State and Commonwealth Government for relevant support.
- Council will only plan for coastal hazards and sea level rise options for land zoned urban.
- Council recognises that some parts of the local government area are more at risk than others and it will not approve any development that results in a long-term increased burden on the ratepayers.
- Beach nourishment will be a preferred interim action to provide protection for community assets in urban areas which require interim protection against storm surge.

As responding to coastal hazards require a dynamic approach the following triggers will result in a review of the CHAS:

- Any increase in sea level rise projections or planning allowances
- If a tropical cyclone crosses the Whitsunday coast more than two times in a decade
- If banks change loan-to-asset ratios or indicate other restrictions in response to coastal hazards
- If Council identifies that some locations may not be serviceable (e.g. water, sewerage, vehicle access)
- If Queensland regulations associated with coastal hazards change

Council will develop key metrics and key performance indicators to monitor over time to help identify triggers for change. Key metrics include:

- Number of homes that are exposed to coastal hazards
- Number of extreme coastal events each year
- Annual expenditure in defending against coastal hazards
- Cost of Council's insurance
- Number (and value) of council assets exposed to coastal hazards
- Changes to coastal property values
- Number and expense of coastal hazard-related litigation (including planning challenges)

Refer to Appendix I for the detailed 2021-2025 Implementation and Action Plan.

9 References

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10 Appendices

APPENDIX I

Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS) Implementation and Change Management Plan

17 April 2021 v1.0

DRAFT

About

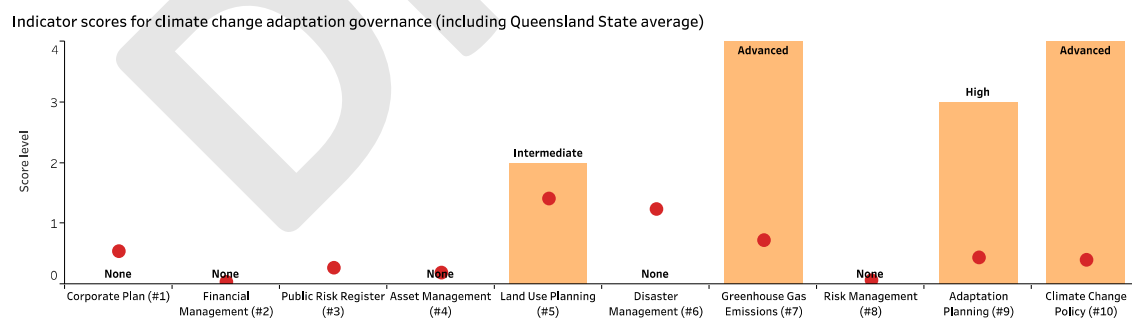
This document is the implementation and change management plan for the implementation of actions associated with Whitsunday Regional Council's Coastal Hazard Adaptation Strategy (CHAS) and supporting information. The CHAS was funded by a partnership of Queensland Government and LGAQ. An implementation plan is a requirement under the project's minimum standards and guidelines, which Council.

The implementation plan is a dynamic plan that can be updated on an annual basis – or in response to a range of triggers (see Section 2). This implementation plan covers the following themes:

- Governance
- Adaptation response by locality
- Five year action plan (2021-2025)
- Triggers for change

1. Governance

Over time Council will improve the consideration of coastal hazards and climate change into its core governance mechanisms. It will draw on the findings from the climate change governance assessment carried out as part of the LGAQ Queensland Climate Resilient Councils (Q CRC) initiative. Council will build on from the most recent assessment results (Figure 41) – with the initial focus being on the Corporate Plan and Financial Management Plan. During any review of core governance mechanisms Council will identify opportunities to incorporate coastal hazard management in line with the CHAS.



INFORMED.CITY™ VISUALISATION
Climate Change Adaptation - Desktop Governance Assessment: Analysis of Queensland's Local Government Areas 2019
2019 Climate Change Adaptation Governance for Local Governments - Analysis of Disaster Management (#6) for Whitsunday Regional Council
© Climate Planning 4 February 2020 Version 1.3

Figure 41 Whitsunday Regional Council Q CRC climate change governance assessment (2019)

2. Summary of Adaptation Response by Locality

Council will align its planning and activities to the broad adaptation responses listed below. These will be adjusted as new information or relevant triggers emerge (see Section 3).

Council recognises that each area of interest is unique and has differing risk profiles. These include:

- The nature of the hazard type (e.g. permanent inundation, storm surge and coastal erosion)
- The number of assets and/or properties exposed
- The technical and financial viability of adaptation options
- The timing of risk (some face risks now – other areas after 2050)

Due to the differing risk profile Council has developed a first-pass response to guide the direction of its adaptation response. These are presented in the following pages.

Table 9 General short-long term direction for adaptation in each location

	Adaptation Response			
	Current day	2030	2050	2100
Airlie Beach	Monitor	Mitigate (Soft)e*	Mitigate (Hard)	TBC
Bowen (Queens Beach)	Monitor	Mitigate (Soft)*	Transition *	Transition *
Bowen (Rose Bay)	Monitor	Mitigate (Soft)*	Transition	Transition *
Bowen (Bowen Front Beach and CBD)	Monitor	Mitigate*	Mitigate*	Transition
Cannonvale	Monitor	Mitigate (Soft)*	Transition	Transition *
Conway Beach	Monitor	Monitor	Mitigate*	Transition
Dingo Beach	Monitor	Monitor	Transition	Transition
Hydeaway Bay	Monitor	Monitor	Transition	Transition
Shute Harbour	Monitor	Monitor	Monitor	Mitigate
Wilsons Beach	Monitor	Mitigate (Soft)	Transition	Transition

* A transition response may be appropriate for limited areas within the locality

Planning and Governance

Table 10 Planning and governance responses

PLANNING AND GOVERNANCE				
	Land use planning	Mainstreaming climate change into Council decisions	Monitoring of climate change adaptation governance	Transition research
Airlie Beach	●	●	●	○
Bowen (Queens Beach)	●	●	●	●
Bowen (Rose Bay)	●	●	●	●
Bowen (Bowen Beach and CBD)	●	●	●	●
Cannonvale	●	●	●	●
Conway Beach	●	●	●	●
Dingo Beach	●	●	●	●
Hydeaway Bay	●	●	●	●
Shute Harbour	●	●	●	●
Wilsons Beach	●	●	●	●

Legend

● Relevant/
feasible

● Priority

○ Not
applicable

Region-Wide Resilience Initiatives

Table 11 Region-wide resilience initiatives

REGION-WIDE RESILIENCE INITIATIVES					
	Raising community awareness	Knowledge sharing	Community stewardship	Monitoring	Exploring financial options
Airlie Beach	●	●	●	●	●
Bowen (Queens Beach)	●	●	●	●	●
Bowen (Rose Bay)	●	●	●	●	●
Bowen (Front Beach and CBD)	●	●	●	●	●
Cannonvale	●	●	●	●	●
Conway Beach	●	●	●	●	●
Dingo Beach	●	●	●	●	●
Hydeaway Bay	●	●	●	●	●
Shute Harbour	●	●	●	●	●
Wilsons Beach	●	●	●	●	●

Legend

● Relevant/
feasible

● Priority

○ Not
applicable

* if accommodate is preferred

Coastal Infrastructure Design

Table 12 Coastal infrastructure design for each location

COASTAL INFRASTRUCTURE DESIGN				
	Climate resilient design	Elevated buildings	Raising land levels	Modifying critical infrastructure
Airlie Beach	●	●	●	●
Bowen (Queens Beach)	●	●	●	●
Bowen (Rose Bay)	●	●	●	●
Bowen (Front Beach and CBD)	●	●	●	●
Cannonvale	●	●	●	●
Conway Beach	○	○	○	●
Dingo Beach	○	●	●	●
Hydeaway Bay	○	○	○	●
Shute Harbour	●	●	○	●
Wilsons Beach	●	●	●	●

Legend

● Relevant/
feasible

● Priority

○ Not
applicable

Coastal Management and Engineering

Table 13 Coastal management and engineering for each location

COASTAL MANAGEMENT AND ENGINEERING					
	Beach nourishment	Dune protection and maintenance	Coastal revegetation	Structures to protect against coastal erosion	Structures to minimise storm tide inundation
Airlie Beach	●	○	○	●	○
Bowen (Queens Beach)	●	●	●	●	●
Bowen (Rose Bay)	○	●	●	●	●
Bowen (Front Beach and CBD)	○	●	●	●	●
Cannonvale	●	○	○	●	○
Conway Beach	●	○	○	●	○
Dingo Beach	●	●	○	●	●
Hydeaway Bay	●	●	○	●	○
Shute Harbour	○	○	○	○	○
Wilsons Beach	●	●	○	●	●

Legend

● Relevant/feasible ● Priority ○ Not applicable

3. Whitsunday Regional Council Five Year Action Plan

Location	Timeframe	Action	Responsibility	Financial ramifications	Priority*
Council Wide	2021-2022	Review key governance documents to identify where and how the consideration of coastal hazards should be incorporated. Consider the extension of Council's climate change policy to incorporate relevant aspects of the CHAS.	Corporate Services	Likely to achieve in existing budget	Very High
Council Wide	2021-2022	Review actions in this plan to quantify line-item budget allocations.	Corporate Services	Likely to achieve in existing budget	Very High
Council Wide	2021-2023	Identify key metrics and key performance indicators to enable ongoing assessment of risk exposure and risk management performance	Corporate Services	May require additional budget (~\$10k)	Very High
Council Wide	2021-2022 then ongoing	Create a platform for internal reporting and external disclosure	Corporate Services	Likely to require additional budget (~\$30-\$40k)	High-Very High
Council Wide	2021-2025	Work with the Hub to identify project synergies and research / collaboration priorities	Hub Corporate Services	Likely to achieve in existing budget	High-Very High
Council Wide	2021-2023	Review old Beach Protection Authority coastal surveys to determine old coast line to develop a	Corporate Services	Likely to achieve in existing budget	High-Very High

Internal distribution only – do not publish

		rate of dune erosion at various coastal locations where this data exists			
Council Wide	2021-2023	Identify capacity and capability needs to implement the CHAS	Corporate Services	Likely to achieve in existing budget	Very High
Council Wide	2021-2022	Survey coastline at each of the 9 sites to establish a 2021 coast line as a bench mark to monitor costal erosion.	Corporate Services	Likely to achieve in existing budget	Very High
Airlie Beach	2021-2022	Review critical infrastructure for coastal risk to identify adaptation needs. Quantify adaptation cost differential and report each cost to CFO (for audit trail).	Infrastructure Services Corporate Services	Likely to achieve in existing budget	Very High
	2021-2023	Explore cost-benefit of beach nourishment. Include longevity, cost, effectiveness for coastal defence.	Development Services	May require additional budget	High-Very High
Bowen (Queens Beach)	2021-2023	Explore the creation of a "limited development zone" at Thomas Street and other high risk locations to define the limitations of land use within at risk locations.	Development Services	May require additional budget	Med - High

Internal distribution only – do not publish

	2021-2023	Explore cost-benefit of beach nourishment. Include longevity, cost, effectiveness for coastal defence.	Development Services	May require additional budget	High-Very High
	2021-2022	Review critical infrastructure for coastal risk to identify adaptation needs. Quantify adaptation cost differential and report each cost to CFO (for audit trail).	Infrastructure Services Corporate Services	Likely to achieve in existing budget	High-Very High
	2021-2023	Investigate off-shore options (e.g. artificial reefs) for the management of erosion	Hub	Additional funding required. Identify grant funding / co-funding /university outreach opportunities	Med-High
	2021-2025	Increase foreshore planting and explore environmental solutions for coastal defences	Development Services	May require additional budget	High
	2021-2023	Explore requirements for back-zoning in alignment with SPP / Ministerial guidelines	Infrastructure Services Development Services	Likely to achieve in existing budget	High-Very High
	2022-2025	Investigate the development of a land levee south of Horseshoe Bay Road along low-lying sections.	Infrastructure Services	May require additional budget	Med-High

Internal distribution only – do not publish

Bowen (Rose Bay)		Explore the creation of a “limited development zone” to define the limitations of land use within at risk locations	Development Services	May require additional budget	
	2021-2023	Explore cost-benefit of beach nourishment. Include longevity, cost, effectiveness for coastal defence.	Infrastructure Services	May require additional budget	High-Very High
	2025	Model the potential need to re-route Horseshoe Bay Road in long-term planning	Infrastructure Services	May require additional budget	Med
	2021-2022	Review critical infrastructure for coastal risk to identify adaptation needs. Quantify adaptation cost differential and report each cost to CFO (for audit trail).	Infrastructure Services Corporate Services	Likely to achieve in existing budget	High-Very High
Bowen (Front Beach and CBD)	2021-2022	Explore the creation of a “limited development zone” to define the limitations of land use within at risk locations	Development Services	May require additional budget	High
	2021-2025	Investigate off-shore options (e.g. artificial reefs) for the management of erosion	Hub	Additional funding required. Identify grant funding / co-funding /university outreach opportunities	High-Very High
	2021-2023	Explore CBA of beach nourishment. Include longevity, cost, effectiveness for coastal defence.	Community (NRM)	May require additional budget	High-Very High

Internal distribution only – do not publish

	2021-2022	Review critical infrastructure for coastal risk to identify adaptation needs. Quantify adaptation cost differential and report each cost to CFO (for audit trail).	Infrastructure Services Corporate Services	Likely to achieve in existing budget	High-Very High
Cannonvale	2021-2025	Undertake artificial reef pilot to explore viability of shoreline protection	Community (NRM)	May require additional budget	High
	2021-2022	Explore the creation of a "limited development zone" to define the limitations of land use within at risk locations	Development and Planning	May require additional budget	High-Very High
Conway Beach	2021-2023	Use Conway as a comparison in beach nourishment projects.	Community (NRM)	May require additional budget	High-Very High
Dingo Beach	2021-2023	Explore CBA of beach nourishment. Include longevity, cost, effectiveness for coastal defence.	Community (NRM)	May require additional budget	High-Very High
	2021-2023	Review functioning of septic system and determine when they may become human health / env nuisance.	Community (NRM)	May require additional budget	High-Very High
Hideaway Bay	2021-2023	Explore CBA of beach nourishment. Include longevity, cost, effectiveness for coastal defence.	Community (NRM)	May require additional budget	High-Very High
	2021-2023	Review functioning of septic system and determine when they may become human health / env nuisance.	Community (NRM)	May require additional budget	High-Very High

Internal distribution only – do not publish

Shute Harbour	2021-2025	Monitor coastal damage after events to ensure current design specs are on par with what is materialising	Community (NRM)	Likely to achieve in existing budget	Low
Wilsons Beach	2021-2023	Explore CBA of beach nourishment. Include longevity, cost, effectiveness for coastal defence.	Community (NRM)	May require additional budget	High-Very High
		Review functioning of septic system and determine when they may become human health / environmental nuisance.	Community (NRM)	May require additional budget	High-Very High
Council wide	2021-2025	Carry out a yearly review of actions to determine if any triggers have been reached and urgency / timeframe changes are required	Community (NRM)	Likely to achieve in existing budget	Very High

*** Priority**

Very high – key task- A range of actions are depended on this activity being complete

High – key task to inform body of work likely to require additional allocation of expenses and/or an important decision

Medium – not time dependent. Would be good to know – but not required within 5+ years. However, would help advanced resilient planning and identify grant funding.

Low – can be pushed out beyond ten years. Useful now if additional resourcing becomes available.

4. Triggers for Change

As responding to coastal hazards require a dynamic approach the following triggers will result in a review of the CHAS:

Threshold	Current status	Action if changes
Regulatory: SPP	SPP states that climate change must be considered	Ensure Strategic Plan considers climate change to at least minimum extent
Regulatory: SLR height	Currently 0.8m	Update WRC Climate Policy
Funding: Grants available	Awarded \$500k for CHAS	Have project outlines / key focus areas already prepared if more funding becomes available
Extreme Events: Tropical cyclone	Currently exposed to 1-2 TC per year in the LG area	Consider bringing options forward if TC intensity or frequency increases
Market: changes to insurability	Currently no insurance available for coastal risks	N/A – review if other insurance for other events is hard to obtain (e.g. TC risk)
Market: changes to lending	Signal from CBA. Review each top four bank annual reports for climate change.	Consider bringing options forward if this materializes into property value impacts
Governance: Q CRC Review	Q CRC Review identified governance gaps	Action recommendations from QCRC report
Services	Council servicing is becoming expensive in some areas or risk is increasing	Consider bringing options forward if this continues (e.g. service charges, change to service levels, retreat options)
Science: IPCC, QLD modelling	IPCC AR6 due 2020	Review upper bounds SLR presented in AR report and determine if SLR considerations should go beyond minimum SPP

3 meter deviation or 100m ³ of sand lost	Boundary at 2021 (from survey)	Nourish beaches to maintain 2021 level
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11 Supplements

The following supplements to this Plan are available from Douglas Shire Council.

- Supplement A: Fact sheets
- Supplement B: Douglas Shire’s coastal story
- Supplement C: Coastal hazard mapping
- Supplement D: Adaptation actions summary sheets

12 Acknowledgements

Council would like to acknowledge and thank all members of the Stakeholder Advisory Group for their input into the Strategy development, including:



Coastal Hazard Adaptation Strategy

Resilient Whitsundays Coastal Hazard Project

Communications Plan

Date: 16 April 2021

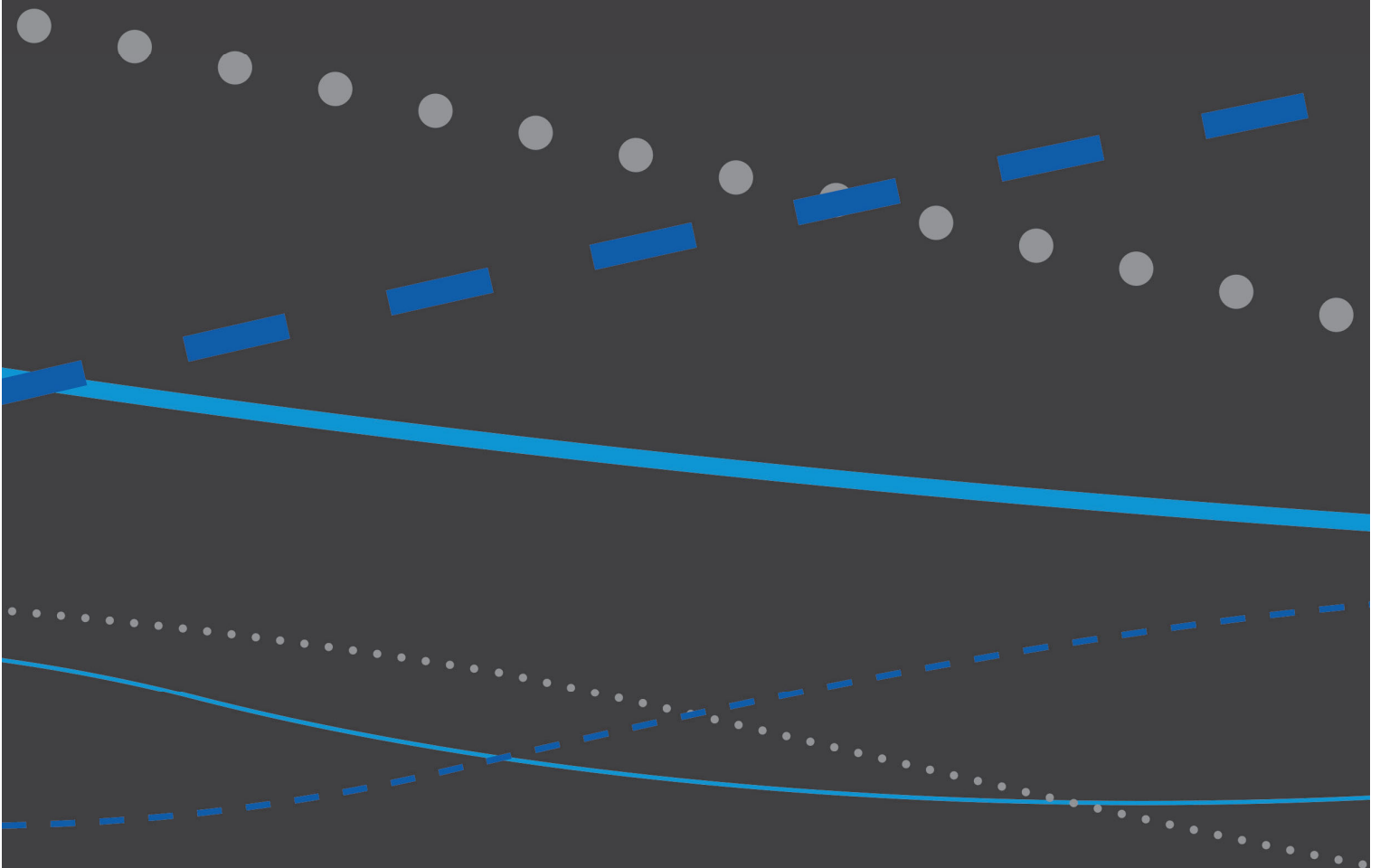


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Document History

Title	Version No.	Date	Author	Reviewer	Approved by
Report	3.0	16 April 2021	Joanne Vlismas	Scott Hardy; Greg Martin	Julie Wright

1. Introduction

In July 2016, Whitsunday Regional Council (WRC) adopted a Climate Change Adaptation Policy and Climate Change Adaptation Strategy (CHAS). The purpose of these two documents is to provide corporate governance on the topic of climate change and assist WRC to manage current projects and plan for future climate change impacts.

One of the key activities under the CHAS is to engage the community, raising the awareness of climate change impacts and describing the range of climate change adaptation options. Community inclusion is one of the guiding principles in the strategy, with a clear goal of maintaining an appropriate level of community and business participation through awareness and education.

Building on this work, WRC received funding from the Local Government Association of Queensland to deliver the 'Resilient Whitsundays: Coastal Hazards and Responses' project. This project has involved identifying which areas and key assets are at risk from coastal hazard in the Whitsunday region, and developing potential options for responding to these challenges.

Extensive consultation with several coastal communities occurred in December 2019 on a series of initial options (covering defend, retreat, status quo and accommodate). From the results of this engagement process, the final hazard assessment, mapping and options for adaptation under the CHAS have been developed.

For the final stage of the project, WRC will be revisiting these communities to inform them of the final CHAS document and options for their community moving forward. Areas at the highest risk of coastal hazard impacts have been targeted to ensure potential risks and opportunities are well understood by the community.

1.1. Purpose and Aim of the Communication Plan

This Communication Plan (the Plan) will support the project, to ensure all communication activities are appropriate, consistent, and delivered in a timely manner. It outlines consistent key messages and the objectives of each project phase and aims to increase participation by stakeholders and the community during the engagement process.

This plan identifies and defines the roles of persons involved in this project, formally defining who should be given specific information, when information will be delivered and what communication channels will be used to deliver the information. This will be a live document and will be reviewed and updated as required.

1.2. Communication Objectives

Open and transparent communication and stakeholder management plays a key role in enabling Council to engage effectively with the public. The key objectives of this Plan are:

- Develop a transparent, inclusive engagement process with all stakeholders.
- Identify and manage communication issues and risks throughout the duration of the project, by providing consistent and timely information.
- Enhance awareness, understanding and confidence in WRC's activities by following best-practice community engagement principles.

1.3. Communication Objectives by Project Phase

Table 1 outlines the 8 phases of the project and corresponding objectives for each phase:

Table 1 Project Milestones and Communication Objectives

Project Milestones	Indicative Timing	Level of Engagement	Communication Objectives
Phase 1			
1. Project Management Plan 2. Stakeholder Engagement Plan 3. Communications Plan	Jan 2017	Inform	Identify relevant internal and external stakeholders through brainstorming and discussions with the project team.
Phase 2			
4. Scoping Study 5. Community Engagement activities 6. Historical Analysis Report 7. Business Case	July 2017	Consult	Consult key stakeholders to assist in the identification of coastal hazards and their potential impacts. This will include direct engagement with key stakeholders and community consultation.
Phase 3			
8. Storm tide Modelling 9. Coastal Erosion Assessment 10. Coastal Inundation Modelling 11. Groundwater Asset Review	Dec 2017	Consult	Consult internal and external stakeholders in the identification of adaptation options, including direct engagement with key stakeholders and technical experts.
Phase 4			
12. Asset Exposure Assessment 13. Spatial Maps of Assets 14. Biodiversity & Ecosystem Assessment 15. Indigenous & Cultural Study 16. Economic Assessment of Key Coastal Settlements 17. Metadata Table 18. Stakeholders Engagement 19. Asset Valuation 20. Vulnerability Assessment	July 2018	Consult	Consult internal and external stakeholders, including direct engagement with key stakeholders and technical experts. The community will also be informed and engaged via stakeholder workshops, website updates, online surveys and information sheets during community consultation.
Phase 5			
21. Risk Assessment 22. Coastal Hazard Risk Maps 23. Damage Curves 24. Economic Indicators Report	July 2018	Consult	Consult internal and external stakeholders to identify and validate vulnerabilities, consequences, losses and risks. This may include conducting a

25. Council Workshops			risk assessment workshop with key stakeholders and council staff.
Phase 6			
26. Proposed Adaptation Options Report 27. Assessment Criteria 28. Stakeholder Workshops	July 2019	Involve	Involve internal and external stakeholders in the identification of adaptation options. Community Consultation to take place to inform affected communities and engage regarding challenges and opportunities.
Phase 7			
29. Multi-Criteria Analysis (MCA) Report 30. Cost-Benefit Analysis (CBA) Report 31. Appraisal Outcomes Report 32. Infographics for CBA and MCA 33. Stakeholder & Community Engagement Workshops	Dec 2019	Involve	Involve internal and external stakeholders in the selection and scoring of values for a multi-criteria assessment. This may include workshops and information sessions. Consult with local communities regarding initial options developed under the CHAS.
Phase 8			
34. Stakeholder Feedback 35. Implementation Strategy 36. Change Management Plan 37. Present Coastal Hazard Adaptation Strategy	May / June 2021	Consult/ Inform	Inform internal and key stakeholders in the implementation phase and ask for feedback about the CHAS via evaluation survey.

1.4. Communication Principles

To develop an efficient and effective Communications Plan several key consultation principles have been developed (summarised in Table 1 below). It is important to establish clear, agreed communication principles.

Table 1 - Summary of Consultation Principles

Principles
1. Integrity and transparency – Engagement involves trust and transparency. The levels of community influence will be clearly communicated throughout this process. WRC will carefully consider and accurately portray the community's role in decision making and will ensure awareness of the scope of their influence on decisions made.
2. Respect – WRC will facilitate a safe and respectful consultation environment that values individual opinions and input. WRC values the contributions made and time given by the community and will facilitate consultation processes that respect all participants and their contributions.

3. Inclusive	– WRC will use a range of opportunities and techniques to encourage the participation and awareness of all people who may be affected by this process.
4. Informative	– Effective engagement will ensure all parties understand the relevant legal, statutory, strategic and local context of this project and the process.
5. Well planned	– Engagement requires informed judgement and planning in its approach and implementation to be effective, practical and suitably resourced.
6. Meaningful	– The community will have multiple opportunities to participate in community engagement processes that are clearly articulated in relation to project constraints, the scope of community influence, and WRC's decision-making process.
7. Closing the loop	– Providing feedback on engagement is important in maintaining an open and transparent process. WRC needs to ensure that the community understands how their input was considered and the reasons for the final decision.

2. Stakeholder Identification

A stakeholder is defined as any individual, group of individuals, organisation or political entity with an interest in the outcome of a decision. They may be, or perceive that they may be, affected directly or indirectly by the outcome of a decision. In order to ensure the best outcome in undertaking consultation, stakeholders must be identified and a mechanism for consultation for each group determined.

2.1. Level of Stakeholder Participation

To ensure the best results from this engagement process, a series of participation levels has been determined, based on the International Association of Public Participation (IAP2) guidelines, as endorsed by the draft Whitsunday Regional Council Community Engagement Policy. Based on the levels of engagement, outlined below in Table 3, Council will **inform**, **consult** and **involve** key stakeholders and the community.

Table 2 – IAP2 Public Participation Spectrum

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision. We will seek your feedback on drafts and proposals.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will work together with you to formulate solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

2.2. Stakeholder Analysis

A preliminary list of potential stakeholders has been developed, in Error! Reference source not found. below. This table also demonstrates the level of consultation best suited to each stakeholder group.

Table 3 - Project stakeholders and level of consultation

Stakeholder Category	Representative/Member	Level of consultation
Local Government		
Whitsunday Regional Council	Mayor & CEO Elected Representatives Health, Environment & Climate Communications & Marketing Water and Sewerage Roads and Drainage Disaster Management Strategic Planning Economic Development	▪ Involve
Government Representatives		
Department of Environment & Heritage Protection		▪ Involve
Federal Member for Dawson	Mr George Christensen MP	▪ Inform
State Member for Whitsunday	Ms Amanda Camm MP	▪ Inform
Queensland Parks & Wildlife	Tanja Brugmann	▪ Inform
Peak Industry Bodies		
Whitsunday Coast Chamber of Commerce	Allan Milostic	▪ Consult
Bowen Collinsville Enterprise	Paul O'Loughlin	▪ Consult
Proserpine Chamber of Commerce	Bob Bogie	▪ Consult
Bowen Gumlu Growers Association	Carl Walker & Anna McCowan	▪ Consult
Bowen Chamber of Commerce	Bruce Hedditch	▪ Consult
Tourism Whitsundays	Tash Wheeler	▪ Consult
Bowen Tourism & Business	Christin Short	▪ Consult
Abell Point Marina	Paul Darrouzet	▪ Consult
Port of Airlie	Mr Wayne Hann	▪ Consult
UDIA	Mark McGrath – President	▪ Consult
Cane Growers	Michael Porter – Manager	▪ Consult
Wilmar Sugar Mill	Danny Van Der Berg	▪ Consult
Sunwater	Chris Delamont	▪ Consult
Reef Catchments	Katrina Dent	▪ Consult
Landcare	Jacquie Sheils	▪ Consult
AgForce	Sharon Howard	▪ Consult
General Community		
Affected Property Owners		▪ Consult
Wider public		▪ Inform
Schools		▪ Inform

3. Funding Agreement and Timing

The CHAS project 'Resilient Whitsundays: Coastal Hazards and Responses' is the result of a sub-funding agreement between Whitsunday Regional Council and the Local Government Association of Queensland, under the Coastal Hazard Adaptation Program (QCoast₂₁₀₀).

The project includes eight phases to be delivered until June 2021 (refer to Table 1 for more details on each project phase).

4. Roles and Responsibilities

The project team's roles and responsibilities have been outlined below in Table 5:

Table 5 – Roles and Responsibilities

Project Team Role	Responsibilities
Whitsunday Regional Council	
Project Manager – Scott Hardy (Coordinator Natural Resource Management)	Manage and coordinate the project's deliverables, keep project phases on track and budget, approve all communications materials, act as key liaison between consultants and WRC, act as key project spokesperson when the Mayor not available.
Project Support – Julie Giguere (Environment Officer)	Assist Project Manager to coordinate project deliverables and phases, support Project Team during meetings, assist with reporting.
Communications Support – Joanne Vlismas (Engagement & Marketing Coordinator)	Assist Project Team in the delivery of communications and engagement materials, draft communications, review consultant materials, assist in the preparation of community engagement activities.
Working Group Member – Shane Neville (Manager Strategic Planning)	Assist the Project Team through input, feedback and technical expertise as required.
Working Group Member - (Executive Officer Economic Development)	Assist the Project Team through input, feedback and technical expertise as required.
Working Group Manager - Yestin Hughes (Manager Assets and Planning)	Assist the Project Team through input, feedback and technical expertise as required.
Working Group Member – Doug Mackay (Development Assessment Manager)	Assist the Project Team through input, feedback and technical expertise as required.
Working Group Member – Jessica Cristaudo (Civil Engineer, Roads and Drainage)	Assist the Project Team through input, feedback and technical expertise as required.
Working Group Member – Sandra Black (Disaster Recovery Coordinator)	Assist the Project Team through input, feedback and technical expertise as required.
External Consultants	
Climate Planning – Donovan Burton	Manage and coordinate each phase to be completed by Climate Planning, provide specialist technical advice on leading climate change adaptation strategies.
Climate Planning – Chloe Portanger	Assist in the coordination of project phases which are to be completed by Climate Planning, prepare project materials for review by Project Team.

5. Identify Risks of Poor Communication

A communication risk or issue is any aspect, impact or result of a project that has potential to raise concerns or objections from the community and adversely affect the progress and/or WRC's reputation. Several potential risks may be associated with this process due to the nature of the project and existing community concerns. These potential risks will require management throughout the consultation process, identified below in Table 6:

Table 6 – Risk Assessment

Identified Risk	Level of Impact (High, Medium, Low)	Mitigation Method
Lack of cooperation / negative response from affected property owners.	High – Could result in negative press and hinder Council's efforts to implement adaptation strategies.	Engage with property owners by letter/email, phone and in person where possible to explain purpose and benefits of the Strategy.
Negative publicity about the project e.g. climate change scepticism and political issues.	High – As there are multiple viewpoints on climate change in the community, the issues surrounding this may hijack the consultation process.	Provide regular, consistent and accurate information to key stakeholders and the community, to ensure our key messages are distributed widely. Keep all information provided non-political and easy to understand. Remain open and transparent throughout the consultation process.
Lack of general understanding about coastal hazards prior to consultation.	Medium – Could reduce the effectiveness of the engagement process as people need time to process the information and form their opinions.	Begin preparing the community with information about coastal hazards that are a risk now (e.g. king tides, cyclones, erosion) and clearly articulate the role of CHAS in addressing these risks. Aim to give the community a solid understanding of coastal hazards before consulting with them.
Consultation process is not adequate to properly engage with the community.	Medium – Could reduce effectiveness of the engagement process.	Engage throughout all phases of the project, with key activities occurring at relevant phases but ongoing communication and education with all stakeholders in between. Multiple rounds of consultation are recommended, with each round building on the feedback received prior.
Confusion around the development and outcomes of the CHAS.	Medium – Could reduce effectiveness of the engagement process.	Simplify the objectives and timeframes for the project and include in the FAQs and any relevant media. Explain benefits to the community in every communication and keep all messaging relevant to a member of the public, i.e. "Why do I care?" "How will this affect me?"

6. Communication Strategy

The Plan has been broken down into different elements, enabling WRC to appropriately inform and engage with the community. Key elements of this section include communication management, internal and external communication tools and an Action Plan.

6.1. Communication Management

6.1.1. *Communication Protocol and Media Spokesperson*

The following protocols will be followed throughout the consultation process:

- All media enquiries will be directed through Council's Communications & Marketing Manager and the Natural Resource Manager.
- The Whitsunday Regional Council Mayor will be the key spokesperson for any media statements or releases; if the Mayor is not available, the Natural Resource Manager will be media spokesperson for the project.
- All other enquiries will be directed to the Natural Resources Manager, who will notify the Director of Community & Environment, if necessary.
- All formal external communication materials will be reviewed and approved by both the Director of Community & Environment, Natural Resources Manager and the Communication & Marketing Manager.
- All incoming communication to Council from external stakeholders and the responses to these enquiries will be recorded and tracked using Enterprise Content Management (ECM) and Customer Request Management (CRM). Key information to be recorded will include name of person, contact details, query, action required, response and any other comments required.

6.2. Internal Communication Tools

The following engagement tools will be used to facilitate effective communication within the internal project team and manage potential issues:

- Email/phone updates
- Regular Working Group meetings

6.3. External Communication Tools

The following engagement tools will be used during the consultation process:

- Community Public Displays
- Letters to affected residents
- Presentation to Chambers of Commerce
- Your Say Whitsunday online feedback
- Council website
- Media Releases
- Social Media
- Public Notices
- FAQs

6.3.1. Community Public Displays

Hold Community Public Displays with each impacted coastal community to provide information, engage and gain feedback from directly impacted communities. Each event would be approx. 2 hours duration and will take place at the following locations:

- Bowen – Display at Front Beach, Queens Beach and Rose Bay (2hrs each)
- Airlie / Cannonvale – Display at Cannonvale Foreshore
- Wilsons Beach / Conway Beach – Display at Wilsons Beach
- Dingo Beach / Hydeaway Bay – Display at Dingo Beach

6.3.2. Letter to affected residents

A letter will be sent to affected residents with information about the CHAS and the consultation process, including how they can have their say.

6.3.3. Presentation to Chambers of Commerce

Present to Bowen and Whitsunday Chambers of Commerce to advise affected business owners and relevant industry stakeholders about future challenges and opportunities for these industries.

6.3.4. Your Say Whitsunday online feedback

Your Say Whitsunday is WRC's online community engagement website. All project information, FAQs and online engagement tools will be available here throughout the duration of the project.

6.3.5. WRC website

WRC's website will be listed under the Have Your Say section, with a link to the Your Say page. The coastal mapping is also available on the website for viewing.

6.3.6. Media Releases

Media releases will be used at strategic points throughout the project stages, announcing important milestones and information. Any releases sent will be newsworthy and relevant.

6.3.7. Social Media

WRC's social media platforms, Facebook, Twitter, Instagram and Youtube, will be used to distribute information to the public throughout the duration of the project. Social media is a valuable tool for engaging with the wider community and sharing information.

6.3.8. Public Notices

A public notice will be placed in the local papers and on WRC's website to advise residents of the consultation process and how they can have their say.

6.3.9. Frequently Asked Questions (FAQs)

Information about the project will be clearly outlined in a Frequently Asked Questions factsheet, which will address concerns and questions about this type of project.

7. Key Messages

The following key messages have been prepared to establish consistent, clear messaging about the project and its benefit to the community. The messages will be used to form the basis for all communications materials throughout the project, and to respond to media enquiries. These key messages will continue to be reviewed and updated as required.

Phase 1 Messaging:

- Whitsunday Regional Council is taking a proactive approach to climate change, by identifying climate change adaptation as a key focus for the region.
- With over 500km of coastline, the Whitsunday region and its residents are vulnerable to the long-term impacts of climate change.
- To respond to these challenges, Council adopted a Climate Change Adaptation Policy and Strategy in July 2016, to guide and deliver a range of important climate change projects.
- Council is working closely with leading global specialists in climate change adaptation, Climate Planning, to determine how the Whitsunday region can best adapt to a changing climate.
- The goal of climate change adaptation is to reduce the harmful effects of climate change, such as sea-levels encroaching on coastal areas, as well as making the most of any opportunities which may result from these changes.
- The Strategy aims to empower resilience in the long-term financial planning, asset management and other key Council planning processes, as well as educating the community about climate change adaptation and identifying opportunities to benefit from a change in climate.
- Building on this recent work, Council has received funding from the Local Government Association of Queensland (LGAQ) to deliver the Coastal Hazard Adaptation Strategy (CHAS) and 'Resilient Whitsundays Coastal Hazards' project.
- This project will begin the important work of identifying which areas and key assets are at risk from coastal hazard in the Whitsunday region, and will develop potential options for responding to these challenges.
- The project has eight key phases, which include ongoing stakeholder engagement, mapping coastal hazards, identifying areas exposed to current and future coastal hazards, undertaking a risk assessment on potential assets at risk from climate change and identifying opportunities for the region.
- Whitsunday Regional Council is taking action to ensure the Whitsunday region and its residents can withstand the challenges of climate change and harness its potential opportunities for the future.
- For more information about the project and Council's vision for climate change adaptation, visit Council's online engagement website Your Say Whitsunday, at <http://yoursay.whitsunday.qld.gov.au>

8. Action Plan

An Action Plan has been developed to provide a consistent structure to developing and implementing the consultation strategy (**Table 5** below). This Action Plan will continue to be reviewed and updated as the project progresses. The current information below is for the release of communication materials during Phase 1 of the project.

Table 5 – Communications Action Plan

Step		Timing	Aim	Objective	How
1	Consultation Planning	March / April 2021	Plan and prepare for future consultation activities	Ensure all risks and issues have been mitigated and best-practice communication standards applied.	▪ Update Communications Plan ▪ Prepare consultation materials
2	Initiate stakeholder and community engagement	Late April 2021	Create interest, inform and share information, giving people a reason to engage.	Engage with affected residents and inform the wider community about the consultation process.	▪ Media release ▪ Social Media ▪ Direct emails to key stakeholders and previous consultation participants
3	Community Engagement activities	Late April – Late May 2021	Capture input from affected communities and industry stakeholders. Inform them of potential impacts from coastal hazards.	Meaningful engagement and information that will provide input into solutions for future challenges and opportunities.	▪ Public Displays at key coastal locations ▪ Present to Chambers of Commerce ▪ Online feedback at Your Say Whitsunday ▪ Social media ▪ Public Notice
4	Close the loop with the community	June / July 2021	To evaluate the feedback and interest from the community regarding coastal hazards.	Raise awareness of the project and promote the outcomes from consultation activities	▪ Direct email to participants ▪ Social media ▪ Consultation summary published

9. Feedback and integration

9.1. Next steps

The project team will brief Council to gain approval of the outlined approach for community engagement. Once the Plan has been approved, the project team will prepare materials and activities to launch in late April 2021.

After each phase and round of stakeholder and community engagement, participants and the public will be advised of the project milestones and next steps by email, web update and media release.

It is recommended that stakeholder and community engagement continue throughout the Project, and at its conclusion, to ensure there is ongoing education and awareness about coastal hazards and climate change adaptation. This Plan will continue to be updated to reflect ongoing engagement.

9.2. Feedback

Key Stakeholders and community participants will be contacted after the project is completed to advise them of the outcome and confirm their feedback on the engagement process.

Closing the loop with participants is one of the most important steps of an effective community engagement process. Once the community sees the results of the engagement, they become more engaged and willing to participate in future activities.

A Consultation Summary will be prepared which will outline the levels of participation and engagement, key feedback results and next steps.

15. Community Services

15.2 DONATION ON COUNCIL FEES - MARCH/APRIL 2021

AUTHOR: Meredith Davis - Administration Officer Community Development

RESPONSIBLE OFFICER: Julie Wright - Director Community Services

OFFICER'S RECOMMENDATION

That Council approve the donation on Council fees, from budget code JC: 2967.11074. Community Donations (2967) / Donations (11074), for the following applicants:

- **Whitsunday Kyokushin Karate Proserpine - Planning Application Fee - \$3,120.00**
 - **Whitsunday Neighbourhood Centre - Planning Application Fee - \$2,056.50**
 - **Whitsunday Running Festival - Class 2 Event Application Fee - \$664.00**
 - **Dingo Beach Progress Assoc. Inc. - Class 2 Event Application Fee - \$664.00**
-

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

Community groups are invited to apply for a Donation on Council Fees when submitting applications to Council prior to the event or works commencing.

PURPOSE

Council to consider providing financial support for Not-for-Profit organisations to enable their events and facilities to continue to be an invaluable resource to our local communities.

BACKGROUND

Donations on Council Fees are only available for Not-for-Profit organisations and only apply to:

- Planning, Building and Event Applications,
- Local Law Licence Applications,
- Local Law Licence Annual Renewals, and
- Green Waste Disposal Fees.

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009

Local Government Regulation 2012

ANALYSIS

Organisation	Event/Description	Application Type	Amount
Whitsunday Kyokushin Karate Proserpine	Material Change of Use Indoor Sport and Recreation Centre Lot 61 on RP731012	Planning Application Fee	\$3,120.00
Whitsunday Neighbourhood Centre	Material Change of Use Community Use Warehouse Lot 2 on SP111110	Planning Application Fee	\$2,056.50
Whitsunday Running Club	Anaconda Whitsunday Trail Fest Airlie Beach Foreshore 11-12 September 2021	Class 2 Event Application Fee	\$664.00
Dingo Beach Progress Association Inc.	WhitFunday 2021 Dingo Beach Foreshore 13 June 2021	Class 2 Event Application Fee	\$664.00
		Total	\$6,504.50

Council has the following options:

Option 1 – That Council approve the payment of fee donations for March/April 2021.

Option 2 – That Council decline the request for fee donations.

STRATEGIC IMPACTS

Corporate Plan

Outcome 2.2 - Our region is inclusive and motivated by a range of social, cultural and recreation opportunities.

Strategy 2.2.6 - Support community groups in facilitating a variety of cultural, community, sporting and recreation activities, events and programs.

Operational Plan

Action 2.2.6.1 - Support the Whitsunday community through the facilitation of the community grants and donations programs.

Financial Implications - The funding for the support will be taken from budget code JC: 2967.11074 - Community Donations (2967) / Donations (11074).

\$138,590.00 has already been provided this year for Donations and Sponsorships.

There is currently \$19,916.00 in this budget line item.

Risk Management Implications - The donation of Council fees for activities undertaken by community groups shows Council is committed to investing in the community, while recognising the work done by our local, Not for Profit community groups.

CONSULTATION

Julie Wright - Director Community Services

Rod Cousins - Manager Community Development & Libraries

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

That Council approves the donation on fees, from budget code JC: 2967.11074 - Community Donations (2967) / Donations (11074), for the months of March/April 2021.

ATTACHMENTS

N/A

15. Community Services
15.3 DONATION REQUEST - 60TH ANNIVERSARY CELEBRATIONS - BOWEN STATE HIGH SCHOOL

AUTHOR: Emily Hart - Community Development Officer

RESPONSIBLE OFFICER: Julie Wright - Director Community Services

OFFICER'S RECOMMENDATION

That Council approve a donation of \$4,400.00 from budget code JC: 2967.11074 - Community Donations (2967) / Donations (11074), to assist the Bowen State High School in hosting their 60th Anniversary celebrations to be held on 22 May 2021.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

Council is approached by community groups for donations and attempts to assist where possible.

PURPOSE

For Council to consider a request from the Bowen State High School for financial assistance to aid them with hosting their 60th Anniversary celebrations.

BACKGROUND

Bowen State High School have been providing secondary education services to the Bowen community for sixty years. To mark this special milestone a community celebratory event will be held at the school on Saturday, 22 May 2021.

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009

Local Government Regulation 2012

ANALYSIS

To celebrate the Bowen State High School's 60th Anniversary, the school will be hosting an event to mark the occasion and has requested a donation to assist them with holding the event. The costings provided for seating, outdoor lighting, live entertainment, food, games and face painting total approximately \$4,400.00.

Council has the following options:

Option 1 - That Council approve a donation of \$4,400.00 to cover the costs of the items listed and support Bowen State High School for its 60th Anniversary Celebrations.

Option 2 - That Council decline the donation request.

STRATEGIC IMPACTS

Corporate Plan

Outcome 2.2 - Our region is inclusive and motivated by range of social, cultural and recreational opportunities.

Outcome 2.2.6 - Support community groups in facilitating a variety of cultural, community sporting and recreation activities, events and programs.

Operational Plan

Action 2.2.6.1 - Support the Whitsunday community through the facilitation of the community grants and donation programs.

Financial Implications - The funds will be taken from budget code from JC: 2967.11074 – Community Donations (2967) / Donations (11074). YTD Budget remaining \$19,800.00.

Risk Management Implications - There is financial risk to Council, however the support provided to this group ensures strong relationships are built and Council's reputation is perceived in a positive manner in the community.

CONSULTATION

Julie Wright - Director Community Services

Rod Cousins - Manager Community Development & Libraries

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

It is recommended that Council approve a donation of \$4,400.00 from budget code JC: 2967.11074 - Community Donations (2967) / Donations (11074), to assist the Bowen State High School for their 60th Anniversary celebrations to be held on 22 May 2021.

ATTACHMENTS

Attachment 1 - Request for Sponsorship - Bowen State High School

Attachment 2 - Event Costings - Bowen State High School

Attachment 1 – Request for Sponsorship - Bowen State High School



1961 - 2021

BOWEN STATE HIGH SCHOOL
Prepared For All Things

CELEBRATING 60 YEARS

1-9 Argyle Park Road, Bowen, QLD 4805
07 4786 9888 | 07 4786 9800 | admin@bowenshs.eq.edu.au
www.bowenshs.eq.edu.au

3 March 2021

Mayor Andrew Willcox
Whitsunday Regional Council
PO Box 104
PROSERPINE QLD 4800

WHITSUNDAY REGIONAL COUNCIL
9 - MAR 2021
RECEIVED

Mayor Andrew Willcox

RE: Bowen State High School 60th Anniversary Celebrations

In 2021 Bowen State High School will celebrate 60 Years of providing inclusive state secondary schooling. As part of the celebrations the school will be holding a culminating event on Saturday 22nd May 2021 at the school. The school would sincerely appreciate a donation of \$5000 to support the materials and resourcing necessary to organise and deliver an occasion of this magnitude and importance.

We appreciate your consideration and look forward to further communication and productive relationships with the Whitsunday Regional Council.

Kindest Regards



Principal
Bowen State High School

Committed To Achieving Inclusive Excellence

Attachment 2 – Event Costings - Bowen State High School



1961 - 2021

CELEBRATING 60 YEARS

BOWEN STATE HIGH SCHOOL

Prepared For All Things

1-9 Argyle Park Road, Bowen, QLD 4805
 07 4786 9888 | 07 4786 9800 | admin@bowenshs.eq.edu.au
www.bowenshs.eq.edu.au

28 March 2021

Bowen Industrial Hire		
Quote No Q3202		
3x Lighting Tower On Trailer MSLED 2245K-9 2400W Mine Certified		
1 Nights Hire	\$ 488.40	
Delivery	\$ 264.00	
Collection	<u>\$ 264.00</u>	
-20% Discount	<u>\$ 203.28</u>	
Total		<u>\$ 813.12</u>
 Bowen Hire & Sales		
400 White Chairs @ \$3.00 each	\$1,200.00	
40 x 1.8 round tables @\$25.00 each	\$1,000.00	
Delivery	\$ 45.00	
Collection	<u>\$ 45.00</u>	
Total		\$2,290.00
 Ben Vico		
Entertainment		\$ 500.00
 Quesadilla		
Ingredients for approximately 500 quesadillas		\$ 500.00
 Face Painting		
Paint 13 @ \$8.25	\$ 107.25	
Body paint accessories	\$ 60.25	
Painters Guide	\$ 9.65	
Total		\$ 177.15
 Games		
4 games @ \$30.00 each		<u>\$ 120.00</u>
 GRAND TOTAL		 <u>\$4,400.27</u>

Committed To Achieving Inclusive Excellence

16. Infrastructure Services

16.1 BURDEKIN AND HAUGHTON FLOOD RESILIENCE STRATEGY

AUTHOR: Jessica Cristaudo - Coordinator Transport Planning and Assets

RESPONSIBLE OFFICER: Adam Hagy - Acting Director of Infrastructure Services

OFFICER'S RECOMMENDATION

That Council:

- 1. endorse the Burdekin and Haughton Flood Resilience Strategy;**
 - 2. note the ongoing work to finalise a supporting Action Plan, which is intended for ownership by each participating Council;**
 - 3. note the completed Process 1 element of the Queensland Emergency Risk Management Framework through the work undertaken by Queensland Reconstruction Authority for Council as per the endorsed Terms of Reference;**
 - 4. note the draft local knowledge maps drawn from local knowledge capture process for selected areas within the catchment; and**
 - 5. note the intention to establish a Burdekin Basin Working Group to support collaborative implementation of the strategy, in perpetuity and provide a Council Officer as a representative on this committee.**
-

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

Following the devastating impacts of the North and Far North Queensland Monsoon Trough event of January/February 2019 on the Burdekin and Haughton catchment region, Queensland Reconstructive Authority (QRA) have worked collaboratively with eight (8) Councils impacted by this area to develop the Burdekin and Haughton Flood Resilience Strategy (the Strategy).

PURPOSE

The purpose of the Strategy was to work in partnership across government to identify the flood matters impacting the Burdekin and Haughton region and to develop a prioritised plan of actions and program of delivery, matched to possible funding avenues that can be implemented over time by Councils.

The Strategy is now being brought to Council for endorsement and nomination of a Council representative to participate in the Burdekin Basin Working Group.

BACKGROUND

Council Briefing Session - 4 November 2020 - Presentation of the draft Strategy by QRA.

STATUTORY/COMPLIANCE MATTERS

N/A

ANALYSIS

The Strategy represents the culmination of over 16 months of collaborative work between the State Government, participating Councils and key stakeholders to understand the multi-faceted aspects of flood risks and resilience across the Burdekin and Haughton catchments, and set actionable pathways for continued resilience enhancement that can be matched to funding opportunities.

The Strategy has been drafted from a grassroots level, rather than appear as a 'traditional' government document. This is consistent with the locally-led, regionally coordinated and state-facilitated approach to the delivery of regional resilience strategies under Resilient Queensland.

The Strategy attempts to clearly articulate the varied considerations of flood resilience relative to the Burdekin and Haughton catchments. This is embedded in a strengths-based narrative which acknowledges the existing resilience of the region, whilst identifying the nature of opportunities to continue to enhance existing community-led approaches.

The Strategy is supported by a comprehensive Action Plan that outlines a range of locally- and regionally-derived actions drawn from engagement with local Councils and a combination of existing regional documents from a spectrum of stakeholders including state agencies, NQ Dry Tropics, and industry groups. The Action Plan is intended to act as the program of works that can support the Councils of the Burdekin and Haughton region in advancing its community-led approach to resilience enhancement by clearly articulating both flood risk and resilience needs.

This Action Plan includes:

- clear and actionable tasks to build resilience across the lines of resilience and maps these to the pathways in the Strategy;
- funding options, indicative costs, and indicative priorities for each action; and
- written content per action that can be used to support funding applications that articulates the need and reasoning behind the action.

The Strategy is a non-statutory document. It is intended to act as a means to articulate resilience issues at the local and regional scale and provide actionable pathways for matching of funding opportunities over time.

Following QRA's consultation with participating Councils as part of the project work, the establishment of an officer-level Basin Working Group is proposed to help guide implementation of the Strategy and Action Plan into the future, and assist to maintain the momentum of collaboration achieved through the project.

The Action Plan is intended to be a living document that can be altered as required by the Basin Working Group or via Councils and Local Disaster Management Groups. There is no requirement on participating Councils to deliver on the Action Plan – however it provides a clear program of effort moving forward against which funding can be proactively sought.

In terms of future implementation, Councils are encouraged to consider submitting joint applications for shared actions identified by the Strategy as part of upcoming state and federal funding opportunities (including the Queensland Resilience and Risk Reduction Fund, the federal Future Drought Fund, etc.).

STRATEGIC IMPACTS

The development of this Strategy aligns to the Place and Prosperity themes of Council's Corporate Plan through protection of the natural environment and enabling the economy to be resilient to weather events that impact the region.

There is a direct linkage to Council's Operational Plan through disaster resilience and impact mitigation.

Council is not obliged to any funding of actions identified in the Strategy, but if funding does become available, there is direct linkage of projects to the Action Plan.

Extensive engagement and collaboration between the state and local governments and other stakeholders has been a hallmark of the Strategy development process.

A total of 75 engagements, 6 multi-stakeholder workshops, 26 stakeholder groups and 5 action planning meetings have been held, canvassing risk profiling, resilience visioning and strategy development, and governance.

Numerous additional meetings and mini-workshops were undertaken periodically with local governments, state agencies, and non-government organisations throughout the development of the Strategy.

CONSULTATION

- Adam Hagy – Acting Director of Infrastructure Services
- Laura Gannon – Resilience Projects, Queensland Reconstructive Authority
- Barcaldine Regional Council
- Burdekin Regional Council
- Charters Towers Regional Council
- Isaac Regional Council
- Mackay City Council
- Tablelands Regional Council
- Townsville City Council

DISCLOSURE OF OFFICER'S INTERESTS

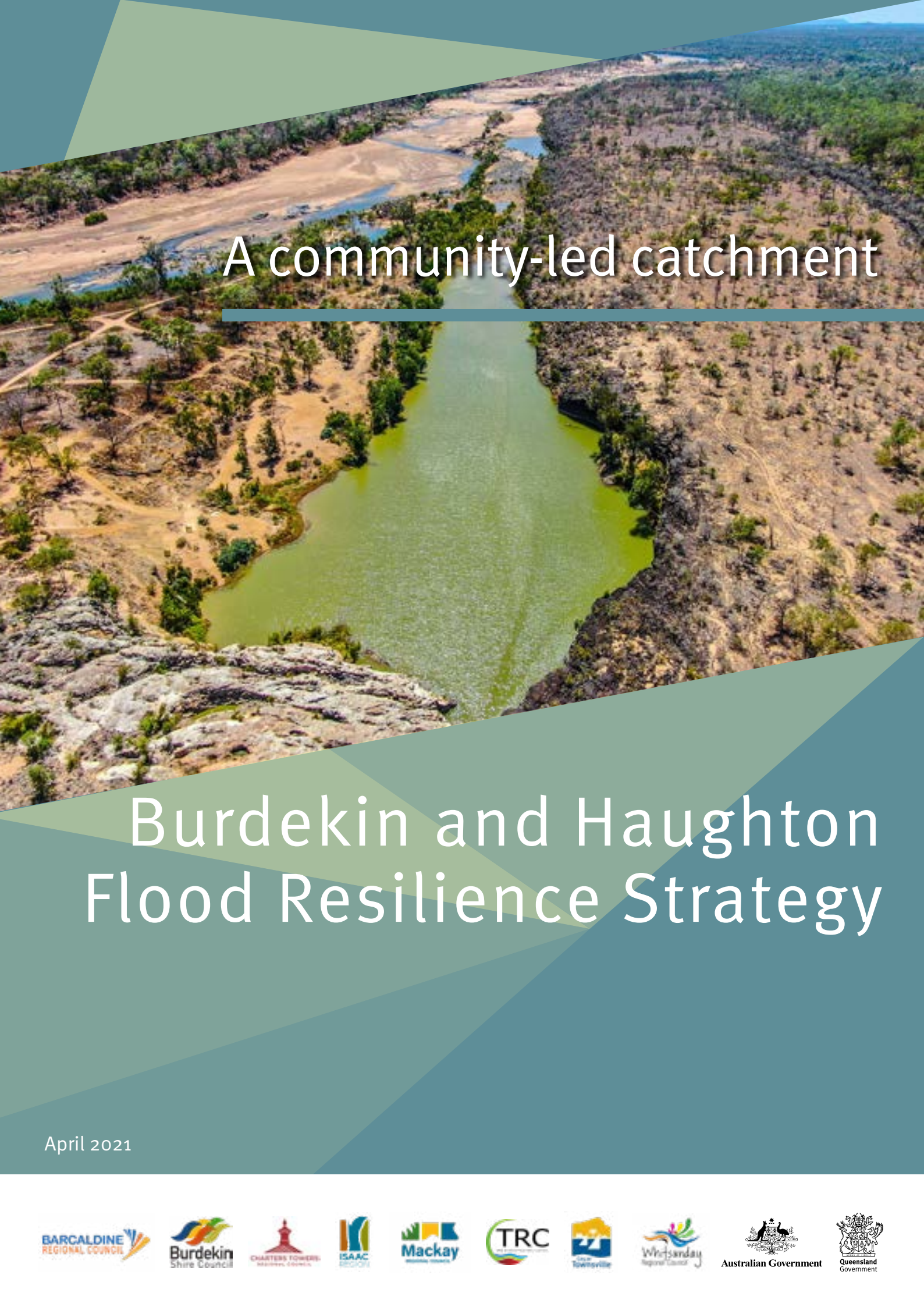
No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

That Council endorse the Burdekin and Haughton Flood Resilience Strategy. Along with this, also provide Council Officer representation on the Burdekin Basin Working Group and continue to work with QRA to finalise the Action Plan.

ATTACHMENTS

- Attachment 1 - Burdekin and Haughton Flood Resilience Strategy
- Attachment 2 - Project Brief for Strategy Endorsement



A community-led catchment

Burdekin and Haughton Flood Resilience Strategy

April 2021



Document details

Security classification	Public
Date of review of security classification	April 2021
Authority	Queensland Reconstruction Authority
Document status	Final
Version	1.0
QRA Reference	QRATF/21/748 (GD/0623)



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While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within.

To the best of our knowledge, the content was correct at the time of publishing.

Copies

Copies of this publication are available on our website at: www.qra.qld.gov.au/burdekin-haughton

Further copies are available upon request to:

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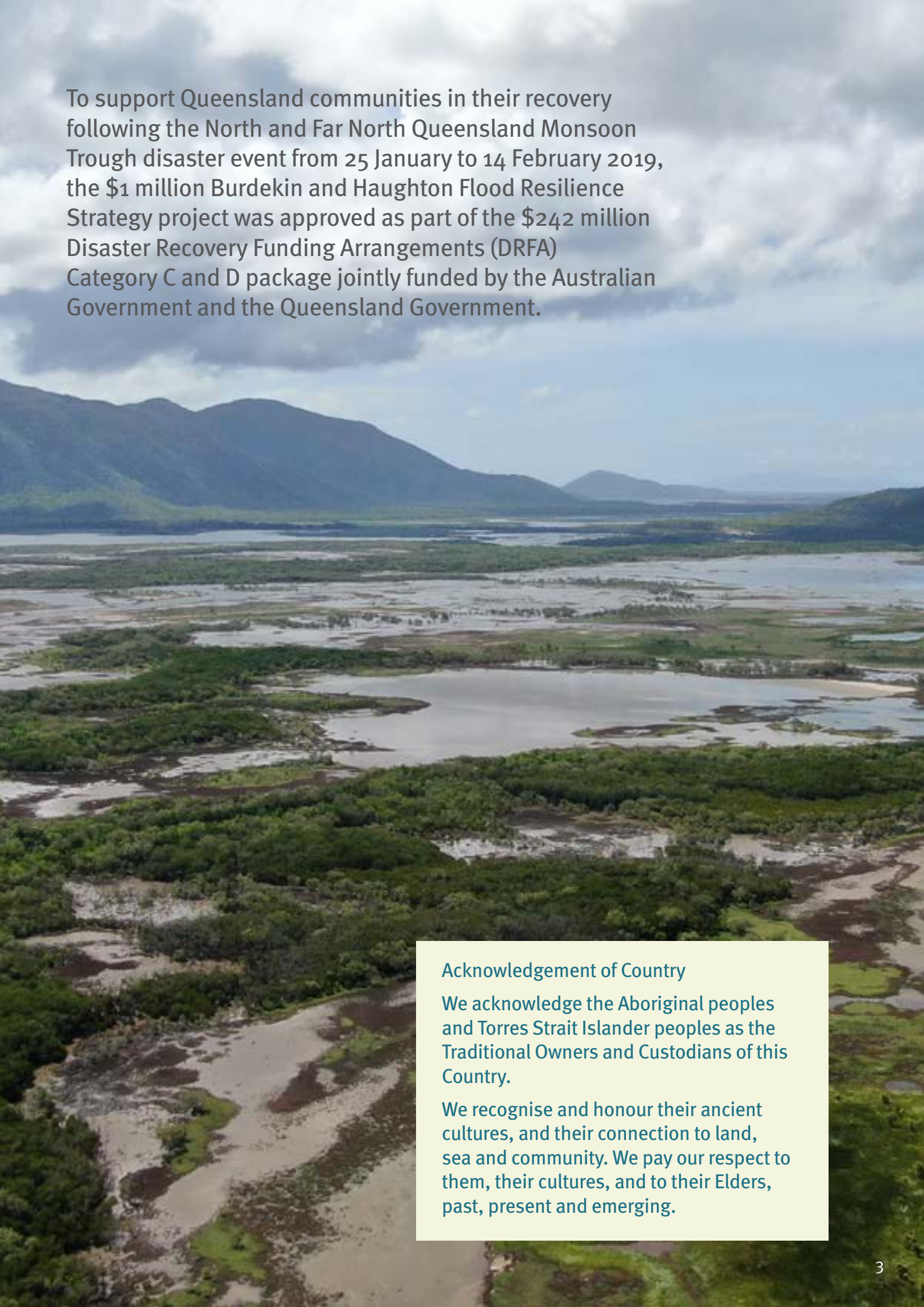
www.qra.qld.gov.au

The Burdekin and Haughton Flood Resilience Strategy is a community-led approach and partnership between eight councils working towards a shared vision of flood resilience for our region.

Councils can assist you with up-to-date flood related information including evacuation centre openings and locations, river heights, road conditions and closures, power and phone outages. Many councils provide an online dashboard for disaster management or emergency management, including information about local hazards, key situational awareness information and other resilience initiatives.

For emergencies, dial Triple Zero (000) for Police, Fire and Ambulance. For help with a damaged roof, rising flood water, trees fallen on buildings, or storm damage use the SES app or phone 132 500. For information about emergency services and safety visit www.qld.gov.au/emergency.

Council/website	Disaster Dashboard
Burdekin Shire Council www.burdekin.qld.gov.au	disaster.burdekin.qld.gov.au
Charters Towers Regional Council www.charterstowers.qld.gov.au	www.getready.ctrc.qld.gov.au
Whitsunday Regional Council www.whitsundayrc.qld.gov.au	disaster.whitsundayrc.qld.gov.au
Isaac Regional Council www.isaac.qld.gov.au	dashboard.isaac.qld.gov.au
Barcaldine Regional Council www.barcaldinerc.qld.gov.au	
Townsville City Council www.townsville.qld.gov.au	disaster.townsville.qld.gov.au
Tablelands Regional Council www.trc.qld.gov.au	dashboard.trc.qld.gov.au
Mackay Regional Council www.mackay.qld.gov.au	disaster.mackay.qld.gov.au

An aerial photograph showing a vast, flat landscape that has been significantly flooded. The water is a murky, brownish-grey color, covering large areas of what appears to be agricultural or natural land. In the foreground, there are patches of green vegetation and some exposed sandy or muddy ground. In the background, a range of dark, forested mountains stretches across the horizon under a sky filled with heavy, grey clouds. The overall scene conveys the scale of the flooding event mentioned in the text.

To support Queensland communities in their recovery following the North and Far North Queensland Monsoon Trough disaster event from 25 January to 14 February 2019, the \$1 million Burdekin and Haughton Flood Resilience Strategy project was approved as part of the \$242 million Disaster Recovery Funding Arrangements (DRFA) Category C and D package jointly funded by the Australian Government and the Queensland Government.

Acknowledgement of Country

We acknowledge the Aboriginal peoples and Torres Strait Islander peoples as the Traditional Owners and Custodians of this Country.

We recognise and honour their ancient cultures, and their connection to land, sea and community. We pay our respect to them, their cultures, and to their Elders, past, present and emerging.



Foreword

In recent years, the Burdekin and Haughton River catchments have experienced repeated and severe flooding events that have impacted on the livelihoods and properties of people who live and work in our region.

The Burdekin River is Australia's largest river when at its peak discharge volume, and we rely on this water as the lifeblood of our productive region.

Our communities accept flooding occurs naturally in Queensland, and we appreciate that understanding how our environment works is intrinsically linked to our ability to thrive.

Our communities already have solid foundations in resilience, and our community-led approach to disaster resilience is part of life for Central and North Queenslanders.

This Burdekin and Haughton Flood Resilience Strategy outlines how we will work together to proactively reduce flood risk and increase resilience throughout the catchments.

We can better prepare for the future and keep our communities safe by coordinating efforts, sharing knowledge and capability, and setting a proactive agenda for improving resilience over time across the catchments.

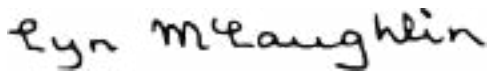
This Strategy is about reinforcing the shared responsibility of disaster resilience, and providing pathways to strengthen our capability and capacity. It also identifies opportunities to boost our resilience efforts and actions to advance social, environmental and economic goals for our communities, and our region more broadly.

By understanding the potential disaster risks we face, and working together to better manage our collective disaster risk, our region will contribute to a stronger and more resilient Queensland.

The Strategy has been developed in partnership between the Australian and Queensland Governments, the local governments of the Burdekin and Haughton River catchments, and a range of stakeholders with a valued connection to the region.

The following eight councils have collaborated to focus on how we will work towards our shared vision of flood resilience for the Burdekin and Haughton River catchments:

- Barcaldine Regional Council
- Burdekin Shire Council
- Charters Towers Regional Council
- Isaac Regional Council
- Mackay Regional Council
- Tablelands Regional Council
- Townsville City Council
- Whitsunday Regional Council.



Cr Lyn McLaughlin
Mayor, Burdekin Shire Council

Acknowledgements

The Queensland Government thanks the following councils, agencies and organisations for their contribution to this Strategy:

- Barcaldine Regional Council
- Burdekin Shire Council
- Charters Towers Regional Council
- Isaac Regional Council
- Mackay Regional Council
- Tablelands Regional Council
- Townsville City Council
- Whitsunday Regional Council
- Queensland Reconstruction Authority
- Queensland Fire and Emergency Services
- Department of Environment and Science
- Department of Transport and Main Roads
- Department of State Development, Infrastructure, Local Government and Planning
- Department of Agriculture and Fisheries
- Department of Resources
- National Drought and North Queensland Flood Recovery Agency
- Great Barrier Reef Marine Park Authority
- NQ Dry Tropics NRM
- SunWater
- Burdekin Water Futures
- Energy Queensland
- Telstra
- Optus
- Northern Drone Services
- NBN Co
- Wilmar
- James Cook University



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Image (this page): Localised flooding in the upper Belyando near Alpha, 2020.

(Opp page): Burdekin River historic flood marker at the Macrossan Bridge in the Charters Towers region.



Our vision

We are a region of people who are proudly self-sufficient and self-reliant.

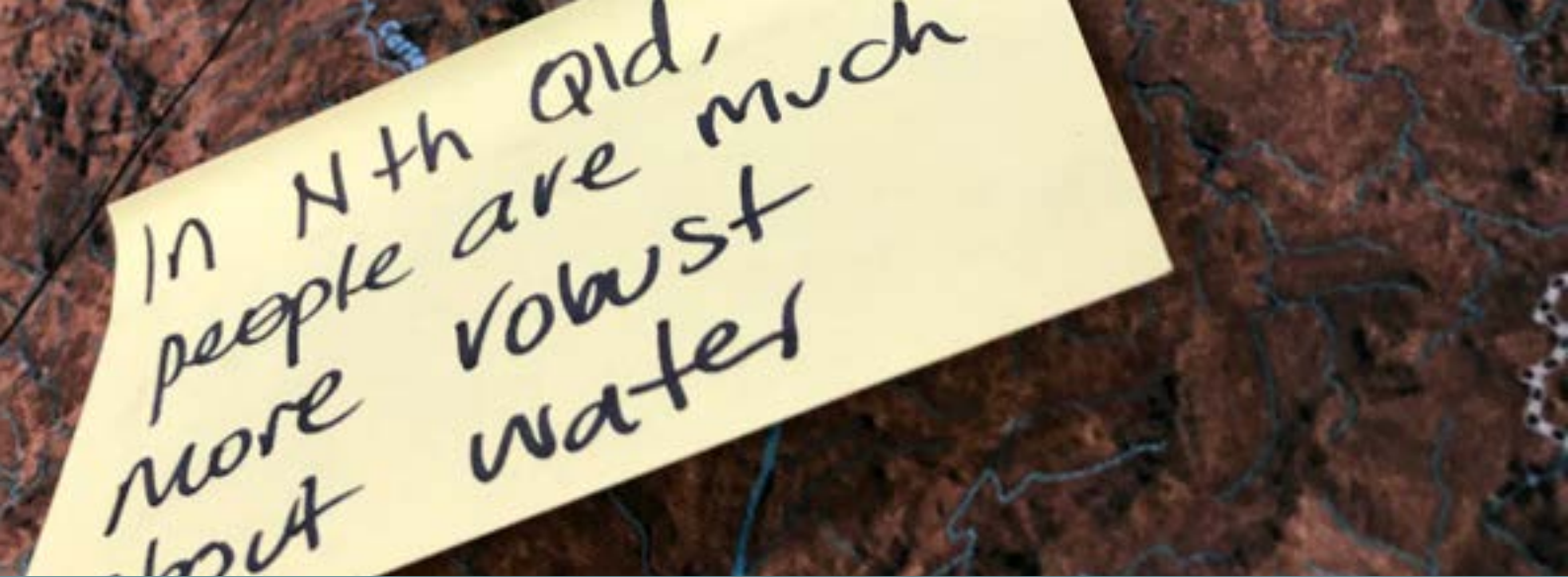
We take care of our own, and are robust about dealing with flood events.

We have a long history of flood exposure, it is part of living in North Queensland.

Because of this, we are adaptive and know what to expect when the rain comes both now, and into the future.

We acknowledge and embrace our diversity as a community, and revel in our shared values.

We lend a hand to each other, and help newcomers to 'learn the ropes' about living with flood.



Our community-led approach

During the wet season, there is no shortage of water flowing through the Burdekin and Haughton catchments. While flooding may bring with it a range of different impacts, water is a resource that is highly valued. Water supply underpins much of our region's social, economic and environmental prosperity.

Serious weather events can cause flooding, and cyclones, monsoon troughs and severe storms, are commonplace. Our exposure to flooding in the Burdekin and Haughton catchments has shaped our resilience over time. Both our capability and capacity to endure have been tested time and time again, and on each occasion, we rise to the challenge.

The Burdekin and Haughton Flood Resilience Strategy (the strategy) is our locally-led and regionally-coordinated blueprint, to leverage the existing resilience of our communities. It unites our community-led approach to flood resilience with innovative and coordinated opportunities to further reduce our region's flood risk and strengthen the resilience of our townships, economy, infrastructure and the environment.



Video: Find out more about the Burdekin and Haughton Flood Resilience Strategy by watching the videos at www.qra.qld.gov.au/burdekin-haughton

Image: Notes captured from 'big map' engagement activities during strategy development.



Our region

Local governments

There are eight local governments within the Burdekin and Haughton catchments. The six councils with a majority area contained within the catchment boundary are:

- Burdekin Shire Council
- Charters Towers Regional Council
- Whitsunday Regional Council
- Isaac Regional Council
- Barcaldine Regional Council
- Townsville City Council.

Two councils with a partial area within the catchment are Tablelands Regional Council and Mackay Regional Council.

These eight councils are working together, to deliver shared solutions to common resilience challenges across the Burdekin and Haughton catchments.

Our communities

The Burdekin and Haughton catchments stretch from south of the town of Alpha, north to the Atherton Tablelands, west to the Great Dividing Range, and east to the coast where the catchments discharge to the Great Barrier Reef coastal zone.

Our communities are diverse and unique. The population of the Burdekin and Haughton catchment area is approximately 111,360 people.

The fertile alluvial soils of the catchments support the rural and agricultural land uses occupying much of the region. A rich mining history and strong community networks are maintained through townships and centres dotted across the landscape including Collinsville, Glenden, Charters Towers and Ravenswood.

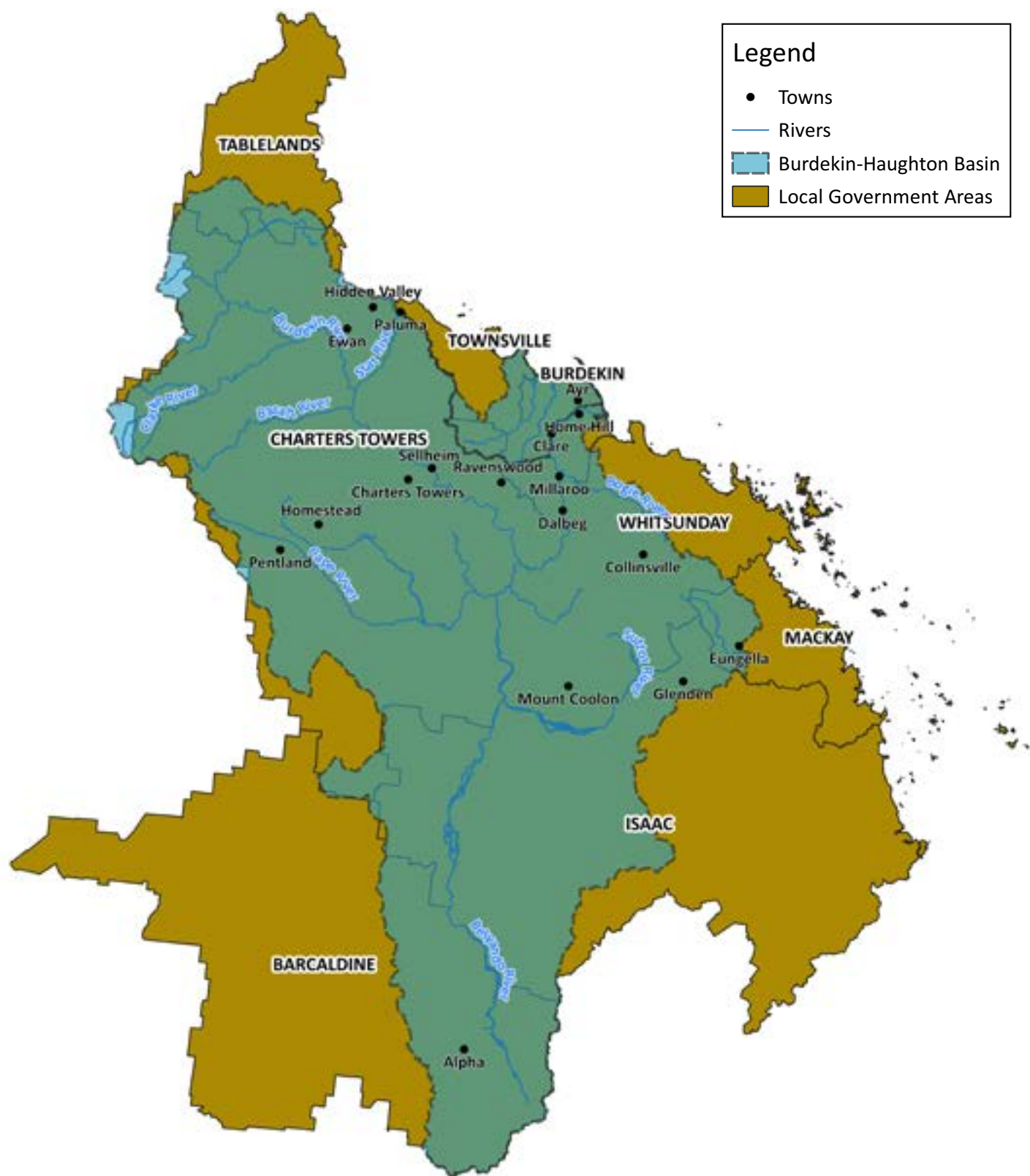
The major urban centres within the catchment are located at Charters Towers, Ayr, Home Hill and Collinsville. A small portion of the Townsville local government area forms part of the Haughton catchment.

In the Haughton catchment are the townships of Clare, Ayr, Brandon, Jerona and Giru, as well as Mingela and Woodstock, which are located toward the catchment's headwaters. It should be acknowledged that while Ayr and Clare are technically located within the Barratta sub-catchment of the Haughton system, riverine flooding in both towns stems from the Burdekin River.

The Burdekin and Haughton catchments comprise a series of sub-catchments, these include:

- Belyando
- Suttor
- Cape and Campaspe
- Upper Burdekin
- Bowen (including the Broken and Bogie)
- Lower Burdekin
- Haughton
- Barratta Creek.

The Burdekin and Haughton catchment





About this strategy

Objectives for flood resilience

The purpose of this strategy is to achieve the following objectives:

- recognise and encourage the behaviours, mindsets and activities that contribute toward flood resilience
- adopt whole-of-catchment approaches that deliver shared solutions to common problems
- understand how the nature of localised flood risk intersects with regionally relevant resilience goals
- work cohesively toward common catchment or regional resilience goals
- combine strategy with long-term investment to support continued community-focused resilience.

“This is about being on the front foot with resilience... so when we do have another event, we are actually better

Recognising our own resilience

This strategy seeks to guide how we will proactively work together to enhance flood-related disaster resilience over time. It combines strategy and investment in resilience action in a way that encompasses the impacts of our weather and climatic conditions across the Burdekin and Haughton catchments.

This strategy adopts a holistic view of the factors that underpin and contribute to flood resilience, with regard to the multitude of ways we are exposed to flood-related impacts across the region, and the various ways in which we can collectively address our risks.

Central to this is recognising the role and value of water for the environment and our livelihoods. Flooding is a natural process we have duly shaped our lives and behaviours around.

While the coordination of disaster resilience action is a key aspiration of this strategy, it must also be recognised that no two places or communities are the same – especially in a catchment with an area equivalent to the size of Tasmania.

From time to time, as much as the river system gives, it also takes away.

Diagram: disaster risk reduction.



Image: A swollen Belyando River on the Capricorn Highway, 2020.

A systems-based approach

Some aspects of resilience are relatively straightforward in terms of the opportunities for enhancement. Other aspects of resilience can be complex and deeply entrenched in systemic issues.

Integrated floodplain management involves a multidisciplinary approach across a range of sectors engaging in disaster management, engineering, land-use planning, community and economic development, transport, environmental management and communications. This approach contributes to an overarching, shared evidence base of knowledge with the capacity to explore systemic issues.

This approach also integrates a trans-disciplinary approach, which brings science, research, social science, governance and policy together with local knowledge.

These approaches culminate in an Action Plan which supports the implementation of this strategy, providing a blueprint for project delivery to support enhanced flood resilience, led by local government.

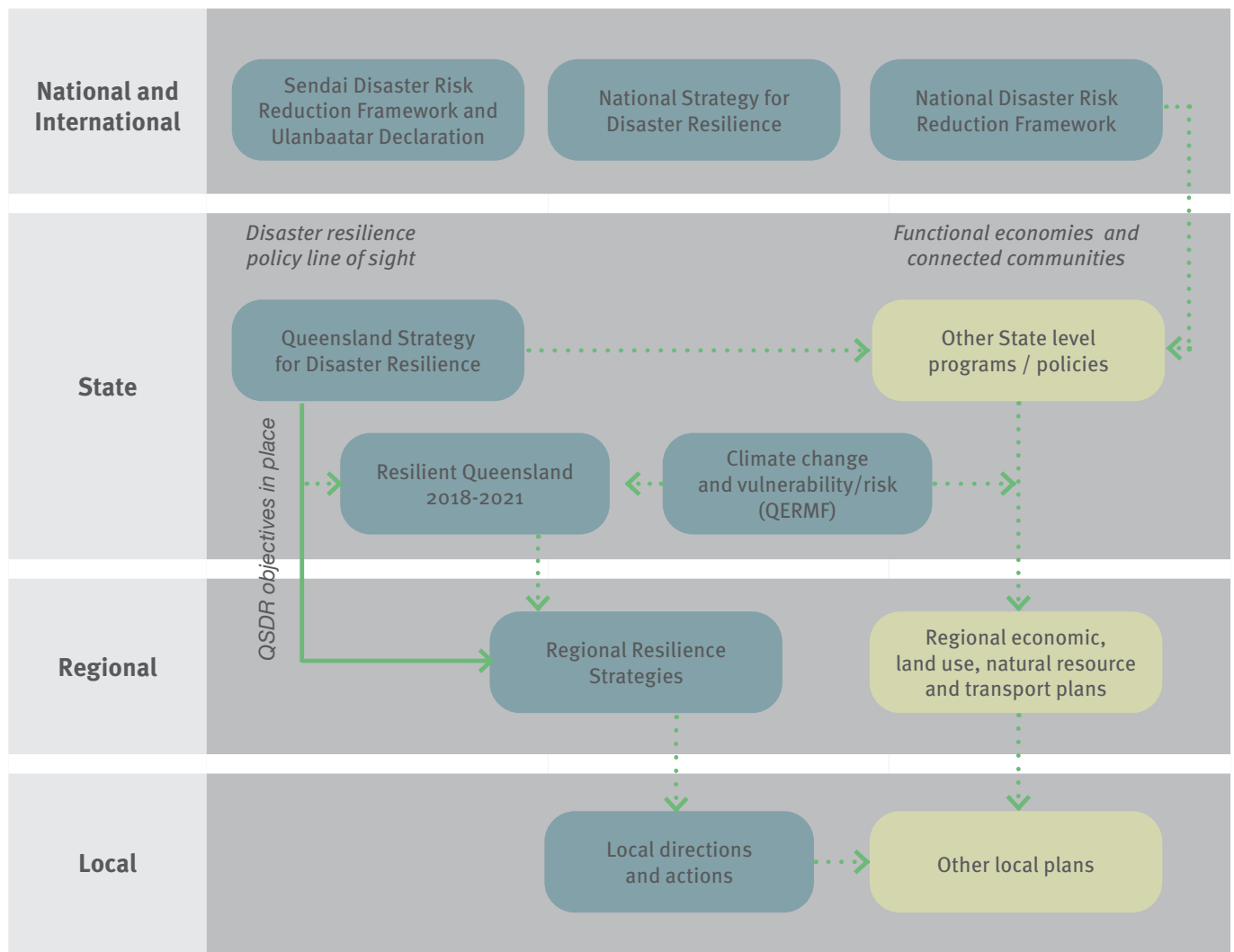
Diagram: Integrated catchment planning approach (source: QRA).



How this strategy connects

This strategy represents a local approach to resilience building and forms part of a broader strategic landscape at the State, national and international levels that guides how we will collectively achieve our resilience goals with a focus on disaster risk reduction and sustainable development.

Diagram: Disaster resilience policy line of





Integrating programs and projects

This strategy combines and builds upon a range of local and regional strategic documents to articulate the various aspects of resilience action identified across the Burdekin and Haughton catchments. The following outlines some of the key plans, projects and studies that have been drawn upon to inform this strategy.

National Disaster Risk Reduction Framework

The National Disaster Risk Reduction Framework (NDRRF) is a multi-sector collaboration led by the National Resilience Taskforce within the Australian Government Department of Home Affairs. The NDRRF was co-designed with representatives from all levels of government, and business and community sectors. Over 100 participants from more than 80 diverse organisations came together at a three-day intensive 'policy sprint' to develop key components of the NDRRF.

The NDRRF outlines a coordinated approach to reducing disaster risk, which is a critical component of enabling resilience. It is designed to leverage the great work and progress made across all sectors since the 2011 release of the National Strategy for Disaster Resilience, and to better understand and reduce disaster risks, improve resilience, and bolster the capability and capacity of communities to withstand natural hazards.

More than ever, limiting the impact of disasters now and in the future requires a coordinated effort across and within many areas, including land-use planning, infrastructure, emergency management, social policy, agriculture, education, health, community development, energy and the environment.

Resilient Queensland – delivering on the Queensland Strategy for Disaster Resilience

The Queensland Government is focused on strengthening disaster resilience so that communities are better equipped to deal with the increasing prevalence of disaster events.

A key outcome of Resilient Queensland is the development of regional resilience strategies that will support the coordination and prioritisation of future resilience-building and mitigation projects across Queensland.

By 2022, every local government in Queensland will be part of a regional resilience strategy that clearly identifies and prioritises actions to strengthen disaster resilience over time.

A community-led catchment is one of the first five regional resilience strategies prepared as part of Resilient Queensland. The strategy seeks to identify and address locally derived challenges that may be shared across local government jurisdictions.

As the most disaster-impacted state in Australia, it is critical we harness best practice and look for new ways to work together to improve the resilience of communities across Queensland, adopting pathways toward a safer, stronger and more resilient Queensland.

North Queensland Regional Plan

The North Queensland Regional Plan was released in 2020 and is a 25-year strategic statutory planning document for the local government areas of Burdekin, Charters Towers, Hinchinbrook, Palm Island and Townsville.

It has been prepared to support the established and emerging industries in the region, and to address changes expected to occur within the region. These changes include a growing and ageing population, shifting economic and employment patterns, impacts from climate change and continued technological advances.

The principal aim of the regional plan is to determine how land-use and infrastructure planning can best support economic growth and population change in the region over the next 25 years and beyond. This will be achieved by enhancing the social, economic and environmental systems that support the region's liveability.



Mackay, Isaac and Whitsunday Regional Plan

The Mackay, Isaac and Whitsunday Regional Plan establishes a vision and direction for the region to 2031. It provides certainty about where the region is heading and provides a framework to respond to challenges and opportunities that may arise.

The regional plan aims to respond to the variety of distinct challenges facing the region to 2031, having regard to cycles of the resources sector, growth and contraction, and the need to sustainably manage development and resources. The regional plan also seeks to plan effectively for essential infrastructure services, such as transport, community and social services. It further recognises the need to prepare for, and appropriately respond to, the anticipated impacts of climate change.

Regional Transport Plans

The Northern Queensland, Mackay, Isaac and Whitsunday, and Central West Regional Transport Plans (RTPs) seek to prioritise and manage their respective transport systems so that they effectively support regional communities, growth and productivity.

The plans seek to establish common transport priorities between the Queensland Government and local governments, communicating the planning intent for the regions. They also define the transport systems' role in achieving regional goals and priorities for forward planning and investment, in partnership with local government.

Improved flood resilience is identified as a key priority and objective for each of these RTPs. Underpinning this, each RTP includes a number planning actions to improve flood resilience through better planning, infrastructure, collaboration and intelligent transportation systems (ITS).

Queensland Climate Adaptation Strategy

The Queensland Climate Adaptation Strategy 2017–2030 outlines how Queensland will collectively prepare for current and future impacts of a changing climate to reduce risk and increase resilience. This strategy recognises Queensland is already experiencing hotter summers, more frequent natural disasters and more impacts on our natural environment, and that these changes pose a threat to our economy, our communities, our environment and our way of life.

The strategy, along with specific sector-based adaptation plans, outlines our commitments and the actions we will take to transition to a low carbon, clean growth economy, and adapt to the impacts of a changing climate.

Sector adaptation plans are an important component of the strategy. These eight plans help to prioritise climate change adaptation activities across the key sectors of the community. They have been developed in consultation with sector and industry stakeholders to reflect the needs and priorities of each sector. They identify emerging opportunities, share knowledge and encourage collaboration. The sector adaptation plans focus on:

- small and medium enterprise
- biodiversity and ecosystems
- human health and wellbeing
- emergency management
- agriculture
- built environment and infrastructure
- tourism.



Queensland State Natural Hazard Risk Assessment 2017

Prepared by Queensland Fire and Emergency Services, the State Natural Hazard Risk Assessment provides a state-wide analysis of relevant natural hazard risks, including tropical cyclones, severe storms, flooding, coastal hazards, heatwaves, bushfires and earthquakes. The assessment considers the nature of natural hazards relevant to Queensland, as well as elements of likelihood, consequence, exposure and vulnerability to understand both inherent and mitigated risk profiles. The assessment links to the Queensland Emergency Risk Management Framework (QERMF), which provides a comprehensive and systematic approach to informing risk-based planning across Queensland.

Queensland Emergency Risk Management Framework

The Queensland Emergency Risk Management Framework (QERMF) has been developed to inform risk-based planning across the emergency management sector in Queensland. The application of the QERMF promotes opportunities for collaboration and communication between government, industry stakeholders and the community across the three disaster management levels (local, district and state) in Queensland. It also promotes the need for identification and communication of residual risk across these levels.

The QERMF assists key stakeholders working within Queensland's Disaster Management Arrangements (QDMA) to review existing natural disaster risk management processes and assist in enhancing resilience, as outlined within the Queensland Strategy for Disaster Resilience.

Initial stages of the QERMF process have been used to develop this strategy, ensuring that it is appropriately risk-informed and aligned to the QDMA.

Local government and industry documents

A range of local government plans, strategies and studies have also been used to inform this strategy. This includes local disaster management plans, planning schemes, community and economic development plans, and coastal hazard adaptation strategies among others. This is in addition to a series of industry-based documents and content prepared by relevant not-for-profit organisations and non-government organisations with a presence in the Burdekin and Haughton region.

Queensland Floods Commission of Inquiry

The Commission of Inquiry was established by the Premier of Queensland in response to the 2010–2011 flood events. The Commission of Inquiry conducted a comprehensive review, focusing on areas such as preparation and planning, adequacy of response, adequacy of forecasts and early warning systems, and land-use planning in the lead up to the 2010–2011 floods.

The final report included recommendations across a vast range of technical and governance disciplines highlighting the complexity of flood risk management in Queensland. Included in the recommendations was the need to conduct additional flood studies and undertake further consultation with local governments to enhance the cooperative approach to flood risk management.



What is resilience?

Resilience can mean many things, including the ability to bounce back or withstand a disaster event, and continue to move forward. The term 'resilience' can often take on a very personal meaning, and can be characterised by a range of unique attributes.

When an emergency, disaster or trauma event occurs, there are many different ways in which resilient behaviours and processes can play out. The following sections consider the varying aspects of resilience, and how we all have a role to play.

Elements of resilience

The multi-dimensional and cross-disciplinary approach of this strategy contemplates five elements that contribute to systems-based resilience. These are:



Community resilience

The attributes underpinning community resilience are slightly different in nature to those characterising resilience in individuals.

Resilient communities are embodied by the collective behaviours and mindsets of individuals and households, which focus on connections with others for support and capacity before, during and after trying times. Resilient communities also tend to be adaptable to changing circumstances, stewarded by strong community leadership. They are also diverse and enterprising, and maintain a strong sense of identity and belonging.

Household and individual resilience

At the household and individual level, resilience can be characterised by a sense of resourcefulness, open-mindedness, and self-reliance or self-sufficiency.

One's awareness of risk and its realities is also paramount. Ingenuity, capability and capacity to accept challenges and seek to overcome them is a common trait. This is supported by a strong set of values and a desire to connect with and support others. These attributes stand a person in good stead to overcome and adapt to life's challenges.

Being prepared and having a plan for severe weather and its impacts increase our ability to exercise resilience.

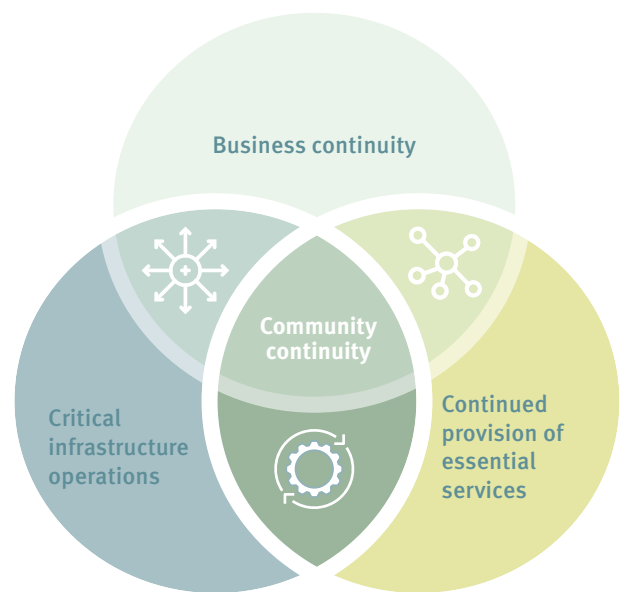
However, there is a difference between stoicism and resilience. Looking after ourselves, our mental and physical wellbeing and that of others around us is critical.

Business resilience

The businesses in our region, both small and large, are critical to the continuity of community functions before, during and after a flood event. The provision of ongoing services and employment, no matter the scale, makes a difference to broader community resilience.

It is for this reason that business continuity planning for small, medium and large enterprises in the Burdekin and Haughton region is central to the resilience of communities. In addition, the ability to continue operating minimises disruption to business and cashflow.

This can be essential for business owners, managers and employees who are impacted by events and seek to maintain gainful employment and continue to be productive members of the community during difficult times.





Flood hazard characteristics

How catchments work

Almost every season, somewhere in Queensland will experience heavy rainfall that can lead to flash flooding and riverine flooding. This is due to our climate and can be driven by monsoon troughs, east coast low events and cyclones.

Where rainfall goes depends upon topography. River catchments are defined by elevated areas, known as the headwaters, at the top of the catchment. Catchments generally comprise a number of tributaries that catch and convey rainfall into our river systems.

Catchments are not just relevant in terms of flooding and floodwater, but can be important to consider in relation to other natural hazards such as bushfires and landslides. The inter-linkages between different hazards are highly evident at the landscape scale. For example, in some cases, bushfire events can burn very hot, stripping vegetation and damaging soils across vast areas. Degraded landscapes can also occur after years of persistent drought.

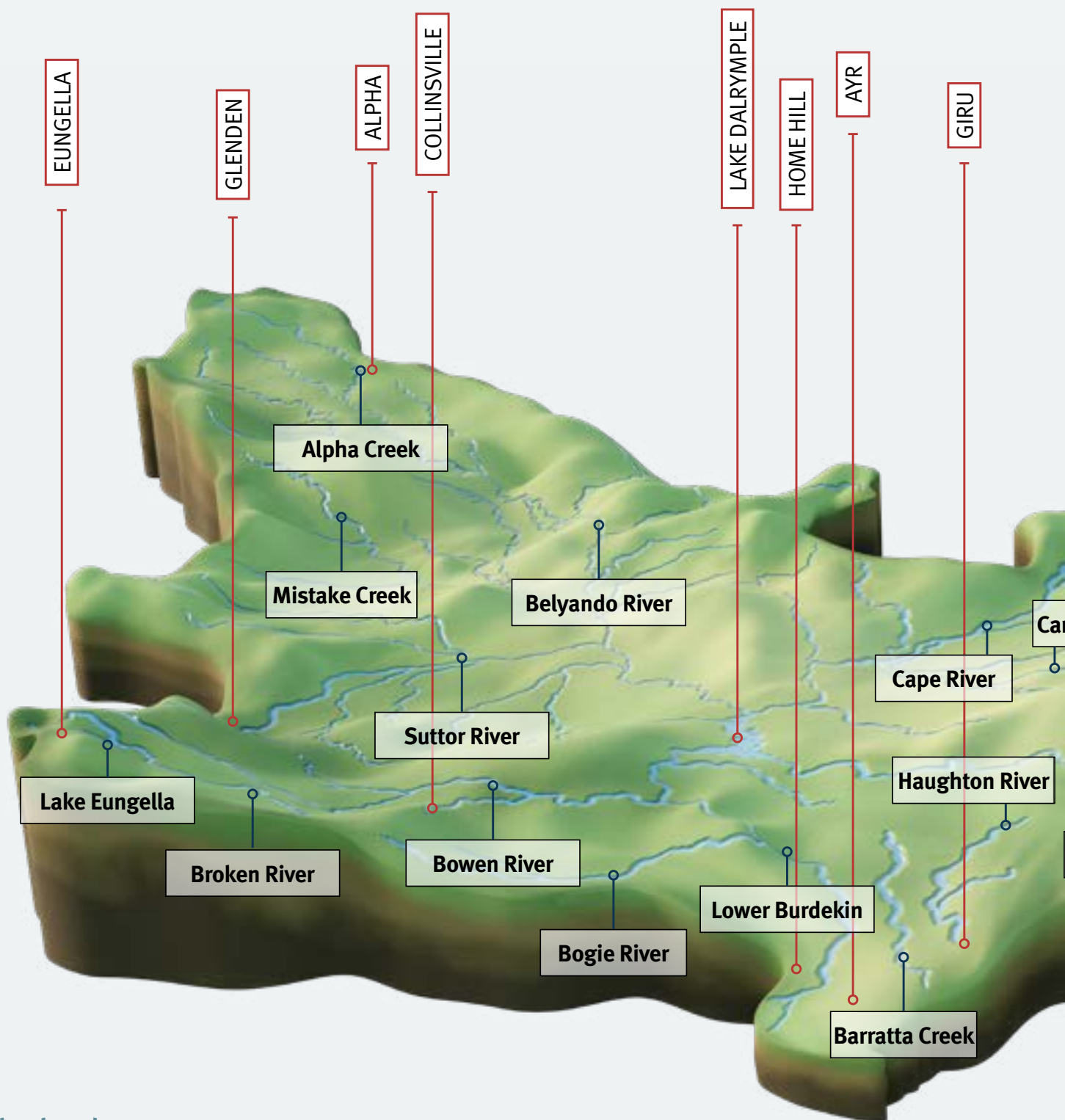
Especially in Queensland, the disaster season is that period of the year where we can experience all types of natural hazard events, and this is changing as a result of climate-related considerations. This means we might experience a bushfire event one week and a major flood the next. Where our landscape is degraded, either by fire, drought or poor land management practices, flooding rains can lead to landslips and extensive landscape and riverine erosion.

Catchment contamination, erosion, sedimentation, increased nutrient loads and silting are particular challenges for the environmental quality of our rivers, and the fauna and flora they support. This can also impact on the quality of water supplies on which our communities and economies depend.

Understanding how our catchments work is vitally important, as they can be subject to impacts from a wide range of natural hazards beyond just flooding.



Video: The video at www.qra.qld.gov.au/burdekin-haughton includes a 3D model to help explain how the Burdekin and Haughton catchments work.



The landscape

The Burdekin catchment occupies a significant portion of the state, stretching from the south of Alpha in Central Queensland, to the Atherton Tablelands in the north, from the Great Dividing Range in the west and out to the coast, east of Home Hill. The Haughton, which adjoins the Burdekin to the north, finds its headwaters in the area of Mingela (part of Hervey Range), flowing east to the coast, past Giru.

The Burdekin catchment comprises several sub-catchments, with the Burdekin River said to be 'the centrepiece to an entire network of rivers'. It is estimated that on average, approximately 50 per cent of the water discharged from the mouth of the Burdekin River is derived from the Upper Burdekin sub-catchment alone.



From the south, the Belyando sub-catchment comprises Alpha Creek and Native Companion Creek, which merge into the Belyando River to the north of the township of Alpha. The Belyando River originates on the western slopes of the Drummond Range, located in the southern reaches of the catchment in Central Queensland. The Belyando flows north about 350 kilometres to join the Suttor sub-catchment.

This general area of the region maintains similar characteristics to that of the headwaters of the channel country of the Lake Eyre Basin, with both located within this Desert Uplands Bioregion of Queensland.

The Suttor River flows from the Denham and Leichardt Ranges east of Glenden in a westerly direction, before joining with the Belyando River to the north of Belyando Crossing. The Suttor River then continues to flow north for approximately 100 kilometres before discharging into Lake Dalrymple (Burdekin Falls Dam). Over half of the Suttor sub-catchment is made up of floodplains and lowlands.



Lake Dalrymple is where three of the upper sub-catchments converge within the Burdekin system. This includes the Suttor (and Belyando), the Cape and Campaspe, and the Upper Burdekin sub-catchments.

The Cape and Campaspe sub-catchment finds its headwaters in the Great Dividing Range to the north of the Flinders Highway, flowing in a generally south-easterly direction to meet Lake Dalrymple.

The Upper Burdekin flows south from the Seaview and Gorge Ranges to the north-east of Lake Lucy and the Valley of Lagoons. It journeys south where it is joined by a number of major creek and river systems from the east and west before transitioning into the Lower Burdekin sub-catchment in the general vicinity of the Macrossan Bridge at Sellheim. The river continues to flow south for a further 120 kilometres into the northern area of Lake Dalrymple.

This river system, along with the Douglas, Dry, Running and Star Rivers and Oaky and Camel Creeks, drain the northern extremities of the catchment to the west of the Seaview, Gorge and Paluma Ranges. Allingham, Hann, Lion, Fletcher and Lolworth Creeks and Basalt River drain the catchment from the western extremities, flowing east to the Burdekin River. The Fanning and Kirk Rivers are the last major tributaries flowing into the Upper Burdekin sub-catchment, joining near Sellheim.

Lake Dalrymple is formed by the Burdekin Falls Dam, which was constructed in the 1980s and is the largest body of fresh water in Queensland. Located 159 kilometres upstream from the mouth of the Burdekin River, the dam was constructed to support water supply and irrigation in the region, servicing an irrigation area of approximately 100,000 hectares downstream. The dam wall measures 876 metres in width, with a spillway of 504 metres.

That portion of the Lower Burdekin that is downstream from the dam drains the western slopes of the Clarke Range, approximately 70 kilometres inland from Mackay.

Discharging into the Lower Burdekin sub-catchment, below the dam, is the Bowen system, which is bound by the Denham, Leichardt and Clarke Ranges. This system has a major impact on the hydrology and water movement of the Lower Burdekin sub-catchment. The headwaters of the Bowen sub-catchment start at the Broken River in the Mackay region, flowing over 200 kilometres north through the Eungella hinterland before becoming the Bowen River. The Bowen River enters the Lower Burdekin upstream from Dalbeg.

Downstream from Millaroo, the Bogie River system meets the Lower Burdekin, which flows from the inland area to the west of Bowen for approximately 120 kilometres.

From its juncture with the Bogie River, the mighty Burdekin River continues for a further 80 kilometres, sprawling into a large coastal delta, and through the main mouth of the river approximately 25 kilometres east of Ayr. The coastal delta comprises many drainage outlets, which discharge to the Great Barrier Reef coastal zone.

Flanking the northern side of the Lower Burdekin sub-catchment is the Haughton River system, which also includes the Barratta sub-catchment. The Haughton system flows east from Mingela (part of Hervey Range), through Giru, before also discharging to the Great Barrier Reef coastal zone. The Barrattas are a series of channels forming part of the Haughton catchment, running almost parallel with the Haughton River before discharging to the coast east of Jerona.

Receiving waters of the Burdekin and Haughton catchments include:

- the internationally significant Bowling Green Bay Ramsar site
- important declared fish habitat areas at Cleveland Bay and Bowling Green Bay
- Cleveland, Bowling Green and Upstart Bay dugong protected areas
- the State Great Barrier Reef Coast Marine Park
- the Great Barrier Reef lagoon, which is World Heritage-Listed and a marine park.

“None of us operate in isolation. A flood event at the back of Ingham affects Charters Towers and the Burdekin Shire. We all have to work as one with these flood situations and other disasters in order to get better outcomes”

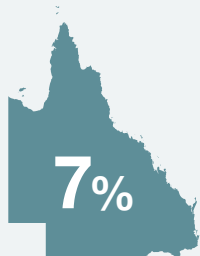
A snapshot of catchment characteristics



catchment size of 134,159 square kilometres



Lake Dalrymple holds 4 times the volume of water of Sydney Harbour



the Burdekin catchment drains 7 per cent of the land mass of Queensland



the Burdekin is the largest river in Queensland by flow volume



the Burdekin River flows over 710 kilometres and is the centrepiece of a series of waterways



the Haughton catchment is known as one of the most flood prone in Queensland



Catchment stories

This strategy is supplemented by a separate body of work, led by the Department of Environment and Science involving the 'Walking the Landscape' process and the development of a catchment story.

Through this processes, participants work systematically through catchments in facilitated workshops during which knowledge of landscape features and processes are gathered to develop a whole-of-landscape understanding of how water flows in catchments. The information gained is used to inform the development of catchment stories.

Catchment stories describe the location, extent and values of catchments as well as demonstrating the key features, which influence water flow, including geology, topography, rainfall and run-off, natural features, human modifications and land uses. Map journals and videos form the basis of catchment stories providing mechanisms for integrating spatial information, photographs and animations with an informative narrative to demonstrate the features of catchments. Catchment stories are valuable tools that can be used to improve evidence-based decision-making for the sustainable management and restoration of ecological systems.

Catchment stories for parts of the Burdekin and Haughton region, produced by the Department of Environment and Science, can be viewed online can be viewed at www.wetlandinfo.des.qld.gov.au.

Rainfall

The Dry Tropics region usually experiences annual wet and dry seasons, with most of the rainfall typically between November and March. The Burdekin River typically flows for a short period of the year (WetlandInfo, 2018).

Rainfall across the catchments is highly variable, due to the sheer scale of the area ranging from Desert Uplands to the Wet Tropics Bioregion. For example, average annual rainfall in the Haughton catchment region is approximately 953 millimetres, but can range between 550 to 3200 millimetres per year. In the Belyando sub-catchment, the average annual rainfall is closer to 500 millimetres (WetlandInfo, 2018).

This variability is linked to the El Nino Southern Oscillation and the formation of tropical low pressure systems, sometimes referred to as a monsoon trough. Additionally, cyclones generated by low pressure systems and warm oceans can contribute significant volumes of rainfall on land (Dry Tropics NRM, 2016).

The Eungella area to the west of Mackay is a very high rainfall area, with steep gradients and hard geology, which has a major influence on the flows of the Broken and Bowen Rivers, and can lead to significant flooding through the Lower Burdekin.

The region's coastal areas are characterised by a tropical sub-humid climate, with relatively high temperatures all year round and heavier rainfall and associated higher humidity in the summer months. Higher altitude coastal ranges, particularly in the region's north and south, have a wet tropical climate with cooler temperatures, and rainfall is distributed more broadly across seasons. In contrast, rainfall gets progressively lower towards the west and is more variable compared to the coastal areas. The dry seasons are longer and cooler, and the wet seasons hotter and more unpredictable in these semi-arid inland areas (Dry Tropics NRM, 2016).



Climate change

While climate varies naturally on timescales, from millions of years to year-to-year, since the advent of the industrial age there has been a rapid increase in temperatures, and in the variability of weather events (Dry Tropics NRM, 2016).

The CSIRO's Monsoon North East technical report on climate change in Australia identified average temperature rises in the Monsoonal North region (in which the Burdekin Dry Tropics region is situated) of between 0.9 and 1.0 degrees Celsius since 1910, and predicts further increases of greater than 1.3 degrees Celsius by the end of the century (CSIRO, 2015 and Dry Tropics NRM, 2016).

General project catchment-scale changes due to climate change during the next century include:

- decreasing water resource quantity and quality
- decreasing plant and crop growth
- increasing intensity of rainfall events
- increasing intensity and frequency of bushfire
- increasing intensity of cyclones, but unlikely increase in frequency
- increasing temperatures and heatwaves
- increasing sea level and height of coastal hazard impacts
- increased evaporation (CSIRO, 2015).

The Queensland Future Climate Dashboard can be viewed at www.wetlandinfo.des.qld.gov.au summarises 11 state-of-the-art climate models with regional-scale simulations through to 2100. These models are varied to consider different magnitudes of climate mitigation, including with limited action to mitigate greenhouse gas emissions, as well as a scenario based upon the stabilisation of greenhouse gas emissions.

Under a scenario where greenhouse gas emissions stabilise by 2060, the following projections for the Burdekin and Haughton catchments are identified:

- average mean climate of the catchment areas is predicted to increase by between 1.8 and 2 degrees Celsius by 2090, and this is expected to be higher for inland areas, including the Barcaldine region
- average heatwave temperatures are predicted to increase by between 1.3 and 1.6 degrees Celsius by 2090 across the catchments, with Burdekin Shire is projected to increase by 1.8 degrees Celsius
- average extreme temperature days across the catchment areas are predicted to increase by 37 days by 2090
- average extreme precipitation in the catchment areas is predicted to decrease by -3.7 mm by 2090
- average drought months across the Burdekin and Haughton region are predicted to increase by 1.4 months by 2090
- 'wetness' in Queensland is usually associated with specific drivers such as La Niña years, and extreme events, for example, convective storms, low pressure systems and tropical cyclones, with average wetness for the catchment areas predicted to decrease by -0.65 months by 2090.

The above is consistent with the general projections of similar or possibly decreased rainfall events into the future, but with potentially increased intensity when they do occur. For further data and information, the Queensland Climate Futures Dashboard can be accessed at www.longpaddock.qld.gov.au/qld-future-climate/dashboard/.



Weather systems that cause flooding

In any year in Northern Australia, it is likely that a significant rainfall event will occur, but not all major floods lead to disastrous consequences. It must be remembered that, for many parts of Queensland, flooding brings significant benefits.

Major flooding in the Burdekin and Haughton catchments is often caused by monsoon rains, monsoon troughs, east coast low events and tropical cyclones during the monsoonal wet season. Multiple large weather events have occurred in more recent years.

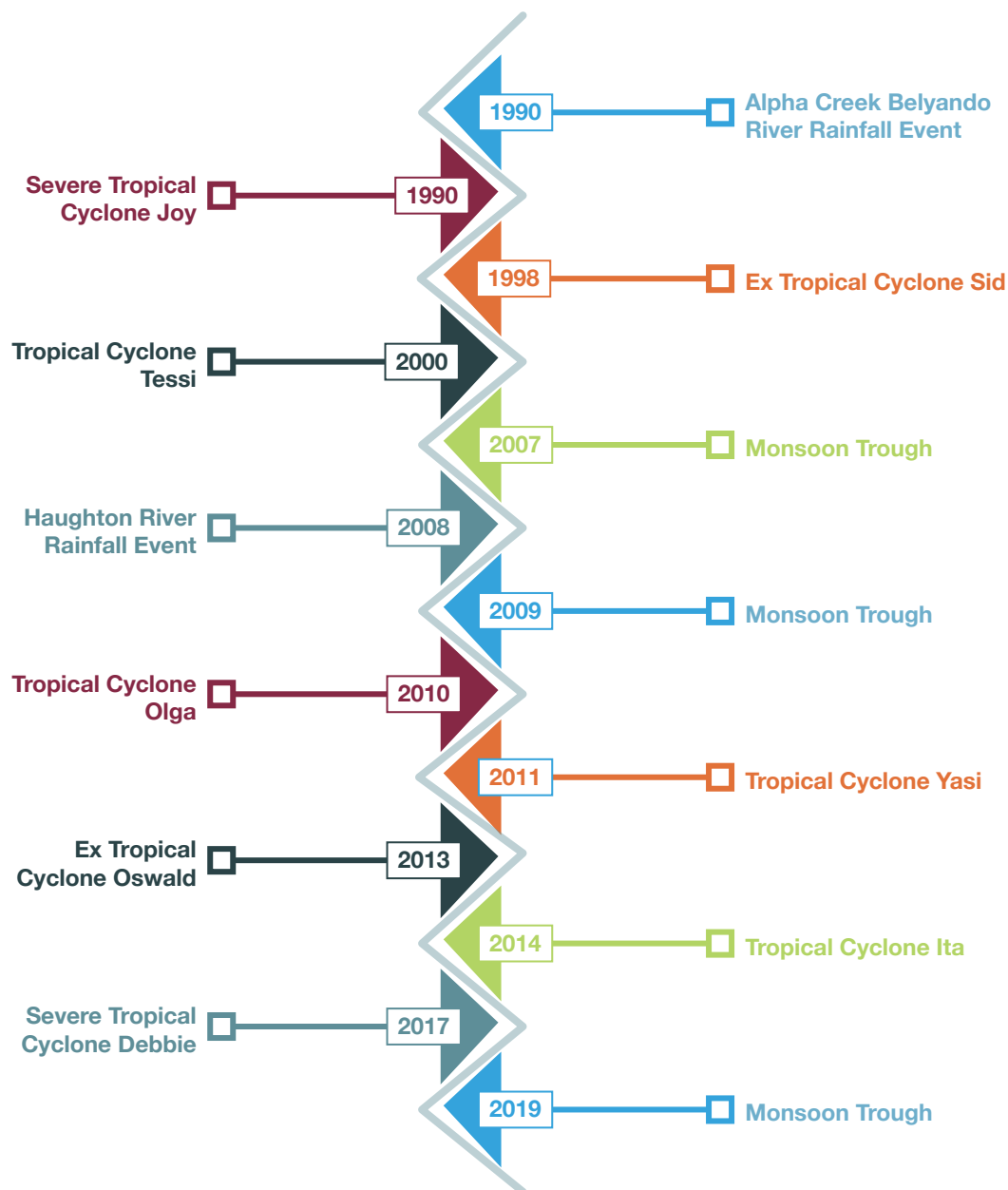


Image: Storm clouds over Burdekin Shire (courtesy Burdekin Shire)



Tropical cyclones

Tropical cyclones are low pressure systems that form over warm tropical waters with sustained winds of 63 kilometres per hour or greater, and gale force winds with wind gusts in excess of 90 kilometres per hour near the centre. In the most severe cyclones, gusts can exceed 280 kilometres per hour.

The Burdekin region has felt the impact of tropical cyclones on numerous occasions. The Bureau of Meteorology's (BoM) Southern Hemisphere Tropical Cyclone Data Portal shows 40 cyclones tracking within 200 kilometres of the Townsville tracking station between the 1969–1970 and 2017–2018 cyclone seasons. Tropical cyclones in the Burdekin and Haughton catchments often result in extensive rainfall, which can lead to major flooding. Previous cyclone events have caused flooding for parts of the Charters Towers and Isaac regions and as such, must not be discounted in inland areas.

As well as extreme winds, a tropical cyclone can cause the sea to rise well above the highest tide levels of the year when it comes ashore.

These storm surges are caused mainly by strong, onshore winds and reduced atmospheric pressure. Storm surge is potentially the most dangerous hazard associated with a tropical cyclone.

Storm surge is an abnormal rise in sea level over and above the normal (astronomical) tide levels. It can be thought of as the change in the water level due to the presence of a storm. These powerful ocean movements are caused by strong winds piling water up against the coast as a tropical cyclone approaches.

Storm tides can swamp low-lying areas, sometimes for kilometres inland. Strong winds at the coast can also create large waves, worsening the impact and giving rise to coastal erosion. Storm surges are at their most dangerous when they arrive at high tide – when the sea is already at its high point. The resulting storm tide can flood inland areas.

For further information, refer to the Queensland Fire and Emergency Services Queensland State Natural Hazard Risk Assessment and Burdekin Shire Council's Coastal Hazard Adaptation Strategy, both available online.

Monsoonal rains and monsoon troughs

The Australian monsoon develops in response to summertime heating over the northern Australian region, when the continent warms at a faster rate than the surrounding oceans. This sets up a giant sea breeze circulation, drawing in moisture from these oceans over the lower pressure on the land. As the humidity progressively builds, a monsoon trough becomes established over the Australian region. True monsoonal flow, with deep low-level westerly winds, exists north of the trough, so when the trough moves south over a location, this area becomes affected by monsoonal conditions (BoM, 2012).

Farmers and graziers, communities and the ecosystems that have evolved across Australia's north depend on monsoonal rains to replenish water storages and recharge natural aquifers. However, these rains can also create substantial flooding and restrict movement across large areas (BoM, 2012).

Climate factors such as El Niño, La Niña and the Madden-Julian Oscillation can be important influences on the timing and intensity of monsoon phases.

Severe storms

BoM defines a severe storm as a thunderstorm that produces:

- large hail (two centimetres in diameter or greater)
- damaging wind gusts (90 kilometres per hour or greater)
- tornadoes
- heavy rainfall conducive to localised and/or flash flooding.

Thunderstorms are associated with a very tall cloud mass called a cumulonimbus cloud, and usually develop when warm, humid air carrying a lot of water vapour near the ground is forced upwards due to surface winds converging with an approaching front or low pressure trough to make the moist air rise rapidly in an unstable atmosphere.

Thunderstorms can become severe when the atmosphere is particularly unstable and/or additional energy is drawn in from surrounding winds. Spring and summer seasons in Queensland are particularly known for the rapid onset of severe storms, super cells and downbursts.

A key example of this was the February 2020 localised rainfall event over parts of the Burdekin Shire, which saw over 500 mm of rain fall in just over 24 hours. Water levels quickly rose in Ayr, and the Bruce Highway was closed between Ayr and Home Hill, in addition to local roads. Rita Island received 615 mm of rain in the same period, which isolated residents. The rainfall event was driven by a slow-moving tropical low sitting over the waters of the Gulf of Carpentaria.



Flood warning system

The flood warning system in the Burdekin and Haughton catchments is made up of four elements:

- 150 gauge assets like rainfall and river gauges in the Burdekin system, and 32 in the Haughton system
- additional supporting infrastructure like flood cameras, ‘flooded road’ signage, data transmission and power supply
- flood prediction services, including eight flood forecast locations on the Burdekin system and one on the Haughton system
- communications/messaging processes (see flood classifications information below).

Each of these elements need to function properly before, during and following a flood event in order for people to fully understand their exposure to the flood risk. An optimised infrastructure network (i.e. the gauges and the supporting infrastructure) is the backbone of ensuring the right people have the right flood information at the right time.

BoM notes that flood warning is an integral component of counter disaster arrangements for a community at risk from flooding. The aim of the warning system is to minimise loss of life and property damage by warning people in a timely way of the likelihood, size and duration of a flood so that they may take the necessary actions to mitigate any adverse consequences to the event. Examples would be to evacuate to a safer location, or relocate property or stock to higher ground.

Warnings are of limited value unless they are delivered in a timely and effective manner, and property owners and residents in the flood-threatened area to heed the warning and take appropriate action in advance of being flooded.

Flood classifications

As part of the effective implementation of the flood warning system, BoM uses a three-tiered classification scheme that defines flooding as minor, moderate or major at key river height stations, known as the river gauge locations. Each classification is defined by the water level that causes certain impacts upstream and downstream of the station. These levels have been determined and described based on standard descriptions of flood effects (see below), historical data and relevant local information.

This helps to inform communities to understand their risk, and provides triggers for action to prepare for flooding.

Minor flooding

Causes inconvenience. Low-lying areas next to watercourses are inundated. Minor roads may be closed and low-level bridges submerged. In urban areas, inundation may affect some backyards and buildings below the floor level, as well as bicycle and pedestrian paths. In rural areas, removal of stock and equipment may be required.

Moderate flooding

In addition to minor flood effects, the area of inundation is more substantial. Main traffic routes may be affected. Some buildings may experience water above the floor level. Evacuation of flood-affected areas may be required. In rural areas, removal of stock is required.

Major flooding

In addition to moderate flood effects, extensive rural areas and/or urban areas are inundated. Many buildings may be affected above the floor level. Properties and towns are likely to be isolated and major rail and traffic routes closed. Evacuation of flood-affected areas may be required. Utility services may be impacted.

Flood forecasting

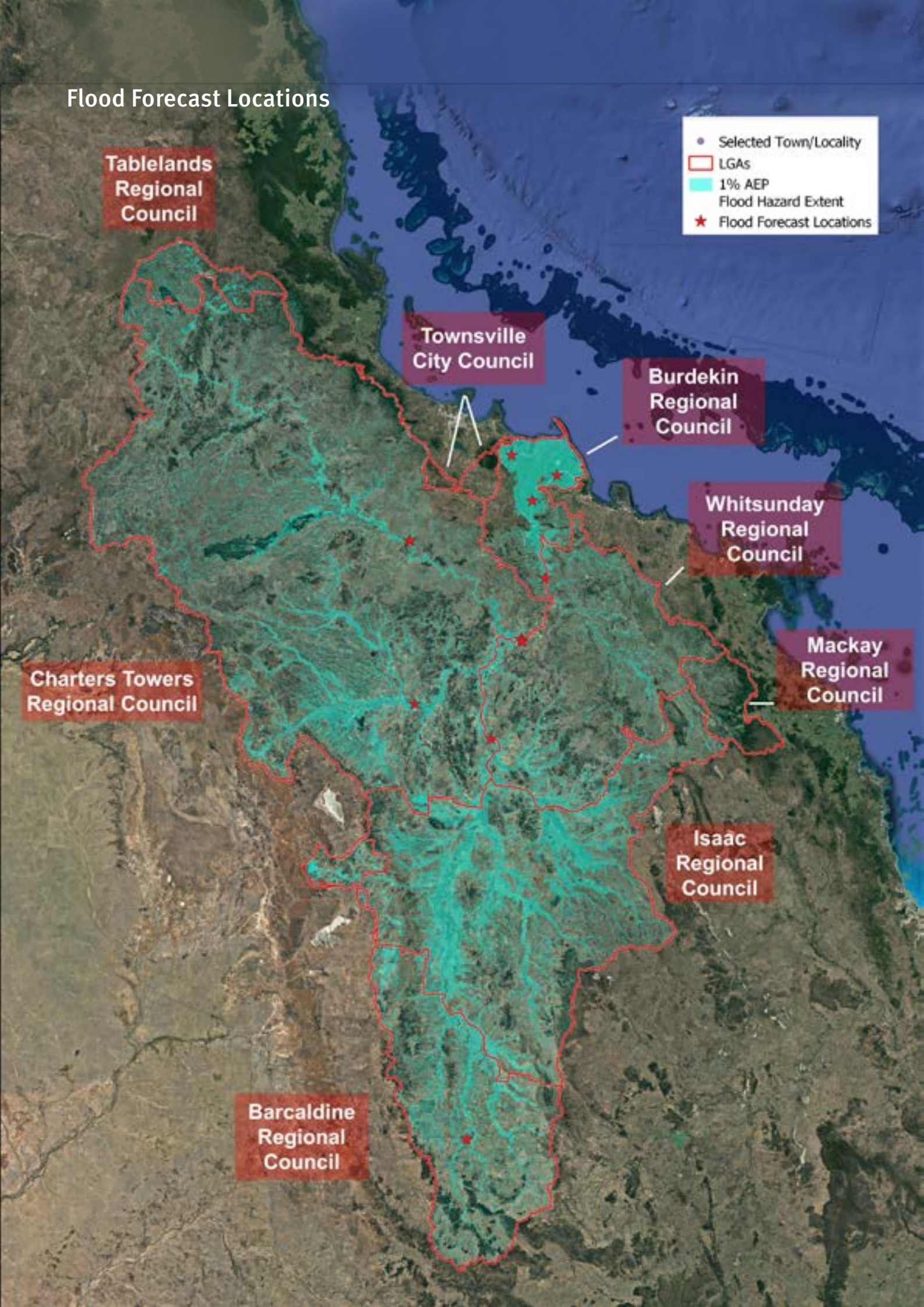
There are eight forecast locations in the Burdekin system and one in the Haughton system.

A forecast location is a location for which BoM provides a forecast of a future water level, either as the class of flood that is predicted (minor, moderate or major), or as a level and class (e.g. ‘4.6 metres – major flood level’).

The Burdekin forecast locations are Alpha, St Anns, Taemas, Sellheim, Burdekin Falls Dam, Dalbeg, Clare and Inkerman Bridge. The Haughton forecast location is at Giru.

Image: Automatic flood warning gauge at the Burdekin Bridge.

Flood Forecast Locations





Flood behaviour and history

Burdekin catchment

The Burdekin River catchment is capable of producing major flooding following heavy rainfall, causing inundation of properties and closure of main roads both upstream and downstream of Lake Dalrymple.

Flooding in the upper catchments of the Burdekin may not necessarily lead to downstream flooding.

At Lake Dalrymple, the three upper tributaries converge: the Belyando and Suttor; the Cape and Campaspe; and the Upper Burdekin Rivers. The streamflows from each tributary are very different.

The Belyando and Suttor systems occupy 57 per cent of the total area of the Burdekin catchment, but are responsible for only 33 per cent of the catchment streamflow. In the Belyando sub-catchment, the highest recorded flood for Alpha was 10.26 metres, which occurred in April 1990, 2.26 metres above the major flood level. Other major flood events have occurred in 1950 and in 2010, in addition to a series of moderate flood events in the 1990s and 2000s.

At the St Ann's gauge on the Suttor River, downstream of Belyando Crossing, the classification of a 'major' flood event is at 10 metres on the gauge. There are no records to date of a major flood at this location.

The Upper Burdekin system accounts for only 28 per cent of the total catchment area, but generates approximately 52 per cent of the catchment streamflow. This means that more than half of the floodwaters generated across the vast Burdekin catchment comes from the Upper Burdekin sub-catchment tributaries, as opposed to the Cape and Campaspe or Belyando and Suttor sub-catchments. Of the upstream catchments above the dam, flows from the Upper Burdekin in particular is more likely to generate downstream flooding than the Cape Campaspe or Suttor and Belyando. Irrespective, the effect of Burdekin Falls Dam alters streamflow to the lower reaches.

Major flooding in the Upper Burdekin sub-catchment, recorded at the Sellheim gauge, occurred in 1972, 1974, 1991, 1998, 2009, 2012 and 2019. It can be observed that major flood events in this sub-catchment have occurred more frequently over recent decades when compared with the Lower Burdekin, measured at the Inkerman Bridge gauge.

Image: Historic flood marker at Hann Creek in the Upper Burdekin sub-catchment.

At the Taemas gauge on the Cape River, downstream of its junction with the Campaspe River, major flood events have been recorded in 1974, 1991 (on two separate occasions), 1998, 2008, 2009, 2012, and fell slightly short of reaching major flood height in 2019.

The Bowen and Broken system, which enters the Lower Burdekin below Burdekin Falls Dam, occupies 7 per cent of the total catchment area, and yields an estimated 13 per cent of the total catchment stream flow. High rainfall west of Mackay can generate major flooding in both the Bowen and Lower Burdekin systems.

From a likelihood perspective, flooding on the Lower Burdekin may be more likely to stem from flooding in the Bowen and Broken system than the upper tributaries, due to the effect of the dam. The dam itself, however, was not constructed for flood mitigation purposes. Rather, it supports water supply for the region, as well as a complex irrigation system that spans the Lower Burdekin delta and supports a thriving agricultural industry, which is a key economic generator for the broader region.

The upper tributaries support a range of different land uses and economic activities, including mining and grazing, as well as other forms of agricultural production.

In terms of its geology, the Burdekin and Haughton landscape is highly variable. Scientific evidence suggests the Lower Burdekin previously travelled north around Mount Kelly and discharged into the Haughton River some 6000 to 10,000 years ago, before shifting to its current course to the south of Mount Kelly and out to the coast. Recent palaeo investigations have also found the Burdekin delta has migrated approximately 100 kilometres south along the ice-age coastline of the Great Barrier Reef, underpinning the dynamic and constantly changing course of the Lower Burdekin channel.

Flood impact on communities across the Burdekin is vast. In many Queensland catchments, upstream flooding within headwater tributaries is usually characterised by flash flooding. This can be difficult to manage, particularly in terms of flood warning as well as rapid-onset impacts. In these conditions, floodwaters usually recede as quickly as they rise. However, this is not the case in some areas of the Burdekin headwaters.

Flooding impacts in Alpha, for example, can be major. Alpha can receive an average of approximately 18 hours warning of a major flood event, but anecdotally as little as 10 hours, and the duration of impact can be significant. Flooding in Alpha is generated by far less rainfall than experienced in other parts of the catchment.



Charters Towers is located some 20 kilometres from the Burdekin River, and as such, its most significant issue is isolation during major flood events. As a township steeped in rich history, the urban form of Charters Towers has adapted to the impacts of heavy rainfall events which are commonplace in the region, via the construction of significant roadside drainage systems to collect and discharge large volumes of water over short periods during high rainfall events.

At the lower end of the catchment, Ayr, Home Hill and other communities, including Rita Island and Groper Creek, occasionally experience severe flooding with multiple residences and businesses affected. This can occur either via major riverine flooding on the Lower Burdekin, or by localised rainfall events generating significant overland flow and localised flooding. It is also generated more commonly from the Bowen and Bogie sub-catchments, which enter the Lower Burdekin below the dam.

Home Hill in particular is exposed to considerable flood risk on the basis of its geographic relationship to the Burdekin River.

The most recent major flood in Ayr and Home Hill occurred in February 1991, with the Inkerman Bridge gauge recording a record height of 12.53 metres, noting this event occurred after the construction of Burdekin Falls Dam. Prior to this, the same gauge recorded a record height of 12.62 metres in April 1958.

Other major flood events recorded at the Inkerman Bridge gauge occurred in 1968, 1972 and 1974, prior to the construction of Burdekin Falls Dam. Large-scale moderate events, falling short of reaching a 'major' flood classification, have occurred in the Lower Burdekin system in 1991 (in a separate event to the major flood in February of the same year), 2008, 2009 and 2019.

The 2019 North and Far North Queensland Monsoon Trough event saw considerable flooding across large areas of the Burdekin and Haughton catchments, and across North Queensland and the Far North in general. The monsoon's heavy rain was the result of an intense and very slow-moving monsoon low over Northern Queensland. Heavy rainfall from the 2019 Monsoon Trough event caused major flooding in several river systems, including the Burdekin River and its tributaries, the Haughton River and Barratta Creek.

"Flood and relying on wet weather events is part of our DNA"

Mayor Sean Dillon, Barcaldine Regional Council.

Haughton catchment

The Haughton River catchment covers an area of approximately 1850 square kilometres and includes the major tributaries of Reid River and Majors Creek.

The Haughton is a short-run system, meaning it does not take long for rainfall in the Mingela area (part of the Hervey Range, at the catchment's headwaters) to generate downstream flooding. The upstream areas comprise granite geologies, contributing to the ease with which water runs from its headwaters. Because of this, the Haughton catchment is notoriously responsive to rainfall, and thus flooding.

Flooding in the Haughton catchment is not in any way unexpected, or without precedent. In fact, it can be known to flood several times a year. As a result, residents of Giru are well acquainted with flood hazard due to its frequent nature. An existing levee around the town provides flood attenuation for events up to a depth of 2.30 metres on the flood gauge (BoM, 2020). In February 2018, the highest flood on record reached 3.20 metres and caused widespread flooding through commercial and residential areas of Giru.

The Haughton channel crosses the western area of the Lower Burdekin floodplain and quickly loses capacity, leading to widespread overbank flooding. The intermediate area between the Haughton and the Lower Burdekin is drained by Barratta Creek. Barratta Creek forms part of the Haughton system, but can receive overbank flows from both the Haughton and the Lower Burdekin, as well as discharge from its own catchment area.

Based on local knowledge, this only occurs in rare events and depends on the characteristics of rainfall across a temporal scale, noting the Lower Burdekin is a much larger system than the Haughton, and they usually experience flooding at different intervals.

Before floodwaters reach Giru, the Haughton system crosses the Bruce Highway and the North Coast railway line. This section of the floodplain is subject to the Haughton River Floodplain Upgrade Project (Bruce Highway Horeshoe Lagoon – Palm Creek), which is designed to increase the flood immunity of the Bruce Highway across the Haughton River floodplain, reducing isolation and improving connectivity and resupply opportunities between Ayr and Townsville.

Irrigation systems across the floodplain have altered the natural flows of the area over time, and support major cane growing and other crop production industries on the fertile soils of the coastal delta.



Heavy rainfall within the catchment area regularly leads to major flooding of agricultural areas adjacent to waterways, and major flooding in Giru.

Since 1978 when flood records started for the Haughton River, there have been almost 20 major flood events.

Brandon experiences riverine flooding associated with Sheep Station Creek to the west of town, which can, in major events, join with flooding in Lilliesmere Lagoon in the Kalamia Creek system immediately north of Ayr. Barratta Creek, further to the west, transects the coastal delta before discharging to the coast near the township of Jerona.

The Barratta sub-catchment experiences overbank flows from both the Haughton and the Burdekin catchments, making this portion of the catchment a complex and dynamic system. It also means the catchment and sub-catchment boundaries in delta locations may not completely align with flood behaviour.

Burdekin River catchment

Major flooding requires a large-scale rainfall situation over the Burdekin River catchment. The completion of the Burdekin Falls Dam in the 1980s has reduced to some extent the occurrence of major flooding in the lower reaches. Major flooding still occurs, however, in the lower reaches from the run-off produced by heavy rainfall and flooding in the Lower Burdekin, Bowen and Bogie River catchments. The following can be used as a rough guide to the likelihood of flooding in the catchment:

- Average catchment rainfalls of in excess of 200 mm in 48 hours may cause moderate to major flooding and traffic disabilities to develop, particularly in low-lying areas of the Burdekin River catchment downstream of the Burdekin Falls Dam and extending into the Burdekin River delta area.
- Average catchment rainfalls of in excess of 300 mm in 48 hours may cause major flooding and traffic disabilities to develop, particularly in low-lying areas of the Burdekin River catchment downstream of the Burdekin Falls Dam and extending into the Burdekin River delta area.

Haughton River catchment

Major flooding requires a large-scale rainfall situation over the Haughton River catchment. However, the following can be used as a rough guide to the likelihood of flooding in the catchment:

Average catchment rainfalls of in excess of 200 mm in 24 hours may cause moderate to major flooding and traffic disabilities to develop, particularly in low-lying areas of the Haughton River catchment downstream of Huston's Farm, extending into the Giru township and Haughton River delta area.

Average catchment rainfalls of in excess of 300 mm in 24 hours may cause major flooding and traffic disabilities to develop, particularly in low-lying areas of the Haughton River catchment downstream of Huston's Farm, extending into the Giru township and Haughton River delta area.



Image (above): Burdekin weir. (Left:) Automatic flood warning gauge at the Giru rail bridge.



Flood exposure

The following section provides a high-level overview of the nature of flood exposure relative to each local government area within the Burdekin and Haughton catchments. The below observations relate to a 1 per cent annual exceedance probability (AEP) event, unless otherwise stated, in large part drawn from the 'process one' analysis of the region using the QERMF approach for each local government area.

AEP describes the probability of a specific rainfall total over a given duration being exceeded in any one year (BoM, 2020). This is the most accurate manner in which to describe a certain flood event magnitude. The annual recurrence interval (ARI) is a commonly used method to describe flood event magnitude (e.g. a 1 in 100 year event); however, the periods between exceedances are generally random and as such, the ARI is not an accurate representation of flood magnitude or probability.

As the climate continues to change, event probabilities are changing such that the ARI is becoming less applicable over time.

However, for the purposes of interpretation of the information contained within this strategy, the following comparison is provided:

- a 2 per cent AEP event is generally equivalent to a 1 in 50 year ARI event
- a 1 per cent AEP event is generally equivalent to a 1 in 100 year ARI event
- a 0.5 per cent AEP event is generally equivalent to a 1 in 200 year ARI event
- a 0.2 per cent AEP event is generally equivalent to a 1 in 500 year ARI event.

Barcaldine

The Barcaldine region occupies just over 11 per cent of the total Burdekin catchment area. The primary town within the Belyando sub-catchment area of the Barcaldine region is Alpha. The township of Alpha serves a large grazing community in the region, and takes its name after one of the first cattle stations established in the region.

In terms of its flood exposure, a significant proportion of residential properties in town are subject to potential inundation or isolation. Located on the Capricorn Highway, major sections of state and local roads are subject to inundation to depths of over 2 metres, which can isolate the township from its surrounds, and also create challenges for resupply depending on flood duration and impact.

In addition to the exposure of residential properties, other significant land uses and infrastructure items are also exposed. These include:

- Alpha railway station
- the only telecommunications tower located in town (but flood impacts may not necessarily cause damage)
- both fuel stations being exposed to potential flood inundation of 1 and 2 metres in depth
- the supermarket within town being exposed to inundation
- electricity infrastructure within town being exposed
- the grounds of Alpha State School being exposed to a flood depth of approximately 1.2 metres
- Alpha aerodrome being subject to potential isolation
- exposure of surrounding grazing land on the floodplains within the Belyando sub-catchment is not uncharacteristic, vulnerability is largely associated with loss of income
- weed transfer downstream, a potential environmental issue as a result of flood events.

The April 1990 flood was the highest event on record, at an estimated AEP of 0.5 per cent. During the event, there was a levee on the upstream side of the Capricorn Highway, near the former hospital site, which was breached and collapsed during the flood event. Since this event, additional culverts have been installed as part of the railway bridge crossing to facilitate easier and faster flood conveyance across the floodplain.

Over recent years, the hospital, aged care facility and emergency services facilities have been relocated to higher ground at the western end of the township, off the floodplain.



Isaac

The Isaac region occupies almost 22 per cent of the total Burdekin catchment area. That part of the catchment which traverses the Isaac region includes parts of the Belyando and Suttor sub-catchments. Perhaps the most prominent issue in relation to flood exposure within the Isaac region relates to the magnitude of existing and future planned mining activity and the movement of product and workers.

There are a number of discrete communities within the Belyando and Suttor sub-catchments, where the local school is the primary hub of the community, such as Mistake Creek and Kilcummin.

The township of Glenden, located within the Suttor sub-catchment, was constructed in the 1980s to provide accommodation for workers and their families at the nearby Newlands Coal Mine. The township itself is not prone to flood due to its geographical context, situated off the floodplain. However, it can be isolated to an extent, having regard to the exposure of roads that connect it with nearby communities.

Land use across the Isaac portion of the catchment is largely related to mining and grazing. Linear infrastructure such as roads and private railways transect the floodplains, transporting product to ports on the coast.

Mackay

The Mackay region occupies about 1.4 per cent of the total Burdekin catchment area. This small area of the Mackay region is located at the headwaters of the Broken and Bowen system. The hinterland township of Eungella, an hour inland from Mackay, is perched 686 metres above sea level.

The Broken River flows around the western side of Eungella. The Eungella Dam on the Broken River is situated to the west of the township, before the river continues its journey north to Urranah, where a declared coordinated project for a further dam is being considered. The geology in this country is largely granite, creating a fast-flowing landscape where limited absorption into soils means run-off can be of high volume and high velocity. The velocity of water flowing off the steep granite geology of the Broken system and the water from the upper Bowen sub-catchments can impact on the sedimentary layers in the lower Bowen sub-catchment, resulting in considerable gully erosion. These are key contributing factors to the large volume of sediment produced by the Bowen system, which is carried downstream and eventually deposited into the Great Barrier Reef coastal zone.

Eungella does not experience significant flood inundation but it does get isolated, with a section of the Eungella Dam Road exposed to flood impact. It also becomes isolated from the nearby town of Crediton.

The loss of electricity during and after an event may occur, but damage to electricity assets may be limited, again due to the geographical location of the township.

Of particular note in relation to flood exposure, Eungella attracts a significant number of visitors both to the township and its surrounds, which include national parks.

Whitsunday

Downstream from Eungella, the Broken River meets the Bowen River before continuing on to enter the Lower Burdekin. The Bowen and Bogie Rivers within the Whitsunday region occupies just over 13 per cent of the total Burdekin catchment area.

Land use in both the Bowen and Bogie systems is largely characterised by grazing and other agricultural activities.

Within the Bowen sub-catchment are the townships of Collinsville and Scottville, to the north-west of the Bowen River. These communities are joined by Scottville Road, and are flanked by Pelican Creek, which discharges into the Bowen River. Issues of flood exposure relevant to Collinsville and Scottville include:

- at least one fuel station in Collinsville is likely exposed to flood impact, with others located nearby
- the sporting oval of Collinsville State High School is subject to potential inundation
- the grounds of Collinsville State School are subject to potential flood impact
- Collinsville Community Centre is potentially exposed and/or isolated
- several short-term accommodation facilities may be impacted, with potential flow-on effects for FIFO workers and mining activities
- several places of worship may be exposed to flood impact.

Tablelands

The headwaters of the Upper Burdekin sub-catchment rise at the very southern extent of the Tablelands region, which occupies just under 2 per cent of the Burdekin catchment area. The creeks and tributaries flowing into the Burdekin River in this area are highly responsive to rainfall events, rising quickly to enter the main river channel as it starts its journey south.

Just as quickly as floodwaters rise in this location, they also fall, leading to short, episodic events rather than long-range inundation. Land use in the Burdekin area of the region is typically associated with grazing and agricultural production, and protection of stock and water pumps during the wet season is a key focus for graziers.

The geographical context of the Tablelands region, high above sea level, places it at the headwaters of a number of coastal and gulf catchments, including the Herbert, Barron, Gilbert, Johnstone, Mitchell, Mulgrave-Russell, Murray and Tully catchments (WetlandInfo, 2020).

Image: The Bowen sub-catchment (courtesy Whitsunday Regional Council).



Charters Towers

The Charters Towers region is the largest local government area within the Burdekin and Haughton catchments by land area, comprising almost 48 per cent of the Burdekin catchment area and almost 19 per cent of the Haughton catchment area. Charters Towers incorporates three sub-catchments, including the Upper Burdekin, Cape and Campaspe, and part of the Suttor sub-catchment. The region is steeped in rich history, with the town of Charters Towers founded in the 1870s following the discovery of gold. Much of the town's history has been lovingly retained in the form of its heritage-listed buildings.

The town of Charters Towers is located 13 kilometres from the banks of the Burdekin River. It is accessed via two main road connections – the Flinders Highway from Townsville, which continues west through to Hughenden and is part of the National Road Network, and the Gregory Developmental Road, which traverses the region from south of Belyando Crossing to north of Greenvale, and is part of the State Strategic Road Network. These roads are key freight, logistics and tourism routes, facilitating inter-regional connectivity and alternative access when the Bruce Highway is closed due to flooding. However, both major road connections are subject to flood inundation at numerous locations as well. Facilitating alternative access to the Bruce Highway, via an improved inland highway system, is a key element of the State Government's resilience strategy for central and northern Queensland.

While Charters Towers itself is not subject to riverine flooding, it does experience heavy rainfall events. Over time, significant roadside drainage systems have been constructed throughout the town to quickly convey overland flows to creeks and tributaries.

Other key townships of the Charters Towers region within the Burdekin catchment include Ravenswood, Greenvale, Hidden Valley, Hervey Range, Homestead and Pentland.

Greenvale was developed in the 1970s to accommodate workers of the nearby Greenvale Nickel Mine, which closed in 1993. While it is not subject to flood inundation, it is subject to isolation due to its location at the confluence of three rivers – the Burdekin, Star and Clarke Rivers. The local pub, named the Three Rivers, was made famous by a Slim Dusty song of the same name.

Hidden Valley is an off-grid township located in the Seaview Range, approximately 20 kilometres from Paluma. It is also located immediately downstream of Paluma Dam which is a referable dam.

Ravenswood, Homestead and Pentland are each subject to flood impacts of varying magnitudes, and to inundation of properties.

Both residential and commercial flooding has previously occurred in some events, particularly in Pentland. A significant portion of the grounds of Homestead State School is subject to potential flood inundation stemming from overbank flooding of Homestead Creek. Ravenswood township is downstream from Suhr's Creek Dam which is a referable dam.

Outside of townships, land use in Charters Towers is largely associated with agricultural production, as well as mining activity. Large portions of the region are also occupied by the Australian Defence Force, including the Greenvale Field Training Area and the Townsville Field Training Area, situated at the headwaters of Keelbottom Creek in Hervey Range.

The basalt geologies of the western and north-western parts of the region give rise to remarkable flood behaviour in certain events, including expansive waterfalls. Flooding of the Upper Burdekin, Cape and Campaspe and Suttor sub-catchments often results in overbank flooding, spilling across large floodplains. Stock management and removal of pumps from watercourses prior to flooding are key activities for graziers, relocating equipment and stock to higher ground. BoM data and forecasts, as well as local landholder communication networks up and down the systems, help to distribute information and trigger preparations during wet seasons.

In terms of major projects on the floodplain, the final business case for the Big Rocks Weir on the Upper Burdekin was handed to the Australian Government in 2020, and aims to boost water security in the Charters Towers region. A business case is underway for the broader Hells Gates Dam Scheme, led by the Australian Government (North Queensland Water Infrastructure Authority, 2020).

All tributaries and rivers flow to the south-eastern portion of the region, discharging into Lake Dalrymple. A small portion of the Charters Towers region also forms the headwaters of the Haughton catchment, in the area of Mingela in the Hervey Range.



Burdekin

The Burdekin Shire occupies the majority of the Lower Burdekin sub-catchment, as well as the majority of the Haughton catchment. Parts of the Haughton catchment are also shared with Charters Towers and Townsville local government areas.

By virtue of the large, sprawling delta system of the Lower Burdekin and Haughton, a number of communities across the Burdekin Shire experience the impact of localised as well as riverine flooding. This includes the townships of:

- Dalbeg
- Millaroo
- Clare
- Home Hill
- Ayr
- Brandon
- Rita Island
- Groper Creek
- Jerona
- Giru.

Despite maintaining a relatively small proportion of the catchment area, the total area of the Burdekin and Haughton catchments flow out to the coast through the Burdekin Shire, placing it at the highest level of potential impact. This extends beyond townships to the significant agricultural activities and assets operating on the delta. The rich, fertile alluvial soils on the delta make it a prime location for agricultural production, dominated by sugar production.

Given the level of exposure across the coastal delta, Burdekin Shire maintains detailed flood models, which assist the council and other agencies to better understand the potential impact of flooding under various conditions.

The construction of Burdekin Falls Dam in the 1980s has altered flows from upstream catchments, with the exception of the Bowen and Bogie sub-catchments, which flow into the Lower Burdekin below the dam. As such, riverine flooding from the upper catchments is not frequent, and localised flooding from significant rainfall events over the coastal delta are likely more commonplace. The Haughton system experiences flooding each year, and sometimes on multiple occasions in each wet season.

In addition to the inundation and isolation of residential dwellings in towns, the following summary of key aspects of flood exposure are identified.

Image: An aerial view of the urban centre of Ayr.

Home Hill

Aspects of flood exposure relevant to Home Hill include:

- the wastewater treatment plant ponds (rarely used) being exposed to an estimated flood depth of between 0.5 and 1.5 metres
- all fuel stations being exposed to potential inundation
- major sections of the Bruce Highway being exposed to inundation impact
- most state and local roads on the coastal delta being subject to inundation
- the North Coast rail line being exposed to flood impact including the Home Hill railway station
- private railway infrastructure servicing the cane industry being exposed
- the mobile phone tower and telephone exchange being subject to over 1 metre of inundation
- the aerodrome landing strip being subject to between 1 and 2 metres of flood inundation
- a significant number of educational facilities (including child care and tertiary) being either directly exposed or likely to be isolated
- Burdekin Memorial Hall possibly being exposed in higher magnitude events
- the police station and hospital possibly being exposed to potential inundation
- aged care facilities possibly being exposed to inundation of over 0.5 metres
- Kirknie Road landfill, and Kirknie Road itself, being exposed to flood impact.

Ayr

Aspects of flood exposure relevant to Ayr include:

- likelihood of experiencing flood impacts shortly after Home Hill, primarily related to flooding from Plantation Creek
- major sections of the Bruce Highway being exposed to inundation impact, particularly across Plantation Creek
- private railway infrastructure servicing the cane industry being exposed
- a significant number of educational facilities (including child care and tertiary) being either directly exposed or likely to be isolated, or part thereof
- Ayr Hospital being exposed to potential flood impacts
- a number of caravan sites being subject to potential flood impact
- supermarkets in Ayr being exposed to potential isolation via carpark inundation
- Ayr aerodrome being subject to isolation
- a number of electricity substations being exposed to potential inundation.



Giru

Aspects of flood exposure relevant to Giru include:

- the majority of the North Coast railway line running parallel to the Bruce Highway being exposed
- the Haughton River Floodplain Upgrade Project (Bruce Highway Horeshoe Lagoon – Palm Creek) has a project criteria to not influence the flood levels upstream and downstream of the Bruce Highway, including Giru
- private railway infrastructure servicing the cane industry being exposed
- educational facilities in town being exposed to potential inundation and isolation
- the police and ambulance stations possibly being subject to minor levels of inundation in major events
- the fire station being potentially exposed to a flood depth of over 0.5 metres
- the Invicta Mill and substation being subject to flood inundation.

Groper Creek

Similar to Giru, the community of Groper Creek on the southern side of the Burdekin River also experiences significant and frequent seasonal flooding. However, its impacts generally tend to be minimal, the principal issues relating to impacts to infrastructure such as roads.

Over time, the built form of Groper Creek has adapted to its flood impact and frequency in a manner that is unique, and not compelled or mandated by regulation. That is to say, residents take it upon themselves to adapt their homes to accommodate flood events. At a cost to the home owner, residences and local business premises are raised off the ground, including garages, water tanks, clotheslines, telephone boxes and electricity infrastructure assets.

While requiring upfront investment, this approach to the accommodation and acceptance of flooding enables residents to protect their assets and remain in their homes during sustained flood events. It is the lifestyle trade-off that is most valued by its residents. This is, of course, made possible by consideration of the nature of flood behaviour, flows of which are of a low velocity in this location. These outcomes are not possible in more dangerous, fast-flowing flood-prone areas.

Loss of life has occurred in flood events at Groper Creek. As such, it is important to always remain vigilant about the danger of floodwaters.

Agricultural lands on the coastal delta

Exposure of surrounding agricultural land on the delta floodplain is not uncharacteristic, and is not unexpected by those living or operating business activities across the delta. Vulnerability to flood impacts in this area is largely associated with loss of income and cascading environmental issues associated with the flooding of production lands.

It is estimated that 82 per cent, or over 87,000 hectares, of cropping land on the coastal delta is exposed to flood impact.

More broadly, the two abattoirs in the Burdekin Shire are both potentially exposed to flood impacts, in addition to the only bulk grain storage facility in the region.

In terms of infrastructure exposure, approximately 42 per cent of mobile phone towers in the region are potentially exposed, along with over 60 per cent of transmission powerline and over 70 per cent of sub-distribution powerline infrastructure assets. This includes potential for isolation, not necessarily inundation of assets. Over half of the fuel stations in the region are subject to potential inundation or isolation.

Burdekin Shire Council's current disaster management arrangements recognise these aspects of potential flood exposure, relative to various scales of events.



Images (above): Twilight in Home Hill. (Right): Flood mitigation in the community of Groper Creek.



Townsville

The upper catchment areas of the Haughton system are located in the very southern area of the Townsville local government area, to the west and south of Mount Elliot. This includes the areas of Woodstock, Majors Creek, Reid River and part of the coastal community of Cungulla. The Townsville local government area occupies 22.5 per cent of the Haughton catchment area.

Townsville experienced significant flooding as a result of the 2019 Monsoon Trough event. This was largely associated with major sustained flooding in the Ross, Bohle and Black catchments, as well as Bluewater Creek.

The heavy rainfall was associated with an intense and very slow-moving monsoon low over Northern Queensland that continued to affect the state in the first half of February 2019. Such slow-moving weather systems are relatively rare for this part of the country, and the large size of monsoon lows means the areas they impact may be larger than tropical cyclones.

In and around Townsville, the accumulated daily rainfall totals were the highest since records began in 1888. Numerous areas reported 12-day accumulations of more than 2000 mm, including at Paluma, Woolshed and Upper Bluewater (BoM, 2019).

During major events, Townsville City Council, Burdekin Shire Council, Hinchinbrook Shire Council and Charters Towers Regional Council work together to support isolated communities that may be in other local government jurisdictions. This was the case with the communities of Woodstock, Reid River and Majors Creek during the 2019 Monsoon Trough event, which were isolated from Townsville City for a prolonged period.

These communities within the Haughton catchment are largely agricultural in nature. The proposed Lansdown Eco-Industrial Precinct is intended to be situated within the Haughton catchment, in the vicinity of Woodstock and Calcium along the Flinders Highway. It aims to be Australia's first environmentally sustainable advanced manufacturing, processing and technology hub.

Image: Majors Creek in the Townsville local government area.



Local knowledge

Accompanying this strategy is a series of sub-catchment local knowledge maps. These maps seek to combine local knowledge with historic data and the latest in climate science and flood risk to clearly communicate the diverse breadth of locally relevant aspects of flood across sub-catchment systems.

The local knowledge mapping products document the local dynamics and observations of flood behaviour, landscape characteristics, geology, rainfall, biodiversity status, flood gauge asset locations, flood travel times between key catchment landmarks, and other valuable intelligence that helps us to understand and interpret how these unique catchment systems operate.

A series of 'big map' workshops were held across the region, attended by local governments, state and federal agencies, emergency services, community and natural resource management groups, industry groups and local landholders, to contribute to the collation of locally specific flood behaviour information. The workshops were held in Charters Towers, Home Hill, Bowen, Clermont and Barcaldine.

These local knowledge maps supplement technical flood modelling mapping through the clear articulation of what happens on the ground, and key knowledge that may inform decision-making and flood preparedness.

Local knowledge maps have been prepared for the Belyando sub-catchment (encompassing the entire Barcaldine local government area, including the headwaters of the adjoining Cooper system), the Upper Burdekin, Cape and Campaspe, Lower Burdekin and Haughton systems. These maps can be accessed at www.qra.qld.gov.au/burdekin-haughton.



Local knowledge mapping prepared for the Belyando and Cooper catchments in the Barcaldine region.



Elements of resilience

The following section provides an overview of the various characteristics of holistic community resilience, as they relate to the Burdekin and Haughton region.

Community and societal resilience

Social resilience largely focuses on the collective resilience of individuals and communities to be self-sufficient during emergencies and disasters, to the extent possible, and self-reliant in ensuring they have the capacity to cope with the impacts that floods and other hazards can bring. Proactive community effort to anticipate, endure and recover quickly from severe weather events ensures emergency services can focus on those who need help the most, while limiting long-term community reliance upon recovery support payments and services.

Across the Burdekin and Haughton catchments, people and communities demonstrate self-sufficiency by the nature of their behaviours to accommodate flood events as a part of seasonal routine. This is particularly evident across the grazing and agricultural communities across the catchments.

The Burdekin and Haughton catchments are home to an estimated 11,360 people across almost 39,000 properties. Across the community, people will experience the impact of flooding events in different ways. For some, there may not be any tangible impact, while for others, flooding can generate devastating consequences, including the loss of homes, businesses, equipment, personal property and possibly lives. Flooding can also lead to longer term impacts that in turn take longer to recover from. In extreme events, people may never fully recovery from trauma.

Everyone's flood experience is

Managing stress, supporting families and family relationships, and accessing post-disaster emotional support are just as critical as repairing roofs and fencing.

Support resources and disaster recovery information, including translated fact sheets in multiple languages, can be accessed at www.qld.gov.au/disasterrecovery.

Vulnerable communities

People are vulnerable and resilient in varying ways. The terms are contrary – lower resilience leads to higher vulnerability along a sliding scale. Despite the wealthy being the most exposed in terms of the value of their assets, it is often the less fortunate who suffer most as they have higher degrees of vulnerability. Resilience should be thought of as a system of complex interwoven dependencies that lead to vulnerabilities across the community. All parts of society, including governments, institutions, organisations and individuals, have a role to play in both increasing resilience and lowering vulnerability.

The demographics of the Burdekin and Haughton catchments indicate a slightly higher proportion of the population is aged 65 years or over, compared with the state average. The proportion of children (aged 14 years and under), people with a disability and people on low incomes in the region are comparable with state averages.

The Indigenous population of the Burdekin and Haughton catchments, at 5.7 per cent, is higher than the state average of 4.0 per cent. This is an important factor when considering overall vulnerability to natural hazard impacts. The gap in health status between Indigenous and non-Indigenous populations in Australia remains unacceptably wide. Partnering and working with Traditional Owner groups across the catchment is a key opportunity to consider mutually beneficial approaches to resilience.

Working with the vulnerable people of our communities to support their self-reliance is therefore a key focus for resilience activity.

Vulnerable members of the community can experience extreme stress during emergencies and flood events. Assisting and empowering vulnerable community members and their families and neighbours to consider what actions they might take, and the triggers for those actions or decisions, is a helpful way to prepare ahead of the annual wet season.

Facilities and services working with vulnerable people can also assist, particularly with regard to continuity of services and how best to support people during trying conditions.

Image: Kayaking in the Upper Burdekin sub-catchment (courtesy Charters Towers Regional Council).

A snapshot of community characteristics

population of
111,360
people



almost
39,000
properties



16.5%

people aged 65+
years, compared with **15%** Queensland average



4.6%

people with disability,
compared with **5.2%** Queensland average



5.7%



Aboriginal and Torres Strait
Islander population,

compared with **4%** Queensland average



Sharing our knowledge and experiences

It is widely known across the catchments that no two flood events are the same, given the variables contributing to each event such as rainfall, location, the prior level of saturation of the catchment, length of time since last rainfall and vegetation characteristics.

This can change what we experience and observe in relation to flood behaviour and its impacts. The region's frequent experience with flooding can and does breed resilience, but likewise we must remain mindful that flood behaviour can deviate from previous known experiences, and observations from past events may be different to those in the future. We therefore need to remain vigilant in terms of our own resilience, and be mindful of the risk of relying on past trends to inform how we maintain resilience moving forward.

In terms of sharing our knowledge and experiences, our communities welcome newcomers on a regular basis, including people who are not familiar with the nature of flood hazard and flood behaviour across the catchments, and their sub-catchments and tributaries. Our communities also maintain a great deal of knowledge of the particular aspects of certain weather systems that produce flooding. Preparing new neighbours ahead of the wet season will help them to understand what to possibly expect, and what they should consider and prepare in advance for their own property and family.

Sharing our own initiatives for flood resilience with neighbours and newcomers helps to build collective, collaborative resilience in relation to what to do when flooding occurs.

Indigenous cultural heritage

Our region's First Nations Peoples are inextricably bonded to country as the very substance of their culture. Much can be learnt from their stories of the earth, tradition, kinship and ceremony, which nurtured their culture and the land over the past 60,000 years. Our region includes a large Aboriginal and Torres Strait Islander population, higher than the Queensland average.

There are a number of Traditional Owner groups in the region, each sharing a unique relationship with country. Dry Tropics Natural Resource Management works closely with Traditional Owner groups, participating in decision-making and on-the-ground land and sea management activities. The Department of Environment and Science Indigenous Land and Sea Ranger program works to conserve Queensland's important ecosystems and cultural heritage on country. A ranger group is located in Home Hill.

A resilient community is one that is connected to and celebrates its heritage. We value our region's rich Aboriginal cultural heritage, and we respect it by protecting important Aboriginal heritage sites, artefacts and histories, and work with Traditional Owners, locals and historians to educate ourselves and others.

Recognising the profound relationship between Aboriginal communities and the land, we aspire to draw together Indigenous knowledge of the land with modern practices for mutual benefit and common understanding of lived history. With help, we can celebrate our abundant heritage legacy locally, preserve it for the future and communicate it to others.

Image: This 60 metre artwork at Plantation Park, Ayr depicts Gubulla Munda, the Aboriginal totem and the protective spirit for the Birri Gubba people. Gubulla Munda holds sacred cultural and spiritual significance to the Traditional Owners.



Case study: Alpha rural recharge day

In November 2018, the Alpha rural recharge day was organised by local graziers, the Sparrow family of Malden Station. The focus of the day was centred on the theme of 'recharge', including physical and mental health wellness. Following years of drought and without immediate relief in sight, the day provided an opportunity for discussion, learning and continued fostering of community spirit and resilience.

The recharge day was attended by more than 130 people from across the Barcaldine region and beyond, coming together to discuss a range of topics, including:

- the Department of Agriculture and Fisheries drought relief assistance scheme
- other drought assistance programs
- drought policy
- roads, infrastructure and community services
- surviving tough times
- low interest loans, grants, succession planning
- how to tackle drought and disaster at the property level
- physical stretching, safe lifting and carrying practices
- cattle nutrition.

The community-led event was supported by a range of additional agencies and organisations, including Queensland Health and Alpha Hospital, Royal Flying Doctor Service, Outback Futures, Department of Agriculture and Fisheries, Queensland Rural and Industry Development Authority (QRIDA), Ergon Energy, Anna Dyer Physiotherapy (on correct techniques for lifting and carrying), and the local Queensland Police Service.

Following on from this event, in 2019, Barcaldine Regional Council partnered with Outback Futures to invest in and launch a campaign called Head Yakka. The campaign is a tool to facilitate common purpose, conversation, activity and outcomes in all ages and for all parts of the community, combining smarts and the outback capacity for hard work to bring about meaningful change.

For more information on the Head Yakka program visit www.headyakka.org.au.

Case study: Caring for Country Plan

NQ Dry Tropics works closely with Traditional Owners as they have a crucial role to play in natural resource management (NRM) given their connection with the land and their traditional ecological knowledge. Incorporating Traditional Owners' ecological knowledge into strategic NRM decision making, and on-ground works, maintains their strong connection to country and also better protects and manages our region's natural resources.

NQ Dry Tropics worked with Traditional Owners to develop a Caring for Country Plan, with strategies and actions from the plan then embedded into the Burdekin Dry Tropics NRM Plan. A Traditional Owner Management Group provided regional Indigenous leadership and advice to NQ Dry Tropics.

The Caring for Country Plan identifies four main themes which are embedded in a hierarchy i.e. the need to establish representative structures and organisations in the Burdekin region was of the highest priority as without one it would be difficult to negotiate access to country and address Traditional Owner issues:

- Traditional Owner representative structures and organisations
- access to country
- the management of cultural resources
- the management of natural resources.

Traditional Owners have observed that the Caring for Country Plan remains relevant, although only partly delivered, and the implementation strategies require ongoing support and recognition. The Caring for Country Plan recognises that natural resources are culturally defined, and articulates strategies that support Traditional Owners to develop their capacity to undertake NRM actions on country.

A number of Traditional Owner groups also have local land and sea management plans, which identify the values, issues and actions for NRM on their country. The Traditional Owner Management Group identified capacity building in NRM activities as a priority for Indigenous people to improve personal, community and country health and wellbeing.

For further information visit nrm.nqdrytropics.com.au/people-connections/traditional-owners/.



Resilient towns and infrastructure

Across the built form of Burdekin and Haughton catchments, best practice adaptation to flooding can be observed. From the raised properties and services at Groper Creek, to dwellings in the Charters Towers region that raise on hydraulics above flood level, residents of the region routinely take it upon themselves to accommodate their lifestyles around the natural processes of the river catchment.

Into the future, development across the region should be contemplated with existing and future hazards and risk at front of mind, to reduce overall exposure of people and property to potential impact and disaster over time.

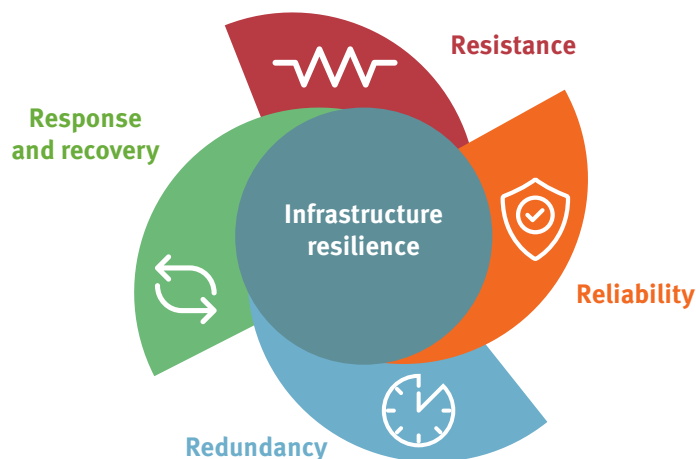
Infrastructure services and networks, and our reliance on them, are also an essential component of daily life. Water, electricity, communications, sewerage, hospitals and health care, banking and finance, transport, education, and other government services such as emergency services, all play a critical role in the day-to-day function of towns and communities.

Our infrastructure networks provide us with important services that support numerous aspects of our lives, and they also support our livelihoods. All economic activity within the region relies on at least one, and often many, interconnected infrastructure services. Our infrastructure networks are both complex and complicated, and we need to build resilience into these networks to ensure continued operations to protect lives and livelihoods.

“By building a more Resilient Queensland, we will overcome some of the challenges currently being faced which include the costs of disasters, rebuilding of infrastructure, increased safety, rising sea water, larger cyclones, longer flood events and prolonged drought”

Elements of infrastructure resilience

There are four key elements that contribute to infrastructure resilience:



(United Kingdom Cabinet Office,

Considering all elements when planning and designing infrastructure increases the ability to continue to supply services in a greater variety of conditions, and to restore service more rapidly after disruption.

However, infrastructure assets and networks should not be thought of as stand-alone, independent elements. Sometimes these systems are very tightly coupled, meaning impacts on one system can have very serious consequences on other systems. Understanding these dependencies, where one infrastructure system requires another to operate, and interdependencies, where both infrastructure systems need each other to operate, is important to ensuring service and community continuity within the Burdekin and Haughton catchments.

Complex system resilience is a further aspect of consideration that moves beyond the resilience of a single asset or network to contemplate the dependencies and interconnections across infrastructure systems. The resilience capacities of complex systems include their absorptive capacity, adaptive capacity, anticipative or predictive capacity, and restorative or transformative capacity (Francis & Bekara, 2013).

Image: Burdekin (Inkerman) Bridge crossing between Ayr and Home Hill.



Build to last

For new infrastructure builds or installations, or in the event of repair or reconstruction after damage from a flood, it is critical we maintain resilience at front of mind as part of organisational cultures. One way to address this is to understand infrastructure limitations in advance, and also understand its vulnerabilities. Where issues might be identified in advance, this process may allow the identification of interim and longer term solutions to increase asset, service and network resilience.

When infrastructure requires upgrade, replacement or rebuild, the opportunity to build back better is key.

Build better before

Build back better

Building back better can lead to different goals or objectives. It could encompass a focus on hardening assets, which may lead to enduring flood impact. On the coastal delta area of the Lower Burdekin and Haughton, for example, inundation may be difficult to avoid and as such, hardening of assets to endure impact may be preferred. In other situations, the focus may be on faster restoration of services and networks following disruption. This may acknowledge that service disruption is potentially unavoidable for different reasons, and preference is placed on service restoration objectives. Of course, the principal goal to avoid hazard exposure in the first instance is always preferred, but in Central and North Queensland, this is generally a challenge.

We also need to build better from the outset of design. This introduces a focus on resilience from the conceptual planning and design phase, where all of the risks the infrastructure will be exposed to during its lifetime can be considered. Through this process, building to last integrates resilience to those risks identified during design, enabling the infrastructure to perform at a higher level of resilience from the moment it enters service, and throughout its usable life. Building better infrastructure is also essential for reducing disaster costs when floods and other events occur. Stronger infrastructure that can withstand flood events, or be returned to service more rapidly after flood disruption, supports communities and builds prosperity.



The economics of resilient infrastructure

Infrastructure is a significant investment for the Burdekin and Haughton regional economy, but it is an investment that provides economic growth, supports community and economic stability, and contributes to general community amenity. Embedding resilience as a core factor in infrastructure investment decisions ensures we maximise the value for money and public benefit of infrastructure investment.

Resilience can be a key economic driver for infrastructure investment. With infrastructure designed to provide a service for long periods (20, 40 or sometimes over 100 years), we know that future conditions are likely to be very different, with potentially more severe floods based on current projections, in comparison with today's conditions. Rebuilding costly infrastructure each time it is damaged is unsustainable. Therefore, a longer term view of building to last is essential, building better before events occur, by focusing on resilience as part of conceptual planning and design phases.

Integrating resilience and sustainability into cost-benefit analysis methods on portfolios of infrastructure investment can have significant financial benefits to from a whole-of-asset-life perspective. Economic benefits can spread well beyond infrastructure service providers themselves, with significant benefits to communities and businesses.

The Building Queensland Business Case Development Framework includes information on embedding both sustainability and resilience into options assessment, and provides templates and frameworks for moving from cost-benefit analysis to include resilience in investment decisions via a multi-criteria analysis (Building Queensland, 2020). This includes considerations into preventative infrastructure to improve resilience, reduce ongoing maintenance costs and cater for the region's changing climate.

Multi-criteria analysis is a complementary approach to a cost-benefit analysis. It allows weighted consideration of non-financial objectives (or objectives that are difficult to monetise or quantify) in selection of best outcomes, and is particularly useful for infrastructure projects that provide public goods. The considerations that form part of the multi-criteria analysis approach ensure that organisation, and potentially community objectives (which may be difficult to reduce to a purely financial value in a business case), are considered more holistically than may otherwise be possible.

A further economic opportunity for the Burdekin and Haughton catchments is one which has already been realised within the region, and includes the integration of infrastructure into the circular economy. A circular economy is one that minimises waste, maximises economic and environmental outcomes, and maximises local reinvestment and catchment export opportunities. The idea behind a circular economy is one that has a net energy gain on its balance of trade.

In the Burdekin and Haughton catchments, the use of bagasse for electricity generation in sugar production takes what was previously a waste product in the milling process, and transfers it to a key source of energy and revenue for mill operators, with Pioneer Mill near Brandon the largest biomass electricity generator in Australia.

This example uses one set of infrastructure, for sugar milling, to support another set of infrastructure, being electricity networks. Overall, it provides infrastructure service and benefit to many more users than just the mill, and also yields significant environmental benefits.

Image: Manual-read flood boards on Alpha Creek.



Case study: Cogeneration – clean, sustainable energy

Wilmar is Australia's leading producer of renewable energy from biomass. Its eight Queensland sugar mills operate on renewable electricity generated on site by using bagasse, a by-product of sugar production. It generates enough electricity to export large amounts to the Queensland grid, and power more than 76,000 homes a year.

Bagasse is the fibre that is left over after the sugarcane has been crushed to remove its sweet juice. Bagasse is recycled and used as boiler fuel at each of Wilmar's mills. It is burned at temperatures of more than 800 degrees Celsius to produce steam. The energy in this steam is either converted into electricity or used as heat in the factories. This process of using both heat and power from a single energy source is called cogeneration. Each year, Wilmar converts the energy in over 5 million tonnes of bagasse into renewable energy.

Wilmar's eight sugar mills have a total generation capacity of 202 megawatts, producing about 600,000 megawatt hours of electricity each year. While all of its mills produce renewable energy, the Pioneer, Invicta and Victoria mills have greater generation capacity. Pioneer's cogeneration plant is the largest generator in Australia run on biomass alone. Surplus bagasse produced in Wilmar's Burdekin mills during the crushing season is stockpiled on large, specially designed pads at the Pioneer Mill, enabling Wilmar to continue to produce power outside of the crushing season. The Pioneer Mill, near Brandon, is capable of operating year-round, day and night.

The Invicta Mill, located at Giru, is also designed to accommodate regular flooding from the Haughton catchment, with a focus on restoration of service.

Case study: Improvements to weather monitoring

BoM has recognised that the current forecasting and notification systems are not reaching the community, and is looking into a customised region-based outlook to better target weather-related messages.

In the 2019–2020 federal budget, \$77.2 million was allocated to enhance weather monitoring in Queensland, including four new weather radars. This includes funding for two new weather radars including 20 new rain gauges to be installed in the Maxwellton and Charters Towers/Hughenden regions to fill the radar coverage gap between Mount Isa and Townsville.

It is critically important that BoM continues to work with affected communities and other relevant stakeholders to ensure the appropriate data is reliably collected before and during disasters, and that data is able to be shared in an easily understood and timely way.

For further information, refer to the National Drought and North Queensland Flood Response and Recovery Agency report '2019 Queensland Monsoon Trough – After the flood: A strategy for long-term recovery', available at www.droughtandflood.gov.au



Case study: Alpha emergency hub

In 2016, the Alpha Hospital, along with the police, fire, SES and ambulance stations, were relocated from the Alpha Creek floodplain to higher ground, enhancing the flood resilience of the community and its ability to endure flood events.

Alpha Hospital was previously located on the western bank of Alpha Creek on Swinburn Street, along with the town's ambulance station. The fire station, SES depot and police station were also located within low-lying parts of the township, east of Swinburn Street, and subject to significant inundation.

The Alpha emergency hub was the first co-located hospital, ambulance, police and fire facility in Queensland. In addition to this joint-service hub, a modern aged care facility also forms part of the now flood-immune precinct. The facility has been purpose-designed to enable expansion over time as needed.

Hospital services provided now include 24-hour emergency access, two inpatient beds, two observation beds, two resuscitation bays, a private practice clinic, a four-bed residential aged care facility, outpatient treatment facilities, telehealth facilities and non-clinical support services. The hub also comprises a combined police, fire and rescue facility (with room for the SES), ambulance service centre, community meeting rooms, amenities and car parking.

A variety of sustainable initiatives were incorporated into the facility, including a 15 kW solar power system to reduce electricity demands, as well as solar hot water with gas back-up. These were important due to the remote location of Alpha and limited electricity supply available from the grid (Queensland Health and Hutchinson Builders, 2020).

Image: Re-located emergency services hub, hospital and aged care in Alpha, improving flood resilience (courtesy Angus Martin)



Resilient transport

Transport networks are an essential component of daily life across the region. This extends beyond road networks to rail, air and stock routes. Not only do these networks enable us to travel for work and for personal purposes, but they support product, freight and stock movements, and drive tourism, as foundations of our economy. Transport also provides a lifeline in times of emergency, and is critical for strong supply chains and resupply before, during and after disaster events.

A resilient transport system is one that responds to unexpected conditions and events in ways that ensure the transport needs of the region, its community and its economy are met (DTMR, 2018).

Due to the extent of road, air and rail (both public and private) throughout our vast catchment areas and geographically dispersed communities, there is substantial local experience in dealing with infrastructure damage and isolation. Especially from Central to North Queensland, we come to expect that on some occasions, we might become isolated or need to evacuate to a safer location. As a community, we generally accept a certain level of inconvenience associated with flood events. It is essential however, that transport networks are returned to service as quickly as possible to ensure minimal disruption to supply chains and community accessibility.

The State Infrastructure Plan maintains a strong focus on transport infrastructure that reduces the long-term cost of repair, improves infrastructure resilience, and improves safety and security. This corresponds with regional planning goals in supporting the region's communities and economic resources by developing resilient and reliable infrastructure and a transport network that moves people and freight efficiently (DTMR, 2020).

Road networks

Roads across North Queensland, and indeed across all of Queensland, are subject to flooding at times. There is much more to a resilient road network than flood immunity, and this can include traffic management during flood events, intelligent transportation systems, alternative route arrangements, 'flooded road' signage and lighting, traffic and road condition cameras, river height stations and cameras. It can also include improving community awareness through education and marketing campaigns. The 'If It's Flooded, Forget It – Back it Up 2020' advertisement campaign aims to increase driver understanding of the risks of crossing floodwaters. The campaign has been an effective way to improve road safety and driver resilience.

The DTMR's Northern Queensland Regional Transport Plan identifies that improving resilience and safety in North Queensland can be achieved through a combination of improved infrastructure, information, communication technology and education.

Specific actions identified in the regional transport plans, relevant to the Burdekin and Haughton catchments, include:

- rest areas and heavy vehicle rest areas to address driver needs and behaviours on the Bruce Highway, Flinders Highway and Gregory Developmental Road
- investigation into potential solutions to improve mobile communication coverage across the region's transport network, for example, at recognised rest stops
- updating and developing management plans for primary stock routes throughout the region
- identification of opportunities for intelligent transport systems on the Bruce Highway and other key linkages, including the Flinders Highway and Gregory Developmental Road
- road network resilience investigations across the region to identify key locations susceptible to weather events and understand requirements to manage, mitigate and avoid network impacts. Investigations should explore key routes susceptible to flooding resulting from major weather events, such as the Bruce Highway, Flinders Highway and Gregory Developmental Road
- examining resilience mitigation measures to help prioritise investments in transport infrastructure upgrades, including at the Belyando River on the Capricorn Highway between Emerald and Alpha, Hervey Range Developmental Road, and upgrading bridge and culvert structures on the Flinders Highway, Gregory Developmental Road and Woodstock-Giru Road
- development and adoption of best practices for coordination between relevant agencies to facilitate efficient and effective responses to flooding and extreme weather events
- cross-agency and governmental solutions to infrastructure resilience including improved collaboration to explore opportunities to coordinate disaster and reconstruction funding with investment into preventative infrastructure
- planning to improve the resilience of the defence transport network, particularly on the Bruce Highway, Flinders Highway and Hervey Range Developmental Road to field training areas.

Image: Flood warning signage on the approach to the Clarke River crossing on the Gregory Developmental Road.



During and following weather events, flooded roads and bridges present safety risks where drivers take undue risks crossing flooded roads. Driver behaviour and the expectations of the travelling public are significant factors. Drivers should take all appropriate measures to ensure they can travel to their intended destination in a safe manner, avoiding the possibility of becoming stranded.

Rail

The Burdekin and Haughton catchments represent a unique part of Queensland, with considerable public and private rail infrastructure assets across the region. The North Coast line extends from Brisbane to Cairns, and connects major towns and settlements along the coast. The Mount Isa line runs east-west connecting Mount Isa to Townsville. Both lines provide freight transport and passenger services. The rail network supports significant economic activity within the region, as well as adjoining regions, and is a key element of the overall supply chain.

Major ports are located at Townsville, Abbot Point and Mackay. Product from mining activities in the Bowen Basin, Galilee Basin and North West Minerals Province and surrounds is transported to major ports and processing facilities on the coast. The road networks servicing these activities are also paramount for key sectors such as the beef industry. Across the Lower Burdekin and Haughton, extensive private rail infrastructure networks support significant cane production activity between farms and local mills. This infrastructure crosses floodplains, rivers and tributaries, and can experience impacts as a result.

The reliability and resilience of rail networks can be an issue, with the long recovery time after flood events, ongoing problems with heat buckling the track, or movements of track requiring levelling due to moisture movements (DTMR, 2019). Operational management measures can mitigate potential risks to rail networks during the summer and wet season months, including speed restrictions when the air temperature is over 38 degrees Celsius, but this can significantly impact on the reliability and efficiency of rail freight and passenger movements. Into the future, the frequency of interruptions is likely to increase.

If it's flooded,

Air

From a disaster vulnerability and resupply perspective, a number of runways, aerodrome landing strips and helipads are subject to potential flood inundation or isolation during major flood events across the Burdekin and Haughton catchments. Some airstrips may also be constrained from receiving certain types of aircraft for resupply or emergency response. Differences in sizes and standards of runway characteristics can impact the type and size of the aircraft that can access an airstrip. Significant rainfall events can undermine airport pavements, limiting the ability of regional airports to function as a critical connection to isolated communities.

Image: Freight train crossing the Haughton River at Giru (courtesy F. Ramsay).



Case Study: Haughton River Floodplain Upgrade Project

The Haughton River Floodplain Upgrade Project (Bruce Highway Horseshoe Lagoon – Palm Creek) is situated at Giru along the Bruce Highway, approximately 40 kilometres south of Townsville and 30 kilometres north of Ayr. The project has a total distance of 13.5 kilometres and extends from south of the Bruce Highway intersection with Trembath Road, to north of the Bruce Highway intersection with Mailman Road.

This section of the Bruce Highway closes due to flooding, on average, every one to two years. These closures significantly affect locals, tourists, transport operators and other motorists, preventing goods from reaching market and sometimes the community from accessing essential services such as health. The project aims to improve safety and efficiency for road users, while significantly improving the capacity of this section of the Bruce Highway to withstand major flooding events. Further, the project will address community concerns regarding the condition of bridges within the project area and the width of the existing Haughton River Bridge.

Once the Haughton River Floodplain Upgrade Project (Bruce Highway Horseshoe Lagoon – Palm Creek) is complete, the duration of inundation will be greatly reduced from an average of 85 hours per year to one hour per year, and from 39 hours to 17 hours in a 2 per cent AEP (an approximate 1 in 50 year ARI) weather event.

The floodplain is impacted by a variety of factors and is considered among the most complex in Queensland.

Case Study: Dotswood Road Fanning River Realignment betterment project

Following the 2019 Monsoon Trough event, the Dotswood Road Fanning River Realignment project received Betterment Funding pursuant to Category D under the DRFA. As a result of the 2019 Monsoon Trough event, approximately one kilometre of the road's surface was washed away when the Fanning River broke its banks.

This event follows a series of occasions that saw the same stretch of road inundated and closed for lengthy periods to enable repairs to occur – at least six occasions over a 10-year period. This included one period where the road was closed for more than two weeks.

The realignment project involved the relocation of a section of Dotswood Road that formerly ran in the middle of the riverbed between two channels. The realignment works crossed the higher flow channel of the Fanning River to the middle height bank, which is only inundated in extreme events. The improved crossing includes a concrete causeway with a concrete entry and exit to the river, along with 1.5 kilometres of new road construction to reconnect the new section with that of the existing road.

This \$1.67 million project now avoids reconstruction after each flood event on the Fanning River, which occurs relatively frequently, and allows better access for property owners, pastoral, agricultural and mining business, as well as the Australian Defence Force, which accesses this area. The road services a number of properties, businesses and employees, and now has increased levels of access and safety during the wet season, with reduced repair costs to government associated with frequent flood events.



Resilient economy

Economic resilience is a critical aspect of overall community resilience, ensuring employment is disrupted as little as possible. Economic inputs and outputs that continue to flow through the region are important to keep local business open, maintain local employment, and continue the delivery of goods and services to support the local population.

Maintaining gainful employment after an event is essential for a variety of reasons. The economic impact of severe weather and disaster events can be felt by individuals and households, thus it remains important to ensure cash flow and income certainty. Employment also satisfies a sense of purpose. Having something to do or apply oneself to each day can be a necessary and welcome mechanism in some cases, where the psychological toll of personal experiences has been significant.

Among the strengths of the regional economy that benefit economic resilience are high levels of industry diversity, strong transport networks, access to manufacturing facilities, the climate of the region, the cost of living and land availability.

Economic drivers and activity

There are multiple economic activities and drivers that underpin the regional economy within the Burdekin and Haughton catchments.

Primary production industries account for a large percentage of employment and businesses within the Burdekin and Haughton catchment economy. Agriculture, forestry and fishing comprise 19.6 per cent of employment within the catchments compared to a 2.8 per cent average across Queensland. Mining comprises 8.7 per cent of employment within the catchments compared to a 2.3 per cent average across Queensland.

Business registration reinforces the very strong agriculture sector within the catchments, indicating agriculture is strongly supported by a large number of smaller businesses. Conversely, mining is less well represented in business registrations, showing that mining employment is overwhelmingly supported by larger organisations.

Key exports from the Burdekin and Haughton region include sugar, beef, fertiliser, molasses, minerals and coal, mostly through ports that are located just outside the Burdekin and Haughton catchment area. The strong grazing industry throughout the region accounts for the majority of land use by area.

The majority of the metalliferous mining activity in the catchments occurs in the Northern Goldfields, centred around Charters Towers and Ravenswood, and almost wholly located within the Charters Towers local government area. The mines in this area play a significant part in the Charters Towers economy, and the wider catchment and North Queensland economy as well.

Other mining and quarrying activities occur across the catchment. Diatomaceous earths from Greenvale are processed near Charters Towers, with Greenvale also home to a marble mine which exports to overseas markets. Lime and limestone around Charters Towers are quarried and sold throughout Queensland. There is a small sapphire mine in the Upper Burdekin catchment, and oil shale deposits exist near Alpha in the southern end of the catchment.

Both types of coal, metallurgical and thermal, are mined within the Burdekin and Haughton region. Metallurgical coal is primarily used for making steel, and thermal coal is primarily used for producing electricity. Significant coal deposits exist in the catchment area, located at the northern end of the Bowen Basin, as well as in the Galilee Basin.

There are extensive areas of dryland cropping between Alpha and Kilcummin, in the Belyando and Suttor sub-catchment areas. Sorghum, wheat, chickpea and mung beans are grown, as well as cotton, sunflower, safflower and forage crops. Many of these crops, especially wheat and pulses, are grown for export, and some are grown for fodder to service the many cattle farms in the area. Mixed enterprise farms including both beef grazing and cropping are common.

A particular feature of both the Burdekin and Haughton catchments are the rich water resources available along the river systems and on the coastal delta. The Burdekin Haughton Water Supply Scheme provides water to the Lower Burdekin and Haughton catchments and is administered by Sunwater.

Access to water provides these areas with a strong irrigated cropping industry, primarily via sugarcane, but also through capsicums, eggplant, rockmelons, squash, pumpkins, watermelons and sweet corn, as well as rice. Fruit trees, including mangoes, are also irrigated from the scheme. Aquaculture is also a key industry on the Lower Burdekin. Access to water as an economic enabler is a significant element of economic and social prosperity across the entire region.

Within the Burdekin and Haughton catchments, especially in the areas around the townships of Ayr, Home Hill, Brandon and Giru in the Lower Burdekin, the economic impact of the sugarcane industry is significant, with estimates that every dollar of sugarcane production supports an additional \$6.40 elsewhere in the related economy (Canegrowers, 2019). Sugarcane production in the Lower Burdekin and Haughton catchments accounts for close to 30 per cent of all jobs.

Image: Cane fire in the Barratta Creek sub-catchment.



Small business

Many of the risks facing the Burdekin and Haughton economy are not unique, but the likelihood and consequence of the risks can be amplified by reliance on commodities. Other risks can include rainfall variability, drought, remoteness and access to services, commodity prices, biosecurity, decline in soil health and environmental conditions, disrupted supply chains and access to workforces.

Flood hazard is also a significant risk to the region's economy and can be more acutely felt in some locations of the region more than others.

Township economies within the Burdekin and Haughton catchments exist to support primary industries such as agriculture and mining. As with many town-based economies, the needs revolve around human and social services, and support to other key parts of the economy. Higher levels of employment are generally in the areas of health and social assistance, retail, accommodation, food service, education, rental hire and real estate services, construction and defence.

Town-based businesses are an important component of regional economies, and provide vitally important social capital. Some town-based and small businesses have developed innovative strategies to enable them to survive. Many small businesses have significant experience recovering from disruptions of all kinds, including flood, and many of them have significant experience in withstanding other natural hazards such as drought.

Notwithstanding this, based on research, an estimated 25 per cent of impacted businesses do not reopen following a major disaster. Depending on location, approximately 66 per cent of affected businesses suffer significant damage to buildings or equipment, and over 90 per cent of business in flood-affected regions forego revenue due to disasters.

There were more than 17,000 small businesses situated in the impact zone of the 2019 Monsoon Trough event, and 97 per cent of businesses surveyed in the most heavily flooded areas reported financial impacts. Reported financial impacts mainly included closures, trade interruptions, forward booking cancellations and damage to premises and equipment. These disruptions and damages are estimated to have cost small businesses at least \$116 million (Deloitte Access Economics, 2019).

Employment and business registration statistics indicate that an effective target for building economic and social resilience within the region includes a strong focus on small business, particularly businesses in agriculture with under 20 staff or turnover under \$2 million.

Business continuity supporting community continuity

Community continuity is largely dependent upon business continuity and continued access to goods and service, retention of employment and continued economic activity. Research has shown that social capital has an impact on the speed and efficacy of disaster recovery. Higher levels of social capital also indicate that a community is more likely to support each other during disaster recovery, for example, by supporting local businesses during recovery.

Small businesses are the engine room of the Queensland economy, working across every industry sector. They make up 97 per cent of all businesses in Queensland and employ more than 914,000 people. Small businesses are both economically and socially vital to our regions, providing local jobs and reinvestment back into local communities.

Small businesses are important to good economic outcomes during normal operations, but even more so during and after disruption. Analysis of the 2008 global financial crisis has shown that regions that have more experienced workers and higher levels of self-employment are more economically resilient.

Small businesses with existing relationships, cultivated through chambers of commerce and other platforms, are more likely to help each other before and after flood events. These networks are pivotal for maintaining supply chains and ensuring business operations that support essential services continue to operate to support community wellbeing before, during and after an event.

Business continuity planning can greatly assist a business to identify pathways when disruption occurs. Small businesses in town that collectively plan for continuity by identifying where they can help each other can offer significant resilience benefits for the entire community.

Image (left): Main street activity in the township of Alpha. (Right): Historic flooding in the township of Alpha, including the main street.



Case study: Buy in the Burdekin

Stemming from the economic impact of the COVID-19 global pandemic in 2020, the Ayr and Home Hill Chambers of Commerce implemented a Burdekin rewards loyalty program, with the support of Burdekin Shire Council. In an effort to reduce the impact of COVID-19 on the local business community, the 'Buy in the Burdekin' campaign was established, with the mission to encourage all residents to support local businesses, boost local jobs and foster awareness of the benefits of supporting local small business.

Together, the chambers of commerce have over 140 members, which has grown in response to this campaign as more businesses seek to participate. The program rewards customers for shopping local, using loyalty cards. The cards are then entered into a draw each month where winners receive 'Burdekin Gift Cards'. This culminates in a mega draw, where four large prizes are given away to loyal 'Buy in the Burdekin' shoppers.

This program has not only seen a direct increase in local spending with Burdekin Shire local and small businesses, but has also seen a strengthened network of businesses operating collectively toward a common goal, focused on business and community continuity following a period of significant economic and social disruption.

Case study: Disaster Resilience Planning for Agriculture Project

The Queensland Farmers' Federation (QFF) acknowledges the importance of disaster resilience planning for agriculture in Queensland, noting it is essential to have the mechanisms in place to support and prepare farmers and primary industries for flood inundation, tropical cyclones or drought. In 2015, the QFF completed a project looking into disaster resilience planning in Queensland agriculture, supported by the Queensland Department of Agriculture and Fisheries.

The QFF highlights that resilience in agriculture centres upon the ability to recover and attain full business functionality after a serious weather event. The Disaster Resilience Planning for Agriculture Project looked at the dairy and mango industries as part of the pilot studies to measure both industries' understanding and comprehension of the impacts of disaster events, and to assess the industries' preparedness and resilience planning for future events. Both industries showed strong governance around disasters, with appropriate communication in place. Both, however, demonstrated limited financial capacity to implement the work that needed to be done. Lack of financial backing to fully explore these resilience operations have been the main inhibitors to both the dairy and the mango industry, particularly at an individual business level.

QFF's findings from the Disaster Resilience Planning for Agriculture Project have informed the National Emergency Management Projects – Disaster Resilience Planning for Australian Agriculture project.

QFF has also designed a website with a one-stop shop search tool for farmers from all industries, to be able to enter their postcode and search for all industry specific, local, state, federal and not-for-profit assistance that is available in their local area.

QFF has delivered relief and recovery projects for severe natural disasters including Cyclones Larry (2006) and Yasi (2011), the 2011 Queensland floods, and flooding associated with Cyclones Oswald (2013), Marcia (2015) and Debbie (2017).

Image: Buy in the Burdekin program (courtesy Burdekin Shire Council).



Environmental resilience

The Burdekin and Haughton catchments comprise a complex system of freshwater rivers and streams that drain a diverse array of landscapes, from semi-arid drylands, wooded grasslands, tropical rainforests, coastal swamps to wetlands.

The region features an abundance of natural environmental beauty, from the series of low mountain ranges that make up the Great Dividing Range, to the numerous national parks dotted across the region, and the internationally important Ramsar wetlands of Bowling Green Bay, which are inherently connected to the Great Barrier Reef World Heritage Area.

A number of key environmental considerations underpin the resilience of the catchment's landscapes, as well as the catchment's impact on receiving environments including Ramsar wetlands and the Great Barrier Reef. Certain environmental issues are amplified during the wet season when catchments experience flooding. The following sections outline some of the key environmental considerations relating to the catchments.

Great Barrier Reef

The Bowling Green Bay Ramsar site covers approximately over 36,000 hectares and is one of two Ramsar-listed sites within the Great Barrier Reef coastal zone. It provides a diversity of wetland habitat types comprising palustrine, riverine, estuarine and marine wetlands. Complex patterns of saltmarsh and saltwater couch grasslands back onto thin fringes of low mangrove communities in the intertidal zone. The site contains one of the largest mangrove and saltmarsh habitats along the Great Barrier Reef Coast. The wetlands support a significant diversity and abundance of species including turtles, dugong, shorebirds and other waterbirds. Several of these species are listed as threatened at international, national and/or state levels. The site is recognised as a network site under the East Asian-Australasian Flyway Partnership and supports at least 3 migratory shorebirds at >1% of the flyway population. The site is high value for fisheries with important fish and crustacean nurseries. Some species depend on the site for certain stages of their life-cycle.

Adjoining Bowling Green Bay, the Great Barrier Reef is an Australian icon, and one of the most precious ecosystems in the world. It stretches more than 2300 kilometres along the Queensland coast and covers an area of 348,000 square kilometres. The Great Barrier Reef contains some 3000 reefs, 1050 islands, and other habitats that support a unique and diverse array of species (Australian Department of the Environment and Energy, 2018). The Queensland and Commonwealth governments are committed to ensuring the Great Barrier Reef retains the values for which it was declared a World Heritage Area, and that it continues to be one of the best managed protected marine areas in the world.

The ongoing health and environmental resilience of the Great Barrier Reef is dependent upon the ecological integrity of the adjacent catchments, including the Burdekin and Haughton catchments, which are intrinsically connected through coastal ecosystems.

Weed transfer

Over the years, the construction of levees and other infrastructure along parts of the river system, and the removal of vegetation and soil in some locations, has altered the flow regime across the catchments, which can lead to water quality impacts, weed infestations and reduced fish productivity as a result of changes to the volume and speed of freshwater flows through the catchment.

The spread of invasive weed species throughout the catchments can have devastating impacts on the natural environment, can reduce agricultural productivity, and is of concern to the community. During the dry season, altered flow regimes and reduced water quality can create ideal conditions for weeds to proliferate.

In times of flood, weeds are transferred to downstream areas, allowing further infestation of previously clean areas. Weeds can also be transferred throughout the catchment through land management practices. Improving land management practices along watercourses provides a key opportunity for resilience enhancement. QFF is currently managing the North & Far North Queensland Monsoon Trough Agricultural Recovery and Resilience Project and the Flood Mapping, Mitigation and Management Plans for Primary Producers Project.

For further information visit www.qff.org.au/projects/natural-disasters/.



Sediment deposition, erosion and water quality

Land uses in the catchment have a significant impact on water quality, as run-off from the land enters the river system during the wet season.

Over the past 150 years, land uses in the catchment have changed, with the primary land use now consisting of grazing and intensive agricultural development, including sugarcane, dryland cropping and horticulture. Mining activities are also well established across the region, producing coal, gold, silver and zinc. Changes to land use across the catchments can amplify issues of erosion, resulting in extensive sediment transfer in the wet season. Sedimentation in the Burdekin catchment is also influenced by landscape geology, where high-velocity flows off granite country generate erosion, and sediment transfer when fast-flowing floodwaters reach erodible soils in downstream locations.

The Burdekin catchment is known to generate significant loads of sediment. Sediment transfer from the upper sub-catchments is mitigated to some degree, by the Burdekin Falls Dam, but fine sediments can continue to flow through to the Lower Burdekin. This includes transfer of sediment from the Bowen and Bogie systems. This sediment can create risks and impacts on marine life and vegetation, irrigation channels and pumps on the coastal delta of the Burdekin and Haughton, as well as water quality issues that cascade into broader risks upon discharge to the Great Barrier Reef coastal zone.

Sediment deposition can also alter the depth, size and shape of rivers. This may have implications for overbank flooding and may result in increased flooding across the broader floodplain, as well as changes in flood velocity in specific locations.

Additionally, water quality issues are known in some catchments as a result of pesticide use from some agricultural activities, as well as chemical leachate associated with former heavy metal extraction and processing activities, including the use of arsenic.

The changes in the way we use land in the catchment has led to significant increases in sediment, nutrient and chemical loads running off the land into the rivers and waters entering the Great Barrier Reef (Burdekin Dry Tropics WQIP, 2017). These impacts are often exacerbated during floods by the conveyance of floodwaters. Monitoring sediment movement through the catchment over time can underpin effective decision-making to support environmental resilience.

Hydrology and groundwater

Following rainfall, water flows across the landscape and into waterways and channels, with some of this water eventually reaching the Great Barrier Reef lagoon. Water that does not flow to the lagoon either:

- sinks into the ground, where it supports a variety of terrestrial and groundwater dependent ecosystems
- contributes to overland flow
- is used for other purposes such as agricultural production (WetlandInfo, 2018).

Extensive irrigation practices have evolved throughout parts of the Burdekin and Haughton catchments, largely associated with sugarcane production. The Lower Burdekin contains the largest irrigation area on the east coast of Australia. The area is famous for its year-round water supply, made possible by the construction of the Burdekin Falls Dam, as well as extensive natural and artificial drainage channels (NQ Dry Tropics, 2016).

The irrigation systems established to support sugarcane production have substantially modified surface water and groundwater systems in the Lower Burdekin area.

The Lower Burdekin groundwater systems that underlay the coastal delta are complex. The delta is the largest unconfined groundwater system of its type in Australia, and there is also a deeper aquifer beneath. Surface and groundwater systems are connected across the floodplain, with contaminants in surface water entering groundwater and vice versa (WetlandInfo, 2018).

Floodplain soils vary in term of water infiltration, from the very porous soils, mainly sand, of the coastal delta to low transmissive soils such as clay. The more porous soils enable high amounts of water infiltration and recharge of groundwater.

Surface furrow irrigation, also referred to as flood irrigation, is the most common system used in the Lower Burdekin area, and across many parts of the world. Surface furrow irrigation can result in the loss of large volumes of tail water to waterways and wetlands if not appropriately managed on farm (WetlandInfo, 2018).

The Barratta Creek estuary is also 'freshening', which is shifting community composition and stressing estuarine vegetation including mangroves and saltmarsh. Some of the once seasonally dry wetlands areas are now subject to elevated and perennial freshwater inflows arising from upstream-irrigated agriculture (GBRMPA 2013, NQ Dry Tropics 2016).

Image: Breakneck Gully in the Upper Burdekin sub-catchment.



Conversely, the coastal floodplain groundwater system has exhibited increased salinity (NQ Dry Tropics 2016) since regular monitoring began in the 1960s (Lenahan and Bristow 2010). According to Bristow and Lenahan (2010) the increased groundwater salinity of the Burdekin coastal floodplain aquifer results from a combination of evapotranspiration of irrigation water, displacement of unsaturated zone solutes, enhanced mixing with relict seawater and seawater intrusion.

The highly modified system has impacted the natural ecological processes, such as natural wetting and drying cycles. Other considerations include potential seawater intrusion, a rising groundwater table and increasing concentrations of salts, aquatic weed infestations and the impact of these on natural ecosystems (NQ Dry Tropics, 2016).

For further information in relation to the hydrology and groundwater considerations of the Lower Burdekin in particular, visit www.wetlandinfo.des.qld.gov.au

Case study: Arming the community with knowledge to tackle woody weeds

Weeds reduce the quantity and quality of Australia's agricultural, horticultural and forestry products, with NQ Dry Tropics identifying that Australian farmers spend an estimated \$1.5 billion a year on weed control, and miss out on approximately \$2.5 billion a year in lost agricultural production caused by weed infestations (NQ Dry Tropics, 2016).

NQ Dry Tropics notes that woody weeds such as parkinsonia (*Parkinsonia aculeate*), prickly acacia (*Acacia nilotica*) and chinee apple (*Ziziphus mauritiana*) are a particular problem in Queensland's agricultural areas, and in recent years, they have been spreading on the Burdekin coast. They cause major issues for grazing and farming enterprises in the Burdekin region, and reduce habitat for native plants and animals. They are difficult to control, reduce the amount of land that can carry pasture and crops, and make it hard for graziers to efficiently muster cattle (NQ Dry Tropics, 2016).

NQ Dry Tropics acknowledges that landholders and environmental managers are becoming increasingly concerned about this spread of weeds. As a result, NQ Dry Tropics facilitated a field day in Bowen called 'The War on Western Weeds visits the coast'. This event was held in October 2015 and supported local farmers, giving them the skills and knowledge to control pest plants sustainably (NQ Dry Tropics, 2016).

NQ Dry Tropics invited Dr Vic Galea from The University of Queensland to speak about an innovative biological herbicide (bioherbicide) method he has developed to control woody weed infestations without using chemicals. The bioherbicide uses naturally occurring native fungi to give target trees a super-dose that eventually kills them. This biological control is administered by drilling a hole into the trunk of the woody weed and sealing a dissolvable capsule of the bioherbicide inside (NQ Dry Tropics, 2016).

As a result of this work, NQ Dry Tropics has continued to receive enquiries from land managers seeking information. This project uses an innovative, cost-effective approach to deal with a major environmental and economic issue (NQ Dry Tropics, 2016).



Case study: Reef Guardian Councils

The Great Barrier Reef Marine Park Authority's Reef Guardian Council program showcases environmentally sustainable practices undertaken by councils in the Great Barrier Reef catchment. The program recognises that effective management and protection of the Great Barrier Reef requires a coordinated effort from industries, communities and all levels of government (Australian Government Great Barrier Reef Marine Park Authority, 2018).

There are 18 councils in the Reef Guardian Councils program undertaking a range of projects, including six councils from the Burdekin and Haughton catchments (Australian Government Great Barrier Reef Marine Park Authority, 2018):

Notable projects showcased in the Reef Guardian Councils Highlights Report 2017–2018 for the Burdekin catchment region include:

- The Burdekin Shire Council's celebration of the International Year of the Reef with the It's Your Reef Festival at Alva Beach in June 2018. Hundreds of residents attended to learn about the values of the reef and what they can do to help its resilience and protection.
- The construction of a model of the Burdekin Shire region by Burdekin Shire Council's environmental health officers, which is used during educational talks with school students. The model was developed with the aim of educating youth on how land practices and poor wastemanagement can affect Burdekin River and consequently the reef.
- Burdekin Shire Council partnering with James Cook University and MBD Ltd to seek funding for the first full-scale trials of a macro-algal treatment process in municipal wastewater in Home Hill. The project aims to aid the removal of nitrogen and phosphate from wastewater before it is released to the Great Barrier Reef.
- Isaac Regional Council's St Lawrence Wetlands Weekend, held in June each year, which promotes local food producers and celebrates the nationally significant wetlands and their importance to the ecology of the region, adjacent inshore environment and reefs.
- Mackay Regional Council's trial of a steam weeding unit to reduce herbicide use. Steam weeding is the latest in safe, chemical free weed control and is ideal for urban areas, parks, playgrounds, schools and natural areas. There are many benefits of using steam to control weeds, including instant results, reduced chemical use and no run-off or pollution into waterways.
- Townsville City Council's installation of an innovative floating wetland trial in Fairfield Waters to counteract the effect of algal blooms and reduce nutrient input into the reef lagoons. It is a sustainable, cost-effective way to treat stormwater run-off flowing to waterways and the Great Barrier Reef. It biologically filters the water, reduces evaporation and improves aeration of the water.
- Townsville City Council's leadership in participating in a national Cooperative Research Centre for Water Sensitive Cities research project to develop a vision and strategic framework to accelerate Townsville's transition towards a water sensitive city.
- Whitsunday Regional Council's commitment to continuing the implementation of its Climate Change Adaptation Strategy and Policy.
- Whitsunday Regional Council's review of its erosion and sediment control policies and procedures relating to public and private development, resulting in a new Erosion and Sediment Control Policy and Program, with its intention to reduce sediment loss from private building sites and council construction projects and avoid it potentially entering the Great Barrier Reef lagoon (Australian Government Great Barrier Reef Marine Park Authority and Reef Guardians, 2019).

*Image: Bowling Green Bay **ramsar wetlands**, near Giru (courtesy F. Ramsay).*



How we prepare

Having regard to the multiple elements of resilience, we can put these to good use around our home and property, and for preparing our business premises and operations for major flood events. The following tips provide a checklist of things to consider to be flood-ready.

Preparing your home

The following points provide a practical list of considerations to ensure your home is flood-ready.

- ☐ Check your insurance policy to make sure it is current, the types of weather events you are covered for, and additional inclusions such as debris/asbestos clean up and removal. This includes all types of insurance such as car, and home and contents insurance.
- ☐ Be prepared emotionally and mentally to deal with insurance issues, as these can sometimes take long periods to resolve.
- ☐ Have an evacuation kit ready, and supplies to last a minimum of three days without electricity, and up to three weeks.
- ☐ Identify how and where to turn off the mains supply for water, power and gas.
- ☐ Be prepared for power and telecommunications outages, even if your home is not directly impacted. Infrastructure networks may experience outages, or be de-energised to protect assets from damage. This helps to expedite reconnection as quickly as possible.
- ☐ Disconnect electrical items, appliances and external television/radio aerials.
- ☐ Repair rotten, corroded and termite-infested timber, particularly inside the roof. Check condition of the roof and repair loose tiles, eaves and screws.
- ☐ Clear gutters and downpipes.
- ☐ Purchase supplies such as masking tape, tarps, sandbags and water containers.
- ☐ Take photos of home and business contents and belongings for evidence in case of damage during the event.
- ☐ Plan in advance which indoor items of furniture and appliances you will raise off the flood or empty (such as fridges and freezers) if water threatens your home.

- ☐ Store all poisons and garden chemicals above ground level and out of reach of children.
- ☐ Consider alternatives to carpet and relocate switchboards and power points to well above previous flood levels (using a licensed contractor), if you live in a cyclone/severe storm-prone area.
- ☐ If your property is in a low-lying area, prepare sandbags. Sandbag internal drains and toilets to prevent sewage backflow. Sandbag areas at risk from flooding, such as doors and windows, where possible.
- ☐ Consider opportunities to dry-proof the external spaces of an existing house to prevent floodwaters from entering a building by using either permanent or temporary flood barriers.
- ☐ Wet-proof internal and external spaces of an existing house to enable floodwaters to enter and leave quickly without causing significant damage.
- ☐ Raise your house above the defined flood event level.
- ☐ Check and fix loose fittings, such as railings. Check windows and install shutters if possible.
- ☐ Monitor your physical and mental health, and those of your family, neighbours and colleagues.
- ☐ Be prepared for it to take some time before you can return to your home after floodwater has receded, for safety purposes.

The above is not an exhaustive list. Additional resources to help you prepare for each wet season can be obtained from your council, or accessed via www.getready.qld.gov.au.

If you are considering renovations or a new house build, the Flood Resilient Building Guidance for Queensland Homes provides detailed design and construction approaches to enhance flood resilience for new and existing homes. This guide can be accessed at www.qra.qld.gov.au/resilient-homes/flood-resilient-building-guidance-queensland-homes.

After an event, guidance on how you can clean your home is available at www.qld.gov.au/community/disasters-emergencies/recovery-after-disaster/cleaning-up/after-a-storm-flood-or-cyclone/returning-to-buildings.

If you need to repair or rebuild your home following an event, information to assist you is available at www.qbcc.qld.gov.au/home-maintenance/rebuilding-after-natural-disaster.



Preparing your property

The following points provide a practical list of considerations to ensure your property is flood-ready.

- ☐ Clean up the yard. This includes moving outdoor equipment, rubbish, chemicals and poisons to a safe location, and disconnecting electrical items.
- ☐ Move livestock, pets, machinery and animal feed to higher ground.
- ☐ Remove water pumps from watercourses.
- ☐ Clear away all loose material. Tie down sheds or other small structures not permanently fixed.
- ☐ Secure caravans, boats and vehicles and locate them such that they are at reduced risk.
- ☐ Remove and store loose furniture or items that could become airborne in strong winds.
- ☐ Trim trees and overhanging branches close to the house (be aware of any overhead powerlines).
- ☐ Check and fix any corrosion, rotten timber, termite infestations and loose fittings around the property.
- ☐ Empty standing water from any containers and paddling pools in the yard that are not frequently emptied to prevent mosquito growth, which can lead to disease.

Preparing your business

The following points provide a practical list of considerations to ensure your business is flood-ready.

- ☐ Anticipate flood events and have a plan ready for before, during and after.
- ☐ Ensure insurance policies cover flood damage.
- ☐ Develop a fit-for-purpose business continuity plan to avoid disruption, not just from flood. By understanding the critical functions of the business, mitigation steps can be taken before and during a disruption event, including contingencies, to reduce the level or duration of any disruption to the critical functions of the business.
- ☐ Prepare your place of business for flood events ahead of each wet season. This may include making stock and appliances easy to raise off the ground, preparation of sandbags, or relocating equipment to higher ground for the season.

- ☐ Consider supporting business infrastructure such as maintaining electronic records and servers off-premises or in a flood-resilient location, or use cloud-based services.
- ☐ Be familiar with where to obtain important and reliable flood emergency information to support decision-making, and how to get assistance if needed.
- ☐ Develop and maintain an emergency response plan for the business and for employees. This will help guide preparations for impending events, and ensure staff are managed in a safe manner. This may include arrangements to evacuate the premises, and instructions on turning off appliances, equipment and potentially hazardous services such as gas and electricity.
- ☐ Identify supply chain risks and work with suppliers and partners to identify mitigation measures and contingencies.
- ☐ Prepare for recovery by recording any damage and loss, including video and photo records to support insurance claims, and ensure claims are lodged as early as possible.

Support for business risk management is available at www.business.qld.gov.au/running-business/protecting-business/risk-management.

Get Ready Queensland

When it comes to extreme weather events in Queensland, including the Burdekin and Haughton region, it is not a matter of 'if' but 'when'.

Get Ready Queensland is a year-round program helping all Queenslanders to prepare for disaster events. Being prepared before a disaster occurs could be the difference between staying safe and putting yourself and those you love in danger.

A significant range of information to assist with preparation, response and recovery from natural hazard events is available via www.getready.qld.gov.au/.

Enhancing our community-led resilience

Resilience is a mindset and process that is about encouraging sustainability and adaptability of people and the places they live, work and play. The ability for self-sufficiency and resilience starts with communities. Likewise, it is important to recognise the vast differences in communities across the catchments, including their identities, challenges and opportunities. No two places are the same. As such, what it means to be resilient for each may not be the same.

The focus on self-sufficiency across Queensland is necessary due to the size of the state, with disparate communities and a high frequency of serious weather events. We must accept these events will continue and likely increase in intensity into the future, and take steps to prepare, and avoid, significant impacts from occurring by being ready.

This strategy and its focus on grassroots, community-led approaches to maintaining and enhancing resilience provides a framework for local actions and areas of focus that contribute toward broader regional resilience goals and aspirations. This approach recognises that resilience is not a commodity and cannot be manufactured.

The Queensland Strategy for Disaster Resilience (QSDR) provides an overarching framework to empower Queenslanders to factor in resilience measures and activities as they anticipate, respond and adapt. As Queenslanders, we are not strangers to serious weather, and in North Queensland in particular, we are robust in our experiences with flood events.

The pathways and directions of this strategy each map back to the four objectives of the QSDR, articulating our local and regional approach to how we will continue our resilience journey in the face of increasing climate-related risks.

Image: Echo Hole on the Upper Burdekin (courtesy of F.Ramsay).





A shared strategy

The strategy draws upon the spectrum of existing resilience efforts both undertaken and underway across the region, acknowledging the integrated, complex and far-reaching concepts of resilience.

The framework of this strategy, and its implementation, is underpinned by three components, as outlined below.

The elements are formulated through extensive regional engagement and collaboration with each local government within the catchment areas, and calibrated against the wealth of existing studies, reports, plans and strategies in place, and strategic observations drawn from the QERMF assessment across the region. This enables the consideration of relevant strategic vulnerabilities and locally identified community needs, which contributes to bolstering community-led resilience initiatives across the region.

Strategic pathways

A range of strategies to inform collaborative approaches to the diversity of resilience goals and aspirations across the region are identified and aligned to our vision of resilience for the region. These strategic pathways form a regional 'blueprint' for coordinated resilience action across the Burdekin and Haughton catchments.

These strategic themes represent potential pathways to meet the aspirations of the region from social, township and infrastructure, transport, economic and environmental perspectives.

The strategic pathways each align with the various objectives of the Queensland Strategy for Disaster Resilience. This establishes a direct 'line of sight' from local, on-the-ground actions, which contribute toward supporting community-led resilience, through state-level strategy and policy, and ultimately to the achievement of national and international resilience objectives. This contributes towards ensuring the communities within the Burdekin and Haughton region remain among Australia's most resilient, with the ability to face future challenges with the least level of disruption or loss.

Action plan

An action plan has been developed to steward the implementation of local directions and regional actions, which links directly to the Queensland Strategy for Disaster Resilience, aligning with the Queensland Government's statewide priorities and commitments for disaster resilience.

These strategic pathways and actions will be moved forward under the direction of each of the local governments within the Burdekin and Haughton catchments, as well as individual stakeholder groups. The action plan includes activities relating to, but not limited to:

- additional flood modelling data
- critical infrastructure resilience
- community education, information and media
- environmental programs to enhance resilience and reduce impact on the Great Barrier Reef
- township-scale business and economic continuity planning
- governance arrangements
- psychological and mental health
- data and evidence collation to support informed decision-making
- drainage activities
- flood gauge assets and governance.

Queenslanders are disaster resilient when...



Above: The four objectives of the QSDR.

Image: Belyando Floodplain in the Barcaldine Region



Regional strategic pathways

These strategic pathways form a regional 'blueprint' for coordinated resilience action across the Burdekin and Haughton catchments. Action and efforts at the local level are calibrated to work toward the achievement of these regional goals. Each strategic pathway is mapped to a corresponding QSDR objective, referenced by the colour at the top right of each strategic pathway.

STRATEGIC PATHWAYS			
Resilient society	2 Every flood is different We know each flood is different, and are not complacent. Flooding comes naturally to the Burdekin and Haughton, we are robust and take it in our stride. We take action to anticipate and prepare for flooding. We prepare our households, and ensure we pass our local knowledge on to others.	3 Embracing technologies We invest in new technologies and skills development to sustainably steward the landscape and anticipate serious weather, including monitoring, Internet of Things (IoT) and drone capabilities which can be leveraged to support situational awareness in addition to business automation.	1 Understanding and avoiding cascading risk We identify and communicate the flow on and cascading risks associated with flooding, with a focus on potential impacts. We coordinate messaging and seek to deliver continuously maturing disaster preparedness messaging over time.
	3 Harnessing the strength of infrastructure networks Opportunities to partner across providers and share assets, access and information can offer enhanced interconnectedness and potential cost savings. We leverage efficient and effective systems opportunities and understand asset and network limitations.	4 Recovering for resilience Our depth of experience in dealing with post-disaster recovery enables us to identify vulnerabilities and opportunities for improved resilience. We strive not only to build back better, but to build to last through recovery and design opportunities.	4 Adapting to live with hazard Adapting our built environment to accommodate flood resilience is key. This includes the allocation of land uses that are appropriate to the risk context, an adaptive built form and engineering opportunities to support resilient outcomes.
Resilient towns & infrastructure	4 Mitigating repeated impact hotspots We collaborate to investigate new options for improved network resilience, having regard to known locations where repeat event impacts highlight potential transport network vulnerability.	4 Strengthening supply chain and resupply networks The nature of industry across the region involves both micro and macro supply chain networks. We work to bolster local supply chains to support communities and strengthen regional networks that support employment and the economy.	2 Working together towards network resilience We collaborate and coordinate to prepare for and respond to natural hazard events to safely manage transportation networks. We take action to implement the resilience objectives of the Regional Transport Plans across the catchment.
	3 A culture of continuity We embrace continuity processes within corporate cultures, from small businesses to large industries across the region. Embedding continuity in daily business operations helps our communities to maintain and support one another when we need it most.	4 Pre-planning for post-disaster recovery We consider our risk in advance of each annual disaster season and explore opportunities to pre-plan should loss or damage occur. We consider the vulnerabilities, and identify opportunities to accelerate recovery or betterment.	2 Resilience as part of the greater good We acknowledge and understand the relationships and interdependencies between economic activities and businesses that support community continuity. We work together to identify, prepare for and respond to hazard events.
Resilient transport	3 Supporting evidence-based decision-making Data collation and monitoring will help us to build a strong evidence base to make informed and sustainable decisions. This has flow on benefits to support economic, transport, built environment and social resilience.	4 Harnessing natural functions Enhancing and reintroducing natural processes as part of broader environmental systems supports environmental resilience. We recognise the dynamic history of the catchments and their flows, and use this knowledge to strengthen the linkages between environmental, economic and infrastructure resilience.	2 Contributing to reef protection We appreciate the relationship between the catchments and the Great Barrier Reef, and coastal processes more broadly. We take action to implement sustainable practices and manage water quality and discharge to highly sensitive receiving waters.
Resilient economy	Local resilience actions (refer to community snapshots)		
Resilient environment			

Climate adapted flood resilience

Climate adapted flood resilience

Place-based community snapshots

A shared responsibility model

Local resilience actions require a multidisciplinary and shared responsibility approach that includes state agencies, non-government organisations and not-for-profits, community groups and individuals.

The local resilience directions are identified using a place-based approach for townships and communities across the Burdekin and Haughton catchments. The community snapshots that follow provide a quick reference guide to the local resilience directions relative to a series of communities across the region. These snapshots include intelligence derived from local disaster management plans and QERMF processes.

Additional shared regional actions will span the entire catchment area, articulated by the shared regional opportunities for collaboration. These are embedded within the action plan which is supplementary to this strategy.

NOTE: The statistics outlined in the following place-based community snapshots contain gaps where data has not been collected, or Census answers have not been provided. These statistics therefore should be interpreted as approximate only.

Each local resilience action outlined within the following community snapshots aligns with an element of resilience and strategic pathways. These are identified as per the following indicators:

Resilient society
Resilient towns & infrastructure
Resilient transport
Resilient economy
Resilient environment



Image: Historical flooding in the township of Alpha.



ALPHA

Location

Belyando sub-catchment

Local government

Barcaldine Regional Council

Township characteristics

The township of Alpha is located on an inside bend on the western side of Alpha Creek. It supports a town-based population as well as a larger grazing community in the surrounding area. The town experiences significant flood impacts that include substantial inundation. The Alpha Hospital, aged care facility and emergency services facilities were recently relocated out of the floodplain to higher ground within town.

Demographics

- The township of Alpha has a population of approximately 335 people.
- Approximately 28.7 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 10.7 per cent of the population.
- The Barcaldine local government area (LGA) achieves better averages than Queensland for medical dependency, unemployment, rental homes and income.
- Couple families, with and without children, represent the largest family composition, accounting for 90.4 per cent of households.
- Approximately 48.8 per cent of the population earns a weekly income of between \$500 and \$1749 and 34.5 per cent earn less than \$500.
- Of private dwellings in Alpha, approximately 46.4 per cent are owned outright, 32.9 per cent are rented and 13.6 per cent are owned with a mortgage.

Key infrastructure

- The town operates on a domestic septic system, loss of power for long periods may test the capacity of holding pits.
- Alpha Hospital is co-located with the aged care facility, and both were recently relocated to higher ground in town.
- The police, fire, SES and ambulance stations are co-located, and were recently relocated to high ground in town.
- The Alpha aerodrome is located to the west of town and is subject to isolation and potential partial inundation.

- The railway station and associated facilities are subject to flood inundation.
- The Capricorn Highway crosses Alpha Creek via a bridge. A separate railway bridge also crosses the creek.
- Town services include a bank, a supermarket and a town hall.
- A flood levee was previously constructed around the town, but was damaged in the 1990 flood and has not been reconstructed.

Environmental features

- Alpha Creek skirts the town to the east and north.
- Land use in the broader area is largely associated with grazing and other agricultural activities.

Local resilience actions

Local resilience actions identified include:

- Undertake a strategic analysis of engineering, land use planning and economic aspects of flood impacts in Alpha to develop options and pathways for long-term adaptation of the town.
- Contemplate establishing a panel of preferred suppliers for flood recovery needs.
- Obtain a fleet of portable water purifying stations for evacuation centres.
- Consider the implementation of a five-year strategic get ready strategy, including a focus on insurance.
- Partner with department of transport and main roads to successfully implement intelligent transport systems on the capricorn highway to improve council's situational awareness, decision-making and safe working practices.
- Continue to engage with service providers to support rural resilience and recovery.
- Via the local disaster management group, discuss medical arrangements for flood events with alpha hospital, having regard to isolation of the town for long periods.
- Continue to work with isaac regional council in relation to flood warnings on the belyando river, downstream of its confluence



GLENDEN

Location

Suttor sub-catchment

Local government

Isaac Regional Council

Township characteristics

Glenden is a mining town that was established in the 1980s to provide accommodation for workers and their families from the nearby Newlands Coal Mine. The township is elevated and largely avoids the floodplain, but does experience isolation from surrounding communities.

Demographics

- The township of Glenden has a population of approximately 620 people.
- Approximately 38.5 per cent of the population is aged between 25 and 44 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged 65 years and over, which represents 1.9 per cent of the population.
- This is consistent with the dominance of the mining-related employment profile of the town.
- The Isaac LGA achieves better averages than Queensland for medical dependency, unemployment and income. However, the rental home market in Glenden is double the state average. Again, this is largely associated with the mining-related employment profile of the town.
- Couple families with children represent the largest family composition, accounting for 60.9 per cent of households.
- Approximately 34.7 per cent of the population has a reported weekly earning of \$1750 or more, and 24.6 per cent earn between \$500 and \$1749.
- Of private dwellings in Glenden, approximately 91.3 per cent are rented, 4.7 per cent are owned with a mortgage and 2.3 per cent are owned outright.

Key infrastructure

- Glenden is accessed by a key bridge connection, the Collinsville Elphinstone Road Bridge.
- The town is serviced by a police station, fire station and ambulance station, none of which are on the floodplain.
- Two health clinics service the community.
- The Glenden community has access to three community halls.
- The Glenden water treatment plant is also located off the floodplain.

Environmental features

- Glenden is surrounded by Suttor Creek to the east and north, and Sandy Creek to the west.
- Land use in the broader area is largely characterised by mining, grazing and other agricultural activities.

Local resilience actions

Local resilience actions identified include:

- Continue collaboration of flood warning network improvements.
- Improve community understanding of flood awareness and risk stemming from flood warning network improvements.
- Explore opportunities to combine level 3 flood models prepared by mining companies across the catchment, prepared by a diversity of interest groups, to collate a repository of flood data.
- Work with communities and community champions to enhance situational awareness.
- Support vulnerable members of the community, particularly those who may not reside in town.
- Explore opportunities to build further telecommunications redundancy in the area.
- Encourage small business resilience, continuity and diversification. This could include investigations into renewable energy industries.

Image: An aerial view of Glenden.



MOUNT COOLON

Location

Suttor sub-catchment

Local government

Whitsunday Regional Council

Township characteristics

Mount Coolon is located on Police Creek, a tributary of the Suttor River. It forms part of the Whitsunday region, and is one of the most western townships in the LGA. It is approximately 130 kilometres south-west of Collinsville and 200 kilometres north of Clermont. The town serves a broader grazing community in the surrounding area.

Demographics

- The township of Mount Coolon has a population of over 64 people.
- Approximately 64.8 per cent of the population is aged between 25 and 65 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24, which represents 10.9 per cent of the population.
- Couple families, with and without children, represent the largest family composition of households.
- Approximately 36.5 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 25 per cent earning less than \$500.
- Of private dwellings in Mount Coolon, approximately 59.1 per cent are owned outright, 27.3 per cent are rented and 13.6 per cent are owned with a mortgage.

Key infrastructure

- Mount Coolon is located on the Bowen Developmental Road.
- An unsealed airstrip services the community, located on the western side of town.
- The Mt Coolon State School is closed.

Environmental features

- There is a weir constructed on Police Creek, immediately upstream of the township.
- The Koala Golden Bar Mine is located to the south of town.
- Land uses in the surrounding area are largely characterised by grazing and other agricultural activities.

Local resilience actions

Local resilience actions identified include:

- Work with communities and community champions to enhance situational awareness.
- Explore opportunities to build further telecommunications redundancy in the area.
- Undertake a strategic review of the need for satellite communications and generator equipment for essential services in mount coolon to support community continuity.



PENTLAND

Location

Cape-Campaspe sub-catchment

Local government

Charters Towers Regional Council

Township characteristics

Pentland is located approximately 100 kilometres south-west of Charters Towers, on the Flinders Highway. It is situated on the western bank of Betts Creek, which flows into the Cape River, and is subject to periodic inundation. The Townsville–Mt Isa railway line transects the town, adjacent to the Flinders Highway. Pentland services a broad agricultural community across the surrounding area. Pentland is a multi-generational community, with a high number of retirees in the area.

Demographics

- The township of Pentland has a population of approximately 300 people.
- Approximately 23.9 per cent of the population is aged between 25 and 44 year, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 9.2 per cent of the population.
- The Pentland community exceeds the state averages for proportion of the population who are medically dependant, and for unemployment.
- Couple families without children represent the largest family composition, accounting for 44.4 per cent of households. This is followed by couple families with children at 38.9 per cent and one parent families at 16.7 per cent.
- Approximately 50.8 per cent of the population has a reported weekly earning of less than \$500, with 35.1 per cent earning between \$500 and \$1749.
- Of private dwellings in Pentland, approximately 50.4 per cent are owned outright, 27.6 per cent are rented and 11 per cent are owned with a mortgage.

Key infrastructure

- Electricity supply to Pentland is provided by the Cape River substation, which in turn is supplied by two 66 kV sub-transmission lines from Charters Towers and Millchester.
- The town water supply is pumped from bores approximately 5 kilometres from the township.
- All properties are on septic services.
- Pentland is serviced by one state school.
- There is one railway siding (no station, although buildings remain), SES, Rural Fire Service and one fuel station.
- There is one police station in Pentland.
- Pentland has two community halls, a post office store and a caravan park.
- The Pentland aerodrome landing strip is located on the western side of the town, and the Royal Flying Doctor Service visits Pentland on a regular basis for clinics.

Environmental features

- The township adjoins a large wetland to the north-west.
- Pentland is located on the western bank of Betts Creek, a tributary of the Cape River.
- Land use in the broader area is characterised by grazing and other forms of agriculture.

Local resilience actions

Local resilience actions identified include:

- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season.
- Continue to collaborate with Department of Transport and Main Roads on flood locations across the Flinders Highway.
- Partner with special interest and stakeholder groups to enhance support to vulnerable community members to have a plan, and know what to do before, during and after a flood event.
- Bolster resupply options, acknowledging the potential for longer term isolation of the community irrespective of the flood levels of betts creek.

Image: An aerial view of Pentland.



HOMESTEAD

Location

Cape-Campaspe sub-catchment

Local government

Charters Towers Regional Council

Township characteristics

The community of Homestead is located approximately 70 kilometres west of Charters Towers, and is situated on the western bank of Homestead Creek. Homestead Creek flows into the Campaspe River to the south. Homestead is a multi-generational community, with a high number of retirees in the area.

Demographics

- The township of Homestead has a population of approximately 50 people.
- Approximately 33.3 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 8.3 per cent of the population.
- The Homestead community exceeds the state averages for proportion of the population who are medically dependant, and for unemployment.
- Couple families, with and without children, represent the largest family composition, accounting for 50 per cent of households.
- Approximately 57.1 per cent of the population has a reported weekly earning of less than \$500, with 14.3 per cent earning between \$500 and \$1749.
- Of private dwellings in Homestead, approximately 40.9 per cent are owned outright, 36.4 per cent are rented and 13.6 per cent are owned with a mortgage.

Key infrastructure

- Electricity supply to Homestead is provided by the Cape River substation, which in turn is supplied by two 66 kV sub-transmission lines from Charters Towers and Millchester.
- Water supply in town is not provided by reticulated services.
- The grounds of Homestead State School are subject to inundation.
- Homestead has access to one community hall.

Environmental features

- Homestead is located on the western bank of Homestead Creek, a tributary of the Campaspe River.
- Land use in the broader area is characterised by grazing and other forms of agriculture.
- Wetland areas occur to the south of the township.
- The town is located approximately 43 kilometres from Great Basalt Wall National Park.

Local resilience actions

Local resilience actions identified include:

- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season
- Continue to collaborate with Department of Transport and Main Roads on flood locations across the Flinders Highway
- Partner with special interest and stakeholder groups to enhance support to vulnerable community members to have a plan, and know what to do before, during and after a flood event
- Bolster resupply options, acknowledging the potential for longer term isolation of the community irrespective of the flood levels of homestead creek.



HIDDEN VALLEY

Location

Upper Burdekin sub-catchment

Local government

Charters Towers Regional Council

Township characteristics

Hidden Valley is the most northern community within the Charters Towers and Burdekin catchment region. It is located 20 kilometres west of Paluma and provides a modest service centre to station owners along the Seaview Range.

Demographics

- The community of Hidden Valley has a population of approximately 26 people.

Key infrastructure

- Hidden Valley is not connected to an electricity grid. Electricity is self-generated.
- The community is not serviced by reticulated water supply.
- The township is not serviced by the telecommunications network, but access to satellite services is possible.
- Telstra services in Hidden Valley are fixed services delivered by radio from the 100 m high Hidden Valley RT off Ewan Road. Due to the remote nature of the area, this is a solar-powered facility. The batteries installed are not a mains power back-up, but instead an integral part of the daily operation of the facility.
- There is localised copper cable distribution in the region that is also fed by solar-powered nodes that communicate back to Hidden Valley.

Environmental features

- Hidden Valley is surrounded by pockets of subtropical rainforest vegetation.
- Paluma Dam is located upstream, and is a referable dam.
- Land in the area is largely in its natural state due to the topography of the area, with surrounding land uses including grazing and agricultural activity.

Local resilience actions

Local resilience actions identified include:

- Explore opportunities to build further telecommunications redundancy in the area.
- Continue to operate across jurisdictional boundaries to support communities that may be isolated from council access during or following an event.
- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season.
- Bolster resupply options, acknowledging the potential for longer term isolation of the community.

Image: An aerial view of Hidden Valley.



GREENVALE

Location

Upper Burdekin sub-catchment

Local government

Charters Towers Regional Council

Township characteristics

Greenvale is located in the northern area of the Charters Towers region, inland from Ingham. While the township itself is not prone to flooding, it is subject to isolation by virtue of its location near the confluence of three major rivers – the Burdekin, Star and Clarke. Greenvale is more than 200 kilometres north of Charters Towers, on the Gregory Developmental Road.

Demographics

- The township of Greenvale has a population of approximately 230 people.
- Approximately 29.7 per cent of the population is aged 65 and over, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24, which represents 14.2 per cent of the population.
- The Greenvale community significantly exceeds both the Charters Towers LGA and state averages for proportion of the population aged over 65 years.
- Couple families without children represent the largest family composition, accounting for 62.5 per cent of households. This is followed by couple families with children at 31.2 per cent of households.
- Approximately 40.4 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 38.4 per cent earning less than \$500.
- The above is consistent with the employment characteristics and age of the Greenvale population.
- Of private dwellings in Greenvale, approximately 40 per cent are owned outright, 31.3 per cent are rented and 17.5 per cent are owned with a mortgage.

Key infrastructure

- Electricity supply to Greenvale is facilitated via a 66 kV line from a connection at Helens Hill near Ingham, via Mt Fox, to the Greenvale substation, which is just north of town.
- Electricity to the Greenvale rural area is supplied by a single-wire earth return (SWER) line.
- The town's water is pumped from bores in the Burdekin River approximately 21.5 kilometres from town to a small filtration and disinfection unit, prior to storage in a hilltop reservoir located approximately 3 kilometres from town.

- Reticulated sewerage is connected to all households in town. Most rural properties are on septic systems.
- A police station, SES and an ambulance station are located in town in a joint emergency services building.
- Greenvale has one community hall and one fuel station.
- The town is serviced by a telecommunications tower that may be subject to flood hazard in some events.
- The Greenvale airstrip is located to the east of town.
- The Royal Flying Doctor Service visits Greenvale on a regular basis for clinic services.

Environmental features

- Land use in the broader area is characterised by grazing and other forms of agriculture.
- The Lava Plains are located approximately 80 kilometres north of Greenvale.

Local resilience actions

Local resilience actions identified include:

- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season.
- Partner with special interest and stakeholder groups to enhance support to vulnerable community members to have a plan, and know what to do before, during and after a flood event.
- Bolster resupply options, acknowledging the potential for longer term isolation of the community.
- Continue to work with the Department of Transport and Main Roads on the flood resilience and immunity of key bridge crossings on the Gregory Developmental Road, as a key secondary inland freight linkage.
- Implement additional flood totem and gauge assets at the Clarke and Basalt River crossings.
- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Partner with natural resource management and land care groups to enhance erosion mitigation, land management and water quality improvement practices and activities throughout the upper burdekin sub-catchment.



HERVEY RANGE

Location

Upper Burdekin sub-catchment

Township characteristics

The Hervey Range township is located at the top of the Hervey Range, approximately 40 kilometres west of Townsville. Despite its location within the Charters Towers local government area, it is most easily accessed via Townsville, particularly during flood events. It is accessed from Charters Towers via the Gregory Developmental Road and Hervey Range Developmental Road.

Demographics

- The township of Hervey Range and immediate surrounds has a population of approximately 280 people.
- Approximately 31.2 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 9 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 47.4 per cent of households. This is followed by couple families with children at 43.6 per cent of households.
- Approximately 43.3 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 35.1 per cent earning less than \$500.
- Of private dwellings in the Hervey Range township, approximately 47.9 per cent are owned with a mortgage, 43.8 per cent are owned outright and 5.2 per cent are rented.

Key infrastructure

- Electricity supply is serviced by a SWER line from Townsville.
- Reticulated water supply is not available.

Environmental features

- In the 2019 Monsoon Trough event, Hervey Range was affected by a landslide.
- Hervey Range township is located at the top of the Hervey Range.
- Land in the area is predominantly in its natural state due to topography, with some grazing and agricultural activity.

Local resilience actions

Local resilience actions identified include:

- Bolster resupply options, acknowledging the potential for longer term isolation of the community.
- Continue to operate across jurisdictional boundaries to support communities that may be isolated from council access during or following an event.
- Partner with natural resource management and land care groups to enhance erosion mitigation, land management and water quality improvement practices and activities throughout the upper burdekin sub-catchment.
- Implement flood warning gauge assets (i.e. automated gauge, camera, etc.) on the Hervey Range Developmental Road crossing of the Keelbottom River.
- Explore opportunities to build further telecommunications redundancy in the area.

Image: An aerial view of Hervey Range.



CHARTERS TOWERS

Location

Upper Burdekin sub-catchment

Local government

Charters Towers Regional Council

Township characteristics

Charters Towers is the primary economic and services centre for the Charters Towers region. It is one of the largest townships within the Burdekin and Haughton catchment area. The township is located more than 20 kilometres from the Burdekin River, but does experience localised flood impacts from overland flow in high-intensity rainfall events.

Demographics

- The township of Charters Towers has a population of approximately 8,120 people.
- Approximately 24.3 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24, which represents 13.5 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 40.8 per cent of households, followed by couple families with children at 35.4 per cent.
- Approximately 51.1 per cent of the population has a reported weekly earning of less than \$500, with 29.3 per cent earning between \$500 and \$1749.
- Of private dwellings in Charters Towers, approximately 33.5 per cent are owned outright, 35.1 per cent are rented and 27 per cent are owned with a mortgage.

Key infrastructure

- Two electricity substations service Charters Towers, including the Charters Towers substation, opposite All Souls and St Gabriels School, and the Millchester substation, which is situated approximately 5 kilometres south of the township on Bluff Road.
- Electricity is supplied to these substations via a 132 kV transmission line from the Ross substation Townsville.
- Town water supply is pumped from the Burdekin River via a weir approximately 13 kilometres from town, to a reservoir on Towers Hill.
- Sewerage is connected to households in the township area. Most rural properties in the surrounding area rely on septic systems.

Image: An aerial view of Charters Towers.

- The town is supported by the Charters Towers Airport, which includes a landing strip capable of landing a large aircraft in an emergency (e.g. a Hercules).
- Charters Towers has one railway station, and is situated on the Townsville–Mt Isa railway line.
- The township is serviced by a large police station, SES, fire and rescue and rural fire service, and an ambulance station.
- There are seven health clinics and one hospital with 23 beds in Charters Towers.
- The community is serviced by five banks and two community halls.

Environmental features

- There are a number of hazardous materials manufacturers and storage facilities around the township of Charters Towers.
- Land uses in the surrounding area are largely characterised by grazing and other agricultural activities.

Local resilience actions

Local resilience actions identified include:

- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season.
- Partner with special interest and stakeholder groups to enhance support to vulnerable community members to have a plan, and know what to do before, during and after a flood event.
- Bolster resupply options, acknowledging the potential for longer term isolation of the community.
- Consider a whole-of-township approach to business and economic continuity planning for Charters Towers.
- Continue to work with the Department of Transport and Main Roads on the flood resilience and immunity of key bridge crossings on the Gregory developmental Road, as a key secondary inland freight linkage.
- Continue to collaborate with Department of Transport and Main Roads on the flood locations across the state controlled road network.
- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Implement flood totem network across the region for flood awareness.
- Review flood classifications across the region.



RAVENSWOOD

Location

Lower Burdekin sub-catchment

Local government

Charters Towers Regional Council

Township characteristics

The heritage township of Ravenswood is situated almost 90 kilometres south-east of Charters Towers, and has a history steeped in gold mining. This industry continues today, supporting a bustling town and tight-knit community situated on Suhrs Creek. Ravenswood is a key township on the access route to Burdekin Falls Dam.

Demographics

- The township of Ravenswood has a population of approximately 255 people.
- Approximately 28.2 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 6.7 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 54.2 per cent of households. This is followed by couple families with children at 32.2 per cent, and single parent families at 13.6 per cent.
- Approximately 40.8 per cent of the population has a reported weekly earning less than \$500, while 31.5 per cent earn between \$500 and \$1749.
- Of private dwellings in Ravenswood, approximately 54.7 per cent are owned outright, 20.8 per cent are owned with a mortgage and 19.8 per cent are rented.

Key infrastructure

- Electricity supply to Ravenswood is provided by a 66 kV sub-transmission line from the Clare substation.
- Town water supplies are pumped from the Burdekin River to Suhrs Creek Dam (a refractable dam), located almost 3 kilometres upstream from Ravenswood, before being pumped to a water treatment plant for storage and distribution.
- All properties are on septic systems, with a small number of mine properties serviced by sewerage infrastructure managed by Carpentaria Gold.
- Ravenswood State School has recently been renovated with new buildings.
- The town is serviced by one police station and SES.
- A post office, store and fuel station are located in town.
- The Ravenswood airstrip measures 1000 metres in length. The Royal Flying Doctor Service visits the town on a regular basis, providing clinic services.
- Ravenswood has one community hall.

Environmental features

- Ravenswood is located near White Blow National Park.
- Land use in the area largely comprises gold mining and grazing activities.

Local resilience actions

Local resilience actions identified include:

- Bolster resupply options, acknowledging the potential for longer term isolation of the community.
- Partner with natural resource management and land care groups to enhance erosion mitigation, land management and water quality improvement practices and activities throughout the Lower Burdekin sub-catchment tributaries.
- Explore opportunities to build further telecommunications redundancy in the area.
- Consider local knowledge-sharing programs to enhance resilience of transient mining communities.

Image: An aerial view of Ravenswood.



EUNGELLA

Location

Bowen sub-catchment

Local government

Mackay Regional Council

Township characteristics

The hinterland township of Eungella is situated almost 700 metres above sea level on the Clarke Range, approximately one hour inland from Mackay. It is located at the headwaters of the Broken River system, which flows north into the Bowen River before discharging into the Lower Burdekin below Burdekin Falls Dam. Eungella itself is not particularly prone to inundation due to its geographic context, but can experience isolation and localised flood impacts.

Demographics

- The township of Eungella has a population of approximately 190 people.
- Approximately 40.2 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 3.1 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 60 per cent of households. This is followed by couple families with children at 34 per cent.
- Approximately 39.1 per cent of the population has a reported weekly earning of less than \$500, and 29.1 per cent earn between \$500 and \$1749.
- Of private dwellings in Eungella, approximately 45.6 per cent are owned outright, 26.5 per cent are owned with a mortgage and 19.1 per cent are rented.

Key infrastructure

- Eungella can experience isolation when the Eungella Dam Road is cut at the bridge.
- Eungella has two community halls and is serviced by one state school.
- Electricity supply to Eungella can be interrupted during and immediately following flood events.
- Eungella Dam is located to the west of the township.

Environmental features

- The area can be subject to landslips as a result of major rainfall events.
- Eungella is surrounded by Eungella National Park to the north, east and south.
- The township also adjoins Crediton State Forest to the west.
- Land in the area is largely in its natural state by virtue of topography, but land use includes some agricultural and grazing activity surrounding the town and further to the north-west.

Local resilience actions

Local resilience actions identified include:

- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season.
- Work with camping and caravan facility operators to ensure appropriate emergency plans for flood are in place.
- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Partner with special interest and stakeholder groups to enhance support to vulnerable community members to have a plan, and know what to do before, during and after a flood event.
- Bolster resupply options, acknowledging the potential for isolation.
- Explore opportunities to build further telecommunications redundancy in the area.



COLLINSVILLE AND SCOTTVILLE

Location

Bowen sub-catchment

Local government

Whitsunday Regional Council

Township characteristics

Collinsville and Scottville are located approximately four kilometres apart, over 80 kilometres west of Bowen within the Whitsunday LGA. Both towns were originally established as mining communities and continue to support these industries today. A significant solar farm is also located nearby.

Demographics

- The townships of Collinsville and Scottville have a resident population of approximately 1500 people, which increases as a result of mining activities.
- Approximately 32.2 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 8.5 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 50.7 per cent of households. This is followed by couple families with children at 36.7 per cent and single parent families at 12.1 per cent.
- Approximately 41.1 per cent of the population has a reported weekly earning of less than \$500, and 33.3 per cent earn between \$500 and \$1749.
- Of private dwellings in Collinsville and Scottville, approximately 45.4 per cent are owned outright, 27.6 per cent are rented and 25.3 per cent are owned with a mortgage.

Key infrastructure

- Water supply is serviced by a reticulated system sourced from sand beds in the Don River (external to the catchment), which is pumped to a holding facility and fed to a treatment plant. Water is then pumped to reservoirs.
- The townships are serviced by a reticulated sewerage system, which includes a network of pump stations. Treatment is undertaken at a plant between Collinsville and Scottville.
- Electricity services are supplied from the Collinsville North substation, which is supplied at 275 kV by two substations,

being Strathmore and Nebo.

- Collinsville and Scottville have access to a police station, SES, a fire station and ambulance services.
- There are four health clinics and one hospital in Collinsville and Scottville.
- A general aviation aerodrome is located between Collinsville and Scottville.

Environmental features

- The Bogie and Clarke Ranges separate the towns from Whitsunday townships along the coast.
- Collinsville is adjacent to Pelican Creek to the east, which drains into the Bowen River to the west.
- Land use in the area is largely characterised by mining activities, solar farms, grazing and other agricultural activities.

Local resilience actions

Local resilience actions identified include:

- Undertake a strategic review of the need for satellite communications and generator equipment for essential services in Collinsville to support community continuity.
- Bolster resupply options, acknowledging the potential for longer term isolation of the community.
- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Work with camping and caravan facility operators to ensure appropriate emergency plans for flood are in place.
- Partner with natural resource management and land care groups to enhance erosion mitigation, land management and water quality improvement practices and activities throughout the Bowen sub-catchment.
- Explore opportunities to build further telecommunications redundancy in the area.
- Undertake a strategic analysis for the provision of emergency housing in town following disaster events.

Image: An aerial view of Collinsville.



DALBEG

Location

Lower Burdekin sub-catchment

Local government

Burdekin Shire Council

Township characteristics

Dalbeg is a small rural community in the Burdekin Shire, located immediately west of the Burdekin River. It is located downstream of the Burdekin Falls Dam, and downstream of the river's confluence with the Bowen River. It is known as a multi-generational community.

Demographics

- The community of Dalbeg has a population of approximately 80 people.
- Approximately 44.7 per cent of the population is aged between 25 and 44 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged 65 years and over, which represents 6.6 per cent of the population.
- Couple families without children represent 61.1 per cent of households, and couple families with children represent 38.9 per cent of family composition in Dalbeg.
- Approximately 71.2 per cent of the population has a reported weekly earning of between \$500 and \$1749, and 24.2 per cent earn less than \$500.
- Of private dwellings in Dalbeg, approximately 61.1 per cent are owned outright, 22.2 per cent are rented and 16.7 per cent are owned with a mortgage.

Key infrastructure

- Dalbeg is accessed by the Ayr Dalbeg Road, which is subject to inundation.
- Dalbeg is serviced by an unsealed airstrip on Foreman Walsh Road.
- Reticulated water supply (non-potable) is available in town, provided by SunWater.
- All properties are on septic services.
- A Sunwater river pumping station is located near town on the Burdekin River, with associated constructed supply channels.
- School students attend school in either Millaroo, Ayr or Home Hill.
- Electricity supply is serviced by a substation located in Millaroo.
- Irrigation and private railway infrastructure transect the landscape.

Environmental features

- Pink Lily Lagoon is a freshwater wetland to the immediate west of the township and provides on- and off-stream flood storage.
- Land use in the area is largely characterised by agricultural activity, including sugarcane production and vegetables.

Local resilience actions

Local resilience actions identified include:

- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Enhance community education on aspects of preparedness.



MILLAROO

Location

Lower Burdekin sub-catchment

Local government

Burdekin Shire Council

Township characteristics

Millaroo is a small rural community in the Burdekin Shire, located immediately west of the Burdekin River. It is located downstream of Dalbeg on the western bank of the Burdekin River.

Demographics

- The community of Millaroo has a population of approximately 100 people.
- Approximately 33.3 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 year, which represents 11.5 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 48 per cent of households. This is followed by couple families with children at 40 per cent.
- Approximately 51.4 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 34.7 per cent earning less than \$500.
- Of private dwellings in Millaroo, approximately 44.8 per cent are owned outright, 37.9 per cent are rented and 17.2 per cent are owned with a mortgage.

Key infrastructure

- Millaroo is accessed by the Ayr Dalbeg Road, which is subject to inundation.
- The town is serviced by Millaroo State School, which also services Dalbeg and the surrounding area.
- Reticulated water supply (non-potable) is available in town, provided by SunWater.
- All properties are on septic services.
- An electricity substation is located in Millaroo, which also feeds Dalbeg.
- An unsealed airstrip on Newman Road services the town.
- A Sunwater river pumping station is located near town on the Burdekin River, with associated constructed supply channels.
- Irrigation and private railway infrastructure transect the landscape.

Environmental features

- The town is bound to the east by the Burdekin River and to the west by Lagoon Creek.
- Land use in the area is largely characterised by agricultural activity, including sugarcane production and vegetables.

Local resilience actions

Local resilience actions identified include:

- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Bolster resupply options, acknowledging the potential for isolation.
- Enhance community awareness on aspects of preparedness.

Image: An aerial view of Millaroo.



CLARE

Location

Barratta sub-catchment

Local government

Burdekin Shire Council

Township characteristics

Clare is a rural township near Ayr, within the Burdekin Shire. While technically located within the Barratta sub-catchment of the Haughton system, it is located on the banks of the Burdekin River.

Demographics

- The community of Clare has a population of approximately 200 people.
- Approximately 32.7 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24, which represents 13.8 per cent of the population.
- Couple families with children represent the largest family composition, accounting for 62.3 per cent of households, followed by couple families without children, which account for 37.7 per cent of households.
- Approximately 38.6 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 31.3 per cent earning less than \$500.
- Of private dwellings in Clare, approximately 36.8 per cent are owned outright, 35.3 per cent are owned with a mortgage and 27.9 per cent are rented.

Key infrastructure

- Clare is serviced by a police station, SES and a rural fire brigade.
- Reticulated water supply is available in town, provided by SunWater.
- All properties are on septic services.
- A refuse transfer station is located in Clare.
- Clare has access to one community hall.
- An electricity substation is located in Clare.
- An unsealed airstrip is located in town, at the corner of Dunn Road and George Road.
- A Sunwater river pumping station is located near town on the Burdekin River.
- Channels have been developed on both sides of the Lower Burdekin, and each section is served by major pump stations located on Clare weir.
- Irrigation and private railway infrastructure transect the landscape.

Environmental features

- The Clare weir is situated on the Burdekin River, upstream from the township.
- Land use in the area is largely characterised by agricultural activity, including sugarcane production and vegetables.

Local resilience actions

Local resilience actions identified include:

- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Bolster resupply options, acknowledging the potential for isolation.
- Continued roll out of the 'Our Town, Our Future' program.



AYR

Location

Barratta sub-catchment

Local government

Burdekin Shire Council

Township characteristics

Ayr is a principal service and civic centre in the Burdekin Shire. While identified within the Barratta sub-catchment, Ayr is subject to flooding from the Burdekin River via Plantation Creek, which has inundated large areas of the town in the past. Ayr is also susceptible to localised flooding, as well as coastal hazards and tropical cyclones.

Demographics

- The community of Ayr has a population of approximately 8750 people.
- Approximately 26.4 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 11.7 per cent of the population.
- Couple families, with and without children, represent the largest family composition, accounting for 81.7 per cent of households.
- Approximately 45.1 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 37.2 per cent earning less than \$500.
- Of private dwellings in Ayr, approximately 37.7 per cent are owned outright, 32.1 per cent are rented and 26 per cent are owned with a mortgage.

Key infrastructure

- Ayr is located on and accessed via the Bruce Highway.
- There is one landing strip servicing Ayr, which is located in Brandon.
- Ayr is serviced by a railway station.
- Ayr connects with Home Hill via the Burdekin Bridge.
- The community is serviced by a police station, fire station, ambulance service and SES.
- There are 12 health clinics and one hospital in Ayr.
- The town is serviced by a refuse transfer station.
- Electricity supply is serviced by zone substations located in Ayr and East Ayr.
- The Burdekin Shire is supplied from north and south by a 132 kV

transmission line owned and operated by Powerlink.

- Reticulated water supply is available in town, which is sourced from an underground bore.
- Ayr is connected to a reticulated sewerage system.
- Standby power generation is available for water supply and sewerage services for Ayr.

Environmental features

- Ayr is adjacent to Plantation Creek to the south.
- The Burdekin Shire is adjacent to the Great Barrier Reef coastal zone and Bowling Green Bay, a Ramsar-listed wetland.
- The township of Ayr is located on the coastal delta floodplain of the Burdekin and Haughton Rivers.
- Lilliesmere Lagoon adjoins the township of Ayr to the north.

Local resilience actions

Local resilience actions identified include:

- Consider local knowledge-sharing programs to enhance resilience of newcomers to the community.
- Partner with special interest and stakeholder groups to enhance support to vulnerable community members to have a plan, and know what to do before, during and after a flood event.
- Consider local flooding and drainage infrastructure network opportunities to enhance resilience to localised flooding.
- Examine a business case for a water treatment facility for Ayr to treat water turbidity and increase access to supply post-flood.
- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season.
- Continue to work with the Department of Transport and Main Roads on the flood resilience of the Bruce Highway and other state-controlled roads in the region.
- Consider the implementation of digital noticeboards in town as central points of public information.

Image: An aerial view of Ayr.



HOME HILL

Location

Lower Burdekin sub-catchment

Local government

Burdekin Shire Council

Township characteristics

Home Hill is situated to the immediate south of the Burdekin River, and is a principal service and civic centre in the Burdekin Shire. Home Hill is subject to significant inundation and flood impact from the Burdekin River. It is also susceptible to localised flooding and coastal hazards, including tropical cyclones.

Demographics

- The community of Home Hill has a population of approximately 3000 people.
- Approximately 275 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 11.7 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 46.5 per cent of households. This is followed by couple families with children at 36.2 per cent, and single parent families at 15.8 per cent of households.
- Approximately 42.4 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 39.3 per cent earning less than \$500.
- Of private dwellings in Home Hill, approximately 42.9 per cent are owned outright, 26.9 per cent are rented and 26.4 per cent are owned with a mortgage.

Environmental features

- The Burdekin Shire adjoins the Great Barrier Reef coastal zone.
- The Burdekin Shire adjoins Bowling Green Bay, a Ramsar-listed wetland.
- Land use in the area is characterised by urban activities within town, and agricultural activities across the broader area.

Local resilience actions

Local resilience actions identified include:

- Consider local knowledge-sharing programs to enhance resilience of newcomers to the community.
- Partner with special interest and stakeholder groups to enhance support to vulnerable community members to have a plan, and know what to do before, during and after a flood event.
- Consider local flooding and drainage infrastructure network opportunities to enhance resilience to localised flooding.
- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season.
- Continue to work with the department of transport and main roads on the flood resilience of the Bruce highway and other state-controlled roads, including Ayr-Dalbeg Road.
- Consider the implementation of digital noticeboards in town as central points of public information.
- Consider potential wastewater treatment facility options on the floodplain to mitigate impacts on the Great Barrier Reef.



BRANDON

Location

Barratta sub-catchment

Local government

Burdekin Shire Council

Township characteristics

Brandon is an urban community within the Burdekin Shire, located several kilometres west of Ayr. It is located within the Barratta sub-catchment, with flood exposure stemming from Sheep Station Creek to the immediate west of town, as well as localised flooding.

Demographics

- The township of Brandon has a population of over 1000 people.
- Approximately 30.5 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24, which represents 9.7 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 48.5 per cent of households, followed by couple families with children at 39.4 per cent.
- Approximately 48.4 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 36.6 per cent earning less than \$500.
- Of private dwellings in Brandon, approximately 41.3 per cent are owned outright, 26.7 per cent are rented and 29.1 per cent are owned with a mortgage.

Key infrastructure

- Brandon is located on and accessed via the Bruce Highway.
- There is one sealed landing strip servicing Brandon and Ayr, located on Aerodrome Road.
- Reticulated water supply is available in town, which is sourced from an underground bore.
- Brandon is connected to a reticulated sewerage system.
- Standby power generation is available for water supply and sewerage services for Brandon.
- Brandon State School is located on the western side of town.
- The North Coast railway line transects the town, but railway station facilities are not available in Brandon.
- Irrigation and private railway infrastructure transect the landscape.

Environmental features

- Brandon is located on the coastal delta of the Barratta sub-catchment.
- Sheep Station Creek is located to the west of the township.
- Land uses in the surrounding area are largely characterised by sugarcane production and other agricultural activities.

Local resilience actions

Local resilience actions identified include:

- Consider local knowledge-sharing programs to enhance resilience of newcomers to the community.
- Partner with special interest and stakeholder groups to enhance support to vulnerable community members to have a plan, and know what to do before, during and after a flood event.
- Consider local flooding and drainage infrastructure network opportunities to enhance resilience to localised flooding.
- Enhance education and information aimed at the travelling public, including freight companies, transport companies, community members and tourists, to increase awareness of access and other issues during the wet season.
- Continue to work with the Department of Transport and Main Roads on the flood resilience of the Bruce Highway and other state-controlled roads.
- Explore opportunities for further flood resilience for Brandon stemming from the the Barratta sub-catchment flood study, including drainage options near Brandon State School.

Image: An aerial view of Brandon.



GROPER CREEK

Location

Lower Burdekin sub-catchment

Local government

Burdekin Shire Council

Township characteristics

The township of Groper Creek is a small coastal community situated on one of the many delta waterways draining the Burdekin River to the coast. It is a resilient township with a large retiree population, which has adapted its built form to accommodate regular flood impacts and limit disruption and flood damage to assets and infrastructure. Isolation is common. It is also exposed to coastal hazards, including storm tide inundation.

Demographics

- The community of Groper Creek has a population of approximately 60 people.
- Approximately 53.2 per cent of the population is aged 65 years and older, which represents the largest demographic cohort.
- Couple families without children represent the largest family composition, accounting for 85 per cent of households, followed by couple families with children at a much lower 15 per cent of households.
- Approximately 45.5 per cent of the population has a reported weekly earning of less than \$500, and 36.4 per cent earn between \$500 and \$1749.
- Of private dwellings in Groper Creek, approximately 78.1 per cent are owned outright, 25 per cent are owned with a mortgage and 21.9 per cent are rented.

Key infrastructure

- Reticulated water supply is available in town.
- All properties are on septic systems.
- Electricity is supplied via substations in other communities.
- Access is available via Groper Creek Road, Coppo Road and Charlies Hill Road, which each link back to the Bruce Highway and are routinely inundated.

Environmental features

- The township is adjacent to Sandy Creek to the north and Groper Creek to the east.
- The town adjoins wetlands to the west, through which access is gained to the township.
- Big Patterson Island and Peters Island form the opposite bank of the Groper Creek waterway.
- Land use in the town is urban in nature and surrounded by wetlands, rural and agricultural activities.

Local resilience actions

Local resilience actions identified include:

- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Exploration of mitigation options to protect public infrastructure.



GIRU

Location

Haughton catchment

Local government

Burdekin Shire Council

Township characteristics

Giru is the primary township on the Haughton River and is routinely impacted and isolated. This has bred a level of self-sufficiency and community resilience, which sees residents take living with flood in their stride as part of daily life.

Demographics

- The community of Giru has a population of approximately 350 people.
- Approximately 36.2 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24 years, which represents 8.5 of the population.
- Couple families without children represent the largest family composition, accounting for 52.9 per cent of households. This is followed by couple families with children at 35.3 per cent and single parent families at 11.8 per cent of households.
- Approximately 48.4 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 37.3 per cent earning less than \$500.
- Of private dwellings in Giru, approximately 39.5 per cent are owned outright, 34.9 per cent are owned with a mortgage and 23.7 per cent are rented.

Key Infrastructure

- Giru is accessed by several routes, which each link with the Bruce Highway.
- The town is serviced by a railway station on the North Coast railway line.
- The town is supported by a police station, fire station, SES and ambulance service.
- Giru has one community hall.
- The town is serviced by a refuse transfer station.
- An electricity substation is located in Giru.
- Reticulated water supply is available in town, sourced from the Haughton River, and is treated by Townsville City Council by way of joint agreement.
- Irrigation and private railway infrastructure transect the landscape.

Environmental features

- Giru is located on the coastal delta of the Haughton catchment, known to be one of the most frequently flooded catchments in Queensland.
- It is adjacent to the Haughton River to the east, and is surrounded by a series of waterholes and lagoons, as well as conservation parks and nature refuges.
- Land use in the town is largely urban in nature, but includes agricultural activities in the surrounding area.

Local resilience actions

Local resilience actions identified include:

- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Maintain resupply options, acknowledging the potential for isolation.
- Explore opportunities for further flood resilience for Giru stemming from the the Barratta sub-catchment flood study.
- Consider the implementation of digital noticeboards in town as central points of public information.
- Relocation of helipad, adjacent to the SES building
- Recruitment of additional SES volunteers.
- Work collaboratively with Townsville City Council in relation to water turbidity following flooding.

Image: An aerial view of Giru.



JERONA

Location

Barratta sub-catchment

Local government

Burdekin Shire Council

Township characteristics

Jerona is a small coastal community near the mouth of Barratta Creek, north-east of Giru. In addition to riverine and localised flood impacts, Jerona is also subject to potential coastal hazards, including tropical cyclones and storm tide impacts. The township is identified as comprising a large retiree community.

Demographics

- The township of Jerona has a population of approximately 40 people.
- Approximately 62.5 per cent of the population is aged between 45 and 64, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 25 and 44, which represents 7.5 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 54.6 per cent.
- Approximately 50 per cent of the population has a reported weekly earning of less than \$500, and 25 per cent earn between \$500 and \$1749.
- Of private dwellings in Jerona, approximately 75 per cent are owned outright and 18.8 per cent are rented.

Key infrastructure

- Static water supply is relied upon in town.
- All properties are on septic services.
- Electricity is supplied via substations in other communities.
- Access is available via Jerona Road, which links to the Bruce Highway and is routinely inundated.

Environmental features

- Jerona is located on the western bank of Barratta Creek.
- It adjoins Bowling Green Bay National Park.
- Land uses in the surrounding area are largely natural, by virtue of the wetland and floodplain geography of the area.

Local resilience actions

Local resilience actions identified include:

- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Bolster resupply options, acknowledging the potential for isolation.
- Explore opportunities for further flood resilience for Jerona stemming from the the Barratta sub-catchment flood study.
- Consider dual hazard resilience opportunities for flood and coastal hazards for Jerona, and other coastal communities in the region including Alva Beach which is not directly impacted by riverine flooding.



RITA ISLAND

Location

Barratta sub-catchment

Local government

Burdekin Shire Council

Township characteristics

Rita Island is located on the northern side of the Burdekin River, where it discharges to the coast. The Burdekin River anabranch separates Rita Island from the mainland. While it is identified within the Barratta sub-catchment, flooding is only caused by the Burdekin River. The frequency of flooding has generated a resilient community, which adapts to conditions to continue daily life.

Demographics

- The township of Rita Island has a population of approximately 150 people.
- Approximately 39.5 per cent of the population is aged between 45 and 64 years, which represents the largest demographic cohort. The smallest demographic cohort is those aged between 15 and 24, which represents 8.6 per cent of the population.
- Couple families without children represent the largest family composition, accounting for 60 per cent of households, followed by couple families with children at 40 per cent.
- Approximately 59.5 per cent of the population has a reported weekly earning of between \$500 and \$1749, with 34.9 per cent earning less than \$500.
- Separate houses account for all the dwelling structures on Rita Island.

Key infrastructure

- Rita Island is accessed via Rita Island Road, which includes a bridge across the Burdekin River anabranch.
- All properties are on septic systems.
- Electricity is supplied via substations in other communities.
- Irrigation and private railway infrastructure transect the landscape.

Environmental features

- Rita Island is bound to the south by the Burdekin River and the west and north by its anabranch.
- It adjoins the Great Barrier Reef coastal zone to the east.
- Land uses in the surrounding area are largely characterised by sugarcane production and other agricultural activities.

Local resilience actions

Local resilience actions identified include:

- Work to identify opportunities to mitigate key repeated road network hotspots that are frequently impacted.
- Investigate the need for temporary infrastructure to embark and disembark boats across the anabranch which safely transport residents during flood events.

Image: An aerial view of Rita Island.



Strategy implementation

Working together to implement the strategy

This strategy will be implemented as a partnership across the eight local governments of the Burdekin and Haughton region. The strategy actions will be driven through local leadership action, with appropriate support from other coordinating bodies and entities including District Disaster Management Groups (DDMGs), state government agencies and not-for-profits.

This approach recognises that, while actions are best delivered locally, multidisciplinary regional level support is also required to encourage cross-jurisdictional collaboration, provide technical assistance and proactively assist project implementation. Opportunities that exist to strengthen community and climate-related disaster resilience in the Burdekin and Haughton catchments include:

- supporting a resilient society through community networks and an inherent ability to adapt to changing circumstances
- supporting communities, including individuals and household members, to make their own informed decisions regarding preparation for severe weather and disasters
- enhancing economic resilience through industry involvement and dialogue, supply chain strengthening, focusing on collaboration and partnerships across public and private sectors, enabling infrastructure and business continuity planning
- support for infrastructure through pathways for improved communications and transport linkages for societal and economic benefit
- supporting community-led recovery opportunities and operations following events
- improving funding certainty through proactive planning, prioritisation and coordination for collective benefit.

Enduring governance and funding arrangements

This strategy provides an opportunity to examine and support how local governments, community and service organisations work together to achieve common resilience outcomes across the vast Burdekin and Haughton catchments. It seeks to inform strategic and coordinated approaches to community and climate-related disaster resilience activities across the region so that funding and action can be aligned to a common intent. This includes working locally toward defined regional goals and aspirations.

Under this model, the strategy acts as the regional 'blueprint' for local and regionally coordinated and sustained action. An agreed governance arrangement will support the implementation of the strategy, together with an enduring commitment to championing resilience into the future. Stakeholder-identified key requirements for the successful implementation of this strategy are:

- recognition of the important role of self-sufficient communities
- a broad, multidisciplinary approach to resilience building
- sustaining governance arrangements, funding and resource capability for implementation of resilience actions over time
- a clear understanding of how resilience arrangements interplay with Queensland Disaster Management Arrangements
- greater collaboration between government and non-government organisations to optimise resilience service delivery and efficiency
- clarification of the proposed resilience implementation arrangements at state, regional and local levels so that local actions can be programmed and delivered accordingly.



Local leadership

Local governments and non-government organisations are encouraged to establish their own multidisciplinary resilience working groups to transition community and climate-related disaster resilience to front-of-mind in all local government functions. This could be achieved by combining existing recovery group arrangements with an ongoing resilience focus over the calendar year.

The strategic framework of this strategy supports local governments to act locally, in line with local community need, in the knowledge that each local activity contributes to the realisation of mutually identified regional goals.

Regional coordination and basin working group

Regional coordination is proposed to fall under the governance of each respective local government, and be supported by a Burdekin and Haughton Basin Working Group, the focus of which will predominantly relate to those aspects of the strategy requiring regional coordination and collaboration.

This will provide a strong link to other existing related governance arrangements such as the relevant DDMGs.

The Basin Working Group is intended to provide a forum to collaborate regionally, across jurisdictional boundaries, for whole-of-basin benefits on issues such as asset upgrades, funding opportunities, asset management and maintenance, joint resilience program and project opportunities, and collaborative situational awareness improvements.

The Basin Working Group is anticipated to comprise each local government within the Burdekin and Haughton catchments, and may also include additional flood warning asset owners and those with supplementary infrastructure that may contribute to the broader flood warning network. This may include natural resource management groups, water boards, mining companies and infrastructure providers.

Terms of reference for the Basin Working Group will guide its operation. The Basin Working Group is intended to be the mechanism to drive collaborative implementation of this strategy, in collaboration with the three DDMGs in place across the region.

State facilitation and support

The Basin Working Group is to be supported by the Queensland Reconstruction Authority (QRA) and BoM, as part of the network subcommittee arrangements chaired by the QRA.

As a locally led and regionally-coordinated strategy, the role of the state is intended to be one of providing enabling measures such as administration of grant funding programs, delivery of core government functions that interface with resilience building, and facilitation/coordination of support that can assist implementation.

Implementation of this strategy provides the opportunity to communicate resilience needs to the State Disaster Coordination Group. This is a multi-agency committee that convenes to discuss state-level resilience and disaster-related challenges, activities and opportunities across Queensland.

The Queensland Resilience Coordination Committee, which reports to the Queensland Disaster Management Committee, has also been convened as an implementation action under Resilient Queensland 2018–2021. Its role is to oversee initiatives and measures necessary to enhance disaster resilience.



Coordinated funding approaches

This strategy seeks to use existing funding streams in a more efficient and strategic way.

A suite of resilience actions have been identified at the local and regional scales, and are provided as part of the action plan supporting this strategy. The action plan is to be delivered to the Basin Working Group and its member local governments, and synthesised against existing strategies prepared by local governments as a means of delivering on the regional strategic pathways and local directions set out in this strategy.

Local governments can work independently towards local directions, or collaborate via the Basin Working Group or relevant DDMGs to develop project business cases based on regional resilience actions in advance of funding rounds so that they are ready to ‘pull from the shelf’ to assist funding and grant application processes as they become available.

Monitoring and evaluation

A key aspect of this strategy moving forward is to establish a clear standards-based implementation framework for integrated resilience planning. This approach focuses on deriving specific local, regional and fit-for-purpose benchmarks for resilience implementation that are cross-referenced to roles, responsibilities and funding.

A benchmarking approach aims to provide a range of metrics that reflect the diversity of the region. It is proposed that the identification and establishment of maturity benchmarking be further developed as implementation occurs over time.

Supplementary project deliverables

Forming part of this strategy are the following additional elements:

Barrattas sub-catchment flood study

- Delivery of a flood study and flood modelling for the Barratta’s sub-catchment within the Haughton catchment. This flood study addresses a key data gap in an area of the catchment with highly complex flood characteristics that are not presently quantified.
- This flood study will enable Burdekin Shire Council to provide more accurate flood warnings and flood information to residents and businesses in the local area, advance community preparedness for future flooding, and ultimately contribute to improved disaster resilience of Burdekin Shire.

Get Ready Queensland – forward program

- The strategy has produced five-year forward plans for each council’s Get Ready program into the future. This provides a strategic view over the next few years that builds upon the flooding issues known locally and discussed in this strategy.
- These forward plans provide detailed and annual-based approaches to work towards longer-term disaster preparedness and community knowledge goals, through year-on-year approaches which take the community on the continuous improvement journey of enhancing resilience over time.

Flood warning improvements

- A review and update of flood classification levels for selected information and forecast gauge locations, defined by BoM, where sufficient data is available.
- This review enables BoM and local governments across the catchments to provide more accurate flood warnings and flood information to residents in the area.







www.qra.qld.gov.au/burdekin-haughton

Burdekin and Haughton Catchment Resilience Strategy

Project Brief for Strategy Endorsement

Project Steering Group

April 2021 – V1

Recommendation

That the Elected Representatives of the Burdekin and Haughton catchments:

- **endorse** the draft Burdekin and Haughton Flood Resilience Strategy (the Strategy), subject to any Council-specific briefings and minor amendments as may be required
- **note** the ongoing work to finalise the supporting Action Plan, which is intended for ownership by each participating Council and will not be released publicly
- **note** the completed Process 1 element of the Queensland Emergency Risk Management Framework for relevant councils as per the endorsed Terms of Reference
- **note** the draft local knowledge maps drawn from the local knowledge capture process for selected areas within the catchment
- **note** the two (2) project videos which support the Strategy document
- **note** the intention to establish a Burdekin Basin Working Group to support collaborative implementation of the Strategy, in perpetuity.

1. Project overview

This project stems from the devastating impact of the North and Far North Queensland Monsoon Trough event of January / February 2019 (the Monsoon Trough) on the Burdekin and Haughton catchment region of Queensland. With over 50 per cent of Queensland's land mass and 39 local government areas affected in total by this event, more than 105,000 people were identified to experience hardship. Over 3,300 homes were damaged by flooding, giving rise to 1,255 uninhabitable dwellings and 1,700 requests for emergency housing assistance.

The economic and social recovery from this event has involved long-term effort requiring collaboration and cooperation by all levels of government. The extraordinary nature of the event, the enormity of its impacts across a broad geographical area and wide cross section of community, industry and economy has required an exceptional effort to ensure long-term recovery for the region.

As part of the support and assistance measures provided by the Queensland Government in response to the Monsoon Trough event, specific opportunities to build resilience within affected communities were identified, including the delivery of the Burdekin and Haughton Flood Resilience Strategy.

To support Queensland communities in their recovery following the Monsoon Trough event, the \$1 million Burdekin and Haughton Flood Resilience Strategy project was approved as part of the \$242 million Disaster Recovery Funding Arrangements (DRFA) Category C and D package jointly funded by the Australian and Queensland governments.

The Strategy Terms of Reference (ToR) were endorsed by the project steering committee on 12 June 2020. The objective of the Strategy was to work in partnership across government

to develop a prioritised plan of actions and program of delivery, matched to possible funding avenues that can be implemented over time by councils. Participating councils worked together to:

- Use a locally-led, risk-informed process to identify disaster resilience gaps and opportunities;
- Facilitate collaboration and develop resilience strategies and action plans into business as usual, including linking to existing funding and policy pathways, and
- Explore flood resilience approaches and methods to formulate strategies and action plans for the defined areas to establish pathways to enhanced resilience collaboration over time.

2. Draft strategy overview

The Strategy represents the culmination of over 16 months of collaborative work between the state government, participating councils and key stakeholders to understand the multi-faceted aspects of flood risks and resilience across the Burdekin and Haughton catchments, and set actionable pathways for continued resilience enhancement that can be matched to funding opportunities.

The Strategy has been drafted from a grassroots level, rather than appear as a 'traditional' government document. This is consistent with the locally-led, regionally coordinated and state-facilitated approach to the delivery of regional resilience strategies under Resilient Queensland.

The Strategy attempts to clearly articulate the varied considerations of flood resilience relative to the Burdekin and Haughton catchments. This is embedded in a strengths-based narrative which acknowledges the existing resilience of the region, whilst identifying the nature of opportunities to continue to enhance existing community-led approaches.

The Strategy is supported by a comprehensive Action Plan that outlines a range of locally- and regionally-derived actions drawn from engagement with local Councils and a synthesis of existing regional documents from a spectrum of stakeholders including state agencies, NQ Dry Tropics, and industry groups. The Action Plan is intended to act as the program of works that can support the Councils of the Burdekin and Haughton region in advancing its community-led approach to resilience enhancement by clearly articulating both flood risk and resilience needs.

This Action Plan includes:

- clear and actionable tasks to build resilience across the lines of resilience and maps these to the pathways in the Strategy;
- funding options, indicative costs, and indicative priorities for each action; and
- written content per action that can be used to support funding applications that articulates the need and reasoning behind the action.

3. Delivery of the Terms of Reference

The Strategy and its supporting elements/tasks have been delivered in accordance with the ToR endorsed by the project steering committee on 12 June 2020. In addition to the delivery of the Strategy itself, the scope within the ToR included:

1. Regard to existing bodies of work underway and previously completed across the region, including:
 - a. Coastal hazard adaptation strategies

- b. Draft planning scheme preparation
 - c. COVID-19 recovery.
2. Integration and alignment with the Queensland Emergency Risk Management Framework (QERMF), via piloting the completion of Process 1 of the framework for flood hazard for each local government to inform the flood risk evidence-based of the Strategy, noting two exceptions being Mackay Regional Council and Townsville City Council, noting these councils maintain higher order data than available to the QRA.
3. A focus on business resilience and continuity:
 - a. Exploration of small business resilience, both in terms of critical success factors as well as consideration of a systems-based approach (organisational network analysis-style approach) which illustrates systems-based reliance across businesses which are critical to supporting communities in emergency and recovery
4. Essential infrastructure resilience:
 - a. Catchment-wide critical infrastructure assessment via completion of Process 1 of the QERMF for flood hazard as part of this project
 - b. Flood warning infrastructure network (FWIN) audit and analysis
 - c. Identification of key infrastructure opportunities to support social, economic and environmental resilience
 - d. Identification of strategic pathways to enhance infrastructure resilience
5. Improvements to resilience communication:
 - a. Development of multi-year Get Ready and associated messaging strategies to support community maturation of understanding of core resilience concepts, and how to develop individual and household resilience
 - b. Development of flood-based 'local knowledge' mapping products that integrate scientific and local knowledge into a product that is meaningful to local residents, based on the way they live in their community / environment
6. Assistance with identifying funding opportunities:
 - a. Developing a detailed Regional Action Plan linked to available funding program types for regional collaboration, to administer over time across the areas of human and social, infrastructure, economy, built, and environment
 - b. Identification of place-based and fit-for-purpose resilience needs, specific to localities, townships and communities across the region, and recognising the specific needs of these different groups
7. Seeking regional integration:
 - a. Align and coordinate with other state government activities and non-government organisations, to create opportunities for improvements in resilience service delivery in matters linked to disaster resilience
 - b. Implementation of fit-for-purpose governance structures including project-based governance arrangements to guide project delivery as well as on-going strategy implementation arrangements
 - c. Integration of aligned state and local natural resource management and environmental strategies to underpin environmental resilience across the catchments, but also reflecting its critical role in supporting the resilience of the Great Barrier Reef Marine Park and other protected natural features in the region.

The delivery of the Strategy has sought to address each of the above elements which is reflected within the Strategy itself, or via supporting bodies of work delivered as part of the project package.

4. Future implementation

The Strategy is a non-statutory document. It is not intended to increase workload or responsibility on regional bodies or councils, but rather act as a means to articulate resilience issues at the local and regional scale and provide actionable pathways for matching of funding opportunities over time.

Following consultation with participating councils as part of the project work, the establishment of an officer-level Basin Working Group is proposed to help guide implementation of the Strategy and Action Plan into the future, and assist to maintain the momentum of collaboration achieved through the project.

The Action Plan is intended to be a living document that can be altered as required by the Basin Working Group or via councils and Local Disaster Management Groups. There is no requirement on participating councils to deliver on the Action Plan – however it provides a clear program of effort moving forward against which funding can be proactively sought.

In terms of future implementation, councils are encouraged to consider submitting joint applications for shared actions identified by the Strategy as part of upcoming state and federal funding opportunities (including the Queensland Resilience and Risk Reduction Fund, the federal Future Drought Fund, etc.).

5. Consultation

Extensive engagement and collaboration between the state and local governments and other stakeholders has been a hallmark of the Strategy development process.

A total of 75 engagements, 6 multi-stakeholder workshops, 26 stakeholder groups and 5 action planning meetings have been held, canvassing risk profiling, resilience visioning and strategy development, and governance.

Numerous additional meetings and mini-workshops were undertaken periodically with local governments, state agencies, and non-government organisations throughout the development of the Strategy.

The following organisations and individuals were engaged in the development of the Strategy:

- Queensland Fire and Emergency Services
- Department of Environment and Science
- Department of Transport and Main Roads
- Department of State Development, Infrastructure, Local Government and Planning
- Department of Agriculture and Fisheries
- Department of Resources
- National Drought and North Queensland Flood Recovery Agency
- Great Barrier Reef Marine Park Authority
- James Cook University
- NQ Dry Tropics NRM
- SunWater
- Burdekin Water Futures
- Energy Queensland
- Telstra
- Optus
- NBN Co
- Wilmar

16. Infrastructure Services

16.2 INFRASTRUCTURE SERVICES CAPITAL PROGRESS REPORT - MARCH 2021

AUTHOR: Michael Downing - Coordinator Capital Project Delivery

RESPONSIBLE OFFICER: Adam Hagy - Acting Director Infrastructure Services

OFFICER'S RECOMMENDATION

That Council receive the Infrastructure Services Capital Progress Report for the month of March 2021.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 28 April 2021.

SUMMARY

The report provides a summary of key Capital projects underway during the 2020/2021 financial year. The report also includes multi-year projects that remain active and carry over to the 2020/2021 financial year.

Current Financial Progress of Major Projects, W4Q programs, Infrastructure Capital Delivery is \$10.6 million actual out of a \$36.25 million overall budget. Note: Finances take into account Q2 budget amendments and other Capital Projects such as Shute Harbour, DRFA works, and Water & Waste Water being the subject of separate reports. The budget will also be amended in the next report with several projects having been resolved to carry over to the 2021/2022 financial year to make way for the TMR early works on Shute Harbour Road as resolved in March.

PURPOSE

To inform Council on progress of Capital Projects being undertaken during the 2020-2021 Financial Year up to the end of March 2021.

BACKGROUND

Resolution 2020/07/15.23 Budget for Financial Year 2020/21 (including a Two Year forward estimate).

Resolution 2021/03/24.28 WRC Delivery of Works Shute Harbour Road to Tropic Road.

STATUTORY/COMPLIANCE MATTERS

N/A

ANALYSIS

Project Delivery Status:

MAJOR PROJECTS

Projects Completed to Date:

Proserpine Main Street Upgrade

Proserpine Administration Building Projects Currently Underway:

Lake Proserpine

Under the current project scope, Stage 1 of the project is 95% complete. A variation has been submitted to the funding body, Building Our Regions, for approval to expand the scope of the project to include the installation of a larger sewerage treatment plant (STP).

Environmental Principal has been engaged to provide a detailed ERA 63 application fee proposal required for the STP installation. This Consultant has worked closely with Sunwater previously and should streamline the process. The consultant is also very familiar with the STP type installation which is similar to other installations recently conducted by Council. The Consultant will confirm that installation requirements meet the environmental requirements of the area alleviating any revisiting of pending approvals and expedite the process.

Once approved the STP will be installed and commissioned to provide a relief to the current installation and allow for future expansions with a 40% redundancy in the system.

PAB - 7 Chapman Street - Carpark

The car park was completed and open for use after the Easter holidays to alleviate parking pressures on local roads. The only outstanding work is the installation of CCTV cameras and gate. This is expected to be awarded mid-April and installed through May. In the interim, the mobile CCTV trailer has been parked on site to facilitate use of the site until the security infrastructure can be installed.

Flagstaff Hill

The contract for the design and construction of the facility has been awarded with design works in progress. Works commenced on site on 11 March 2021. The majority of inground works have been completed with the installation of the ground floor slab being programmed for completion by 30 April 2021.

The Governor, His Excellency the Honourable Paul de Jersey AC, visited and officially opened the Flagstaff Hill Conference & Cultural Centre site on 12 March 2021. The project is running on schedule with the first round of Milestone Reporting submitted on 31 March 2021.



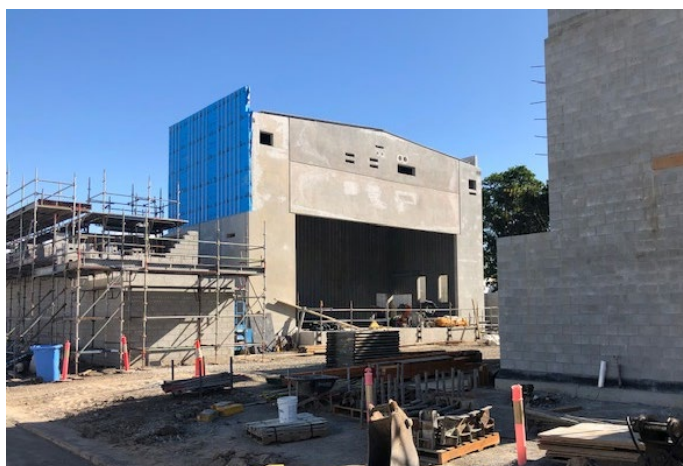
Proserpine Entertainment Centre (PEC)

Works completed up to the end of March 2021 include the pouring of the ground floor to the kitchen, back of house areas, stage, first floor over the concessions area, and installation of the structural steel to the tower structure. The front of house works included the installation of blockwork to the third-floor, installation of the lift shaft to the front foyer and pouring of the columns and beams to the street front. Approval of the Ergon easements has been completed and registered to allow the installation of Ergon Services.

Works programmed for completion in the coming month include the concrete, masonry and block works. The major component of the works to be completed in April / May includes the installation of the structural steel for the facility.

While the crane and Ergon works are taking place on site the street access to the library has been closed in the interest of public safety. During this time access is to come from the rear carpark in the first instance and on occasion from Main Street via the church to the front door.

The construction works are currently eight (8) weeks behind programme. The project is currently anticipated to reach PC November 2021 with the contract programme showing a completion date of the 12 October.



WORKS FOR QUEENSLAND PROJECTS 2019/2020 to 2020/2021 FY \$3.6 million

Projects Completed to Date:

Fairy Tree Park Swing Installation (Airlie Beach)
Bicentennial Park Lighting Improvement (Cannonvale)
Bicentennial Park Fencing and Softfall (Cannonvale)
Gloucester Sports Park Water Tanks (Hydeaway Bay)
Dingo Beach Footpath (Dingo Beach)
Thomas Street Footpath (Bowen)
Hansen Park Sound System (Bowen)
Gideon Pott Park Stage 2 (Bowen)
Keith Johns Park Stage 2 (Proserpine)
Rotary Park Upgrade (Proserpine)
Cannonvale Lakes Stage 2 (Boardwalk)
Halpannel Park Upgrade (Proserpine)
Whitsunday Gardens Park Upgrade (Proserpine)
Bridge Upgrade Bicentennial Boardwalk (Airlie Beach)

Projects Currently Underway:

Airlie Beach Movie Screen (Airlie Beach): Council approval to award the tender for a container-based screen was given at the end of February. Community consultation has been ongoing and closed early April. The results are to be provided to DNRME to finalise approvals to locate the movie screen on the Foreshore reserve. Delivery of the screen is still on track for July 2021.

Cannonvale Lakes Stage 3 (Cannonvale): Public consultation results were provided to the public in March. Documents for quoting the works have been finalised and it is expected to be awarded in late-April. A time extension has been applied for to complete the works due to the necessity to consult with the public and amend the scope to meet the results of the consultation.

Gloucester Sports Park Retaining Wall (Hydeaway Bay): Works completed 5 March 2021. Final documentation being sourced for capitalisation.



Henry Darwen Park Stage 2 (Bowen): Quotes are being assessed for the latest stage of works which includes new irrigation system installation, completion of the walking track network, exercise equipment installation and installation of bollard boundary fencing.



Bowen Lions Park: Request for quote awarded for skillions and BBQs, estimated start date early April 2021.

Collinsville Tennis Court Upgrade: An RFQ has been prepared to gather quotes to renew the courts. The scope includes the demolition of the existing shed structure, construction of a new skillion structure on the opposite side of the courts, new fencing, new lighting, new nets, surface refurbishment and other minor items.

Darcy Munro Park Upgrade: Playground Equipment purchased with expected delivery 12 April 2021. Installation RFQ has been awarded with works scheduled to start early May 2021.

Scottville Lions Park Upgrade: Playground Equipment purchased with expected delivery 12 April 2021. Installation RFQ has been awarded with works scheduled to start early May 2021.

COVID WORKS FOR QUEENSLAND PROJECTS 2020/2021 FY \$2.72 million

Projects Completed to Date:

Cannonvale Foreshore Hall (PCYC) Roof Renewal
Proserpine Water and Sewer Admin Roof Renewal
Cannonvale Depot Office Roof Replacement
Cannonvale Foreshore Hall (PCYC) New Playground

Bowen Aerodrome Sewerage Treatment Renewal:

Projects Currently Underway:

Wangaratta Caravan Park Pool Refurbishment: A Contract has been awarded for the pool refurbishments. Works are expected to start in the first week of April with practical completion due at the end of May 2021.

Proserpine Aquatic Facility Residence Demolition and Kiosk Renewal: Design has been finalised and is being prepared for tender with all other aquatic facilities. Construction is currently estimated to begin in early May with an expected 8 to 12-week construction program. Pool closures are expected to occur over this period.

Bowen Aquatic Facility Town Pool Amenity Upgrade: Design has been finalised and is being prepared for tender with all other aquatic facilities. Construction is currently estimated to begin in early May with an expected 8 to 12-week construction program. Total Pool Closure will occur for this period as no amenities will be available for use.

Les Stagg Oval Grandstand Renewal: Contract for the supply of a modular three hundred seat aluminium grandstand has been awarded, the delivery has been delayed slightly and will come early in April. Scope for demolition of existing grandstand and installation of kit is has been out to market and closes mid-April. Installation will be arranged around home games for the Brahmans.

Collinsville Youth Coalition Amenities Renewal Demolition works have commenced with the removal of asbestos ahead of the remaining demolition of the existing amenities. The new modular building is to follow with construction planned to complete before the end of the financial year.

Bowen Water Park Renewal: Design has been finalised and is being prepared for tender with all other aquatic facilities. Construction is currently estimated to begin in early May with an expected 8 to 12-week construction program. Closure of the water park will be required over this time to carry out works.

Whitsunday Coast Airport Roof Renewal: The roof repairs have progressed well and approach completion. The solar install has been awarded and will commence once materials have been procured. This is expected to complete prior to the end of the financial year and presents a significant saving on the estimated costs following a very competitive tender process.

Continuation of Pedestrian Path Lighting Airlie Foreshore: There has been a delay with lead in times for the lights and distribution boards. The electrician has not started on site to avoid creating a mess in amongst a heavy pedestrianised area. Works will commence in April.

Bowen Aerodrome Work Camp Superstructure Renewal: The RFQ was advertised this month and the RFQ closes early April. A tender meeting was carried out with a number of interested builders expected to price the works.

Collinsville Pool Amenities and Kiosk Upgrade: Design has been finalised and is being prepared for tender with all other aquatic facilities. Construction is currently estimated to begin in early May with an expected 8 to 12-week construction program. Works are to be completed during Pool closure period with no impact expected to operations.

INFRASTRUCTURE SERVICES CAPITAL DELIVERY PROGRAM 2020/2021

Projects Completed to Date:

Armada Crescent Drainage Upgrade (Jubilee Pocket)

Reynolds Street Drain (Bowen)

Argyle Street Kerb and Channel (Bowen)

Flagstaff Hill roadworks (Bowen)

St Mary's School safer transport upgrade (Bowen)

Wangaratta Caravan Park Road Entry Widening (Bowen)

Bowen State High School safer transport upgrade

Wilson Beach Rockwall

Projects Currently Underway:

Bowen Aerodrome Runway Repairs: The reseal package has been awarded. The reseal package has been delayed due to the ongoing weather delays in our region and the others that the contractor is working within. These works are expected later in April.

New Bowen Cemetery Columbarium Wall: Have received certified For Construction drawings, drafting specifications for procurement to go to market.

Assets Renewal Parks and Gardens: Bulk of projects deal with renewal of sand soft fall and renewal of park signage.

Heavy Formation Grading Program: Incorporating with un-funded sections of roads on which DRFA work is being completed. Currently this is being used to fund infill works on Myuna Road, Strathmore Road and Strathalbyn Road.

Bowen State High School safer transport upgrade: The vast majority of works were completed prior to the end of the month with line marking to be painted mid-April to allow the paint to bond suitably to the new asphalt.

Collinsville State High School safer transport upgrade: Works commenced late in March to construct the car parks with a Telstra line being lowered ahead of the Easter break. The works are planned to be completed by the end of April subject to weather delays.

Construction of Lagoon Deck and Shared Cycle Path: The RFT has been advertised and now includes over 100m of the Ergon trench, similar to what was carried out during the Foreshore project, to link the Cannonvale and Jubilee Pocket substations for improved service to the growing areas. This is planned to be awarded mid-May.

Edgecumbe Heights Walking Tracks Upgrade (Design only): A concept plan, budget estimate and drawing plans have been finalised and certified, this design only project was completed end of March 2021.

Forestry Road: This project has been carried over to 2021/2022 following the resolution by Council to carry out the TMR early works on Shute Harbour Road. Stormwater pipes have been delivered ahead of commencement and minor works will be carried out in between other works if the capital team has availability between other commitments.

Gloucester Avenue Floodways: This project has been carried over to 2021/2022 following the resolution by Council to carry out the TMR early works on Shute Harbour Road. Funding allows completion up to the end of 21/22 FY.

Dodd Street Shared Footpath: Works commenced and have progressed well with two thirds of the shared path completed by end of March. The completed sections have been opened as each block has been complete and the last portions should be finalised by mid-April.



Hillview Road Kerb and Channel: Design has been finalised and documents have been prepared for the works to be quoted on by local contractors. Works are proposed to commence in May.

Moonlight Drive Kerb and Channel: Works will commence after Easter and finish mid-April.

Port of Airlie Transit Terminal Upgrade: This project has been carried over to 2021/2022 following the resolution by Council to carry out the TMR early works on Shute Harbour Road. The funding application is still outstanding and will be finalised ahead of commencement.

Reflect Application Redesign and Implementation: Currently rolled out to roads and drainage teams, future implementation will also see the software rolled out to Parks and Gardens and Water and Wastewater.

Reseal Program: The package has been awarded and has had weather delays putting the start back to mid-April. Minor prep works have commenced ahead of the contractor mobilising to the region.

Roma Peak Road Floodways: This project has been carried over to 2021/2022 following the resolution by Council to carry out the TMR early works on Shute Harbour Road. Funding allows completion up to end of 21/22 FY.

Unsealed Roads Creek Crossing Upgrade Program: This project has been carried over to 2021/2022 following the resolution by Council to carry out the TMR early works on Shute Harbour Road.

Unsealed Roads Re-sheeting Program: Incorporating with un-funded sections of roads on which DRFA work is being completed. Currently this is being used to fund infill works on Myuna Road, Strathmore Road and Strathalbyn Road.

Wilsons Beach Rockwall: The footpath commenced in March and was finalised at the end of the month. This now completes the construction of the rock wall which will be surveyed and registered with State departments.



Ted Cunningham Bridge Upgrade: The design and construct package tender had an extension request approved due to the COVID lockdown experienced by some potential tenderers. This will now close 14 April 2021. It is expected that the bridge can be constructed prior to the next wet season.

STRATEGIC IMPACTS

Alignment to Corporate Plan

Strategy 3.2.2: Develop water and wastewater services and systems that ensure the integrity of the Whitsundays natural environment.

Strategy 3.4.1: Develop and maintain effective roads and drainage infrastructure, networks and facilities.

Strategy 3.4.2: Develop and maintain effective water and waste water infrastructure, networks and facilities.

FINANCIAL CONSIDERATIONS

Refer Attachment 1 for summary project expenditure report.

CONSULTATION

Infrastructure Services Project Control Group

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

That Council receives the Capital Progress report for the month of March 2021.

ATTACHMENTS

Attachment 1 – Capital Delivery Financial up to March 2021

Attachment 1 Capital Delivery Financial up to March 2021

Capital Projects as at 31st March 2021		36257250.00	10577377.40	25679872.60
Grouping	Description	Total Annual Current Budget	Actuals to Date	Remaining Budget \$
Major Projects : Flagstaff Hill	Flagstaff Hill Cultural and Conference Centre - JC#5617	3446938.00	33003.22	3413934.78
Major Projects : Flagstaff Hill Total		3446938.00	33003.22	3413934.78
Major Projects : Lake Proserpine	Lake Proserpine Recreation Hub - Stage 1 - CW 18-19	1366270.00	801063.30	565206.70
Major Projects : Lake Proserpine Total		1366270.00	801063.30	565206.70
Major Projects : Proserpine Administration	Proserpine Administration Building Replacement - JC_5640	3406098.00	3481664.23	-75566.23
Major Projects : Proserpine Administration Total		3406098.00	3481664.23	-75566.23
W4Q 2019.20	Improving Beach Communities - Region Wide - W4Q 19- 20	486.00	486.83	-0.83
W4Q 2019.20	W4Q - Bicentennial Boardwalk Lighting Improvement - CW 1920	0.00	0.00	0.00
W4Q 2019.20	W4Q - Bicentennial Park Fencing - CW 1920	0.00	0.00	0.00
W4Q 2019.20	W4Q - Bridge Upgrade on Bicentennial Boardwalk - CW 1920	89932.00	3148.65	86783.35
W4Q 2019.20	W4Q - Cannonvale Lakes Boardwalk Upgrade - CW 1920	486098.00	102700.57	383397.43
W4Q 2019.20	W4Q - Cannonvale Lakes Stage 3 - CW 1920	0.00	0.00	0.00
W4Q 2019.20	W4Q - Cannonvale Playground Upgrade - CW 1920	0.00	0.00	0.00
W4Q 2019.20	W4Q - Dingo Beach Footpath-Walkways - CW 1920	0.00	0.00	0.00
W4Q 2019.20	W4Q - Gideon Pott Park Stage 2 - CW 1920	0.00	0.00	0.00
W4Q 2019.20	W4Q - Gloucester Rainwater Tank & Retaining Wall - CW 1920	13794.00	1808.07	11985.93
W4Q 2019.20	W4Q - Halpannel Park Upgrade - CW 1920	329094.00	352478.31	-23384.31
W4Q 2019.20	W4Q - Hansen Park Sound System - CW 1920	65002.00	52930.71	12071.29
W4Q 2019.20	W4Q - Henry Darwen Park Stage 2 - CW 1920	371336.00	80937.80	290398.20
W4Q 2019.20	W4Q - Keith Johns Drive Park Stage 2 - CW 1920	55106.00	28911.60	26194.40
W4Q 2019.20	W4Q - Lions Park, Bowen - CW 1920	278856.00	127682.26	151173.74
W4Q 2019.20	W4Q - Movie Screen - CW 1920	349424.00	1617.54	347806.46
W4Q 2019.20	W4Q - Park (Tree) Lighting - CW 1920	0.00	0.00	0.00
W4Q 2019.20	W4Q - Railway Road Stage 1 - CW 1920	441168.00	3360.68	437807.32
W4Q 2019.20	W4Q - Rotary Park, Proserpine - CW 1920	48118.00	41727.76	6390.24
W4Q 2019.20	W4Q - Thomas Street Footpath - CW 1920	137426.00	127736.53	9689.47
W4Q 2019.20	W4Q - Whitsunday Gardens Park - CW 1920	131890.00	91439.45	40450.55
W4Q 2019.20	W4Q - Fairy Tree Park CW 1920	0.00	0.00	0.00
W4Q 2019.20 Total		2797730.00	1016966.76	1780763.24
W4Q COVID19	Bowen Aerodrome Amenities - Sewerage Treatment Plant Renewal	35000.00	2646.78	32353.22
W4Q COVID19	Bowen Aerodrome Work Camp Dwelling - Superstructure Renewal	95866.00	335.73	95530.27
W4Q COVID19	Bowen Aquatic Facility - town pool amenity upgrade	367234.00	13637.72	353596.28
W4Q COVID19	Bowen Water Park renewal	100001.00	85.83	99915.17

W4Q COVID19	Cannonvale Depot Office Roof Replacement	119000.00	113790.80	5209.20
W4Q COVID19	Cannonvale Foreshore Hall - New Playground	41000.00	30420.57	10579.43
W4Q COVID19	Cannonvale Foreshore Hall - Roof Renewal	53245.00	51758.62	1486.38
W4Q COVID19	Collinsville Aquatic Facility - town pool amenity and kiosk upgrade	142610.00	10670.84	131939.16
W4Q COVID19	Collinsville Youth Coalition - Amenities Renewal	98999.00	32164.91	66834.09
W4Q COVID19	Continuation of Pedestrian Path Lighting Airlie Foreshore	100000.00	1899.08	98100.92
W4Q COVID19	Les Stag Oval - Grandstand Renewal	70001.00	461.62	69539.38
W4Q COVID19	Proserpine Aquatic Facility - residence demolition and kiosk renewal	313806.00	14371.13	299434.87
W4Q COVID19	Proserpine Water & Sewer Admin Reroof	68754.00	55123.25	13630.75
W4Q COVID19	Wangaratta Caravan Park Swimming Pool refurbishment	75600.00	1608.34	73991.66
W4Q COVID19	Whitsunday Coast Airport - Roof rectification Works	1027922.00	29467.17	998454.83
W4Q COVID19 Total		2709038.00	358442.39	2350595.61
Infrastructure Services	Argyle Street kerb and channel	400001.00	141883.86	258117.14
Infrastructure Services	Armada Crescent Drainage Upgrade	45293.00	18232.84	27060.16
Infrastructure Services	Assets Renewal Parks and Gardens	386786.00	3518.23	383267.77
Infrastructure Services	Brisbane Street and Powell Street Blackspot Upgrade	392.00	391.42	0.58
Infrastructure Services	Construction of Lagoon Deck and Shared Cycle Path	499999.00	14312.75	485686.25
Infrastructure Services	Conway Road Overlay Pavement - Ch 6.92 km to 8.76 km - CW 18-19	3364.00	5004.67	-1640.67
Infrastructure Services	Cycleway funding - CW 18-19	3342.00	3341.92	0.08
Infrastructure Services	Dodd Street Shared Footpath	160001.00	5497.40	154503.60
Infrastructure Services	Edgecumbe Heights Walking Tracks Upgrade	27500.00	14663.36	12836.64
Infrastructure Services	Forestry Road	1000002.00	24030.01	975971.99
Infrastructure Services	Hillview Road Kerb and Channel	250000.00	8928.08	241071.92
Infrastructure Services	Moonlight Drive Kerb and Channel	38000.00	1546.95	36453.05
Infrastructure Services	New Bowen Cemetery Columbarium Wall	30002.00	5188.39	24813.61
Infrastructure Services	Nielson Road - ID 22420 - CH 0 - 1252	0.00	0.00	0.00
Infrastructure Services	Port of Airlie Transit Terminal Upgrade	50000.00	3219.53	46780.47
Infrastructure Services	Pretty Bend Road - Cattle road resheeting	20034.00	18212.50	1821.50
Infrastructure Services	Proserpine RV Park - CW 18-19	25298.00	0.00	25298.00
Infrastructure Services	Reflect Application Redesign and Reimplementation	50001.00	0.00	50001.00
Infrastructure Services	Reseal Program	789588.00	97012.74	692575.26
Infrastructure Services	Reynolds Street Drain	25000.00	20912.17	4087.83
Infrastructure Services	Ted Cunningham Bridge Upgrade	2200009.00	7136.96	2192872.04
Infrastructure Services	Tondarra Road, Bowen - Road ID 31060 - Repair Culvert	970.00	970.00	0.00
Infrastructure Services	Unsealed Roads Creek Crossing Upgrade Program	300000.00	4958.08	295041.92
Infrastructure Services	Unsealed Roads Resheeting Program	800009.00	0.00	800009.00
Infrastructure Services	Wilson Beach Swimming Enclosure Refurbishment	350000.00	0.00	350000.00
Infrastructure Services	Wilsons Beach Rockwall	217000.00	212382.52	4617.48
Infrastructure Services	Chapman Street car park (Proserpine Admin)	1050702.00	843141.91	207560.09
Infrastructure Services	Bowen Aerodrome Runway Reseal Project	500000.00	0.00	500000.00
Infrastructure Services	Flagstaff Hill Roadworks	200000.00	173856.50	26143.50

Infrastructure Services	Betterment Reshaping table drains	147001.00	0.00	147001.00
Infrastructure Services	Heavy Formation Grading Program 2020.21	500000.00	0.00	500000.00
Infrastructure Services	Gloucester Avenue Floodways	200000.00	342.49	199657.51
Infrastructure Services	Thurso Road culvert replacement	60000.00	0.00	60000.00
Infrastructure Services	St Mary's School parking	0.00	24914.29	-24914.29
Infrastructure Services	Roma Peak Road floodways	0.00	0.00	0.00
Infrastructure Services	Bowen State High School parking	0.00	10683.92	-10683.92
Infrastructure Services	Collinsville State High School parking	0.00	489.27	-489.27
Infrastructure Services	Airlie Beach Parking Strategy	200000.00	0.00	200000.00
Infrastructure Services	Jasinique Drive Culvert Remedial Works	0.00	0.00	0.00
Infrastructure Services Total		10530294.00	1664772.76	8865521.24
Major Projects : Proserpine Entertainment Centre	Proserpine Entertainment Centre (PEC) - JC#4926	12000882.00	3221464.74	8779417.26
Major Projects : Proserpine Entertainment Centre Total		12000882.00	3221464.74	8779417.26
Grand Total		36257250.00	10577377.40	25679872.60

16. Infrastructure Services

16.3 OPERATIONAL REPORT - WHITSUNDAY WATER & WASTEWATER - MARCH 2021

AUTHOR: Troy Pettiford - Chief Operating Officer Whitsunday Water

RESPONSIBLE OFFICER: Adam Hagy - Acting Director Infrastructure Services

OFFICER'S RECOMMENDATION

That Council receive the Whitsunday Water and Waste Operational Report for March 2021.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 12 May 2021.

SUMMARY

This report details the monthly operational performance of the Whitsunday Water and Waste business activity.

PURPOSE

To provide Council with information on the operational performance of the Whitsunday Water and Waste business activity.

BACKGROUND

Reports are prepared for each business activity of Council. The previous report for Whitsunday Water and Waste submitted to Ordinary Council Meeting held on 24 March 2021 which detailed the month of February 2021. Resolution 2021/03/24.32.

STATUTORY/COMPLIANCE MATTERS

Water Act 2000 (QLD)

Water Supply (Safety and Reliability) Act 2008 (QLD)

Local Government Act 2009 (QLD)

Public Health Act 2005 (QLD)

Plumbing and Drainage Act (QLD), 2018

Plumbing and Drainage Regulation (QLD), 2019

Environmental Protection Act 1994 (QLD)

Ombudsman Act 2001 (QLD)

Waste Reduction & Recycling Act 2011

Waste Reduction and Recycling (Waste Levy) Amendment Act 2019

Environmental Protection Act 1994

Environmental Protection Act (Waste Management) Regulation 2000

ANALYSIS

The following information provides a high-level overview of operational undertakings of the water, sewer and waste business activity for the month of March 2021.

A total of two hundred and ninety-six (296) requests were received in March 2021.

The tables below display the contribution of each customer request category to the total.

	Scheme			
Category Water	Bowen	Coastal	Collinsville	Proserpine
Low water pressure	1	1	-	-
Water planned interruption	-	-	-	-
No water	-	2	-	-
Fire Hydrants	1	2	-	2
Water unplanned interruption	-	1	-	-
Dirty Water/Quality	13	7	2	1
Water Main Broken/Leaking	-	4	-	-
Water other	6	18	9	2
Water Meter Damaged/Leaking	6	2	3	-
Water Service Broken/Leaking	18	26	6	6
Water Connections	3	12	-	-

	Scheme			
Category Sewer	Bowen	Coastal	Collinsville	Proserpine
House pump alarm	1	1	-	-
Manholes	-	-	-	-
Pump stations	-	2	-	-
Sewer mains	1	2	-	2
Sewer odour	-	1	-	-
Sewer overflows and blockages	13	7	2	1
Sewer other	-	4	-	-

	Scheme			
Category Waste	Bowen	Coastal	Collinsville	Proserpine
Additional Bin Service - Recycling	-	-	-	-
Additional Bin Service - Waste	-	-	-	-
Missed Bin Service - Recycling	1	7	-	-
Missed Bin Service - Waste	8	10	1	-
New Bin Service – Waste & Recycling	1	9	1	3
Repair Replacement Bin - Recycling	4	5	3	2
Repair Replacement Bin – Waste	25	17	-	8

The following **Top 3** prioritised current projects for each work section in the WW business unit is summarised below:

Asset Management

- 2021/22 Projects – progressed major scopes
- Shute Harbour Road service relocation assessment – TMR road upgrade
- Grant applications and information request assistance

Management Accountant

- Operational budgets and Fees and Charges – Water, Sewer & Waste Fin Yr 21-22
- Water Price Path – Model Calculations and Balancing

- Grant Funding – Project progress reports and expenditure statements

Network Operations

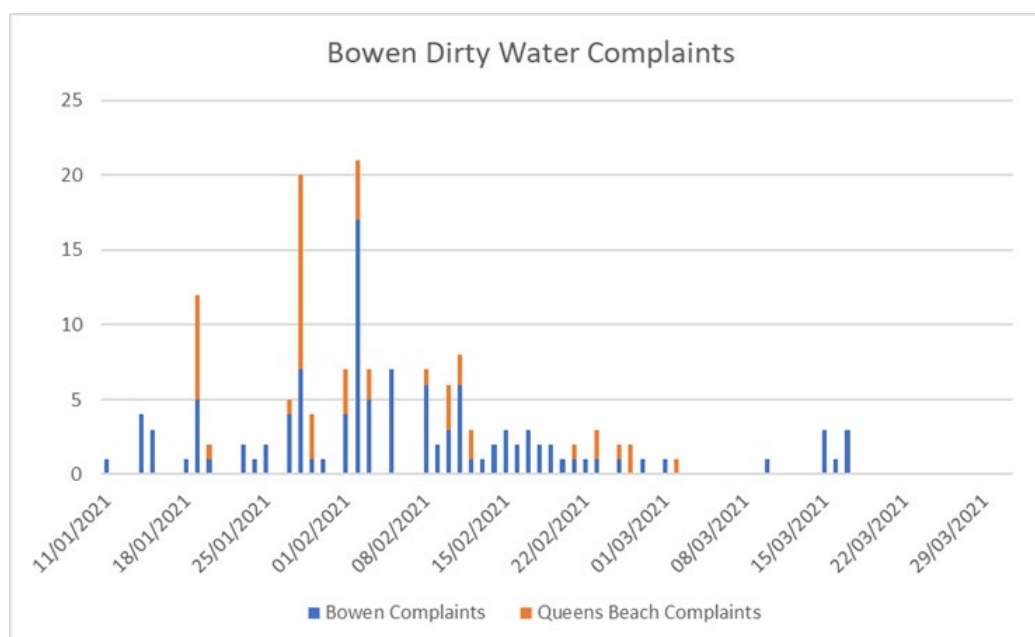
- Working on the Operational and Maintenance Plan (O&M) activities, such as the implementation of work tickets (proactive and reactive maintenance), SOP review, Safety Review, Training, and the Asset Data acquisition will be included in this plan.
- Assisting Capital Works team:
 - Leachate pipeline project - Kelsey Creek landfill.
 - Valving installation project - Bowen Aerodrome intersection.
 - Sluice valve project - Sinclair St water main.
- Assist Management Accountant with budget considerations for Quarter 3 review and 21/22 FY budget.

Treatment Operations

- Cannonvale and Proserpine WTPs – Cannonvale pipeline and Proserpine water pump station commissioning works are being undertaken that required multiple plant shut-downs.
- Treatment Operations Workforce Planning Project is almost complete with some final information required regarding compliance with the current EBA to be finalised with HR.
- Maintenance Planning and operator training – Formalised operator asset maintenance planning is commencing with operator daily and weekly checklists starting to gather asset condition data. Updated treatment plant training manuals, Safety and SOPs are under review for all 8 treatment plants which will strengthen both our drinking water quality and environmental management systems compliance.

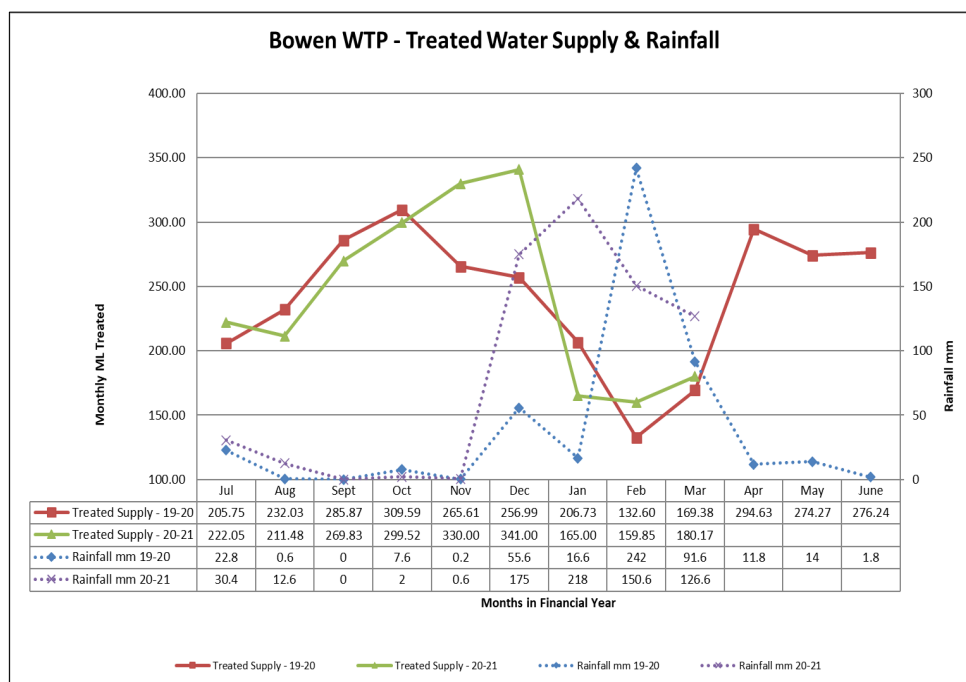
Dirty Water Event January to March 2021

The issues resulting in Bowen residents experiencing dirty water/poor water quality has been resolved. Whitsunday Water monitored dirty water complaints up to Thursday 1 April 2021 and provided updated data to the Regulator. The incident has now been closed with the Regulator.

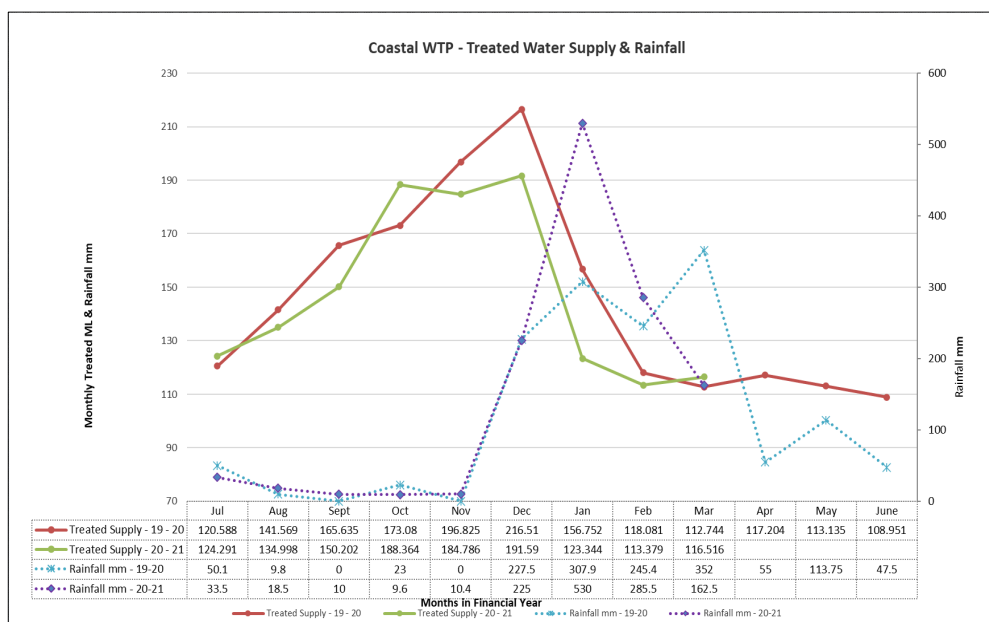


Water Demand Statistics March 2021

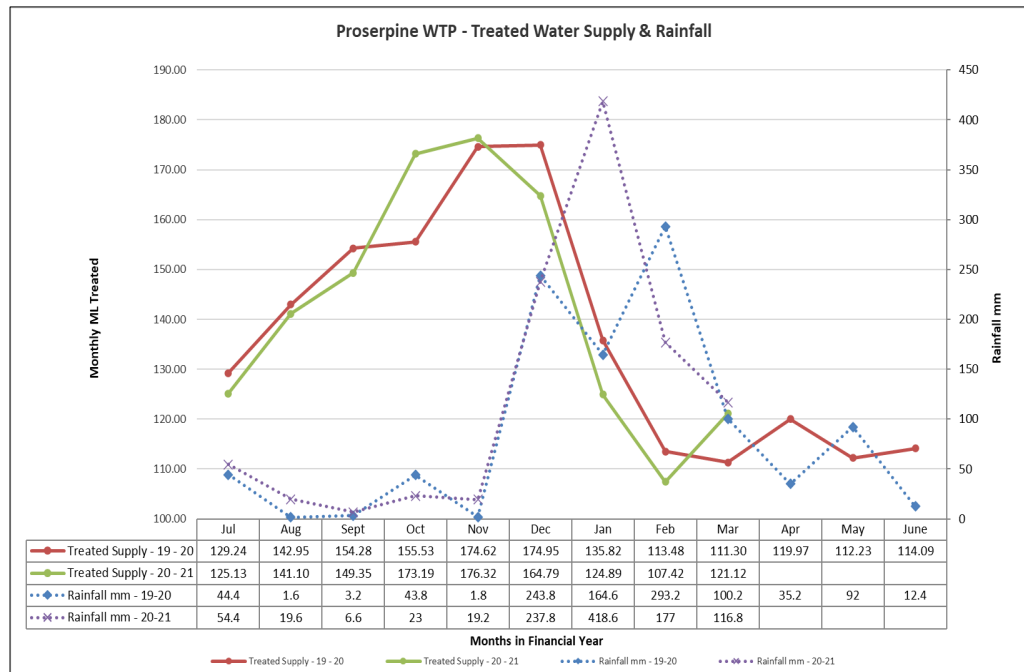
The Bowen WTP has produced an estimated average of **5.81 ML/day** of treated water during March 2021.



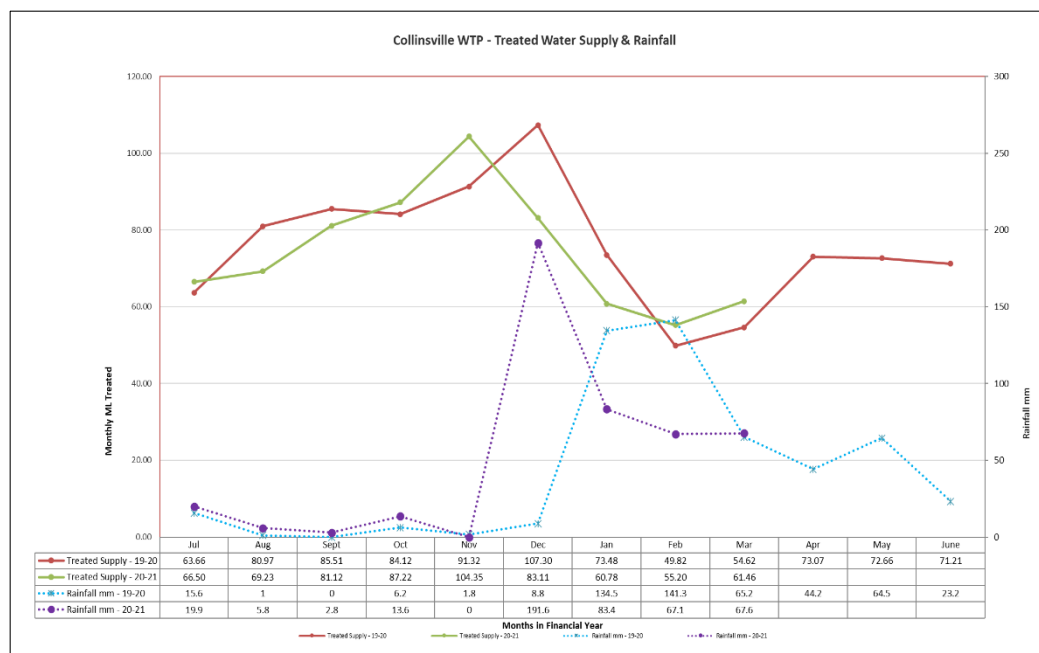
The Coastal WTP has produced an average of **3.88 ML/day** of treated water during March 2021.



The Proserpine WTP has produced an average of **3.9 ML/day** of treated water during March 2021.



The Collinsville WTP has produced an average of **1.98 ML/day** of treated water during March 2021.



Waste Management

In March 2021, total waste handled in the region was 4,895 tonnes.

- **3,393** tonnes were landfilled at Kelsey Creek & Bowen Landfills.
- **1,503** tonnes of waste were diverted from landfills (**31%** diversion achieved from Operational plan target of **20%**).
- **128** tonnes kerbside recycling collection - (disposed at Materials Recycling Facilities - MRFs).

Waste Top 3:

- Mt Coolon Levy Ready project delivery underway (2020-21 Local Government Levy Ready Grant Program Round 2). Project Manager appointed, Community Engagement plan completed and request for quotations in progress. The project will see the closure of the current Mt Coolon Landfill facility by 30 June 2021 and establish a new Waste Transfer Station to ensure compliance with the Waste Reduction and Recycling Act 2011.
- Request for Tender to procure kerbside Waste and Recycling collection services closed and Tender evaluation in progress. New contract will replace the current contract which expires on 30 June 2021. The contract will be a short-term contract with the option to align the term with the Mackay Regional Council's contract and develop a potential joint tender for future years if the regional approach is deemed beneficial after analysis is undertaken.
- Request for Tender in progress to procure management services for the Cannonvale Waste Transfer Station to replace the current contract which expires on 30 June 2021. Request for Tender advertised with a closing date of 17 March 2021: Tender evaluations in progress.

Capital Works Projects - WS&W

4931 Bowen Sewerage Treatment Plant Upgrade - The plant is nearing Commissioning Completion. Principal Contractor Aquatec Maxcon is currently in the commissioning stage of Separable Portion 3. Separable Portions 1 and 2 have been completed.

There are three items that have been moved to Separable Portion 3, being wash press issues with the installed units, noise, and odour testing. Rectification works have delayed the forecast PC date with it likely that the Date for Practical Completion for SP3 will be early May 2021 subject to approval of an Extension of Time claim being submitted by the Contractor.

Total expenditure to date \$25,139,670.54 being 98.94% of the project budget \$25,407,850.91. It is expected that the budget will balance such that no additional funds will be required to complete the project following reconciliation of variations (both negative and positive).

5609 Cannonvale Bulk Potable Pipeline Stage 1: Works has been split into three separate tenders.

Total expenditure to date across all sub projects within Cannonvale Bulk Potable Pipeline Stage 1 is \$12,866,612.61 being 86.56% of the project budget \$14,863,999.19. Note this does not include variations currently under assessment.

- **Tender 1 - Pipeline Materials Supply:** Delivered to site are now complete and the contract is complete.
- **Tender 2 - Pump Station and Generator Facility Construction:** The building works, mechanical works (pipework is complete, tested, flushed, and disinfected) and the majority of the electrical works are complete. The generator has been installed and tested, with only the connection of the external fuel tanks to be completed.

Final connections to the new power transformer have been undertaken. The new transformer, via the automatic transfer switch panel, will provide power to the entire Proserpine Water treatment Plant (PWTP). The generator will be able to provide backup power to the PWTP at that point.

Some minor civil works are required to address potential stormwater drainage issues identified on site. Dowden's will complete performance testing April 2021 once pipeline is complete.

- **Tender 3 - Pipeline Construction:** The pipeline is continuing to progress, with current forecasts indicating that Date for Practical Completion of 30 April 2021 will not be met however an Extension of Time is being sought due to inclement weather in February. The current wet season still may impact the Date for Practical Completion if significant weather events occur. The current scheduling is prioritising completion in the areas most affected by wet weather.

The pipeline leading up to the future Cannon Valley reservoir site has commenced but progress has slowed slightly due to encountering rock within the pipe trench; with approximately 80% of the pipeline installed.

5549 Cannon Valley Reservoir: The Cannon valley reservoir project has commenced with Stage 1 of the Bulk earthworks underway. Request for Tender for the Design and Construct of the reservoir is to be issued early April 2021. Expected completion date of the reservoir is 31 December 2021.

Total expenditure to date \$1,837,736.06 being 19.63% of the project budget \$9,364,217.03.



Cannonvale Sewerage Pump Station 1 Renewal: The critical project path provided by the Contractor forecasts a Project Completion date has been delayed to due to additional construction defects requiring rectification. Commissioning is expected to commence late April 2021 with Project Completion forecast to mid May 2021.

Total expenditure to date \$1,489,763.74 being 96.36% of the project budget \$1,545,998.23.

7886 Insurance - Bowen Reservoir: Tender documents currently being developed. RFQs for specific Engineered technical documentation has been developed. Request for Tender (RFT) to be issued in April for a May start date.

Total expenditure to date \$24,835.29 being 4.3% of the project budget \$577,766.78.

Collinsville reservoir roof renewal and Collinsville Solar Project: RFT to be issued in April start date and projected December 2021 completion date. Note this project is planned to be completed over the 20/21 and 21/22 Financial years.

Total expenditure to date \$21,862.470 being 3.92% of the project budget \$557,206.12.

8081 Cannonvale Water Network Augmentation Stage 1A: All works have been completed with final claim to be issued. This project will be completed on Budget.

Total expenditure to date \$790,656.34 being 97.95% of the project budget \$807,240.45.

8080 Local Government Grants and Subsidies Project (LGGSP) Water Project

Council are delivering three (3) sub projects within the LGGSP Grant Project (WO 8080).

Total expenditure to date \$730,266.69 being 83.56% of the project budget \$873,916.38. Note this does not include recent awarded variations. *Note: the expenditure breakdown between each project assumes equal amortisation over the projects and will likely be amended prior to Capitalisation.*

Cannonvale Water Network Augmentation Stage 1B: All works have been completed on site. Finalisation of Quality Assurance (QA) documentation and As-Constructed drawings are still outstanding but are expected to be completed in April.

Total expenditure to date \$430,363.26 being 98% of the project sub-budget \$438,839.29. A portion of this sub project budget may be utilised to address a variation for the Moonlight Dr reservoir upgrade sub-project under this project.

The Coyne road reservoir Upgrade: All major works for this project have been completed. A recent downpour has proven that the unsealed roadway access is still experiencing stormwater drainage issues on site and therefore will require a more permanent solution. A review of available budget is being undertaken to confirm whether these works can be undertaken under the current contract. It is expected that this access will be concreted to prevent additional wash out.

Total expenditure to date \$185,712.30 being 85% of the project sub-budget \$217,592.00.



Final site works Coyne Road reservoir.

The Moonlight Drive Reservoir Upgrade: All major works have now been completed and tanks have been commissioned. Some final site tidy works up are required to be undertaken. There will also be a requirement for additional discussions with landowners relating to private water pump electrical issues.

Total expenditure to date \$212,893.79 being 98% of the project sub-budget \$217,486.00.



New tanks installed at Moonlight Drive site

5539 Sewer Pump Capacity Upgrades Combined Rising Main: This project has been identified to be tendered out in the 20/21 Financial year and then carried over to be delivered in the 21/22 Financial year. This scheduling need is due to delays borne from COVID, and power upgrade installation schedule timeframes with Ergon required critical dates to be adjusted. The electrical and civil designs have been completed with only the Tender documentation creation task outstanding.

Total expenditure to date \$148,915.93 being 27.91% of the project budget \$533,560.90.

8598 Thomas Street Drain Sewer Replacement: The project involves replacing a short length of gravity sewer in Bowen through Thomas St drain to allow for relining of this section of sewer. Project commencement has been delayed due to inclement weather, pipe impediments and resourcing issues. Fit for purpose plant is being organised to try clear the impediment. Works are expected to commence late April and be completed prior to the end of Financial Year.

Total expenditure to date \$0.00 being 0% of the project budget \$57,200.00.

Financials - Operational

In general budget expectation at the end of March 2021 equals **75.0%**

Water and Sewerage

Operating Revenue:

- Total actual operating revenue is **\$26,239,930**.
- Which projects a revenue level achievement of **75.42%**; Current Budget projection of **\$34,793,425**.
- The target for this period was **75.0%**; therefore, operational revenue is confirmed at positive **0.42 % or (\$144,861) above** current budget expectation to the end March 21 of the **20/21** financial year.

Operating Expenses:

- Total operating costs Year to Date (YTD) is **\$24,942,911** (including corporate overhead expenditure).
- Which demonstrates a **73.04%** expenditure of the Current Budget of **\$34,149,894**.
- The target expenditure for this period was **75.0%**; therefore, this operational expenditure is **1.96% or (\$669,509) below** budgeted expectations to the end of March 21 of the **20/21** financial year.

Operating Profit and Loss in Summary:

Whitsunday Regional Water and Sewerage			
Monthly performance report year to 31st March 2021			
	2020/21		2019/20
Operating revenue	Actual	Current Budget	Actual
Total operating revenue	26,239,930	34,793,425	33,976,153
Operating Expenses			
Total operating costs	(20,510,681)	(28,240,251)	(28,582,308)
Surplus (deficit) from operations Exl.Overheads	5,729,249	6,553,174	5,393,844
<i>Internal Corporate Overheads</i>	(4,432,230)	(5,909,643)	(5,031,000)
Surplus (deficit) from operations	1,297,019	643,531	362,844
Capital cash contributions received	604,136	1,000,000	748,768
Capital cash revenue from government sources	3,252,055	10,527,818	4,580,499
Physical assets contributed	-	-	326,641
Other capital income	3,818	-	-
Other capital expenses	-	(1,836,807)	(1,805,562)
Net result for the period	5,157,028	10,334,542	4,213,190

Waste

Operating Revenue:

- Total actual operating revenue is **\$5,959,679**.
- Which obtained a revenue level achievement of **67.77%**; against the Current Budget of **\$8,793,367**.
- The target for this period was **75.0%**; therefore, operational revenue is confirmed at a **7.23% or (\$635,346) below** revised budget expectation to the end of March 21 in the **20/21** financial year. The business unit is continuing to monitor this current revenue trend closely and further investigate the status of receiving revenue from emerging waste stream sources.

Operating Expenses:

- Total operating costs Year to Date (YTD) is **\$5,683,723** (including corporate overhead expenditure).
- Which demonstrates **70.21%** expenditure completion of the Current 20/21 Budget of **\$8,095,864**.
- The target expenditure for this period was **75.0%**; therefore, operational expenditure is **4.79% (\$388,174) below** budgeted expectations for the March 21 period of the **20/21** financial year.

Operating Profit and Loss in Summary:

Whitsunday Waste Facilities			
Monthly performance report year to 31st March 2021			
	2020/21		2019/20
Operating revenue	Actual YTD	Current Budget	Actual
	5,959,679	8,793,367	7,998,668
Operating Expenses			
Total operating costs	(5,192,296)	(7,440,634)	(6,922,109)
Surplus (deficit) from operations Exl.Overheads	767,383	1,352,733	1,076,559
<i>Internal Corporate Overheads</i>	(491,427)	(655,230)	(778,706)
Surplus (deficit) from operations	402,089	697,503	297,853
Other capital income/(expenses)	25,000		-
Net result for the period	427,089	832,068	(2,940,449)
Retained surplus (deficit) brought fwd from prior year	263,954	263,953	-
Net result from above	427,089	832,068	(2,940,449)
From (to) capital - items of capital income & expense	-	-	3,375,487
Adj From (to) capital to adjust working capital cash			(500,000)
Transfer (to) capital general revenue expended	192,880	(1,069,400)	2,249,459
Net transfers from (to) capital reserves	(25,000)	(134,565)	(1,920,543)
Retained surplus (deficit) funds at period end	858,923	(107,944)	263,953

STRATEGIC IMPACTS

3.2.1 Develop and implement policies and strategies that protect and enhance the Whitsunday region's natural environment.

3.2.2 Develop water and waste services and systems that ensure the integrity of the Whitsunday region's natural environment.

3.4.2 Develop and maintain effective water and wastewater infrastructure, networks and facilities.

3.4.3 Develop integrated asset management plans to effectively manage and maintain road, water and wastewater infrastructure and ensure assets meet the demands of a growing population.

3.4.4 Deliver effective customer focussed water services that protect the public health.

3.4.5 Develop a planned approach to securing the Whitsunday region's water supply.

3.4.7 Engage with Federal and State Governments regarding regional and national water security issues.

CONSULTATION

Adam Hagy - Acting Director Infrastructure Services

Linda McEwan - Management Accountant

Shannon Lorroway - Administration Coordinator Whitsunday Water

David de Jager - Manager Waste Services

Yestin Hughes - Principal Engineer Civil & Environmental

Malcolm Briody - Capital Works Engineer
Darren Trott - Manager Network Operations
Peter Stapleton - Manager Treatment Operations

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

That Council receives and notes the information in the Whitsunday Water and Waste Operational Report for March 2021.

ATTACHMENTS

Attachment 1 - Monthly Performance Report and Balance Sheet as at 31 March 2021
Attachment 2 - Capital Delivery Financial up to 31 March 2021

Attachment 1 - Monthly Performance Report and Balance Sheet as at 31 March 2021

Whitsunday Regional Water and Sewerage 			
Monthly performance report year to 31st March 2021			
	2020/21		2019/20
	Actual	Current Budget	Actual
Operating revenue			
Rates and utility charges	26,794,723	34,503,568	33,940,682
Less: Discounts & pensioner remissions	(1,641,591)	(1,263,165)	(1,260,166)
Statutory fees and charges, rental and levies	259,801	493,867	189,722
Sale of goods and major services	353,084	490,236	466,946
Interest	188,203	227,819	241,094
Operational Government grants and subsidies	-	-	-
Internal service provider revenue	-	-	-
Other operating revenue	285,710	341,100	397,875
Total operating revenue	26,239,930	34,793,425	33,976,153
Operating Expenses			
Employee benefits	(4,489,559)	(6,471,925)	(6,314,646)
Materials and services	(6,350,688)	(10,165,062)	(9,449,956)
Internal service provider expenditure (Exl.Overheads)	(663,201)	(969,325)	(827,281)
Depreciation	(7,587,354)	(8,702,654)	(10,116,554)
External finance costs	(1,419,879)	(1,931,285)	(1,873,872)
Total operating costs	(20,510,681)	(28,240,251)	(28,582,308)
Surplus (deficit) from operations Exl.Overheads	5,729,249	6,553,174	5,393,844
<i>Internal Corporate Overheads</i>	<i>(4,432,230)</i>	<i>(5,909,643)</i>	<i>(5,031,000)</i>
Surplus (deficit) from operations	1,297,019	643,531	362,844
Capital cash contributions received	604,136	1,000,000	748,768
Capital cash revenue from government sources	3,252,055	10,527,818	4,580,499
Physical assets contributed	-	-	326,641
Other capital income	3,818	-	-
Other capital expenses	-	(1,836,807)	(1,805,562)
Net result for the period	5,157,028	10,334,542	4,213,190
Competitive Neutrality Adjustments			
Income Tax Equivalent (30%)	1,547,108	3,100,363	1,263,957
Return on Capital (6.57%)	9,284,805	9,284,805	9,284,805
Other NCP Adjustments	39,000	39,000	39,000
Adjusted Net Result	(5,713,885)	(2,089,626)	(6,374,572)
Retained surplus (deficit) brought fwd from prior year	461,266	461,266	-
Net result from above	5,157,028	10,338,142	4,213,190
Transfer from capital for unfunded depreciation	1,449,134	5,095,619	6,615,836
From (to) capital - items of capital income & expense	(3,818)	1,833,207	1,478,921
Adj From (to) capital to adjust working capital cash	-	-	-
Transfer (to) capital general revenue expended	-	(3,763,139)	-
Internal Program Contributions	-	-	-
Surplus/(deficit) available for transfer to reserves	-	-	-
Net transfers from (to) capital reserves	(5,868,207)	(14,423,676)	(11,846,681)
Retained surplus (deficit) funds at period end	1,195,402	(458,581)	461,266

Whitsunday Regional Water and Sewerage

Monthly performance report year to 31st March 2021



Continued	2020/21		2019/20
	Actual	Current Budget	Actual
Capital Funding Sources			
General revenue used (excess funds provided)	-	3,763,139	-
Government Grants and Subsidies	2,540,000	9,689,966	4,700,498
Loans for capital purposes	-	-	5,665,636
Physical assets contributed	2,500,000	3,779,706	7,668,123
Disposal proceeds of capital assets	3,818	-	-
Movement in Inter-functions capital loans	-	-	-
Funds Held in Capital Reserves	2,091,150	4,408,882	7,334,909
Funded depreciation & amortisation expended	5,292,018	3,607,035	3,500,717
Total capital funding sources	12,426,986	25,248,728	28,869,883
Capital Funding Applications			
Non-current assets	10,531,626	22,707,286	26,664,585
Loan redemptions	1,895,361	2,541,442	2,205,298
Total capital applications	12,426,987	25,248,728	28,869,883
Reserve balances held at beginning of period			
Capital reserve balances	9,364,444	-	16,894,652
Total reserve cash held at beginning of the period	9,364,444	-	16,894,652
Reserve balances held at the end of period			
Capital reserve balances	8,101,501	5,909,566	9,364,444
Unspent loan and depreciation cash held	846,202	-	-
Retained Surplus (Deficit)	1,195,403	(458,580)	-
Total reserve cash held at the end of the period	10,143,106	5,450,986	9,364,444

Whitsunday Regional Water and Sewerage

Balance Sheet as at 31st March 2021



	2020/21 Actual	2019/20 Actual
Current Assets		
Cash and cash equivalents	9,950,821	14,738,312
Trade and other receivables	4,667,985	3,945,654
Total Current Assets	14,618,806	18,683,966
Non-current Assets		
Property, plant and equipment	280,089,124	287,676,478
Closing WIP Balance	51,113,817	40,582,191
Total Non-current Assets	331,202,941	328,258,669
TOTAL ASSETS	345,821,747	346,942,635
Current Liabilities		
Trade and other payables	7,788,744	5,256,777
Borrowings	2,760,409	2,760,409
Inter-function Capital Loan payable	24,934,018	24,934,018
Other Liabilities	149,377	-
Total Current Liabilities	35,632,548	32,951,204
Non-current Liabilities		
Borrowings	41,032,972	42,927,154
Total Non-current Liabilities	41,032,972	42,927,154
TOTAL LIABILITIES	76,665,520	75,878,358
NET COMMUNITY ASSETS	269,156,227	271,064,277
Community Equity		
Capital	179,714,552	176,835,113
Asset revaluation surplus	79,490,853	79,490,853
Capital reserve balances	8,755,418	14,277,045
Unspent loan and depreciation cash held	-	-
Retained surplus (deficiency)	1,195,403	461,266
TOTAL COMMUNITY EQUITY	269,156,226	271,064,277

Whitsunday Waste Facilities



Monthly performance report year to 31st March 2021

	2020/21		2019/20
	Actual YTD	Current Budget	Actual
Operating revenue			
Rates and utility charges	4,330,372	5,767,610	5,461,729
Less: Discounts & pensioner remissions	(357,358)	(279,796)	(266,726)
Statutory fees and charges, rental and levies	38,781	51,950	49,511
Sale of goods and major services	1,757,539	2,869,647	2,714,353
Interest	24,673	29,367	31,895
Operational Government grants and subsidies	-	195,923	-
Other operating revenue	165,672	158,666	7,906
	5,959,679	8,793,367	7,998,668
Operating Expenses			
Employee benefits	(457,358)	(637,325)	(428,620)
Materials and services	(4,139,703)	(6,481,243)	(6,065,815)
Internal service provider expenditure	(4,673)	-	(6,661)
Depreciation	(571,951)	(266,090)	(431,520)
External finance costs	(18,610)	(55,976)	10,507
Total operating costs	(5,192,296)	(7,440,634)	(6,922,109)
Surplus (deficit) from operations Excl. Overheads	767,383	1,352,733	1,076,559
Internal Corporate Overheads	(491,427)	(655,230)	(778,706)
Surplus (deficit) from operations	402,089	697,503	297,853
Other capital income/(expenses)	25,000	-	-
Net result for the period	427,089	832,068	(2,940,449)
Retained surplus (deficit) brought fwd from prior year	263,954	263,953	-
Net result from above	427,089	832,068	(2,940,449)
Transfer from capital for unfunded depreciation	-	-	-
From (to) capital - items of capital income & expense	-	-	3,375,487
Adj From (to) capital to adjust working capital cash	-	-	(500,000)
Transfer (to) capital general revenue expended	192,880	(1,069,400)	2,249,459
Internal Program Contributions	-	-	-
Surplus/(deficit) available for transfer to reserves	-	-	-
Net transfers from (to) capital reserves	(25,000)	(134,565)	(1,920,543)
Retained surplus (deficit) funds at period end	858,923	(107,944)	263,953

Whitsunday Waste Facilities



Monthly performance report year to 31st March 2021

	2020/21		2019/20
	Actual YTD	Current Budget	Actual
Continued			
Capital Funding Sources			
General revenue used (excess funds provided)	(192,880)	1,069,400	(2,249,459)
Government Grants and Subsidies	-	134,565	172,097
Loans for capital purposes	-	-	2,500,000
Physical assets contributed	-	-	-
Disposal proceeds of capital assets	-	-	-
Funds held in capital reserves	-	266,090	498,364
Funded depreciation & amortisation expended	571,951	-	431,520
Total capital funding sources	379,071	1,470,055	1,352,522
Capital Funding Applications			
Non-current assets	154,032	1,148,100	1,352,522
Total capital asset acquisitions	154,032	1,148,100	1,352,522
Loan redemptions	225,040	321,955	-
Total capital applications	379,071	1,470,055	1,352,522
Reserve balances held at beginning of period			
Capital reserve balances	1,099,563	-	(150,519)
Unspent loan and depreciation cash held	-	-	-
Recurrent reserve balances	-	-	-
Total reserve cash held at beginning of the period	1,099,563	-	(150,519)
Reserve balances held at the end of period			
Capital reserve balances	1,124,563	1,099,563	1,099,563
Unspent loan and depreciation cash held	-	-	-
Retained Surplus (Deficit)	858,923	(107,944)	-
Total reserve cash held at the end of the period	1,983,486	991,619	1,099,563

Whitsunday Waste Facilities



Balance Sheet as at 31st March 2021

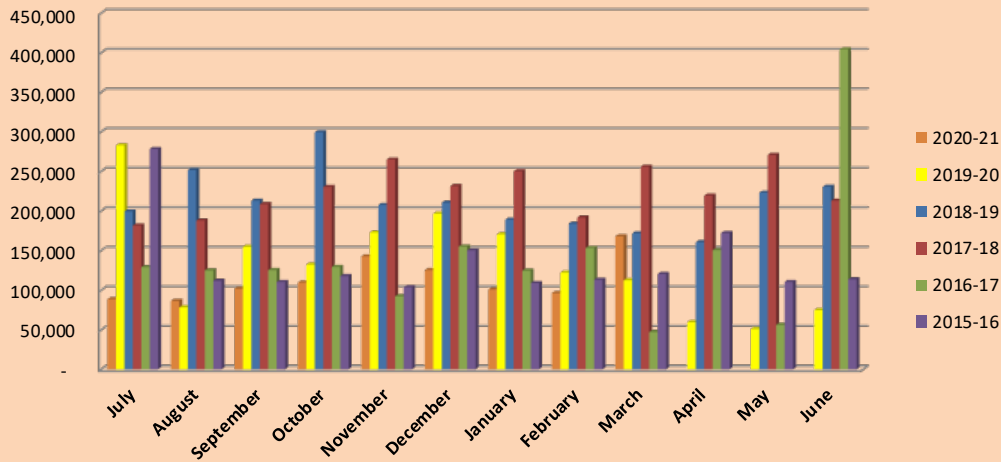
	2020/21 Actual	2019/20 Actual
Current Assets		
Cash and cash equivalents	1,983,486	1,363,516
Trade and other receivables	620,806	644,945
Total Current Assets	2,604,292	2,008,462
Non-current Assets		
Property, plant and equipment	7,971,054	8,543,006
Closing WIP Balance	154,032	-
Total Non-current Assets	8,125,086	8,543,006
TOTAL ASSETS	10,729,378	10,551,467
Current Liabilities		
Trade and other payables	1,768,769	600,819
Borrowings	151,061	151,061
Other Liabilities	9,795	-
Total Current Liabilities	1,929,625	751,880
Non-current Liabilities		
Borrowings	2,124,178	2,348,939
Other Provisions	6,888,082	6,888,082
Total Non-current Liabilities	6,888,082	6,888,082
TOTAL LIABILITIES	10,941,885	9,988,901
NET COMMUNITY ASSETS	(212,508)	562,566
Community Equity		
Capital	(2,242,321)	(847,277)
Asset revaluation surplus	46,327	46,327
Capital reserve balances	1,124,563	1,099,563
Unspent loan and depreciation cash held	-	-
Retained surplus (deficiency)	858,923	263,953
TOTAL COMMUNITY EQUITY	(212,508)	562,566

Whitsunday Waste Facilities

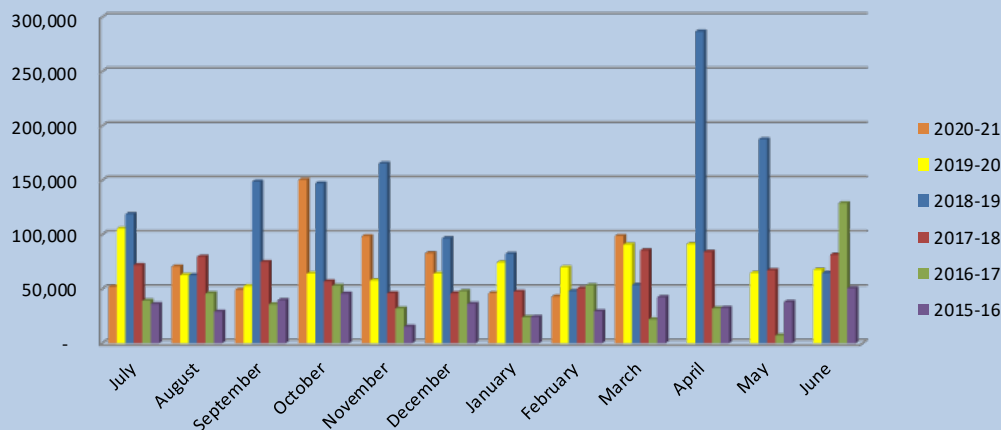
Performance Data for the year to date to 31st March 2021



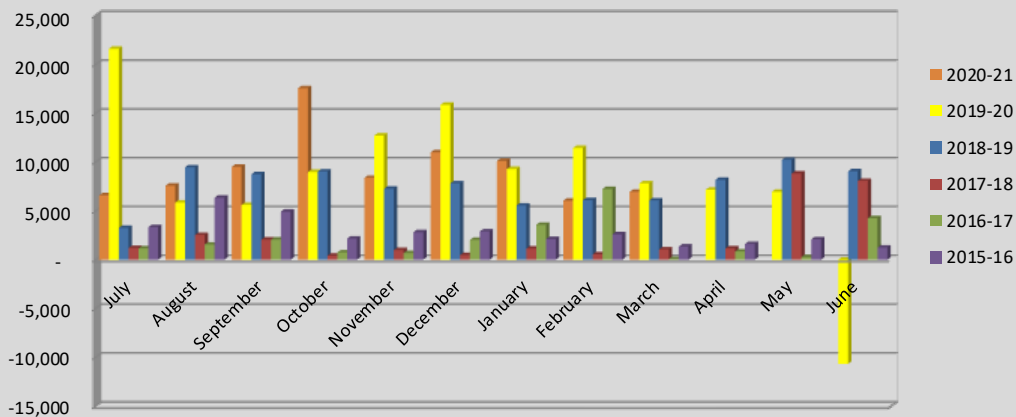
Kelsey Creek Landfill - Revenue



Bowen Landfill - Revenue



Cannonvale Transfer Station- Revenue



Attachment 2 - Capital Delivery Financial up to March 2021

Capital Projects as at 31st March 2021		5583594.00	2205553.82	3378040.18
Grouping	Description	Total Annual Current Budget	Actuals to Date	Remaining Budget \$
Waste	Leachate and storm water management - Bowen	480000.00	4970.26	475029.74
Waste	Leachate and storm water management - Kelsey Creek	480002.00	130269.72	349732.28
Waste Total		960002.00	135239.98	824762.02
Water & Waste Water	BWTP Low Lift Pump Renewals - CW 1920	356651.00	-18349.61	375000.61
Water & Waste Water	Cannonvale PS1 Renewal - CW 18-19	802586.00	734732.16	67853.84
Water & Waste Water	Cannonvale Water Network Augmentation - Stage 1A New	641759.00	599378.30	42380.70
Water & Waste Water	Emergent works - Sewer	220500.00	0.00	220500.00
Water & Waste Water	Emergent Works - Water	157009.00	69202.54	87806.46
Water & Waste Water	Insurance - Bowen Reservoir- CW 1920	553874.00	944.51	552929.49
Water & Waste Water	Insurance - Collinsville Reservoir - CW 1920	2000.00	0.00	2000.00
Water & Waste Water	LGSP Grant Project - Delivery of CWNA Stage 1B, Coyne Road	812545.00	587096.01	225448.99
Water & Waste Water	Sewer Pump Capacity Upgrades - Combined Rising Main - CW 18-19	469301.00	86975.16	382325.84
Water & Waste Water	Thomas St Drain Sewer Replacement	57201.00	0.00	57201.00
Water & Waste Water	CVilleResHL_OldInsW&STPlant	550166.00	10334.77	539831.23
Water & Waste Water Total		4623592.00	2070313.84	2553278.16
Grand Total		5583594.00	2205553.82	3378040.18

16. Infrastructure Services

16.4 OPERATIONAL REPORT - ROADS & DRAINAGE - MARCH 2021

AUTHOR: John Gwydir - Executive Manager Roads and Drainage

RESPONSIBLE OFFICER: Adam Hagy - Acting Director Infrastructure Services

OFFICER'S RECOMMENDATION

That Council receive the Roads & Drainage, Mechanical Workshops, and Open Spaces progress report for the month of March 2021.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 12 May 2021.

SUMMARY

This report provides Council with information regarding the performance by Council's Roads & Drainage, Mechanical Workshops, and Open Spaces operational teams over the month of March 2021 and proposed works for April 2021.

PURPOSE

The report is to provide Council with information on Council's performance in relation to services supplied by Council's Roads & Drainage, Mechanical Workshops and Open Spaces operational teams.

BACKGROUND

Previous report regarding Operational performance submitted to Council 24 March 2021 which detailed the month of February 2021 (Resolution 2021/03/24.31).

STATUTORY/COMPLIANCE MATTERS

Local Government Regulations Section 204.

ANALYSIS

The following details the accomplishments for the month of March 2021 and may also include proposed works for April 2021.

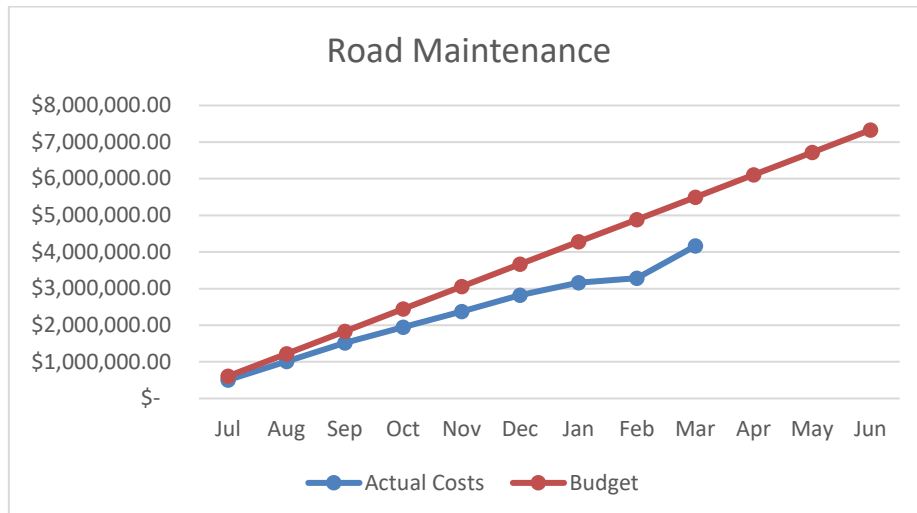
Roads & Drainage Maintenance

General maintenance activities carried out on Council's road network over the course of March were largely routine in nature including road inspections, pothole patching, grading and signage repairs.

The Roads & Drainage Maintenance budget for FY2021 after Q2 review is set at \$7,360,372 spread over the following activity groups respectively: unsealed roads, vegetation, sealed roads, operations, road furniture, management, pathways, training, bridges & structure, kerb & channel.

At the end of March there were 1,565 identified defects on the local road network remaining, with 737 defects being rectified (accomplished) during the month. Table 1 provides specific details of the activities undertaken during the period.

Financial Position:

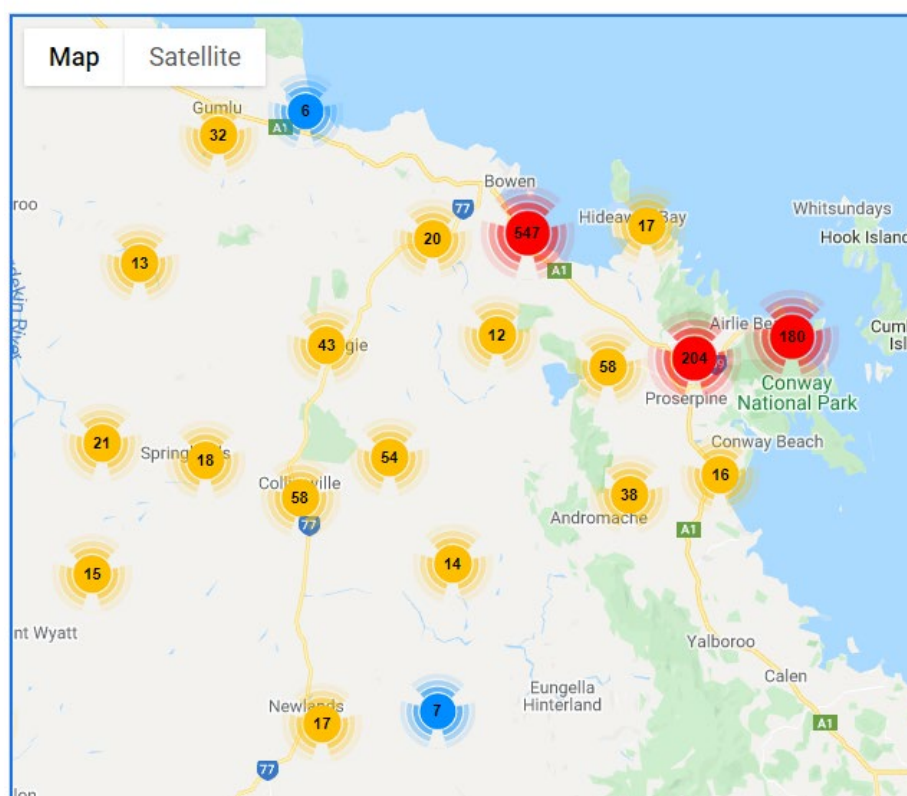


Plot 1: Total expenditure against overall budget for Roads & Drainage Maintenance.

WRC Road Network - Defects

DEFECTS MAP VIEW

Showing 1565 items on map and 0 with no Lat/Long.

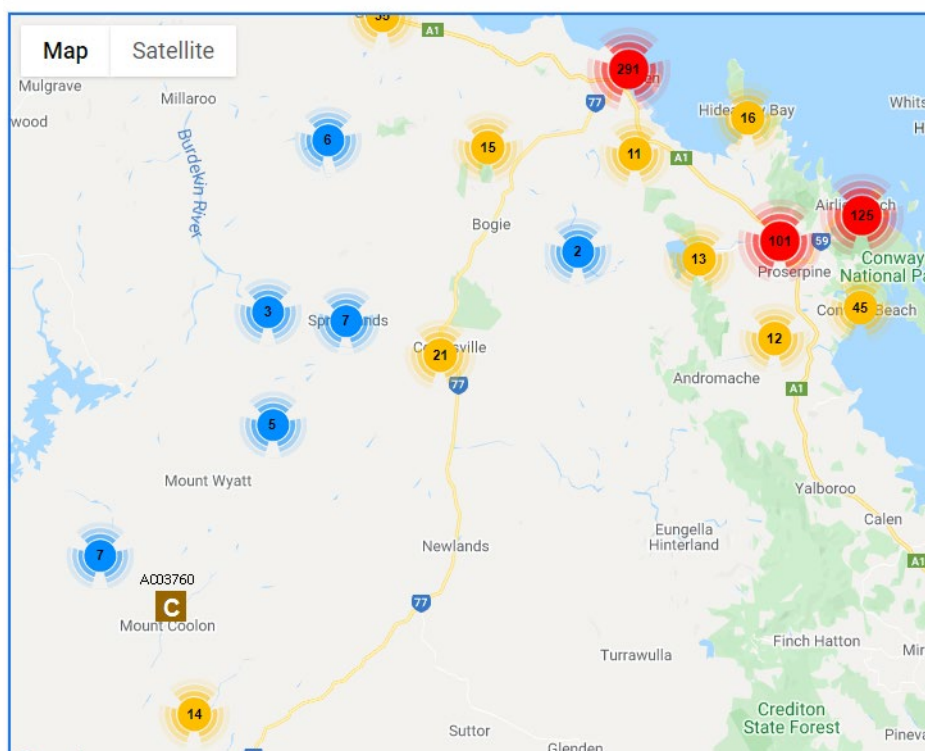


Plot 2: Current known active defects on WRC Road Network

WRC Road Network - Accomplishments - March 2021

ACCOMPLISHMENT MAP VIEW

Showing 730 items on map and 7 with no Lat/Long.



Plot 3: Defects accomplished during month of March 2021.

Notable activities for the period:

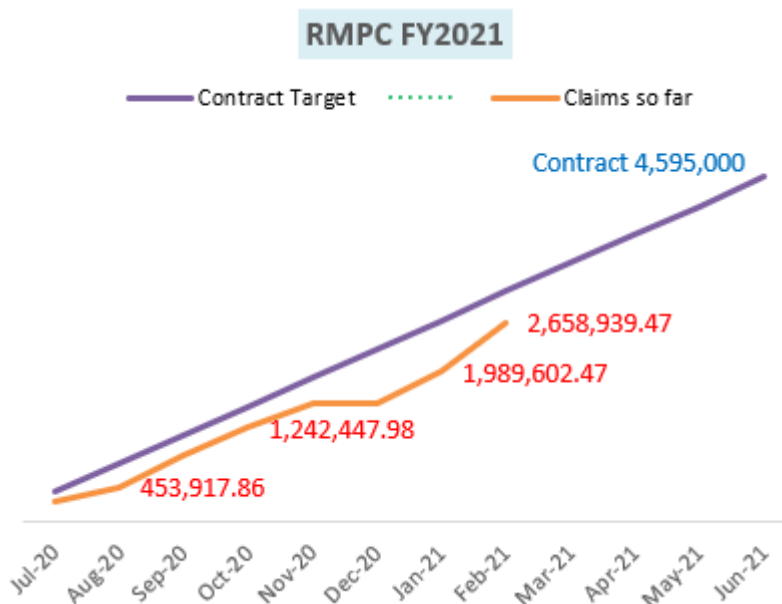
- Roadside Slashing - Regional
- Pothole Patching - Regional
- Maintenance Grading:
 - Tondara Road, Gumlu
 - Glen Isla Road, Proserpine
 - Bates Road, Proserpine
 - Brandy Creek Road, Cannonvale
- Boat Ramp Cleaning - Greys Bay & Yasso Point, Bowen
- Installation wheel stops - Greys Bay, Bowen
- Repairs to scours at approaches to 2 crossings on Brandy Creek Road, Cannonvale
- Widening of 500m of Saltwater Creek Road

Types of Repairs	Number of Instances	Quantity Completed	Unit
Crack Seal Treatment	1		Each
Culvert Clear/Repair	9		Each
Edge Repair	10	18.9	Tonnes
Floodways Clear/Repair	4		Each
Footpath Maintenance	37		Each
Guide Markers Repair/Replace	52		Each
Heavy Formation Grading	22	29.8	Km
Herbicide Spraying	57	10708	Litres
Kerb & Channel Maintenance	5	107	Metres
Line Marking	6		Each
Medium Formation Grading	13	30.4	Km
Mowing	55	122232	m2
Other Formation Work	3		Each
Pavement Repairs	15	639	m2
Pothole Patching	181	51.4	Tonnes
Roadside Object Removal	7		Each
Scour Repairs	50		Each
Shoulder Grading	19	141	Km.Side
Signs Repair/Replace	98		Each
Surface Correction	8	2	Tonnes
Surface Drains Clear/Repair	18		Each
Surface Sweeping	2		Each
Tractor Slashing	55	89.3	ha
Vegetation Clearing	10		Each
Grand Total	737		

Table 1: Summary of road defects accomplished during March 2021.

Road Maintenance Performance Contract (RMPC) with TMR

Council continues to undertake routine maintenance on the National & State Highways within the Whitsunday Region as well as two (2) roads in a neighbouring region. These works have a total contract value for the 2020-2021 FY of \$4,595,000.

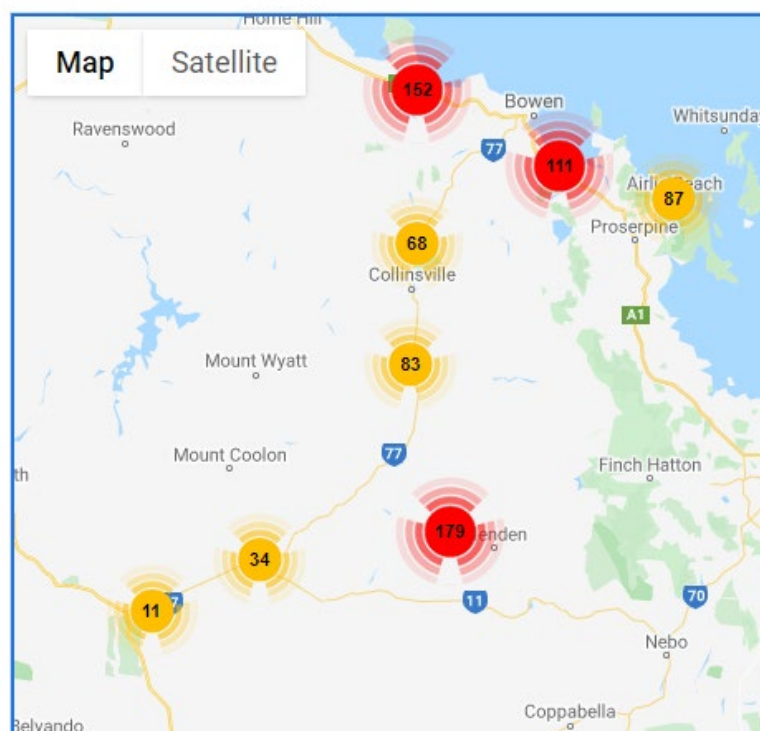


Plot 4: Year to date claimed value against total contract value for regional RMPC

There are currently 1927 outstanding defects on the network with 398 defects being rectified (accomplished) during the month of March 2021.

DEFECTS MAP VIEW

Showing 725 items on map and 11 with no Lat/Long.

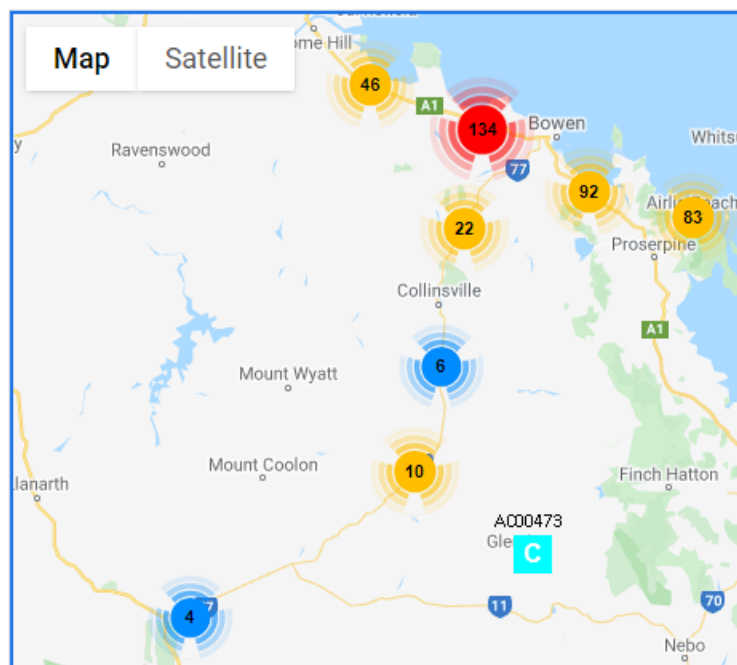


Plot 5: Current RMPC Defects on network as of March 2021.

RMPC Road Network - Accomplishments - March 2021

ACCOMPLISHMENT MAP VIEW

Showing 398 items on map and 53 with no Lat/Long.



Plot 6: RMPC Defects accomplished during month of March 2021.

Customer Request Management

Throughout the month of March, Roads & Drainage received 142 requests for assistance. Of these 140 (85%) were actioned within Council's nominated service standards.

Area	New	Closed	C/F Open	Within Target	%	Outside Target	%
Call Back - Roads & Drainage	4	2	2	2	50%	2	50%
Upgrades to Roads & Drainage	4	3	1	4	100%	0	0%
General - Roads & Drainage	63	43	20	59	94%	4	6%
Routine Roads & Drainage	69	58	11	63	91%	6	9%
Urgent Roads & Drainage	6	5	1	3	50%	3	50%

Overall Total	146	111	35	131	90%	15	10%
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Mechanical Workshops Activity Report

Routine (scheduled services)

- Scheduled and routine servicing of plant and fleet vehicles.
- Small plant repairs as requested by stores and work teams.
- General repairs to plant as requested and prioritised.
- Plant inspections on hired and contractor's machinery as requested.

Servicing, repairs, and breakdowns for March 2021 grouped by both vehicle type and nature of workshop activity:

Plant Type	Preventative Maintenance	Reactive Maintenance	Grand Total
Backhoe	1	3	4
Excavator	1	0	1
Grader	1	2	3
Light Vehicle	14	26	40
Loader	1	1	2
Mower	15	27	42
Roller	0	2	2
Skid Steer	0	1	1
Small Plant	1	1	2
Spray Unit	0	5	5
Street Sweeper	1	2	3
Tractor / Slasher	4	9	13
Trailer	5	5	10
Truck	8	39	47
Grand Total	52	123	175

Open Spaces Maintenance

Open Spaces Statistics

Parks & Gardens Operations					
Service	2020/2021	Jan	Feb	Mar	Trend
Public Parks Available as advertised	100%	100%	100%	100%	-
Park CRMs - Received	701	47	56	68	↑
Parks CRMs Closed	366	47	52	65	↑
Mowing Hours	10,428.6	1680.5	1933.5	1943	↑
Landscaping Hours	12,112	792	1264.5	1353.5	↑
Work Tickets Issued	107	15	30	11	↓
Work Tickets Completed	85	18	14	4	↓
Contracts Audited	2	0	0	2	↑
Scheduled Inspections Completed – Parks, Playground & Exercise Equipment	376	44	44	44	-
Cemeteries - Burials	41	3	5	8	↑
Cemeteries – Placement of Ashes	8	1	2	3	↑

March 2021

- Proserpine Crew completed landscaping at the Chapman Street Carpark;
- Safe Mower Operations Certificates obtained by all operators; and
- Installation of Plaque at the Whitsunday Bottle Tree - “The Hugging Tree”.



Safe Mower Operations - Bowen



Competency Certificates Safe Mower Operations Proserpine



*Competency Certificates Safe Mower Operations
Cannonvale, Airlie Beach*



STRATEGIC IMPACTS

Alignment to Corporate Plan

Outcome 3.4 - Our infrastructure supports our region's current and future needs

Strategy 3.4.1 - Develop and maintain effective roads and drainage infrastructure, networks and facilities

Outcome 4.3 - Our agriculture sector is sustainable and enjoys access to strong export and development opportunities

Strategy 4.3.2 - Maintain road infrastructure that meets the needs of primary producers and industry stakeholders.

CONSULTATION

Adam Hagy - Acting Director Infrastructure Services

Mark Callaghan - Manager Parks & Gardens

Robert Winley - Manager Fleet Services

DISCLOSURE OF OFFICER'S INTERESTS

No officer involved in the preparation of this report has an interest to declare in accordance with the provisions of the Local Government Act 2009 or the Staff Code of Conduct.

CONCLUSION

Officer's recommendation is that the report be received, and its contents noted.

ATTACHMENTS

N/A

17. Matters of Importance

No agenda items for this section.