



Notice of Meeting

Notice is hereby given that the **Ordinary Meeting** of the **Whitsunday Regional Council** will be held at the Council Chambers 83-85 Main Street, Proserpine on **Tuesday 10 November 2020** commencing at **9:00 a.m.** and the Agenda is attached.

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

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, 83-85 Main Street, Proserpine
on Tuesday 10 November 2020 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 Staff Presentation

Agenda of the Ordinary Meeting to be held at
the Council Chambers, 83-85 Main Street, Proserpine
on Tuesday 10 November 2020 commencing at **9:00am**

1. APOLOGIES	5
2. CONDOLENCES	6
2.1 Condolences Report	6
3. DECLARATIONS OF INTEREST	8
3.1 Declarations of interest	8
4.1 MAYORAL MINUTE	9
4.2 MAYORAL UPDATE	10
5. CONFIRMATION OF PREVIOUS MINUTES	11
5.1 Confirmation of Previous Minutes Report	11
6. BUSINESS ARISING	15
7. DEPUTATIONS	16
8. PETITIONS	17
9. NOTICE OF MOTION	18
10. QUESTIONS ON NOTICE	19
11. QUESTIONS FROM PUBLIC GALLERY	20
12. OFFICE OF THE MAYOR AND CEO	21
13. CORPORATE SERVICES	22
14. DEVELOPMENT SERVICES	23
14.1 20170864 - Development Permit for Other Change Application - Material Change Of Use (Food & Drink Outlet (Temporary Use), Tourist Park & Hotel - 6 Pandanus Drive Cannonvale - CJHA Pty Ltd As Tte	23
14.2 Planning Scheme Major Amendment Package - Landscaping Work Definition and Operational Works Table of Assessment	56
14.3 Funding Opportunity - Remote Airstrip Upgrade Program Round 8	59
14.4 Development Services Monthly Report - October 2020	63
15. COMMUNITY SERVICES	77
15.1 Donation on Council Fees - September/October 2020	77
15.2 Special Projects Grant Applications - Round 1 - 10 February to 16 October 2020	86
15.3 2020 Sport & Recreation Club Grant - Bowen Swimming Club	127
15.4 Sport & Recreation Club Grants - October 2020	131
15.5 Financing and Funding Climate Change Adaptation Report - Ian Edwards	141
15.6 Multi-Criteria Analysis and Cost Benefit Analysis for Climate Change Planning	174
15.7 Community Services - Monthly Report - October 2020	344
16. INFRASTRUCTURE SERVICES	366

17. MATTERS OF IMPORTANCE.....	367
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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: Rod Ferguson - Chief Executive Officer

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 10 November 2020.

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. Declarations of Interest
3.1 DECLARATIONS OF INTEREST

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 PREVIOUS MINUTES REPORT

AUTHOR: Melanie Douglas - Governance and Councillor Support Officer

RESPONSIBLE OFFICER: Rod Ferguson - Chief Executive Officer

RECOMMENDATION

That Council confirms the Minutes of the Ordinary Meeting held on 28 October, 2020.

The following report has been submitted for inclusion into Council's Ordinary Council Meeting to be held 10 November, 2020.

SUMMARY

Council is required to confirm the minutes of the Ordinary Council Meeting Minutes held on 28 October, 2020.

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 28 October, 2020 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 28 October, 2020 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 28 October, 2020, the following interests were declared and recorded in the minutes:

Councillor	MPI/COI	Report No.	Particulars of the interest
No declarations were made for the meeting of 28 th October 2020			

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

recorded in the minutes of the meeting. At the Ordinary Meeting held on 28 October, 2020, the following orders were made:

Councillor	Order Made
No orders were made for the meeting of 28 th October 2020	

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 28 October 2020

If Council is satisfied that the unconfirmed minutes are an accurate representation of what occurred at the meeting held on 28 October, 2020 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 28 October 2020 with amendments

If Council is not satisfied that the unconfirmed minutes are an accurate representation of what occurred at the meeting held on 28 October, 2020 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	Subject Title and Reference 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' for a period of 60 days, to 8 July 2020.	On hold pending the outcome of the intersection funding and discussion with DTMR - Cnr Galbraith Park Rd 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 the application fee
26/08/2020	Echo Park Speedway & Sporting Association - Subleasing - 60 Corduroy Road, Collinsville 2020/08/26.04	That the item lay on the table pending further advice on the ability of Council to individually lease agistment properties to former lessees and the existing agistment arrangements remain in place until the matter is resolved.	Not Resolved - to be further discussed on 14/10/2020 - Seeking to confirm a resolution.
23/09/2020	Echo Park Speedway & Sporting Association - Subleasing - 60 Corduroy Road, Collinsville 2020/09/23.08	That the item lie on the table pending further information from the Echo Park Speedway and Sporting Association Inc. in regards to their membership, meeting arrangements and financial auditing arrangements as required by the incorporations legislation.	Not Resolved - to be covered in the discussion on the 14/10/2020.

14/10/2020	Lease - Mirthill Pty Ltd - Part of Land Lot 237 Bowen Airport 2020/10/14.10	That the item lie on the table pending the Chief Executive Officer seeking advice from the Department of Local Government Racing and Multicultural Affairs and providing a report brought back to Council with any options regarding open tender of the land.	Not Resolved - pending further information
28/10/2020	20200377 - Development Application For Development Permit For Non-Resident Workforce Accommodation (192 Rooms) – Mill, Aitken & Barclay Street Mt Coolon – Capricorn Property Developments Pty Ltd 2020/10/28.23	Pending further clarification regarding possible conditions on telecommunications, heavy and small vehicle parking and associated impacts on amenity issues and a report be brought back to the next Ordinary Meeting.	Not Resolved - pending further discussion

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 28 October, 2020 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 28 October, 2020

Attached separately

6. Business Arising

No agenda items for this section.

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

Excerpt of Council's Standing Orders:

1. Questions from the Public Gallery must be submitted in writing to Council prior to the Council Meeting.
2. The time allocated shall not exceed fifteen (15) minutes for each speaker (and no more than three (3) speakers shall be permitted to speak at any one (1) meeting).
3. If any address or comment is irrelevant, offensive, or unduly long, the Chairperson may require the person to cease making the submission or comment.
4. Any person addressing the Council shall stand, state their name and address, act and speak with decorum and frame any remarks in respectful and courteous language.

12. Office of the Mayor and CEO

No agenda items for this section.

13. Corporate Services

No agenda items for this section.

14. Development Services

14.1 20170864 - DEVELOPMENT PERMIT FOR OTHER CHANGE APPLICATION - MATERIAL CHANGE OF USE (FOOD & DRINK OUTLET (TEMPORARY USE), TOURIST PARK & HOTEL - 6 PANDANUS DRIVE CANNONVALE - CJHA PTY LTD AS TTE

AUTHOR: Matthew Twomey - Senior Development Assessment Officer

RESPONSIBLE OFFICER: Neil McGaffin - Director Development Services

OFFICER'S RECOMMENDATION

That Council approve the application for Other Change Application for Material Change of Use - Food & Drink Outlet (temporary use), Tourist Park & Hotel, made by CJHA Pty Ltd As TTE, on L: 104 SP: 208361 and located at 6 Pandanus Drive Cannonvale, subject to the conditions outlined in Attachment 1.

The following report has been submitted for inclusion into Council's Ordinary Council Meeting to be held on 10 November 2020.

SUMMARY

Council is in receipt of a change application to a development permit. The application seeks to make amendments to the approved development by removing the function facility and short-term accommodation and replacing it with a revised hotel layout and tourist park. A temporary food and drink outlet is proposed for the duration of construction. The change application is recommended for approval, subject to reasonable and relevant conditions.

PURPOSE

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

BACKGROUND

The original development application was decided by Council on 14 November 2018.

STATUTORY/COMPLIANCE MATTERS

Planning Act 2016

ANALYSIS

Council has received the following Development Application, which has been assessed against the provisions of the relevant legislation as reported below.

1. Application Summary

Proposal:	Other Change Application for Material Change of Use - Food & Drink Outlet (temporary use), Tourist Park & Hotel
Landowner	CJHA Pty Ltd As TTE
Property Address:	6 Pandanus Drive, Cannonvale
Property Description:	L: 104 SP: 208361
Area of Site:	3.632ha

Planning Scheme Zone:	Low-medium density residential.
Level of assessment	Impact assessable
Overlays:	Acid sulphate soils overlay code Bushfire hazard overlay code Coastal protection overlay code Environmental significance overlay code Infrastructure overlay code Landslide hazard overlay code
Existing Use:	Vacant land
Existing Approvals:	Development Permit for Reconfiguration of a Lot - One (1) into Two (2) Lots and Access Easement; and a Development Permit for a Material Change of Use - Tourist Park
Public Notification:	3 September 2020 – 23 September 2020
Submissions received:	One
State referrals:	State transport infrastructure – proximity to state controlled road network State transport corridors and future State transport corridors – thresholds
Infrastructure charges:	\$Nil.

2. Site Details

2.1. Location

The subject site is located at 6 Pandanus Drive, Cannonvale and forms an irregular shaped allotment having a total site area of 3.632 hectares

2.2. Zoning

The subject site is zoned low-medium density residential under the *Whitsunday Regional Council Planning Scheme 2017*.

2.3. Site description

No significant vegetation is located on the site which is currently vacant, the previous buildings on the land having been demolished approximately 20 years ago. The site has a gentle slope from north to south with no major drainage features.

2.4. Access

The site achieves access from Pandanus Drive with an approximate 70 metre frontage.

2.5. Surrounding uses

The site is located at the interface between commercial and residential uses. In the immediate vicinity of the subject site the development is generally low to medium rise and features mainly commercial development.

More specifically, the surrounding area is described as follows:

- To the east – Commercial uses and low density residential uses in Stewart Drive;

- To the west – Medium density residential uses, commercial use (Bunnings Warehouse), Coral Esplanade (unconstructed) and Pandanus Drive;
- To the north – Low-medium density residential uses in Beth Court; and
- To the south – Commercial uses (Day Care Centre) front Shute Harbour Road.

3. Proposal Details

The approved development consists of a Hotel and Function Facility and Short-term Accommodation of 145 units. As a result of the change application, the development now proposes three (3) development aspects to be delivered over three (3) stages, as follows:

- Food and Drink Outlet (temporary Use) for a mobile food vehicle;
- Tourist Park – being Stage 2 of the Reefo's Resort Tourist Park – Stage 1 approved under DA/20191280;
- Hotel – Royal Cannonvale Hotel.

The Food and Drink Outlet (temporary use) aspect of the development is to allow for the temporary establishment of a mobile food vehicle to operate from the site for a limited period of two (2) years during the construction of the Reefo's Resort and Royal Cannonvale Hotel development over the whole of the site.

The Tourist Park will comprise the following elements:

- twenty-four (24) x 1-bedroom cabins;
- one (1) x 3-bedroom cabin;
- reception and housekeeping/laundry facilities;
- seven (7) short-term car parks adjacent to the reception building for guest check-in;
- twelve (12) visitor car parking spaces located adjacent the entrance driveway;
- direct access to the communal open space facilities and swimming pool constructed in Reefo's Resort Stage 1 (Council Ref: 20191280);
- direct access and use of the Royal Cannonvale Hotel's dining, communal and entertainment facilities, swimming pool and outdoor recreational facilities; and
- ample areas of landscaped communal open space.

The Hotel will comprise a split-level building fronting Pandanus Drive and includes the following public/guest facilities:

- bar and bistro;
- outdoor dining;
- designated smoking areas (DOSAs);
- TAB;
- gaming room;
- children's play room;
- beer garden and swimming pool which includes a 20-metre-long lap pool within;
- separate room on the first level for private parties;

- two car parking areas with direct access to the hotel and comprising a total of 73 spaces with four (4) dedicated set down spaces; and
- access for service vehicles and loading/unloading at the rear of the hotel

4. Planning Assessment

The application has been assessed against the relevant provisions of the *Planning Act, 2016* and the *Whitsunday Regional Council Planning Scheme, 2017*. The proposal is considered to be generally in accordance with the Planning Scheme and is recommended for approval in accordance with the drawings and documents submitted, subject to reasonable and relevant conditions (Attachment 1).

4.1. State Assessment and Referral Agency (SARA)

The Application was referred to the following Agencies:

The Application was referred to the State Assessment Referral Agency (SARA) for its proximity to a state-controlled road and exceeding the threshold for traffic on a state-controlled road. SARA has not elected to impose conditions within their response included as Attachment 3 to this report.

4.2. State Planning Policy – July 2017

The Whitsunday Regional Council Planning Scheme, 2017 has been assessed by the State government to adequately reflect state interests included in the State Planning Policy 2017.

State Interest – Environment and Heritage

The site has been historically cleared of all of the existing vegetation and developed for accommodation purposes. A pocket of essential habitat/wildlife habitat forms part of the development site. The proposed development site is located in the southern and eastern portion of the site well removed from the mapped essential/wildlife habitat.

State Interest – Safety and Resilience to Hazards

A small portion of the premises is identified as being affected by medium storm tide inundation and being erosion prone. This area is approximately 300 metres from the proposed development area. Any further development on the site will be required to avoid these hazards.

4.3. Mackay Isaac and Whitsunday Regional Plan – February 2012

The Mackay, Isaac and Whitsunday Regional Plan was established to provide the vision and direction for the region to 2031. The plan provides certainty about where the region is heading in the future and provides the framework to respond to the challenges and opportunities which may arise.

Strategic directions – Sustainability, Climate Change and Natural Hazards

The proposed development is considered to appropriately respond to all identified hazards.

Strategic directions – Environment

The proposed site is located within the urban area and has been historically cleared. The development will be set back from the adjoining coastal environment and will have minimal impact on the region's environmental values.

Strategic directions – Regional Landscapes

Not applicable.

Strategic directions – Natural Resource Management

Not Applicable.

Strategic directions – Strong Communities

The region is made up of many local communities, each with its own unique character and identity. The proposal involves consolidating and improving the region's built environment by offering a mixed land use which will significantly improve the liveability of the region.

Strategic direction – Strong Economy

The region has a strong economic base, underpinned by agriculture, tourism and resource activities. The proposal aims to service the region's strong tourism industry by attracting and accommodating the current and future needs of the industry sector. The proposal will also offer a diverse range of employment opportunities enabling employment related development to occur.

Strategic direction – Managing Growth

Providing a more compact urban settlement pattern focusing on existing towns and cities will provide better levels of accessibility, and cost-effective provision of infrastructure and services. The proposal is considered to be an appropriate land-use response to the region's growth in both population and tourism.

Strategic direction – Urban Form

The built form is required to respond to the region's climate with tropical design principles incorporated into development at all stages of the planning and construction cycle. These principles assist in maintaining and enhancing the character and heritage of the region. The applicant states the proposed development will comprise new modern architecture, building materials and finishes, which presents a positive and visually attractive building complementing the existing character and amenity of the locality. Council officers consider the development to improve the localities mixed urban form which currently comprises a mix of commercial, large retail and unit developments.

Strategic direction – Infrastructure and Servicing

The proposal has demonstrated via submission of detailed engineering reports that the current infrastructure in Cannonvale is suitable to meet the demand placed by the proposal.

Strategic direction – Transport

The applicant has provided a Traffic Impact Assessment demonstrating the suitability of the development in the context of the regions transport network.

4.4. Whitsunday Regional Council Planning Scheme, 2017

4.4.1. Strategic Framework

Liveable communities and housing

The proposal supports the settlement pattern of the region and the hierarchy of centres. The proposal involves the consolidation of land located in close proximity to local restaurants, shopping uses and Cannonvale Beach. The development is located in a local activity centre, which is intended to complement, but not to compete with, the role and function of higher order activity centres. Local centres are developed as well-designed, safe and visually attractive centres, predominantly in a low-rise building format, where significant off-site impacts are avoided. The proposal is considered to offer a low-medium built format which will complement but not compete with larger activity centres within the region.

Economic growth

The proposal is considered to add to the economic resilience, wealth creating and employment generating capacities of the region's tourism and entertainment sector. The proposal will provide a level of service to short term visitors as well as permanent residents which is reasonably expected in the locality. The development will be a significant investment in the region's economy and will yield a diverse range of employment opportunities.

Environment and heritage

The proposal has not been identified as significantly impacting upon any cultural heritage or ecological features. Impacts to air, soil and water are to be managed by conditions of approval.

Safety and resilience to hazards

The proposal is not considered to compromise the safety of the regions community, property and infrastructure. The development footprint is located outside of mapped hazards on the property.

Infrastructure

The proposal supports the coordinated, efficient and orderly provision of the region's infrastructure.

4.4.2. Overlay Codes

Acid sulphate soils overlay code

The development site is identified as being subject to acid sulphate soils. The applicant has provided a geotechnical investigation of the site which states there is no requirement for acid sulphate soil management during construction.

Bushfire hazard overlay code

The development site is identified as being subject to bushfire hazard. The subject site has been cleared as the result of historical development which is considered to mitigate the bushfire risk onsite.

Coastal protection overlay code

The development site is identified as being subject to storm tide inundation. The development footprint for the proposal is removed from the portion of the site and therefore is not considered at risk from storm tide inundation.

Environmental significance overlay code

The subject site is identified as containing areas of environmental significance. The site has been cleared as the result of historical development. Furthermore, the development footprint is removed from the coastal boundary of the site.

Infrastructure overlay code

The subject site is identified being within the infrastructure overlay for transport infrastructure. At future building works stage the applicant will be required to ensure the accommodation rooms are designed in accordance with MP4.4 of the Queensland Development Code. It is not considered the proposal will negatively impact on the safety, efficiency and effectiveness of Shute Harbour Road.

Landslide hazard overlay code

The subject site is identified being subject to landslide hazard. The applicant has provided a geotechnical investigation which concludes the risk of landslide on the subject site is very low.

4.4.3. Zone Code

Low Medium Density Residential Zone

The development is considered to achieve the intent of the low-medium density residential zone. The proposal is considered to successfully integrate into the immediate locality as it is in close proximity to Shute Harbour Road and higher order residential and commercial uses and will form a positive addition to the wider locality.

The temporary Food and Drink Outlet is considered to introduce minor impacts to the site with construction occurring onsite for the permanent land uses during this time.

The inclusion of a Tourist Park as proposed by the change application is of a scale compatible with the existing character of the locality and will suitably integrate with adjoining land uses, including the already approved Tourist Park proposed on the balance of the allotment. The proposed built form of the Tourist Park provides a low rise built form of a scale, density and layout consistent with the objectives of the zone code. When viewed from Pandanus Drive the visual impact on the streetscape will be relatively minor, with the Tourist Park located behind the prominent Hotel.

It is acknowledged the Hotel use is included in the Entertainment activities activity group of the Planning Scheme and importantly has previously been approved with the current proposal seeking to provide a reduced built form. Notwithstanding, the low-medium density residential zone describes the zone may provide for other activities which:

- (i) directly support the day to day needs of the immediate residential community;*
- (ii) are a small-scale and low intensity;*
- (iii) are compatible with the local residential character and amenity of the area;*
- (iv) wherever possible, are co-located with similar activities within the zone;*
- (v) are accessible to the population they serve and are located on the major road network rather than local residential streets; and*
- (vi) do not have a significant detrimental impact on the amenity of surrounding residents, having regard to hours of operation, generation of odours, noise, waste products, dust, traffic, electrical interference, lighting and visual impacts;*

The applicant has prepared several specialist reports to support the application which recommend, with the imposition of suitable conditions of approval that the activities can be compatible with the character and amenity of the area when having regard to the environmental health impacts of the uses. The applicant has also outlined the proposal is

generally co-located with uses which are of a higher order and is highly accessible to the population it is intended to serve. These statements are supported by officers having regard to the criteria listed above for permitting other activities in the low-medium density residential zone.

4.4.4. Development Codes

Business Activities Code

The Other Change application proposes to remove the previously proposed Function Facility from the development, whilst proposing an amended built form for the approved Hotel. The amended Hotel plan continue to demonstrate a high-quality design which will lift the character of the locality. An amended Acoustic Assessment has been prepared by Palmer Acoustics which provides recommendations for attenuation measures to ensure that acoustic screening is appropriate to mitigate noise emissions. The recommendations of this report have been accepted by officers to ensure a negligible impact will be experienced by surrounding residential development from the entertainment use of the premises.

Relocatable Home and Tourist Park Code

The addition of a Tourist Park to the approved development is considered to meet the necessary requirements of the use code. The premises is within 1km of the adjoining local centre zone with public transport available within a short walking distance on Shute Harbour Road. The proposed site density is consistent with the nominated maximum of 60 sites per hectare, a total of 82 cabins proposed within the 2.75ha site. Pandanus Drive which provides access to the site is sufficiently sized for the development and a supporting Traffic Impact Assessment has been provided identifying the road network can accommodate the projected increase in traffic.

To protect adjoining residential uses a two (2) metre high solid fence is proposed and no potentially noisy activities or mechanical plant are proposed adjoining a residential boundary. Communal facilities for the Tourist Park will be generally provided by the Hotel. These facilities include a large swimming pool, outdoor recreation area, children's playroom and indoor and outdoor dining facilities. A condition of approval has been imposed that these facilities cannot at any point be restricted from guests of the Tourist Park.

Sufficient on-site visitor car parking spaces are provided as well as seven (7) short-term check-in spaces in front of the reception building. The design and management of the internal vehicle and pedestrian network provides for safe and convenient site movements. Adequate separate and privacy is provided for all proposed cabins, with a minimum of 1.8 metres provided between each site.

Advertising Devices Code

Future advertising will be compliant with the provisions of the code or be subject to an operational works application.

Infrastructure Code

The proposal will be connected to all necessary reticulated infrastructure networks. Conditions of approval have been imposed requiring all works to connect the site to be undertaken to the satisfaction of Council.

Landscaping Code

The applicant has provided a site-specific landscape intent to support the application. Landscaping will be provided along the frontage of Pandanus Drive which will improve the character of the streetscape and form part of a welcoming entrance to the development. Significant landscaping is proposed within the development and between the development site and adjoining premises. It is considered the proposed landscape plans incorporate elements that clearly define the boundaries of the premises.

Transport and Parking Code

The applicant proposes to provide the following car parking:

- Food and Drink Outlet (temporary use) – 4/5 spaces
- Tourist Park – 44 spaces
- Hotel – 77 spaces

It is proposed that the Hotel be constructed prior to the Tourist Park and accordingly, the full complement of car parking spaces for the Hotel must be provided on-site prior to the commencement of the Hotel use. The number of car parking spaces required for the Hotel, prescribed by the Planning Scheme, is 87 spaces. An additional 12 car parking spaces, allocated as visitor car parking spaces for the Tourist Park, will be available to the Hotel – temporarily providing a total of 85 car parking spaces - until such time the Tourist Park use commences. The number of car parking spaces required for the Tourist Park is 31 spaces and a total of 44 spaces is proposed, an excess of 13 spaces.

The total number of car parking spaces required by the Tourist Park and Hotel combined uses is 118 spaces. The development proposes a total of 117 car parking spaces.

The applicant submits when the Tourist Park is completed a cross-utilisation of the site's car parking will occur. Applying a discount of 30% of the Hotel car parking requirement would reduce the car parking demand for the overall combined development to 92 car parking spaces. A cross utilisation of the site as proposed by the applicant is acceptable.

5. Public Submissions

The development application was placed on public notification between 3 September 2020 and 23 September 2020 in accordance with the relevant provisions of the Planning Act 2016. The Notice of Compliance was received on 24 September 2020. One (1) submission was received during this period of Public Notification.

The submission has been received and summarised in the below table:

Issue	Comment/Condition Number
1. Impact on community by the 25 bungalows forming part of the Tourist Park.	The Planning Scheme provides a Tourist Park may be develop in the low-medium density residential zone provided the impacts on the community are managed. The Planning Scheme does not require need for such a development to be demonstrated. The design of the proposal which orientates the use of the site away from adjoining residential uses in conjunction with appropriate conditions of approval will enable the proposal to operate without an unreasonable impact on the surrounding amenity.
2. Need for the Hotel development	The application maintains the already approved Hotel, however removes the Function Facility. It is important to note the original development application did not attract any submissions against it when it underwent public notification in 2018. As the Hotel use is already approved and has been reduced in scale the matters raised by the submitter are

	not required to be revisited by the applicant.
3. Stormwater Management	Conditions of approval have been imposed requiring stormwater quantity and quality to be constructed and managed in accordance with Council's Development Manual and Stormwater Quality Management Guideline. All stormwater from the site is conditioned to discharge to the lawful point of discharge in Pandanus Drive.
4. Easement K	The proposed driveway has been configured such that it does not restrict a future access location for adjoining Lot 50. Future servicing arrangements for Lot 50 are equally considered not be restricted by the proposed design.

6. Infrastructure Charges

6.1. Adopted Infrastructure Charges Resolution

The following is a breakdown on the Infrastructure Charges for the development:

	Adopted Charge				
Type of Development	Development Category	Demand Unit & Qty	Charge Rate	Adopted Charge	
MCU	Accommodation (short term)	24	\$10,478.40	\$251,481.60	
MCU	Accommodation (short term)	1	\$14,669.75	\$14,669.75	
MCU	Entertainment	1887.8m2	\$209.55 per m2 of GFA	\$395,588.49	
MCU	Commercial (retail)	16.8m2	\$188.60 per m2 of GFA	\$3,168.48	
Total Adopted Charge				\$664,908.32	
	Credit				
Type of Development	Development Category	Demand Unit & Qty	Charge Rate	Discount	Total Credit
MCU	Accommodation (short term)	79	\$10,478.40	100%	\$827,793.60
MCU	Residential – 1 or 2 bedroom dwelling house	1	\$20,956.80	100%	\$20,956.80
MCU	Entertainment	250m2	\$209.55 per m2 of GFA	100%	\$52,387.50
MCU	Commercial (retail)	16.8m2	\$188.60 per m2 of GFA	30%	\$950.54
MCU	Commercial (retail)	16.8m2	\$188.60 per m2 of GFA	27%	\$855.49
Total Credit					\$902,943.93
Total Levied Charge					\$Nil.

Current Amount of Levied Charge	\$Nil.
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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 – There are no payable infrastructure charges.

Risk Management Implications – N/A

Strategic Impacts – N/A

CONSULTATION

Doug Mackay - Manager Development Assessment

Neil McGaffin - Director Development Services

Public Notification 15 business days per Planning Act 2016 requirements

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 application has been assessed against the relevant provisions of the *Planning Act, 2016* and the *Whitsunday Regional Council Planning Scheme, 2017*. The proposal is considered to be generally in accordance with the Planning Scheme and is recommended for approval in accordance with the drawings and documents submitted, subject to reasonable and relevant conditions (Attachment 1).

ATTACHMENTS

Attachment 1 - Conditions of Approval

Attachment 2 - Locality Plan

Attachment 3 - Zoning Plan

Attachment 4 - Proposal Plan

Attachment 5 - State Agency Referral Agency (SARA) Response

Attachment 1 - Conditions of Approval

1.0 ADMINISTRATION

- 1.1 The approved development must be completed and maintained generally in accordance with the approved drawings and documents:

Plan/Document Name	Prepared By	Plan Number	Dated
Proposed Site Plan	Blueprint Architects	DA-1.00 Rev B	26/08/2020
Proposed Site Plan Aspect 02 & 03	Blueprint Architects	DA 1.01 Rev A	04/06/2020
Proposed Site Plan Aspect 02	Blueprint Architects	DA 1.02 Rev A	04/06/2020
Proposed Site Plan Aspect 03	Blueprint Architects	DA 1.03 Rev B	06/08/2020
Proposed Reception Floor Plan Aspect 02	Blueprint Architects	DA 1.04 Rev A	04/06/2020
Proposed Reception Roof Plan Aspect 02	Blueprint Architects	DA 1.05 Rev A	04/06/2020
Proposed 3 Bed Bungalow Aspect 02	Blueprint Architects	DA 1.06 Rev A	04/06/2020
Proposed 1 Bed Bungalow Aspect 02	Blueprint Architects	DA 1.07 Rev A	04/06/2020
Proposed Ground Floor Plan Aspect 03	Blueprint Architects	DA 1.08 Rev B	26/08/2020
Proposed First Floor Plan Aspect 03	Blueprint Architects	DA 1.09 Rev B	26/08/2020
Proposed Roof Plan Aspect 03	Blueprint Architects	DA 1.10 Rev B	26/08/2020
Proposed Ground Floor Area Plan	Blueprint Architects	DA 1.11 Rev B	26/08/2020
Proposed First Floor Area Plan	Blueprint Architects	DA 1.12 Rev B	26/08/2020
Proposed GFA Area Plans	Blueprint Architects	DA 1.13 Rev B	26/08/2020
Proposed Elevations Aspect 02	Blueprint Architects	DA 2.01 Rev A	04/06/2020
Proposed Elevations Aspect 02	Blueprint Architects	DA 2.02 Rev A	04/06/2020
Proposed Elevations Aspect 03	Blueprint Architects	DA 2.03 Rev B	26/08/2020
Proposed Elevations Aspect 03	Blueprint Architects	DA 2.04 Rev B	26/08/2020

Proposed Elevations Reception and Maintenance	Blueprint Architects	DA 2.05 Rev A	04/06/2020
Proposed Dimensioned Car Park Plan	Blueprint Architects	DA1.14 Rev C	30/10/2020
Proposed Dimensioned Car Park Plan	Blueprint Architects	DA1.15 Rev C	30/10/2020
Noise Impact Assessment	Palmer Acoustics	4252 v.4	03/06/2020
Landscape Intent	JFP Consultants	B4239-DA1-LC01.2 [B]	20/05/2020
Engineering Report Revision 2	STP Consultants	STP19-1168	16/07/2020
STP Letter	STP Consultants	STP19-1168	16/07/2020
Geotechnical Investigation	Ground Environments	1702.1160 Rev 1	24/09/2017
Traffic Assessment	Premise	CJH0003-L02-BIJ	02/06/2020

1.2 The applicant is to comply with the Queensland Treasury's conditions as outlined in the Department's correspondence dated 28 August 2020.

1.3 The following further development permits are required prior to commencement of work on site or commencement of the use:

- ☐ Operational Works:
 - Earthworks;
 - Access and Parking;
 - Stormwater drainage;
 - Water Infrastructure;
 - Sewerage Infrastructure; and
 - Erosion Prevention and Sediment Control.
- ☐ Plumbing and Drainage Works;
- ☐ Building Works;

All Operational Works, Plumbing and Drainage Works Development Permits must be obtained prior to the issue of a Building Works Development Permit.

1.4 Where a discrepancy or conflict exists between the written conditions of this approval and the approved plans, the requirements of the written condition(s) will prevail.

1.5 All conditions of this approval must be complied with in full to Council's satisfaction prior to the commencement of the use.

1.6 The applicant shall demonstrate and provide evidence that compliance with all conditions of this development approval and any other subsequent development approvals as a result of this development approval have been complied with at the time of commencement of the use.

1.7 A copy of this decision notice and stamped approved plans/drawings must be retained on site at all times. This decision notice must be read in conjunction with the stamped approved plans to ensure consistency in construction, establishment and maintenance of approved works.

1.8 The development is approved to be carried out in stages, as follows:

- ☐ Stage 1 – Food & Drink Outlet (temporary use)
- ☐ Stage 2 – Hotel/ Tourist Park*

* The Hotel must be operational prior to the commencement of the use of the Tourist Park.

2.0 CLEARING, LANDSCAPING AND FENCING

Stage 1 and 2

- 2.1 Any vegetation removed must be disposed of to the requirements of the Council. Transplanting, chipping or removal from site are the preferred solutions.
- 2.2 All vegetative waste cleared as part of the development of the site is to be either:
- a) stored neatly on site and shredded within sixty (60) days of clearing; or
 - b) removed off the site to an approved disposal location.

Stage 2

- 2.3 Landscaping for the applicable stage is to be provided generally in accordance with the approved landscaping plan B4239-DA1-LC01.2 [B] and must be planted with semi-mature species.
- 2.4 The planting schedule must be in accordance with PSP SC6.4 (Landscaping).
- 2.5 Solid fencing, a minimum of two (2) metres high, is to be erected along the side and rear boundaries of the development prior to the commencement of stage 2. The proposed design and materials are to be submitted to Council with the lodgement of the first operational works application.
- 2.6 Temporary fencing is to be provided to restrict access to the balance of the development site.

3.0 BUILDING

Stage 1 and 2

- 3.1 Ventilation and mechanical plant must be located and designed so that prevailing breezes do not direct undesirable noise and odours towards nearby residential accommodation.

Stage 2

- 3.2 All air-conditioning units are to be screened from view from the street or adjoining properties.
- 3.3 Building and landscaping materials are not to be highly reflective, or likely to create glare, or slippery or otherwise hazardous conditions.
- 3.4 Buildings are to be finished with external building materials and colours to reduce scale and bulk.
- 3.7 Noise attenuation measures are to be implemented in accordance with recommendations contained within the approved Noise Impact Assessment 4252 v.4.

- 3.8 Prior to commencement of the Hotel, the applicant must lodge with Council certification (by an experienced and qualified sound engineer) the noise emissions levels set within the Noise Impact Assessment 4252 4252 v.4 are achieved.

4.0 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

Stage 2

- 4.1 The development, including all buildings, access ways, car parks, and driveways must be designed and managed to incorporate the principles and recommendations of the Crime Prevention through Environmental Design – Guidelines for Queensland. The design and management must include, but not be limited to, the following:
- a) Landscaping of all car parking areas and pedestrian and/or vehicular access ways must be suitable to enhance safety;
 - b) Landscaping should be sufficiently low so as not to block opportunities for surveillance and provide opportunities for concealment or sufficiently high to afford shade and comfort without limiting observation opportunities;
 - c) Pedestrian pathways between buildings and car parks must be generous in proportions with a minimum width of 1.2 metres, well-lit and provide continuous accessible paths of travel.
 - e) Access to parking areas to be via a surveillance entry point;
 - f) Internal and external lighting of toilets must be bright, vandal resistant and where toilets are open after hours, should illuminate in hours of darkness or be sensor/movement sensitive;
 - g) Any automatic teller machines or public telephones which are accessible after hours must be well lit with vandal resistant lighting and suitably positioned so as to permit maximum opportunities for natural surveillance from within the site and by external observers;
 - h) The main entrances/exits must be obvious, well lit, sign-posted, free from obscuring landscaping and signage etc.
 - i) The approaches to all entrances and exits must have adequate visibility to enable patrons to look either in or out, prior to entering or exiting the development;
 - j) Security surveillance cameras must be installed in all areas where the public has general access during all parts of the day, including the car park and pedestrian access ways.

5.0 LIGHTING

Stage 2

- 5.1 The level of illumination, at a distance of 1.5 metres outside any boundary of the site, resulting from direct, reflected, or other incidental light emanating from the site shall not exceed eight lux measured at any level upwards from ground level.
- 5.2 Lighting along, all internal access driveways and parking areas, is to be directed downwards so as to minimise any adverse effects of glare or direct light nuisance on all surrounding allotments, including allotments within, but must achieve a minimum level of illumination consistent with the safety of pedestrians and vehicles.

6.0 EARTHWORKS

Stage 2

- 6.1 All site works must be designed by an experienced and qualified Geotechnical Engineer and undertaken in accordance with the recommendations of the Geotechnical Investigation Report by Ground Environments Pty Ltd dated 24 September 2017.

- 6.2 All cut/fill batter slopes are to be protected and retained in a visually acceptable manner prior to commencement of the use. Any retaining structures must be designed in accordance with the recommendations of the Geotechnical Investigation and Report by Ground Environments dated 24 September 2017 and are stable and will remain so over the long term.
- 6.3 Prior to commencement of any work on site an Operational Works development permit must be obtained in relation to Earthworks. Any application for Operational Works (Earthworks) must be accompanied by engineering design drawings demonstrating compliance with the recommendations of the Geotechnical and Civil site report for the site. All filling is to be placed, trimmed and compacted as a minimum to standards identified in AS 3789. Compaction test results are to be submitted to Council for its records.
- 6.4 Prior to commencement of use on the site, the applicant must lodge with Council, a geotechnical engineer's certification (by an experienced and qualified geotechnical engineer). The certification must be addressed to Council and must certify that the works have been constructed according to the geotechnical engineer's recommendations of the Geotechnical Investigation Report by Ground Environments dated 24 September 2017 and are stable and will remain so over the long term.

7.0 WATER INFRASTRUCTURE

Stage 2

- 7.1 The development must be connected to Council's water network prior to commencement of the use.
- 7.2 The development must be connected to Council's water supply network, using the existing water service connection, prior to commencement of the use.
- 7.3 Flow and pressure testing of the existing Council water supply system must be completed to determine if this development creates the need for additional infrastructure to service the use. If the flow and pressure results indicates a requirement for upgrading this work must be completed by the developer at their full cost. An Operational Works application must be submitted and approved by Council prior to commencement of these works.
- 7.4 A Development Permit for Operational Works (Water Infrastructure) must be obtained prior to commencement of work on site. Any application for Operational Works (Water Infrastructure) must be accompanied by engineering design drawings, and certifications of the design, demonstrating compliance with Council's Development Manual and this Decision Notice.
- 7.5 Prior to commencement of use on the site, the applicant must lodge with Council a civil engineer's design and construction certification (by an experienced and qualified engineer). The certification must be addressed to Council and must certify that all Water Infrastructure works have been designed and constructed according to the conditions of this Decision Notice and Council's Development Manual.

8.0 SEWERAGE INFRASTRUCTURE

Stage 2

- 8.1 The entire development must be connected to Council's sewerage network prior to commencement of the use.
- 8.2 A Development Permit for Operational Works (Sewer Infrastructure) must be obtained prior to commencement of work on site. Any application for Operational Works (Sewer Infrastructure) must be accompanied by engineering design drawings, and certifications of the design, demonstrating compliance with Council's Development Manual (current at the time of development) and this Decision Notice.

- 8.3 All sewerage Infrastructure must be designed and constructed in accordance with Council's Development Manual (current at the time of development), prior to commencement of the use.
- 8.4 Sewerage infrastructure must be constructed to comply with S6 "Sewer Reticulation" of Council's Development Manual, Council's Standard Drawings and Water Services Association of Australia Sewerage Code of Australia. Where a discrepancy or conflict exists between Council's Development Manual and the Sewerage Code, the requirements of Council's Development Manual will prevail.
- 8.5 Prior to commencement of use, the applicant must lodge with Council, a civil engineer's design and construction certification (by an experienced and qualified engineer). The certification must be addressed to Council and must certify that all Sewer Infrastructure works have been designed and constructed according to the conditions of this Decision Notice and Councils Development Manual.

9.0 ACCESS AND PARKING

Stage 1

- 9.1 The external access from the pavement of Pandanus Drive to the property boundary must be constructed to comply with the dimensions, gradients and specifications as indicated on Council's Standard Drawing RS-051 prior to commencement of the use.
- 9.2 Prior to commencement of use on the site, the applicant must lodge with Council, a RPEQ engineer's design and construction certification. The certification must be addressed to Council and must certify that External Access, Internal Access, onsite parking and manoeuvring areas have been designed and constructed according to the conditions of this Decision Notice and achieves compliance with Whitsunday Regional Council Planning Scheme 2017, Council's Development Manual, AS2890 and AS 1428.
- 9.3 Prior to commencement of any work on site an Operational Works development permit must be obtained in relation to Access and Parking which must be accompanied by detailed engineering drawings demonstrating compliance with Council's Development Manual (current at the time of development), Australian Standard AS2890, AS1428 and this Decision Notice.
- 9.4 Any application for Operational Works – Access must be accompanied by a Road Safety Assessment carried out by a Registered Professional Engineer of Queensland (RPEQ) in accordance with the Guide to Traffic Impact Assessment.
- 9.5 A minimum of five (5) car parking spaces must be provided onsite prior to the commencement of stage 1

Stage 2

- 9.1 The external access from the pavement of Pandanus Drive to the property boundary must be constructed to comply with the dimensions, gradients and specifications as indicated on Council's Standard Drawing RS-051 prior to commencement of the use.
- 9.2 Prior to commencement of use on the site, the applicant must lodge with Council, a RPEQ engineer's design and construction certification. The certification must be addressed to Council and must certify that External Access, Internal Access, onsite parking and manoeuvring areas have been designed and constructed according to the conditions of this Decision Notice and achieves compliance with Whitsunday Regional Council Planning Scheme 2017, Council's Development Manual, AS2890 and AS 1428.
- 9.3 Prior to commencement of any work on site an Operational Works development permit must be obtained in relation to Access and Parking which must be accompanied by detailed engineering drawings demonstrating compliance with Council's Development Manual (current at the time of development), Australian Standard AS2890, AS1428 and this Decision Notice.

- 9.4 Any application for Operational Works – Access must be accompanied by a Road Safety Assessment carried out by a Registered Professional Engineer of Queensland (RPEQ) in accordance with the Guide to Traffic Impact Assessment.
- 9.5 A minimum of 117 car parking spaces, one (1) Medium Rigid Vehicle (MRV) space for loading/unloading must be provided on site prior to the commencement of Stage 2, as follows:
- ☐ Hotel – 73 car parking spaces; and 1 MRV space
 - ☐ Tourist Park – 44 car parking spaces

10.0 STORMWATER AND FLOODING

- 10.1 A Development Permit for Operational Works (Stormwater) must be obtained prior to commencement of work on site and must be accompanied by engineering design drawings, including calculations and certifications of the design, demonstrating compliance with Queensland Urban Drainage Manual (current at the time of development), Council's Development Manual and this Decision Notice.
- 10.2 The developed flows from the land must be drained to a lawful point of discharge prior to commencement of the use.
- 10.3 The applicant shall submit, with the Operational Works application, a Stormwater Quality Management Plan (SQMP) that:
- (a) is prepared in accordance with the recommendations and requirements outlined in the Whitsunday Regional Council Stormwater Quality Guide; and
 - (b) demonstrates how the proposed development will reduce any water quality impact from the proposed development; and
 - (c) includes the information outlined in Table 5 of the Whitsunday Regional Council Stormwater Quality Guide; and
 - (d) includes all the stormwater models and calculations used in the creation of the SQMP; and
 - (e) complies with Council's Development Manual (current version at the time of development); and
 - (f) includes a suitably qualified person certification (see Section 1.4 of the Whitsunday Regional Council Stormwater Quality Guide).
- 10.4 The Stormwater Quality Management Plan shall include a site plan showing the location, type, dimensions and engineered drawings for all proposed stormwater quality devices. The Plan shall be to a suitable scale and identify the distances to site boundaries from the constructed stormwater quality devices. The Plan shall confirm all stormwater quality devices have been located within the development property boundaries.
- 10.5 Prior to commencement of use on the site, the stormwater quality devices and supporting infrastructure shall be inspected by the applicants' engineer and Council. Should any stormwater quality devices or supporting infrastructure not be in an acceptable condition, the defects shall be rectified by the applicant, at the applicant's cost.
- 10.6 All stormwater quality devices installed under the approval shall be commissioned by a suitably qualified person and a certificate supplied to Council prior to their use. This Commissioning Certificate is used to initiate the required servicing period in accordance with the manufactures requirements and to advise Council the system is ready to accept stormwater.

- 10.7 Prior to commencement of use on the site, the applicant must lodge with Council, a civil engineer's design and construction certification (by an experienced and qualified engineer). The certification must be addressed to Council and must certify that the works have been constructed in accordance with the requirements of Queensland Urban Drainage Manual, Councils Development Manual and this Decision Notice and will not cause adverse effects to adjoining or downstream properties or infrastructure.

11.0 ELECTRICITY AND TELECOMMUNICATIONS

- 11.1 Provide electricity and telecommunications connection to the proposed development to the requirements of the relevant authority. The application must submit to Council, either:
- (a) a certificate of supply demonstrating that existing low-voltage electricity supply is available to the newly created development; or
 - (b) a certificate of supply that the applicant has entered into an agreement with the authorized electricity supplier, Ergon, to provide electricity services to the newly created development, payment has been received and the connection will be completed at a date in the future.

If low-voltage electricity supply is unavailable to the newly created development, then the applicant must provide a certificate of supply of the proposed electricity connection date to all future property owners prior to entering into a contract of sale for the newly created development prior to the commencement of the use.

12.0 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

- 12.1 A Development Permit for Operational Works (Erosion Prevention and Sediment Control) must be obtained prior to commencement of work on site. Prior to commencement of any work on the site, the applicant must submit to Council for approval, a site-based Erosion Prevention and Sediment Control Plan for the site
- 12.2 The plan must be prepared in accordance with Council's Development Manual (current at the time of the development), and the Best Practice Erosion & Sediment Control – November 2008 (IECA White Book).
- 12.3 The strategy of the plan must be implemented and maintained for the duration of the operational and building works, and until exposed soil areas are permanently stabilised (e.g. turfed, concreted).
- 12.4 Discharges of water pollutants, wastewater or stormwater from the site must not cause measurable levels of water pollutants in the receiving waters to fall outside the acceptable ranges specified in the 'Australian Water Quality Guidelines for Fresh and Marine Waters', ANZECC 2000.
- 12.5 No visible emissions of dust must occur beyond the boundaries of the site during earthworks and construction activities on the site. If, at any time during the earthworks and construction activities the dust emissions exceed the levels specified above, all dust generating activities must cease until the corrective actions have been implemented to reduce dust emissions to acceptable levels or wind conditions are such that acceptable levels are achieved.
- 12.6 During the transportation of soil and other fill/excavated material:
- a) All trucks hauling soil, or fill/excavated material must have their loads secure and covered;
 - b) Any spillage that falls from the trucks or their wheels must be collected and removed from the site and streets along which the trucks travel, on a daily basis; and

- c) Prior to vehicles existing the site, measures must be taken to remove soil from the wheels of the vehicles to prevent soil and mud being deposited on public roads.

13.0 ENVIRONMENTAL HEALTH

- 13.1 The operation of swimming pools must comply with Queensland Health's Swimming and Spa Pool Water Quality and Operational Guidelines (2004).
- 13.2 Application must be made to Council's Environmental Health Branch to establish and conduct a food business in accordance with the requirements of the *Food Act 2006*.
- 13.3 Premises intended to be used for the storage, preparation, handling, packing and/or service of food must comply with the requirements of the *Food Act 2006* and the Food Standards Code.
- 13.4 The proprietor must apply for and hold plan approval prior to commencing fit out of any area intended for the storage, preparation handling, packing and/or service of food.
- 13.5 The proprietor must hold a current Food Licence with respect to the food handling activities conducted at the premises, prior to the commencement of use.
- 13.6 A trade waste approval must be obtained from Council's Environmental Health Service Department prior to the discharge from the premises of any trade waste to Council's wastewater system. All discharges must be in accordance with Council's wastewater system admission limits.
- 13.7 In the event the business/operator receives a noise complaint the following procedure must be enacted:
 - (a) The business/operator shall record the following details of the complaint:
 - (i) Contact details of the complainant;
 - (ii) Time and date of the complaint;
 - (iii) Details and nature of the complaint;
 - (iv) The method which the complaint was lodged; and
 - (v) The action taken by the responsible person in relation to the complaint.
 - (b) If the issue cannot be resolved in house between the business/operator and the complainant within 5 days, the business/operator shall be responsible to commission an independent noise consultant which is endorsed by Council to conduct a noise assessment. The noise assessment must include:
 - (i) the nature or the potential harm/nuisance;
 - (ii) the sensitivity of the receiving environment;
 - (iii) the current state of technical knowledge of the activity;
 - (iv) appropriate noise standards; and
 - (v) the likelihood of successful application of different attenuation measures that may be taken.
 - (c) Upon receipt of the noise acoustic report the business/operator must undertake appropriate actions to resolve the complaint.
 - (d) The business/operator must then advise the complainant of actions taken to resolve the complaint.

14.0 CATCHMENT AND LAND MANAGEMENT

14.1 Prior to the first operational works, an expanded Stormwater Quality Management Plan (SQMP) is to be submitted. The report is to be in accordance with the approved Stormwater Quality Management Plan but expanded to include the requirements of Table 5 of Council's Stormwater Quality guide and the following:

- (i) The SQMP must include a site plan, showing the location, type, dimensions and engineered drawings for all proposed stormwater quality devices. The plan shall be to a suitable scale and identify the distances to site boundaries for the constructed stormwater quality device; and
- (ii) provides a maintenance plan which includes a schedule of maintenance works, for any proposed devices; and
- (iii) the design of any stormwater quality infrastructure and devices complies with Council's Development Manual (current version at the time of development) and with the Whitsunday Regional Council Stormwater Quality Guideline.

14.2 All proprietary devices for stormwater quality are to be maintained as per the instructions of the manufacturers at all times.

14.3 A Commissioning Certificate is to be submitted to Council prior to commencement of use. All stormwater quality devices installed under the approval shall be commissioned by a suitably qualified person and a certificate supplied to Council prior to their use.

14.4 Prior to commencement of the use of the proprietary devices, the applicant must provide a copy of the maintenance contract for any proprietary stormwater treatment device installed on the site. Details of the maintenance contract including maintenance intervals to achieve, minimally, that at least 90% of pollutants will be captured during the inter-maintenance period.

14.5 Prior to the commencement of use for stage 2 (Hotel) a minimum of 12x 690 mm PSORB are to be in operation.

14.6 Prior the commencement of use for stage 2 (Tourist Park), a minimum of 12X 690 mm PSORB are to be in operation.

15.0 OPERATING PROCEDURES

15.1 The applicant is required to make available a courtesy bus for patrons of the Hotel, operating seven days a week, for all operating hours of the bars and restaurants.

15.2 The Hotel must not be restricted at any time from guests of the Tourist Park.

15.3 Short-term accommodation units are not be let or managed by persons or agencies other than the operator of the Tourist Park and are not to be let for permanent rental exceeding 4 weeks without written consent from Council.

16.0 WASTE

16.1 Waste and recycling storage facilities must be provided in accordance with the following provisions:

- a) Adequate waste containers must be provided to contain the volume and type of waste and recyclable matter generated by the development;
- b) Waste storage area for waste containers must be constructed of a solid concrete base or acceptable equivalent; and
- c) Waste storage area must be designed and constructed so it can be easily cleaned whilst ensuring that no waste or recyclable matter is released to the stormwater system or any waterway.

- 16.2 Maintenance and cleaning of waste containers must be carried out by a cleaning contractor or in an area where contaminants cannot be released into stormwater drainage, a roadside gutter, water or onto unsealed ground.
- 16.3 All reasonable and practicable measures are to be taken to ensure that the waste storage area is kept to a standard of cleanliness where there is no accumulation of;
- a) Waste, except in waste containers;
 - b) Recycled matter, except in containers;
 - c) Grease; or
 - d) Other visible matter.

17.0 MISCELLANEOUS

- 17.1 If any item of cultural heritage is identified during site works, all work must cease, and the relevant State Agency must be notified. Work can resume only after State Agency clearance is obtained.
- 17.2 Any alteration necessary to electricity, telephone, water mains, sewerage mains, and/or public utility installations resulting from the development or in connection with the development, must be at full cost to the developer.
- 17.3 Any building materials, equipment and the like must be appropriately tied down, placed indoors and secured on site at the time of preparation for cyclone events. The onsite supervisor is to ensure that all contractors/employees take the necessary steps to secure the construction site in the event of a cyclone.
- 17.4 All construction materials, waste, waste skips, machinery and contractors' vehicles must be located and stored or parked within the site. No storage of materials, parking of construction machinery or contractors' vehicles will be permitted in Pandanus Drive or adjoining land unless written permission from the owner of that land and Council is provided.
- 17.5 It is the developer's responsibility for the full rectification of any damage caused to neighbouring public infrastructure (such as footpaths, driveways, fences, gardens, trees and the like) caused by contractors, including clean-up of any litter or waste that is a result of the subject development.
- 17.6 The applicant must, at no cost to Council, ensure that all reasonable safeguards in and around the works are undertaken and maintained at all times to ensure the safety of the public. Such safeguards include, but are not limited to, erecting and maintaining barricades, guards, fencing and signs (and ensuring removal after completion of works) and watching and flagging traffic.
- 17.7 No permanent refuse storage areas are to be visible from Pandanus Drive.

18.0 ADVISORY NOTES

18.1 Hours of work

It is the developer's responsibility to ensure compliance with the Environmental Protection Act 1994, which prohibits any construction, building and earthworks activities likely to cause nuisance noise (including the entry and departure of heavy vehicles) between the hours of 6.30 pm and 6.30 am from Monday to Saturday and at all times on Sundays or Public Holidays.

18.2 Dust Control

It is the developer's responsibility to ensure compliance with the Environmental Nuisance of the Environmental Protection Act 1994 which prohibits unlawful environmental

nuisance caused by dust, ash, fumes, light, odour or smoke beyond the boundaries of the property during all stages of the development including earthworks and construction.

18.3 Sedimentation Control

It is the developer's responsibility to ensure compliance with the Environmental Protection Act 1994 and Schedule 9 of the Environmental Protection Regulation 2008 to prevent soil erosion and contamination of the stormwater drainage system and waterways.

18.4 Noise During Construction and Noise in General

It is the developer's responsibility to ensure compliance with the Environmental Protection Act 1994.

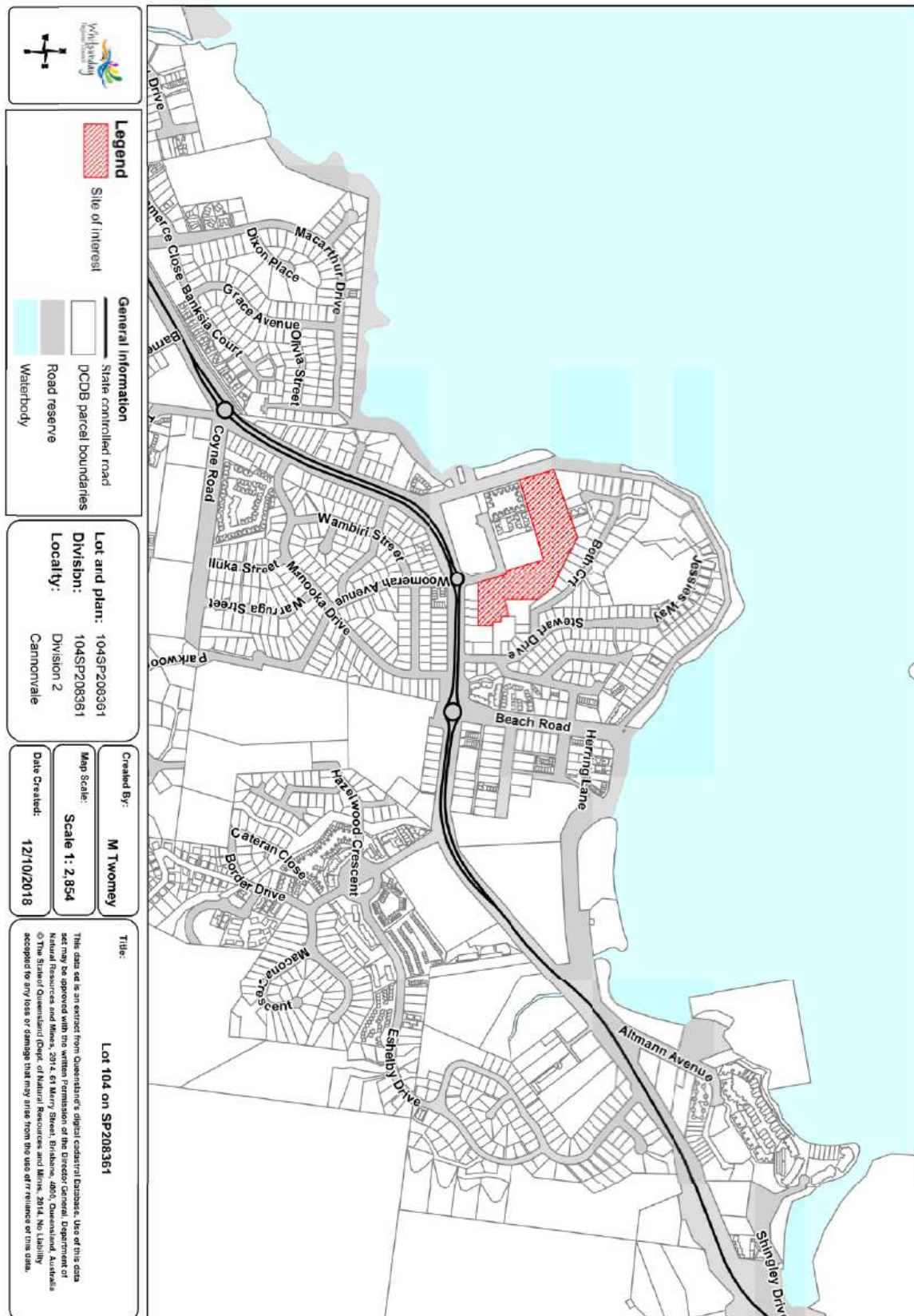
18.5 General Safety of Public During Construction

It is the project manager's responsibility to ensure compliance with the Work Health and Safety Act 2011. It states that the project manager is obliged to ensure construction work is planned and managed in a way that prevents or minimises risks to the health and safety of members of the public at or near the workplace during construction work.

It is the principal contractor's responsibility to ensure compliance with the Work Health and Safety Act 2011. It states that the principal contractor is obliged on a construction workplace to ensure that work activities at the workplace prevent or minimise risks to the health and safety of the public at or near the workplace during the work.

It is the responsibility of the person in control of the workplace to ensure compliance with the Work Health and Safety Act 2011. It states that the person in control of the workplace is obliged to ensure there is appropriate, safe access to and from the workplace for persons other than the person's workers.

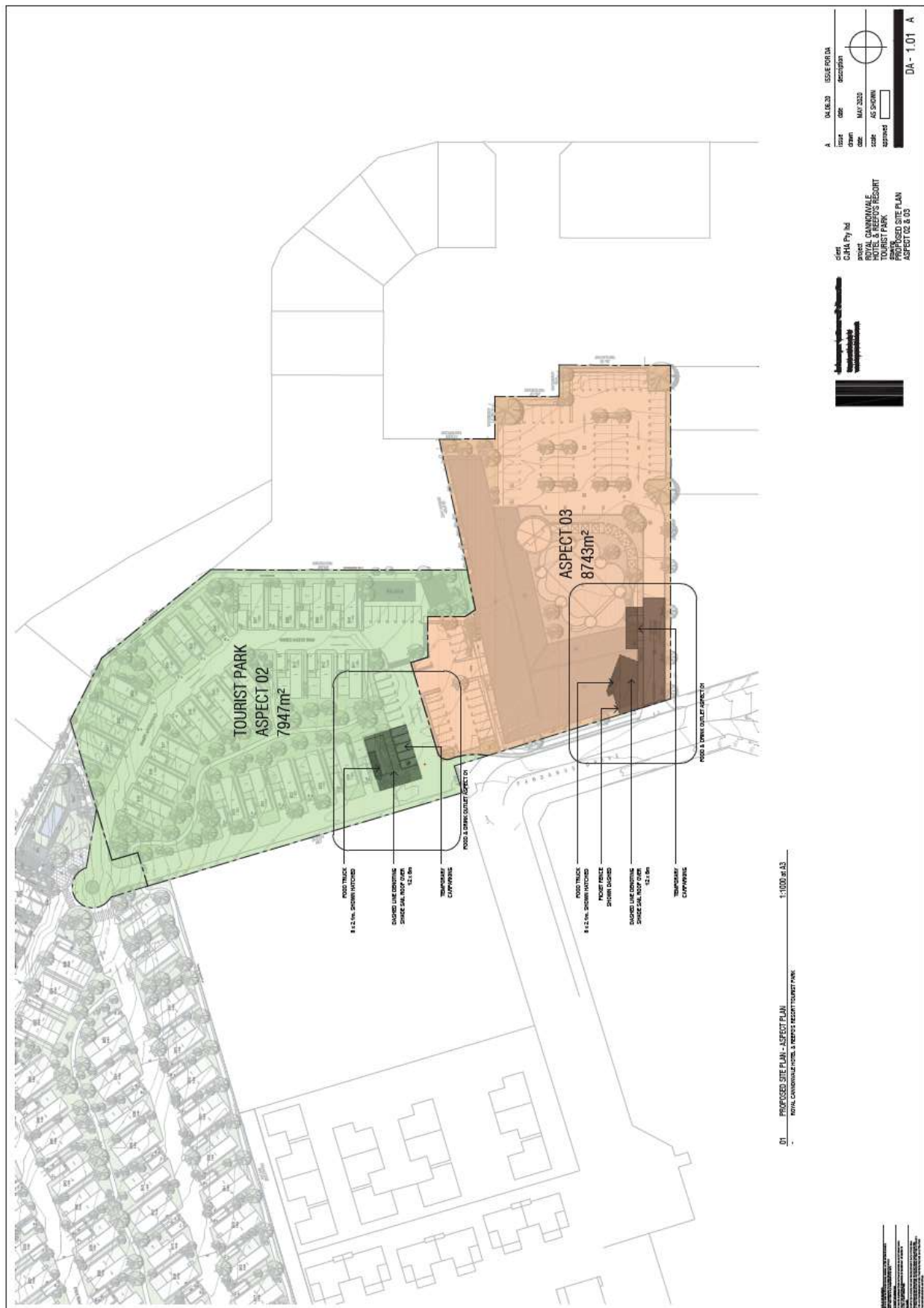
Attachment 2 - Locality Plan



Community facilities
District centre
Emerging community
Environmental management and conservation



Attachment 4 - Proposal Plan





Attachment 5 - State Agency Referral Agency (SARA) Response

RA29-N



Queensland Treasury

Our reference: 2006-17453 SRA
Your reference: 20170864
Applicant reference: 18171

28 August 2020

The Chief Executive Officer
Whitsunday Regional Council
PO Box 104
PROSERPINE QLD 4800
info@whitsundayrc.qld.gov.au

Attention: Mr Matthew Twomey

Dear Mr Twomey

Changed referral agency response

(Given under section 28 of the Development Assessment Rules)

On 13 August 2020, the State Assessment and Referral Agency (SARA) received representations from the applicant requesting SARA change its referral agency response. SARA has considered the representations and now provides this changed referral agency response which replaces the response dated 10 August 2020.

Applicant details

Applicant name:	CJHA Pty Ltd
Applicant contact details:	c/-Vision Surveys PO Box 2103 CANNONVALE QLD 4802 andrea@visionsurveysqld.com.au

Location details

Street address:	6 Pandanus Drive, Cannonvale
Real property description:	Lot 104 on SP208361
Local government area:	Whitsunday Regional Council

Application details

Development permit	Material change of use for other change application for Food and Drink Outlet (Temporary Use), Tourist Park and Hotel
--------------------	---

Page 1 of 5

Mackay Isaac Whitsunday regional office
Level 4, 44 Nelson Street, Mackay
PO Box 257, Mackay QLD 4740

Referral triggers

The development application was referred to SARA under the following provisions of the Planning Regulation 2017:

- 10.9.4.1.1.1 Infrastructure - State transport infrastructure
- 10.9.4.2.4.1 State transport corridors and future State transport corridors

Conditions

Under section 56(1)(b)(i) of the *Planning Act 2016*, the conditions set out in Attachment 1 must be attached to any development approval.

Reasons for decision to impose conditions

SARA must provide reasons for the decision to impose conditions. These reasons are set out in Attachment 2.

Advice to the assessment manager

Under section 56(3) of the *Planning Act 2016*, SARA offers advice about the application to the assessment manager—see Attachment 3.

A copy of this response has been sent to the applicant for their information.

For further information please contact Leah Harris, A/Principal Planning Officer, on (07) 4898 6815 or via email MIWSARA@dsdmip.qld.gov.au who will be pleased to assist.

Yours sincerely



Patrick Ruettjes
Manager (Planning)
Mackay Isaac Whitsunday Regional Office

cc CJHA Pty Ltd, andrea@visionsurveysqld.com.au
enc Attachment 1—Changed conditions to be imposed
Attachment 2—Reasons for decision to impose conditions
Attachment 3—Advice to the assessment manager

Attachment 1—Changed conditions to be imposed

(Under section 56(1)(b)(i) of the *Planning Act 2016* the following conditions must be attached to any development approval relating to this application.)

(Copies of the plans and specifications referenced below are found at Attachment 5.)

No.	Conditions	Condition timing
Material Change of Use		
40.9.4.2.4.1 – The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Transport and Main Roads to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition(s):		
4.	Noise attenuation measures to achieve the following noise criteria must be provided: ▲ In accordance with the relevant version 2.6 of the SDAP, ensure compliance with State code 4—AQ23.4 Buildings (other than a relevant residential building or relocated building) are designed and constructed using materials which ensure that habitable rooms meet the following internal noise criteria: ○ ≤35 dB(A) Leq (1 hour) (maximum hour over 24 hours). Note: Noise levels from a State-controlled road or type 1 multi-modal corridor are to be measured in accordance with AS4055.1:1997 Acoustics—Description and measurement of environmental noise.	Prior to the commencement of use and to be maintained at all times.

Attachment 2—Reasons for decision to impose conditions

The reasons for the SARA's decision are:

- The proposed development complies with or can be conditioned to comply with the relevant provisions of State code 1: Development in a State-controlled road environment
- There is no existing or proposed direct access to the State-controlled road.
- The proposed development will not impact existing public passenger transport infrastructure.

Material used in the assessment of the application:

- The development application material and submitted plans
- *Planning Act 2016*
- *Planning Regulation 2017*
- *The State Development Assessment Provisions (version 2.6)*, as published by SARA
- The Development Assessment Rules
- SARA DA Mapping system

Attachment 3—Advice to assessment manager

General advice	
1.	Terms and phrases used in this document are defined in the <i>Planning Act 2016</i> , its regulation or the State Development Assessment Provisions (SDAP) v2.6. If a word remains undefined it has its ordinary meaning.

14. Development Services

14.2 PLANNING SCHEME MAJOR AMENDMENT PACKAGE - LANDSCAPING WORK DEFINITION AND OPERATIONAL WORKS TABLE OF ASSESSMENT

AUTHOR: Mary Partridge - Strategic Planner

RESPONSIBLE OFFICER: Neil McGaffin - Director Development Services

OFFICER'S RECOMMENDATION

That Council adopt the amendments for inclusion in the Major Amendment to the Whitsunday Planning Scheme 2017, including any necessary administrative amendments.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

Proposed amendments to the Operational Works Tables of Assessment and a new definition for Landscaping Works for inclusion in the Major Amendment to the Whitsunday Planning Scheme 2017.

PURPOSE

The purpose of this report is for Council to consider the proposed amendments to the Whitsunday Planning Scheme 2017.

BACKGROUND

At the Ordinary Meeting of Council on 11 October 2017 Resolution number 2017/10/11.11:

"Council resolves to make a Major amendment to the *Whitsunday Regional Council Planning Scheme 2017*".

STATUTORY/COMPLIANCE MATTERS

Planning Act 2016;
Planning Regulation 2017; and
Ministers Guidelines and Rules 2017.

ANALYSIS

Within the Operational Works Table of Assessment there are two triggers for landscaping

Table 5.8.1 Operational Work

All operational works involving landscaping work where associated with the Reconfiguring of a lot or Material change of use	Accepted development if complying with the acceptable outcomes of the applicable code(s)	Construction management code Landscaping code
---	--	--

All operational works involving landscaping work where not associated with the Reconfiguring of a lot or Material change of use	Code assessment	Construction management code Landscaping code
---	-----------------	--

However, the Planning Scheme has no definition of what 'Landscaping Work' is, nor does the *Planning Regulation 2017* prescribe a definition. Issues have arisen where landscaping works done by developers, not associated with a Reconfiguration of a Lot (ROL) or Material Change of Use (MCU), are not consistent with the infrastructure Council utilises. This creates a consistency issue when the landscaping works are handed over to Council for maintenance/management.

Landscaping generally is the process of making a garden or other piece of land more attractive by altering the existing design, adding ornamental features, and planting trees and shrubs. Any definition should not involve building work or engineering work, as these are other types of works which are triggered within the Operational Works Table.

The following administrative definition of Landscaping works, utilised by the Gold Coast City Council in their City Plan, is proposed for inclusion in the Planning Scheme:

"Planning, design and implementation of all hardscape and softscape treatment of the surface of the land in all areas external to a building envelope. This may include both public and private open space areas and road reserve areas for the purposes of amenity and function."

In addition to including a definition for Landscaping Work, amendments to the triggers of Operational Works for Landscaping Works within the Tables of Assessment would be necessary to address the consistency with Council infrastructure.

The following amendments to the sections of the Operational Works Table of Assessment (Table 5.8.1) associated with Landscaping Work (in red) are recommended:

All operational work involving landscaping work where associated with the Reconfiguring of a lot or Material change of use	Accepted development if complying with the acceptable outcomes of the applicable code(s)	Construction management code Landscaping code Healthy Waters Code
	Otherwise Code Assessment	
All operational work involving landscaping work where: not associated with the Reconfiguring of a lot or Material change of use; and on land owned, or to be owned, by Council	Accepted development if undertaken by or on behalf of the Council.	Construction management code Landscaping code Healthy Waters Code
	Otherwise Code assessment	

The intent of the proposed amendment is to enable Council to apply the relevant landscaping standards to Council projects without requiring a development approval. Council may also engage a third party to undertake landscaping works and, through the engagement process, apply the relevant landscaping standards to ensure compliance. This will not require a development approval either. However, in the instance that a developer intends to provide their own landscaping design and then hand over the land to Council, a development approval will be required to ensure that the relevant landscaping standards are applied.

It is acknowledged that this amendment only encapsulates a rare circumstance as most land handed over to Council is landscaped as part of the ROL or MCU approval. However, historically these circumstances have occurred and this amendment will address the issue.

The amendment to the levels of assessment for operational work, involving landscaping work where associated with the ROL or MCU, removes the automatic trigger to Accepted development. The stipulation of 'Otherwise Code assessment' ensures that operational work for landscaping work will not default back to Accepted development.

The amendment to the level of assessment for operational work, involving landscaping work where not associated with the ROL or MCU *and* on land owned, or to be owned, by Council, is to exclude Council from requiring a development approval for landscaping works on their own land or on land they will be taking ownership of.

While this is a relatively minor amendment, to date all changes to the level of assessment have been put before Council for a resolution, this report maintains that consistency.

STRATEGIC IMPACTS

The proposed amendments will ensure that where Council will take ownership of a landscaped area, it is of a standard which is compatible with Council's requirements. If the proposed amendments are not included in the Major Amendment package, there will be continued risks to Service Delivery and associated Financial losses.

CONSULTATION

Shane Neville - Manager Strategic Planning
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 proposed amendments will improve the functionality and usability of the Planning Scheme, which will benefit both applicants and assessing officers. It is recommended the amendments be included in the Major Amendment package to the Whitsunday Planning Scheme 2017.

ATTACHMENTS

NA

14. Development Services

14.3 FUNDING OPPORTUNITY - REMOTE AIRSTRIP UPGRADE PROGRAM ROUND 8

AUTHOR: Elouise Lamb - Project Officer Economic Development & Major Grants

RESPONSIBLE OFFICER: Neil McGaffin - Director Development Services

OFFICER'S RECOMMENDATION

That Council resolves to:

- a) support a submission to the Queensland Government's Remote Airstrip Upgrade Program Round 8 funding opportunity to request \$456,500 for Collinsville Aerodrome to upgrade lighting; and
 - b) commit to a co-contribution of \$456,500 if funding is attained from the 21/22 Capital Works Budget or Airport Reserve.
-

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

Funding is available under the Queensland Government's Remote Airstrip Upgrade Program to support safety upgrades at Collinsville aerodrome.

Options have been reviewed and it is recommended that Council submit a proposal to attain funds to upgrade the aerodrome lighting infrastructure. This option has been identified as priority project as the lighting is at end of life and non-complaint with Civil Aviation Safety Authority (CASA) requirements.

PURPOSE

To advise of the need to improve the condition of the Collinsville Aerodrome lighting to better comply with CASA requirements and the opportunity to attain funds via the Remote Airstrip Upgrade Program to support the project

BACKGROUND

Ordinary Meeting 12.11.2019. Item 10.2 Remote Airstrip Upgrade Program – Collinsville Aerodrome Upgrade. Council applied for infrastructure upgrades for Collinsville Aerodrome in Round 7 of the program but were unsuccessful. Feedback from the submission has been incorporated in the new project proposal.

STATUTORY/COMPLIANCE MATTERS

Project must comply with CASA Manual of Standards Part 139

12 November 2020 - Submission closes

30 April 2022 - Project must be complete

ANALYSIS

The Federal Government has announced the Remote Airstrip Upgrade Program (RAUP) Round 8 which will run over two years from 2020-21 to 2021-22 with up to \$7 million available. The objective of the program is to provide funding for access and safety upgrades to remote aerodromes, as well as subsidised flights to ensure residents of remote communities have access to regional service centres.

The funding requires a 50% or higher co-contribution for projects over \$150k. The maximum grant amount is \$500k.

In the Whitsunday region only aerodromes in the Collinsville SA2 are eligible as it is classified as 'remote' by the 2016 Australian Statistical Geographic Standard (ASDS).

Collinsville Aerodrome consists of a single runway identified as runway 06/24 (see attachment 1). The runway is 1402m long with a sealing at the Runway 06 end. Lighting is available however the spacing of the lighting infrastructure does not conform to CASA's Manual of Standards (MOS) Part 139 requirements. The existing lighting system is also at end of life and has high earth leakage creating a risk of operational failure. The treatment is to put in new pit and duct conduiting to address earth leakage and lighting that is spaced to meet MOS Part 139 requirements.

A consultant report has been undertaken by Queensland Airport Lighting Pty Ltd which identified a cost of \$913k to design, construct and commission upgraded aerodrome lighting that is compliant with the regulations.

STRATEGIC IMPACTS

Financial implications – The funding program specifies that a 50% or higher co-contribution is required for projects over \$150k. With the project to being in the 21/22 FY, the minimal co-contribution requirements of \$456,500 could be allocated within the 21/22 capital works budget or from the airport reserve in the event funding is attained.

Safety – Without the lighting upgrades there is an increased risk of infrastructure failure which could reduce aircraft utilising the Aerodrome at night. This may cause some delays for aeromedical retrievals from Collinsville and impede local business operations.

Regulatory – This infrastructure will contribute to enabling the Collinsville Aerodrome to obtain future certification in accordance with the CASA MOS Part 139.

CONSULTATION

Neil McGaffin – Director Development Services
Matthew Fanning – Director Infrastructure Services
Craig Turner – Chief Operating Officer – Aviation and Tourism
Tony Schulz – Whitsunday Coast Airport Manager

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

To reduce risks to access of the aerodrome at night, including the RFDS, it is recommended that Council apply for this funding to attain 50% of costs to install new compliant lighting and refer a 50% co-contribution to the 2021/2022 budget considerations.

ATTACHMENTS

Attachment 1 - Collinsville Aerodrome Layout

Attachment 1 – Collinsville Aerodrome Layout

COLLINSVILLE
AVFAX CODE 4409

ELEV 591
FULL NOTAM SERVICE NOT AVBL

QLD. 203546S 1475136E UTC +10 YCSV
AD OPR Whitsunday Regional Council, PO Box 104, Proserpine, UNCR
QLD, 4800. PH 0427 129 579: 07 4785 5100.

REMARKS
AD Charges: All ACFT.

AERODROME AND APPROACH LIGHTING
RWY 06/24 LIRL PAL 119.6 (Standby power AVBL).

ATS COMMUNICATIONS FACILITIES
FIA BRISBANE CENTRE 135.5 Circuit area

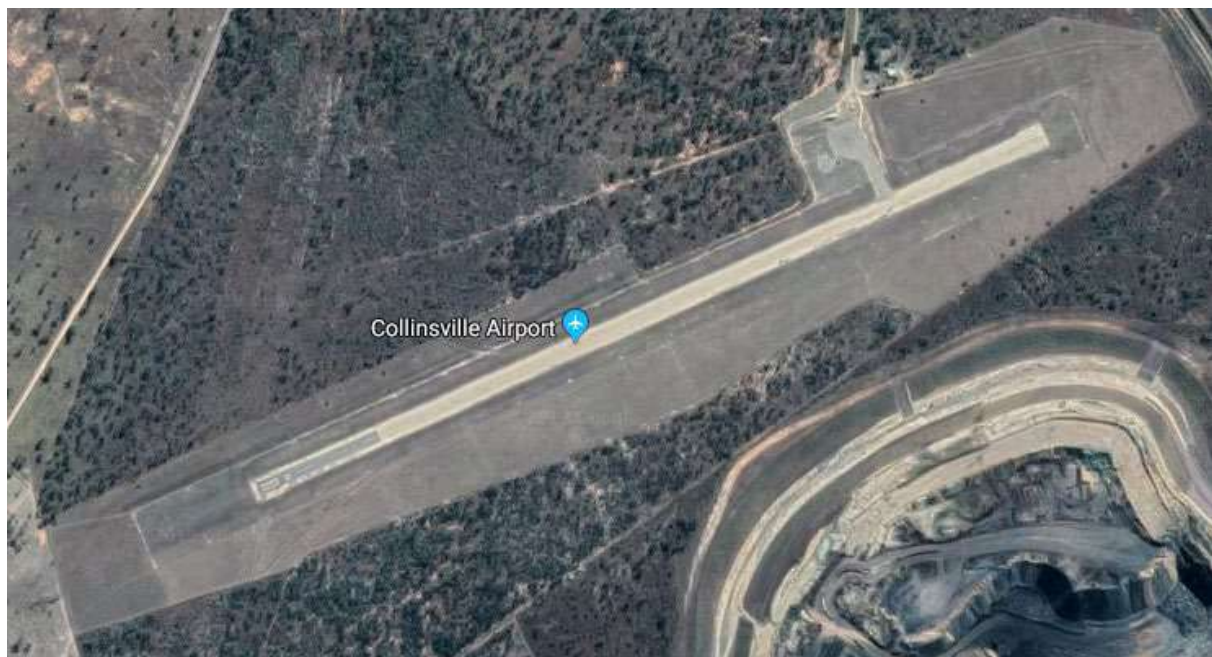
LOCAL TRAFFIC REGULATIONS
Pavement Restriction: RWY 06/24 not AVBL ACFT ABV 5,700KG MTOW.

FLIGHT PROCEDURES
Right hand circuits required when OPR on RWY 24.

CTAF 126.7

ADDITIONAL INFORMATION
1. Animal hazard exists.
2. Caution: Blasting at mine 0.6NM S of ARP; advice by NOTAM.

CHARTS RELATED TO THE AERODROME
WAC 3234, 3235.



14. Development Services

14.4 DEVELOPMENT SERVICES MONTHLY REPORT - OCTOBER 2020

AUTHOR: Neil McGaffin - Director Development Services

RESPONSIBLE OFFICER: Neil McGaffin - Director Development Services

OFFICER'S RECOMMENDATION

That Council receives the Development Services Monthly Report for October 2020.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

Development Services Monthly Report – October 2020

PURPOSE

To provide an overview of Whitsunday Regional Council's Development Services Directorate for the 2020/2021 Financial Year, with focus on the month of October 2020.

BACKGROUND

The Development Services Directorate has a departmental vision of a prosperous, liveable and sustainable Whitsundays.

The Directorates purpose is to lead the delivery of economic, social and environmental outcomes for the Whitsundays through services in partnership with stakeholders.

The Directorates vision is delivered by bringing together the functions of Economic Development, Strategic Land Use and Infrastructure Planning, Development Assessment, Building and Plumbing Assessment and Compliance.

STATUTORY/COMPLIANCE MATTERS

N/A

ANALYSIS

This report represents the activity within the Directorate for the month of October 2020.

STRATEGIC IMPACTS

Alignment to Corporate Plan

Outcome 1.1: Out 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 N/A

Risk Management Implications Regular reporting on the Directorate's progress and achievements ensures accountability and fosters a positive culture.

CONSULTATION

Doug Mackay – Manager Development Services
Jonathan Cutting – Strategic Planner
Ry Collins – Project Coordinator Regional Skills Investment Strategy
Emily Reck – Cadet Building Certifier

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 Development Services Monthly Report for October 2020.

ATTACHMENTS

Attachment 1 – Development Services Monthly Report – October 2020

Development Services

Strategic Planning
Development Assessment
Building, Plumbing & Compliance
Economic Development

Monthly Report – October 2020

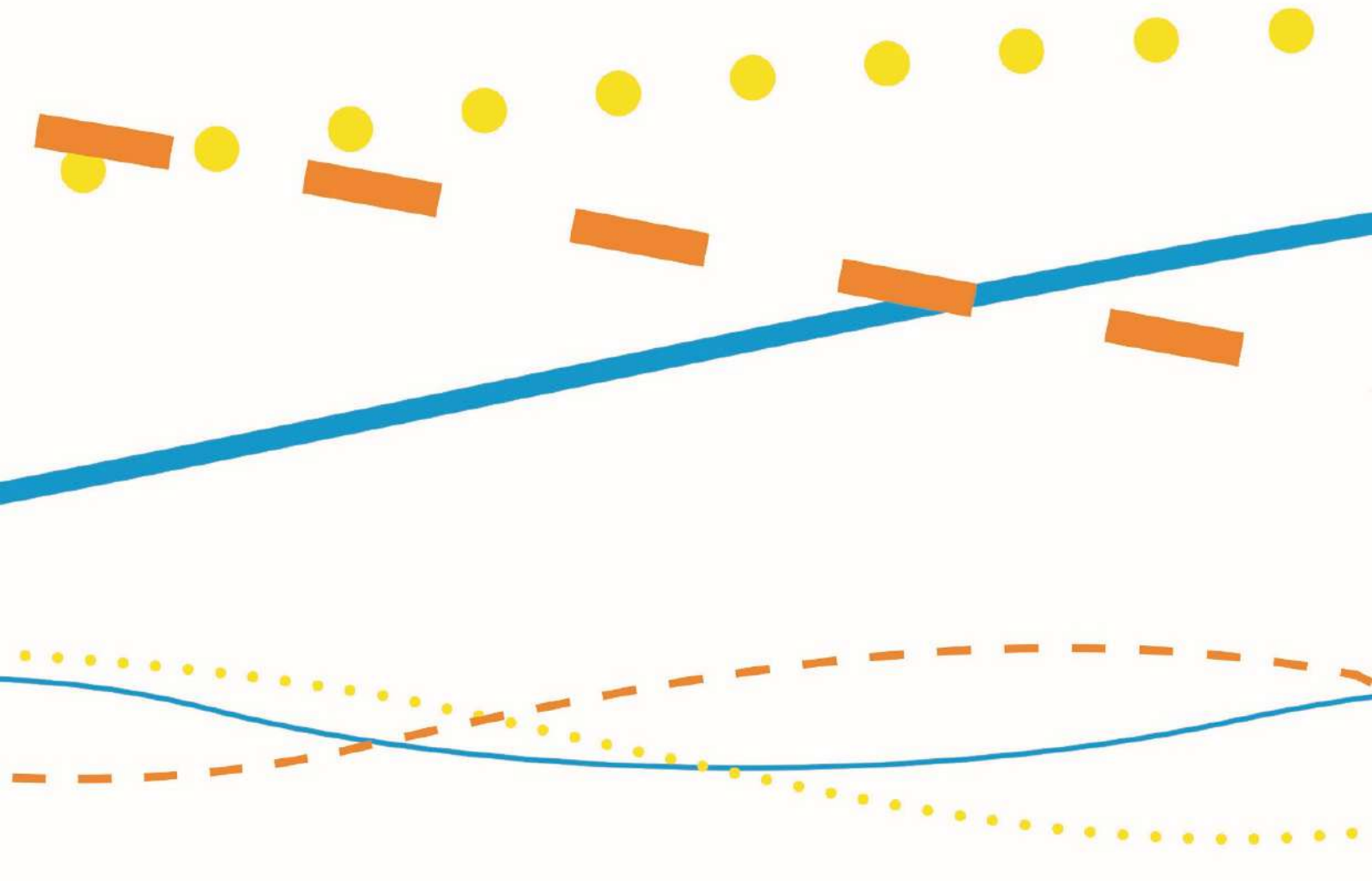


TABLE OF CONTENTS

Directors Report	3
Strategic Planning	4
Operational Activities	4
Development Assessment.....	5
Development Statistics	5
Summary of Applications approved under Delegated Authority.....	7
Summary of Applications approved by Resolution	8
Building, Plumbing & Compliance	9
Economic Development	11

Directors Report

Strategic Planning

The month of October saw Council resolving to commence public consultation on the Interim Local Government Infrastructure Plan Amendment from 26/10 – 16/11, to remove a future water reservoir from Bowen South, as it is no longer required to support the network, potentially saving Council over \$14M. The Land Asset Management Plan continues to progress, with Council owned lots suitable to be considered for sale or re-purpose being presented to ELT. Next steps will be to review trustee lots which Council manages to inform negotiations with DNRME and finalise the Land Asset Management Plan. The 'Shaping Collinsville's Future' community consultation undertaken late in October was a success and will help inform a variety of Strategic projects, including the Collinsville Masterplan and Open Space Strategy. Submission analysis will now be undertaken in collaboration with the communications team to inform projects for Works for Queensland and other future grants.

Development Assessment

The number of new development applications has remained on trend for the whole year, showing no noticeable reduction following the pandemic outbreak in March. Planning certificate applications have been higher for the last three months, indicating increased sales interest in large properties. The team has been focussed for the last month on finalising the assessment and conditions package for the Whitsunday Paradise application.

An audit was conducted on short term accommodation approvals to check on numbers and compliance with conditions. With only 2 exceptions, all properties reported that accommodation numbers were kept within limits imposed by conditions.

A letter was sent to nineteen property owners where Council's records show that a new use has commenced without the payment of infrastructure charges. Two owners have challenged the request for payment, one of them noting that the charges were outside of the statute of limitations (6 years). The other is being further investigated. Three payments have been received.

Building, Plumbing & Compliance

The Plumbing Department has been steady with approvals and inspections this month. Kelvin is currently on four weeks annual leave.

Building application assessments and inspections are continuing at a steady rate whilst the building department works through the backlog of existing applications.

The Compliance team has been working through the high priority backlog of compliance contained within the compliance register and is working on streamlining the process to achieve a consistent, effective approach.

The Structural Integrity Report for 29-31 Main Street, Proserpine, previously O'Duinns Hotel has been received and is under review to determine the appropriate action going forward in making the building safe.

Economic Development

For October, work continued on existing projects and new projects that may be able to attract future investment stimulus such as Tourism Infrastructure which was announced as an opportunity from the recent Federal budget. Initial work on the proposed Whitsunday Trails concept was completed and prepared for briefing to council and work on projects such as RSIS and Regional Jobs Board continues. Volume of new funding opportunities was subdued however it is expected to increase over the next month with the release of the Building Better regions fund. Engagement with stakeholders in the Whitsundays and greater region continues to be high and a number of new activities were initiated to promote, attract and stimulate investment into the region.

Strategic Planning

The Strategic Planning Branch is responsible for developing and maintaining land use and infrastructure plans and policies, such as the Planning Scheme, as well as reviewing various planning related State planning instruments and legislation, including the Mackay, Isaac, Whitsunday Region Plan.

Operational Activities

The Strategic Planning Branch is undertaking several projects, including;

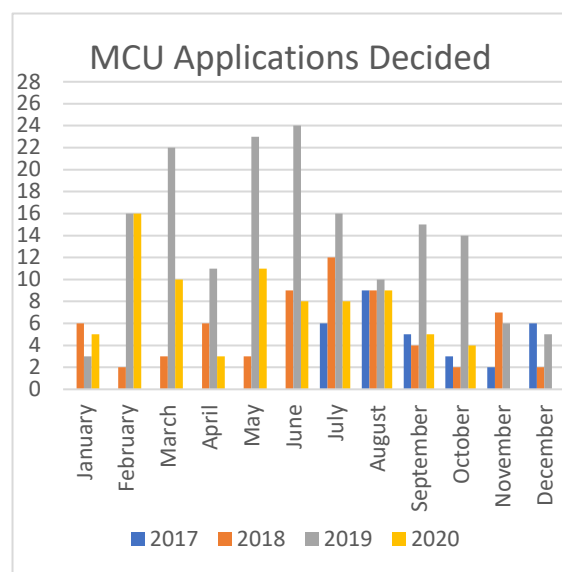
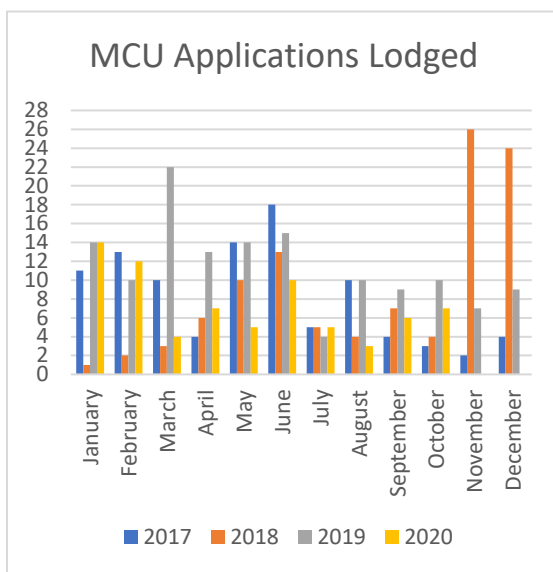
- Continuing Planning Scheme Integration and Review
- Council resolution and Consultation of the Collinsville Master Plan
- Council resolution and Consultation of the Proserpine Master Plan V2
- Finalisation of the Land Register Lot Review
- Finalisation of the Bowen Master Plan
- Finalisation of the Interim LGIP Amendment
- Finalisation of the Airlie Beach Local Plan
- Review of the amended Airlie Beach Land Management Plan
- Review of the Cannon Valley Growth Strategy
- Review of the Local Heritage Register
- Preparation of the Greater Airlie Beach Area Master Plan
- Preparation of the Open Space Standards (Development Manual) – Community and Stakeholder Surveys
- Research Affordable Housing Strategy
- Research Smart City Strategy; and
- Assessment of Façade Improvement Policy Applications.

Development Assessment

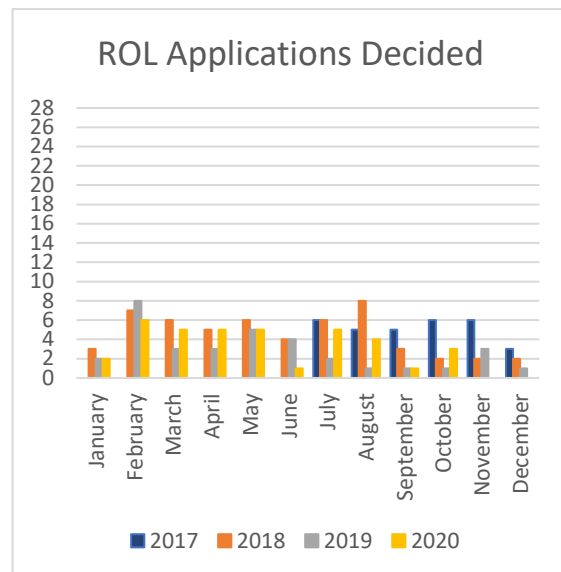
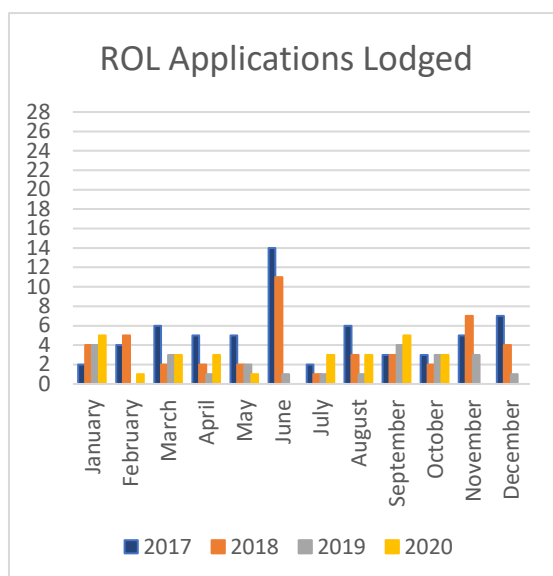
The Development Assessment Unit is responsible for assessing development applications, reviewing referrals for state land, environmental impact statements and other material for coordinated projects, activities, preparing planning and development certificates and inspecting developments for compliance with development approvals and other planning requirements.

Development Statistics

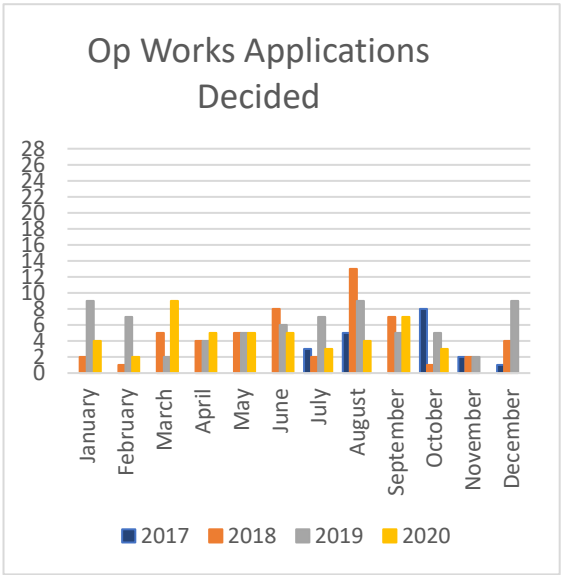
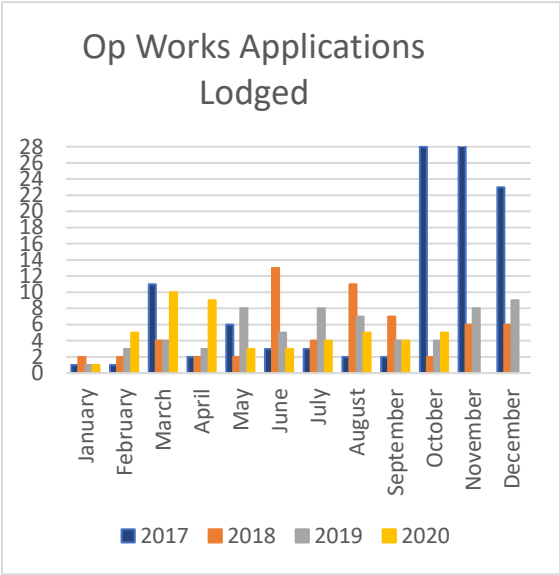
New MCU applications continued to increase from the year's low in August. Seven new applications were received in October – equalling the 2017 average (statistics for 2018 and 2019 were skewed by the number of short term accommodation applications). MCU's decided dropped slightly, reflecting the lower number of applications received three months ago.



New reconfiguring applications have remained steady at between 3 – 5 per month all year and October continued the trend.



New operational works applications followed the same trend as ROL applications, at 5 per month.



Plan sealing remained on the annual average of between 4 – 6 per month and the number of planning certificates remained steady at four requests for October



Summary of Applications approved under Delegated Authority

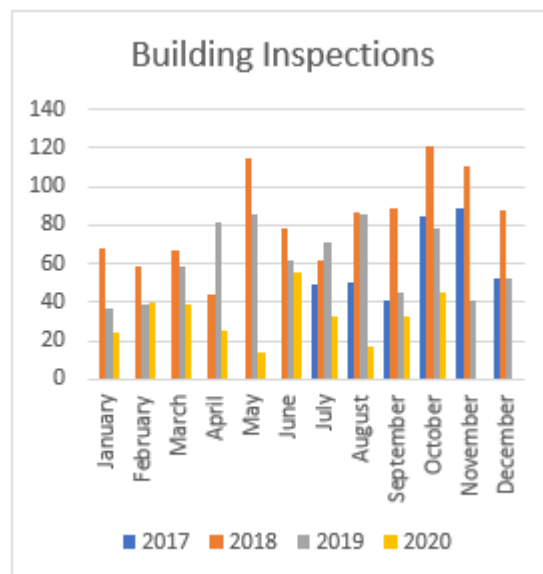
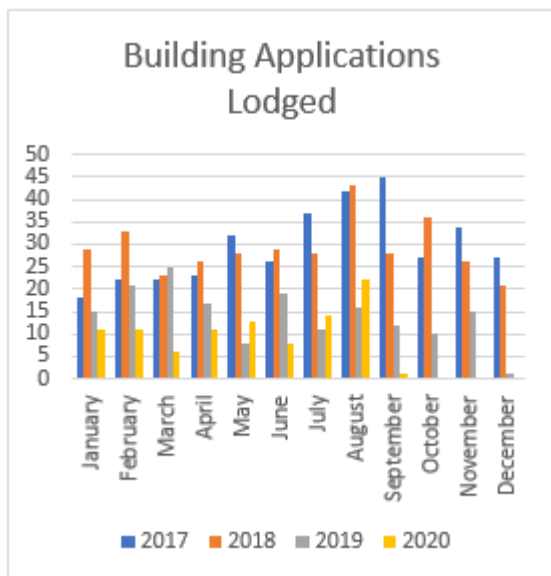
Application No.	Applicant & Location	Approval Details
20150972	Paluma Road Pty Ltd as TTE 48 Paluma Road, Cannonvale 1 RP714805	Extension Application For Development Permit for Material Chang of Use (Medical Centre & Caretakers Residence)
20170269	Curko Sime as TTE & Curko Maria Janet as TTE Richardson Road, Sugarloaf 301 SP2999209	Development Permit for Other Change (Operational Works)
20190899	JG Wilson & J Kasiske 8 Begley Street, Airlie Beach 12 RP720712	Development Permit for Dual Occupancy & Reconfiguration of a Lot
20191353	Moloko Homes Pty Ltd 93-115 Parker Road, Cannonvale 7 RP729788	Development Permit for Operational Works (Fill Storage)
20200646	Belard Nominees Pty Ltd as TTE 3 Nara Ave, Airlie Beach 1 RP908017	Development Permit for Material Change of Use (Short Term Accommodation)
20200649	ML Coote 181 Paluma Road, Woodwark 115 SP153777 & 185 SP176018	Development Permit for Reconfiguration of a Lot 2 into 5
20200895	BM Ferdinand & JS Ferdinand Valmadre Road, Kelsey Creek 2 RP739908 & 30 SP285373	Development Permit for Reconfiguration of a Lot (Boundary Realignment)
20200915	David Edge Marine Contracting Pty Ltd Shute Harbour Road, Jubilee Pocket 13 RP891517 & 2 RP743420	Development Permit for Operational Works (Water & Sewer)
20200962	The State of Queensland Bowen Developmental Road, Springlands 92 DK182	SDA Application for Material Change of Use (Mobile Batching Plant)

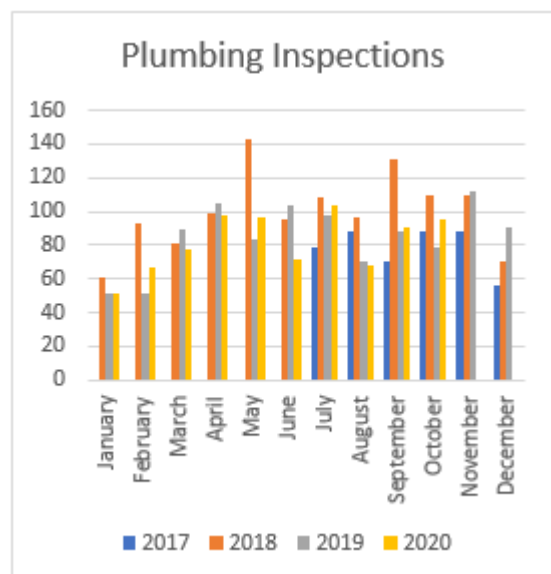
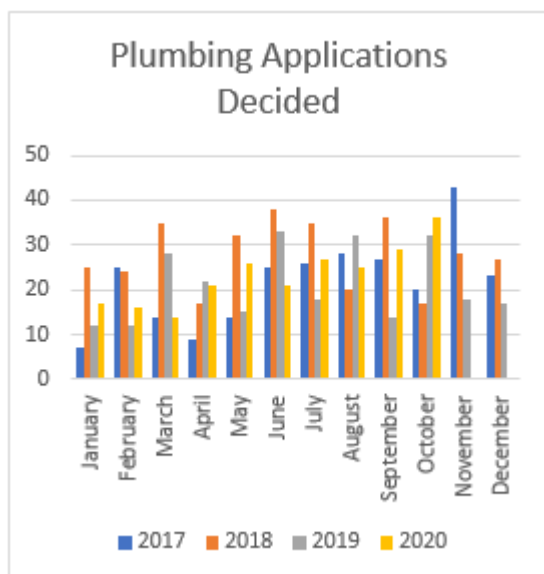
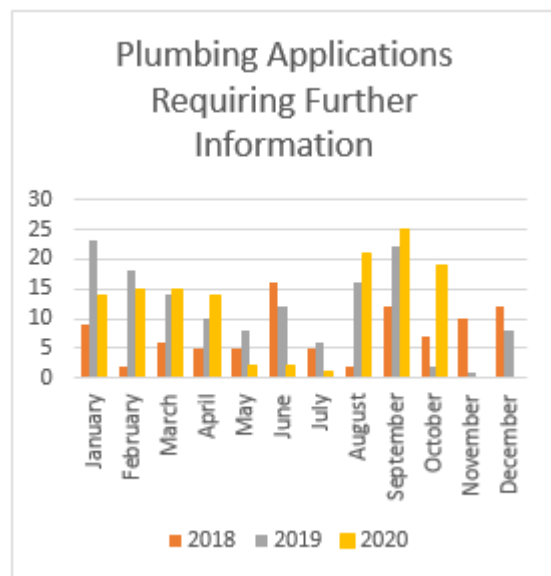
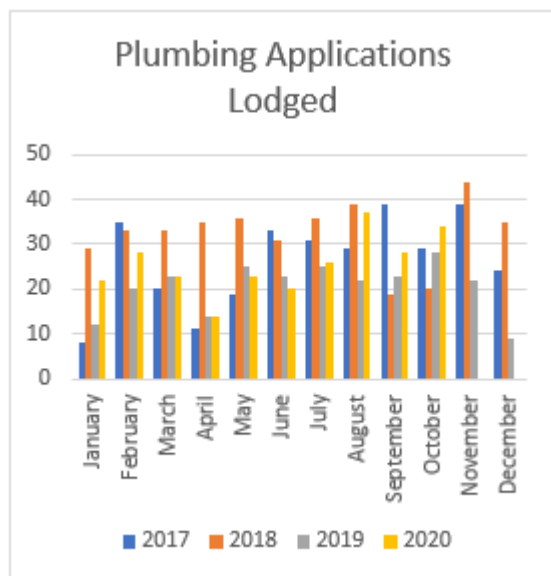
Summary of Applications approved by Resolution

Application No.	Applicant & Location	Approval Details
20180816	Homeland Property Developments Pty Ltd Bruce Highway, Mount Gordon 15 SP194473 "Whitsunday Paradise"	Development Permit for Preliminary Approval for Variation Approval pursuant to section 50 of the Planning Act; and Reconfiguration of a Lot 4 into 198 lots, park, road & access easements; and Development Permit for Material Change of Use (Food & Drink Outlet x2; Outdoor Sport & Recreation; Service Station & food & Drink Outlet, Shopping Centre inc Child Care Centre, Food & Drink Outlet x 2, Health Care Services, Shop x 5 and Supermarket)

Building, Plumbing & Compliance

The Building, Plumbing & Compliance branch is responsible for assessing/reviewing building and plumbing applications, developing and maintaining various building and plumbing related policies and registers; carrying out Building regulatory functions; and manage and regulate enforcement and compliance procedures.





Economic Development

The Economic development branch undertakes actions that progress the growth and overall prosperity of the region. This includes the provision of support to local businesses, delivery of actions contained within the Economic Development Strategy, stakeholder engagement, facilitation and development of investment enquiries and business cases for targeted investment, advocacy towards issues of regional economic and social importance, and development of research and reports on the economy.

Monthly Highlights

- Hosted representatives from the Department of State Development, Tourism and Innovation to visit key projects and investment opportunities in the region including WCA, proposed hotel sites, commercial estates and Shute Harbor.
- Submitted over \$7.8K in new grant funding applications to support two council projects across all directorates. Received notification of successful grant application for three projects worth \$2.5M.
- Undertook 'Ground truthing' activity with the Whitsunday Trails project consultant to gather on the ground evidence of the suitability of sites proposed in the Whitsunday Trails concept plan.
- Co-hosted the #PickQLD event with Bowen Gumlu Growers, QITE and Tassal to promote and improve the attraction of Agricultural workers for the Vegetable, Mango and Prawn farming sectors.
- Provided assistance to new business looking to establish in the region in the segments of Adventure drive tours, marine tours, Health food supplies and Shipwright servicing.
- Undertook a review of Economic Development content on the council website and proposed a refreshed format that will align department services with best practice.
- Commenced development of a local contractor register to assist in promoting local business content and capability to major projects, developments and mines in the region.
- Participated in the final workshop of the Regional Jobs Committee to finalise the MIW Future Skills Roadmap that will help inform state government funding policy for skills development.

Current Projects

- | | |
|---------------------------------------|------------------------------------|
| • Regional Skills Investment Strategy | • Whitsunday Trails Concept Design |
| • ASBAS Digital Skills program | • Adani CBF – Options Analysis |
| • Whitsunday Jobs Board | • Revised Investment Prospectus |

Stakeholder Meetings

- Participated in periodic collaborative meetings with industry partners and organisations including Bowen Collinsville Enterprise, Bowen Tourism, Bowen Chamber, Whitsunday Chamber, Whitsunday Charter Boat industry association and the Whitsunday Economic recovery sub-group.
- Participated in project workshops for the Fight Food Waste CRC and Thriving Coasts CRC to promote regional interests in Agricultural and Tourism innovation.
- Held meetings with a renewable energy developer regarding potential of major hydrogen project for Bowen.
- Attended the Tourism Whitsundays AGM to discuss outcomes of recovery marketing campaigns, current industry challenges and opportunities.
- Coordinated a regional stakeholder meeting with AusIndustry to communicate the implications and opportunities for the region from the Federal budget.
- Participated in LGAQ's investment connect program to develop cross regional strategies for investment attraction and retention between council economic development staff.
- Attended a forum hosted by TIQ and RDA to discuss strategies to reactivate regional exports, airfreight and attract new foreign investment.

Funding Submissions

Program	Project	Amount Requested
Covid Safe Australia Day	2021 Australia Day Awards & Citizenship Ceremonies	\$7,800.00
Regional Connectivity Program – via Telstra	Mt Coolon Blackspot Project	Unknown
TOTAL		\$7,800.00

Funding Attained

Program	Project	Amount Requested
Bridges Renewal Program	Ted Cunningham Bridge Replacement	\$2,000,000.00
Queensland Resilience and Risk Reduction Fund (QRRRF).	Regional Floodway Resilience Program	\$271,521.00
Queensland Resilience and Risk Reduction Fund (QRRRF).	Whitsunday Floodplain Management Plan	\$300,000.00
TOTAL		\$2,571,521.00

Unsuccessful Applications - NIL

15. Community Services

15.1 DONATION ON COUNCIL FEES - SEPTEMBER/OCTOBER 2020

AUTHOR: Meredith Davis - Administration Officer Community Development

RESPONSIBLE OFFICER: Julie Wright - Director Community Services

OFFICER'S RECOMMENDATION

That Council donate the value of the fees, from budget code JC: 2967.11074 - Community Donations (2967) / Donations (11074) for the following recipients:

- Youth with a Mission Whitsunday - Local Law Licence Fee - \$265.00
- Parkrun Australia - Local Law Licence Renewals x 2 - @ \$200.00 per permit
- Save the Children Australia - Local Law Licence Renewal - \$200.00
- Phoenix Tai Chi Bowen Inc. - Local Law Licence Renewal - \$200.00
- Show Whitsunday (Proserpine AP & I Assoc.) Plumbing & Building Application Fee - \$7,849.00

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

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 for:

- 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
Youth with a Mission Whitsunday (YWAM)	Whitsunday Kids Program Wednesdays 3:30pm – 5:00pm Airlie Beach Foreshore	Local Law Licence Application Fee	\$265.00
Parkrun Australia	Parkrun Events Various Times and Locations Bowen	Local Law Licence Renewal Fee	\$200.00
Parkrun Australia	Parkrun Events Various Times and Locations Airlie Beach	Local Law Licence Renewal Fee	\$200.00
Save the Children Australia	Save the Children Playgroup Collinsville and Scottville	Local Law Licence Renewal Fee	\$200.00
Phoenix Tai Chi Bowen	Tai Chi Classes Front Beach Park, Bowen	Local Law Licence Renewal Fee	\$200.00
Show Whitsunday Proserpine AP & I Assoc.	Rebuild of Main Show Pavilion Destroyed by Cyclone Debbie	Plumbing & Building Fees	\$7,849.00
		Total	\$8,914.00

Council has the following options:

Option 1 – That Council approve the payment of fee donations for September/October 2020.

Option 2 – That Council decline the requests 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). There is currently \$71,201.00 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 donate the value of the fees, from budget code JC: 2967.11074 – Community Donations (2967) / Donations (11074) for September/October 2020.

ATTACHMENTS

Attachment 1 - Request for Donation on Council Fees - Youth with a Mission Whitsunday

Attachment 2 - Request for Donation on Council Fees - Parkrun Australia Bowen

Attachment 3 - Request for Donation on Council Fees - Parkrun Australia Airlie Beach

Attachment 4 - Request for Donation on Council Fees - Save the Children Australia

Attachment 5 - Request for Donation on Council Fees - Phoenix Tai Chi

Attachment 6 - Request for Donation on Council Fees - Show Whitsunday (Proserpine AP&I)

Attachment 1 - Request for Donation on Council Fees - Youth with a Mission Whitsunday



Donation on Council Fees Application Form 2020/2021

Donation on Council Fees Application Form

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'n/a'.

Application Information

Community groups are required to complete this form to apply for a Donation on Council Fees prior to the event or application. Donations on Council Fees are only available for Not for Profit organisations and only apply for Application Fees, Licence Fees and Disposal of Green Waste Fees.

On receiving the completed form, it will be processed and presented to Council at the next available meeting for consideration. Once a decision has been made, formal notification will be made to the listed applicant.

Forms can be emailed to info@whitsundayrc.qld.gov.au or in person at any of Council's Customer Service Centres.

Section 1 – Applicant Details

Clear Form

Applicant Name	Youth With A Mission Whitsunday Inc.	Contact Person	[REDACTED]
Postal Address	PO Box 2041 Cannonvale Qld 4802		
Phone Number	[REDACTED]	Mobile Number	[REDACTED]
Email Address	[REDACTED]		

Section 2 – Details of Donation on Council Fees

☐ Class 1 Application Fee:	\$ 927.00	☒ Local Law Licence Fee:	\$ 265.00
☐ Class 2 Application Fee:	\$ 664.00	☐ Building Application Fee:	\$
☐ Class 3 Application Fee:	\$ 399.00	☐ Planning Application Fee:	\$
☐ Category 1 Food Licence Fee:	\$ 525.00	☐ Other:	\$

Section 3 – Linked Applications

Is this Donation on Council Fees linked to an Event Application? If yes, please complete below:

Event Name	Whitsunday Kids Program	Location	Airlie Beach Foreshore
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Please Note:

*If the fee has been paid, please attach the receipt and complete Council's EFT Form for a refund.

*If you are in receipt of an invoice, please attach a copy to this application.

Signature	[REDACTED]	Date	30/09/2020
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Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

OFFICE USE ONLY:

☐ Approved	☐ Declined	Number:	262.2020.60 - 215.2020.59	Date:	30/09/2020
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Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4800
P: 1300 WRC QLD (1300 677 753) F: (07) 4945 0272 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
63 65 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4801

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 2 - Request for Donation on Council Fees - Parkrun Australia Bowen



Donation on Council Fees Application Form 2020/2021

Donation on Council Fees Application Form

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'n/a'.

Application Information

Community groups are required to complete this form to apply for a Donation on Council Fees prior to the event or application. Donations on Council Fees are only available for Not for Profit organisations and only apply for Application Fees, Licence Fees and Disposal of Green Waste Fees.

On receiving the completed form, it will be processed and presented to Council at the next available meeting for consideration. Once a decision has been made, formal notification will be made to the listed applicant.

Forms can be emailed to info@whitsundayrc.qld.gov.au or in person at any of Council's Customer Service Centres.

Section 1 – Applicant Details

Clear Form

Applicant Name	Parkrun Australia	Contact Person	[REDACTED]
Postal Address	82-86 Minnie Street Southport Qld 4215		
Phone Number	[REDACTED]	Mobile Number	[REDACTED]
Email Address	[REDACTED]		

Section 2 – Details of Donation on Council Fees

☐ Class 1 Application Fee:	\$ 927.00	☐ Local Law Licence Fee:	\$
☐ Class 2 Application Fee:	\$ 664.00	☐ Building Application Fee:	\$
☐ Class 3 Application Fee:	\$ 399.00	☐ Planning Application Fee:	\$
☐ Category 1 Food Licence Fee:	\$ 525.00	☐ Other: Local Law Licence	\$ 200.00

Section 3 – Linked Applications

Is this Donation on Council Fees linked to an Event Application? If yes, please complete below:

Event Name	Parkrun Events	Location	Bowen
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Please Note:

*If the fee has been paid, please attach the receipt and complete Council's EFT Form for a refund.

*If you are in receipt of an invoice, please attach a copy to this application.

Signature	[REDACTED]	Date	27/10/2020
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Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

OFFICE USE ONLY:

☐ Approved	☐ Declined	Number:	262.2020.63/215.2016.42	Date:	27/10/2020
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Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4800
P: 1300 WRC QLD (1300 972 753) F: (07) 4945 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 3 - Request for Donation on Council Fees - Parkrun Australia Airlie Beach



Donation on Council Fees Application Form 2020/2021

Donation on Council Fees Application Form

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'n/a'.

Application Information

Community groups are required to complete this form to apply for a Donation on Council Fees prior to the event or application. Donations on Council Fees are only available for Not for Profit organisations and only apply for Application Fees, Licence Fees and Disposal of Green Waste Fees.

On receiving the completed form, it will be processed and presented to Council at the next available meeting for consideration. Once a decision has been made, formal notification will be made to the listed applicant.

Forms can be emailed to info@whitsundayrc.qld.gov.au or in person at any of Council's Customer Service Centres.

Section 1 – Applicant Details

Clear Form

Applicant Name	Parkrun Australia	Contact Person	[REDACTED]
Postal Address	82-86 Minnie Street Southport Qld 4215		
Phone Number		Mobile Number	[REDACTED]
Email Address	[REDACTED]		

Section 2 – Details of Donation on Council Fees

☐ Class 1 Application Fee:	\$ 927.00	☐ Local Law Licence Fee:	\$
☐ Class 2 Application Fee:	\$ 664.00	☐ Building Application Fee:	\$
☐ Class 3 Application Fee:	\$ 399.00	☐ Planning Application Fee:	\$
☐ Category 1 Food Licence Fee:	\$ 525.00	☐ Other: Local Law Licence	\$ 200.00

Section 3 – Linked Applications

Is this Donation on Council Fees linked to an Event Application? If yes, please complete below:

Event Name	Parkrun Events	Location	Airlie Beach
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Please Note:

*If the fee has been paid, please attach the receipt and complete Council's EFT Form for a refund.

*If you are in receipt of an invoice, please attach a copy to this application.

Signature	[REDACTED]	Date	27/10/2020
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Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

OFFICE USE ONLY:

☐ Approved	☐ Declined	Number:	262.2020.64/215.2015.95	Date:	27/10/2020
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Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4809
P: 1300 WRC QLD (1300 972 753) F: (07) 4945 0272 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

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Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4809

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 4 - Request for Donation on Council Fees - Save the Children Australia



Donation on Council Fees Application Form 2020/2021

Donation on Council Fees Application Form

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'n/a'.

Application Information

Community groups are required to complete this form to apply for a Donation on Council Fees prior to the event or application. Donations on Council Fees are only available for Not for Profit organisations and only apply for Application Fees, Licence Fees and Disposal of Green Waste Fees.

On receiving the completed form, it will be processed and presented to Council at the next available meeting for consideration. Once a decision has been made, formal notification will be made to the listed applicant.

Forms can be emailed to info@whitsundayrc.qld.gov.au or in person at any of Council's Customer Service Centres.

Section 1 – Applicant Details

Clear Form

Applicant Name	Phoenix Tai Chi Bowen Inc	Contact Person	[REDACTED]
Postal Address	65A Field Street Bowen Qld 4805		
Phone Number		Mobile Number	[REDACTED]
Email Address			

Section 2 – Details of Donation on Council Fees

☐ Class 1 Application Fee:	\$ 927.00	☐ Local Law Licence Fee:	\$
☐ Class 2 Application Fee:	\$ 664.00	☐ Building Application Fee:	\$
☐ Class 3 Application Fee:	\$ 399.00	☐ Planning Application Fee:	\$
☐ Category 1 Food Licence Fee:	\$ 525.00	☐ Other: Local Law Licence	\$ 200.00

Section 3 – Linked Applications

Is this Donation on Council Fees linked to an Event Application? If yes, please complete below:

Event Name	Tai Chi Classes	Location	Bowen Front Beach
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Please Note:

*If the fee has been paid, please attach the receipt and complete Council's EFT Form for a refund.

*If you are in receipt of an Invoice, please attach a copy to this application.

Signature	[REDACTED]	Date	27/10/2020
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OFFICE USE ONLY:

☐ Approved	☐ Declined	Number:	262.2020.62/215.2018.64	Date:	27/10/2020
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Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4806
P: 1300 WRC QLD (1300 972 753) F: (07) 4945 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

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Bowen QLD 4805

Proserpine
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Proserpine QLD 4806

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

8.27 x 11.69 in

Attachment 5 - Request for Donation on Council Fees - Phoenix Tai Chi



Donation on Council Fees Application Form 2019/2020

Donation on Council Fees Application Form

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'n/a'.

Application Information

Community groups are required to complete this form to apply for a Donation on Council Fees prior to the event or application. Donations on Council Fees are only available for Not for Profit organisations and only apply for Application Fees, Licence Fees and Disposal of Green Waste Fees.

On receiving the completed form, it will be processed and presented to Council at the next available meeting for consideration. Once a decision has been made, formal notification will be made to the listed applicant.

Forms can be emailed to info@whitsundayrc.qld.gov.au or in person at any of Council's Customer Service Centres.

Section 1 – Applicant Details

Clear Form

Applicant Name	SAVE THE CHILDREN AUSTRALIA	Contact Person	
Postal Address	P.O BOX3080 BRISBANEQLD 4101		
Phone Number		Mobile Number	
Email Address			

Section 2 – Details of Donation on Council Fees

☐ Class 1 Application Fee:	\$ 909.00	☐ Local Law Licence Fee:	\$
☐ Class 2 Application Fee:	\$ 651.00	☐ Building Application Fee:	\$
☐ Class 3 Application Fee:	\$ 391.00	☐ Planning Application Fee:	\$
☐ Category 1 Food Licence Fee:	\$ 515.00	☒ Other: LOCAL GOV CONTROLL	\$ 200.00

Section 3 – Linked Applications

Is this Donation on Council Fees linked to an Event Application? If yes, please complete below:

Event Name	Location
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Please Note:

*If the fee has been paid, please attach the receipt and complete Council's EFT Form for a refund.

*If you are in receipt of an Invoice, please attach a copy to this application.

Signature	Date
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Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

OFFICE USE ONLY:

☐ Approved	☐ Declined	Number:	Date:
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Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4806
P: 1300 WRG QLD (1300 972 753) F: (07) 4945 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

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Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4806

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 6 - Request for Donation on Council Fees - Show Whitsunday (Proserpine AP&I)



Donation on Council Fees Application Form 2020/2021

Donation on Council Fees Application Form

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'n/a'.

Application Information

Community groups are required to complete this form to apply for a Donation on Council Fees prior to the event or application. Donations on Council Fees are only available for Not for Profit organisations and only apply for Application Fees, Licence Fees and Disposal of Green Waste Fees.

On receiving the completed form, it will be processed and presented to Council at the next available meeting for consideration. Once a decision has been made, formal notification will be made to the listed applicant.

Forms can be emailed to info@whitsundayrc.qld.gov.au or in person at any of Council's Customer Service Centres.

Section 1 – Applicant Details

Clear Form

Applicant Name	Show Whitsunday - Proserpine AP + I	Contact Person	[REDACTED]
Postal Address	PO Box 150 Proserpine Qld 4800		
Phone Number		Mobile Number	[REDACTED]
Email Address	[REDACTED]		

Section 2 – Details of Donation on Council Fees

☐ Class 1 Application Fee:	\$ 927.00	☐ Local Law Licence Fee:	\$
☐ Class 2 Application Fee:	\$ 664.00	☒ Building Application Fee:	\$ 5,445.00
☐ Class 3 Application Fee:	\$ 399.00	☐ Planning Application Fee:	\$
☐ Category 1 Food Licence Fee:	\$ 525.00	☒ Other: Plumbing Application Fee	\$ 2,404.00

Section 3 – Linked Applications

Is this Donation on Council Fees linked to an Event Application? If yes, please complete below:

Event Name	Not Applicable	Location	Proserpine Showgrounds
Please Note: *If the fee has been paid, please attach the receipt to the form for a refund. *If you are in receipt of a refund, please attach the receipt to the form.			
Signature	[REDACTED]	Date	28/10/2020
Privacy Statement: Your information is handled in accordance with your application. Your information is handled in accordance with the information Privacy Act 1988 and is not to be disclosed to any other person or agency unless you have given Council permission to or the disclosure is required by law.			

OFFICE USE ONLY:

☐ Approved	☐ Declined	Number:	262.2020.85/2020 0734	Date:	28/10/2020
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Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4800
P: 1300 WRC QLD (1300 972 753) F: (07) 4945 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

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Proserpine
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Proserpine QLD 4800

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Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

15. Community Services

15.2 SPECIAL PROJECTS GRANT APPLICATIONS - ROUND 1 - 10 FEBRUARY TO 16 OCTOBER 2020

AUTHOR: Jacqueline Neave - Arts & Community Programs Officer

RESPONSIBLE OFFICER: Julie wright - Director Community Services

OFFICER'S RECOMMENDATION

That Council approve the payment of Special Projects Grant - Round 1, from budget code JC: 2967.10081 - Community Donations (2967) / Projects Grants (10081), to assist the following recipients:

- **Whitsunday Community & Education Centre - \$8,300.00**
 - **Collinsville, Scottville & District Historical Society - \$7,046.50**
 - **Collinsville Community Association Inc. - \$2,100.00**
 - **Gloucester Sports & Recreation Association Inc. - \$9,750.00**
 - **Mackay Hospital Foundation - \$20,000.00**
-

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

Each financial year a fixed amount of funding, as determined by Council, is allocated to the Special Projects Grant program. Once the funding round has closed, the applications are submitted to Council for consideration.

PURPOSE

For Council to approve funding for the Special Projects Grant Applications for Round 1 of the 2020/21 Program.

BACKGROUND

The first round of the Special Projects Grant Program for 2020/21 closed on Friday, 16 October 2020. The following applications were submitted:

Bowen

Whitsunday Community & Education Centre (WC & EC) is the body that runs the centre that houses three different groups, the Art Society, Potters Group and Family History Group. The WC & EC has requested \$8,300.00 to assist with an upgrade to their facility. The refurbishment project of the gallery space will include painting of walls and ceiling, new floor coverings and blinds to update the space. In the past, the space was used for art exhibitions, the refurbishment will assist in reinvigorating the use of the facility.

The WC & EC will be contributing \$2,050.00 towards the project for hanging rails and fit-out after work is completed.

Collinsville

Collinsville Scottville & District Historical Society has requested \$7,046.50 to assist with the upgrade of the existing 17 Historical Signs throughout the Collinsville, Scottville & Mt Coolon districts. The upgrade of the interpretive signage will help preserve the history within the communities and enhance the existing tourist infrastructure. The funding will be utilised to cover the costs associated with the design, development and installation of the signs.

The Society will be contributing to the project via promotion of the signage through brochures, a map of the towns indicating the locations of the signs, as well as the new addition of a QR code specific to the signage.

Given that historical signs are an important cultural heritage resource, it is hoped the project will attract more visitors to the region and offer an understanding of the places of historical significance that reflect the diversity of our communities and provide a sense of identity and connection to the past and nation.

Collinsville Community Association Incorporated has requested \$2,100.00 to assist with the hosting of the Collinsville Lights Up Christmas competition. The event is aimed at bringing families and the community together to make streets, buildings, houses and trees light up with unique displays over the Christmas period. The funding will be used to purchase prizes for the six categories, including Best House and Best Street.

The Collinsville Community Association will be contributing \$450.00 to cover the costs for printing, stationery, advertising and coordination of the event.

Christmas is a time for family bonding, renewing friendships, exchanging gifts or going on holidays. With the current COVID-19 pandemic, people are spending less time physically connecting to others within the communities. The competition event provides the opportunity to bring participation and community connectedness back.

Proserpine

Gloucester Sports and Recreation Association Incorporated has requested \$9,750.00 to assist in completing the installation of a brick retaining wall. The retaining wall was part of a previous Works for Queensland project to install additional rainwater tanks for the public toilets and the club house, which has been completed, but there were insufficient funds to complete the wall. The brick retaining wall is now essential for another sport and recreation project (funded by another government agency) to proceed, including the erection of a fence and installation of a concrete slab.

The Gloucester Sports and Recreation Association will contribute \$4,000.00 towards the overall project for the fencing materials, erection of the fencing on brick wall and the concrete slab.

Mackay Hospital Foundation has requested \$20,000.00 to assist with the purchase of a vehicle for a Voluntary Transport Program between Cannonvale, Proserpine and the Mackay Base Hospital. The proposal is to purchase a 2020 LDV G10 People Mover 9-seater vehicle to facilitate the transporting of patients and will have the capacity to accommodate up to 80 patients per week.

The Mackay Hospital Foundation will contribute \$24,716.00 to the total project to purchase and maintain the vehicle as well as providing volunteers who will facilitate a door to door transport option Monday to Friday 8-4pm.

Across the Whitsunday Region there are limited transport options available for patients who need to attend important medical appointments at Mackay Base Hospital. Concerns have been raised by Whitsunday residents regarding the lack of options and the Mackay Hospital Foundation has acknowledged the issue and is committed to reducing transportation barriers and building partnerships with community organisations.

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009

Local Government Regulation 2012

LSP_C&ENV_03 - Community Grants Policy

ANALYSIS

Organisation Name	Amount Requested	Amount Recommended
Bowen		
Whitsunday Community & Education Centre	\$8,300.00	\$8,300.00
Sub-Total	\$8,300.00	\$8,300.00
Cannonvale/Airlie Beach		
No applications received		
Sub-Total	\$0.00	\$0.00
Collinsville		
Collinsville, Scottville & District Historical Society	\$7,046.50	\$7,046.50
Collinsville Community Association Incorporated	\$2,100.00	\$2,100.00
Sub-Total	\$9,146.50	\$9,146.50
Proserpine		
Gloucester Sports & Recreation Association Incorporated	\$9,750.00	\$9,750.00
Mackay Hospital Foundation	\$20,000.00	\$20,000.00
Sub-Total	\$29,750.00	\$29,750.00
Combined Total	\$47,196.50	\$47,196.50

Council has the following options:

Option 1 -

That Council contributes:

- \$8,300.00 towards the costs of the refurbishment of the Gallery Space.
- \$7,046.50 towards the costs of upgrading 17 existing Historical Signs throughout the Collinsville, Scottville & Mt Coolon districts.
- \$2,100.00 towards the costs of the Collinsville Lights Up Christmas Competition Event.
- \$9,750.00 towards the costs of building a retaining wall.
- \$20,000.00 towards the costs of a Voluntary Transport Program between Cannonvale, Proserpine and Mackay Base Hospital.

Option 2 - That Council decline the Special Project applications, allowing adequate funding for further projects in the final round of the financial year.

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 - KPI - Community & RADF Grant Applications are decided within corporate timeframes.

Financial Implications - The total cost to Council for this group of applications could be \$47,196.50, which will be budgeted against JC: 2967.10081.63150 - Community Donations (2967) / Projects Grants (10081).

Risk Management Implications - Providing financial support for projects undertaken by community groups will reinforce the message that Council is committed to investing in worthwhile community activities while recognising the work done by our local community groups.

Special Projects Grants – Total Requested V Budget 2020/21

current applications inclusive

Total Requested	2020/21 Budget	Proposed Recommendation Total
\$47,196.50	\$140,000.00	\$47,196.50

Totals by Location based on Recommendations

Location	Amount
Bowen	\$8,300.00
Cannonvale/Airlie Beach	\$0
Proserpine	\$29,750.00
Collinsville/Mt Coolon	\$9,146.50

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 the payment of the Special Projects Grants, from budget code JC: 2967.10081.63150 - Community Donations (2967) / Projects Grants (10081).

ATTACHMENTS

Attachment 1 - Special Projects Grant Application - Collinsville, Scottville & District Historical Society

Attachment 2 - Special Projects Grant Application - Collinsville Community Association Inc.

Attachment 3 - Special Projects Grant Application - Whitsunday Community & education Centre

Attachment 4 - Special Projects Grant Application - Gloucester Sports and Recreation Association Inc.

Attachment 5 - Special Projects Grant Application - Mackay Hospital Foundation

Attachment 1 – Special Projects Grant Application - Collinsville, Scottville & District Historical Society



Special Projects Grant Application

Special Projects Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Please note: Application Contact is responsible for acquitting grant.

Clear Form

Club/Entity Name	COLLINSVILLE, SCOTTVILLE & DISTRICT HISTORICAL SOCIETY		
Application Contact	[REDACTED]		
Contact Phone (H)	[REDACTED]	Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]		
Club Location	COLLINSVILLE		

Section 2 – Club/Entity Details

Incorporation No.	IA 33189		
Public Liability Insurance Limit (\$)	7,000,000.00		
Certificate of Currency Attached?	☒ Yes ☐ No		
Regional, State or National Governing Organisation Name			
Contact Phone (H)	Contact Phone (M)		
Email Address			

Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4800
P: (1300) WRG QLD (1300 972 753) F: (07) 4945 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

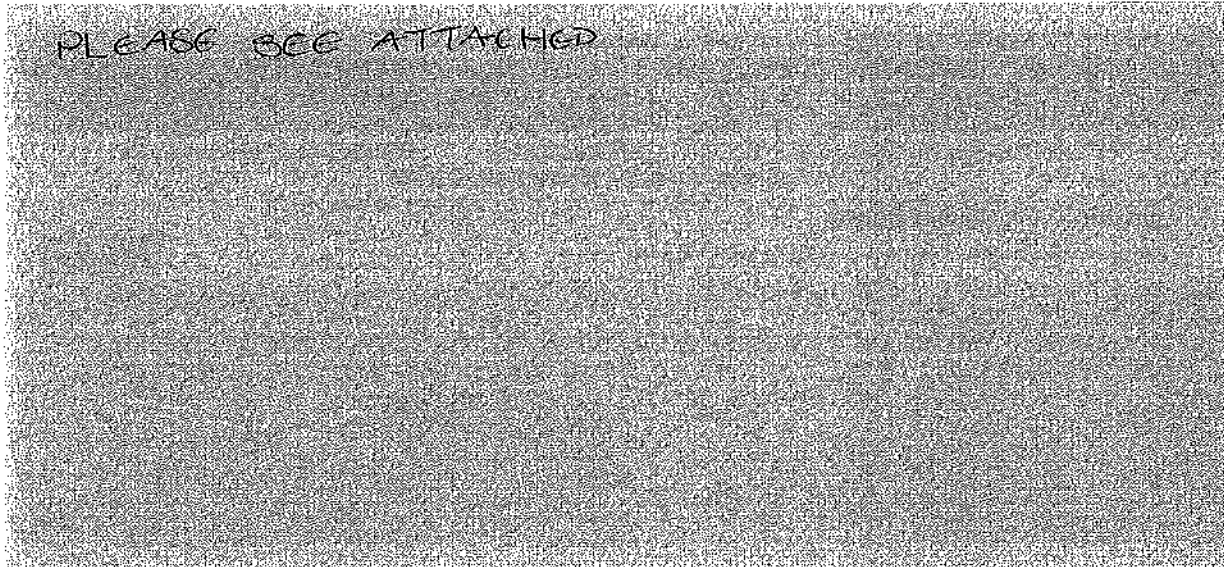
Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

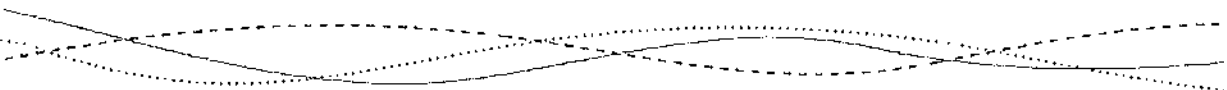
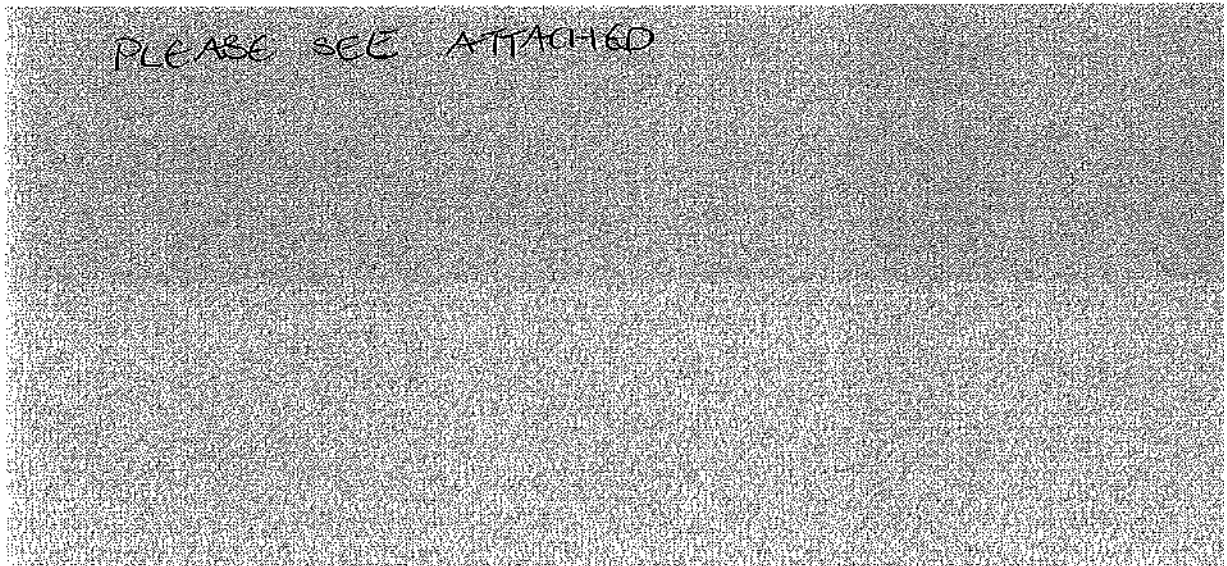
Section 3 – Project Details

Please provide a brief description of the project and attach your completed Project Plan with any available documentation.



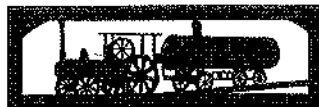
Section 4 – Project Benefits

Please outline how this project will benefit your organisation and the local community. Also comment on community support for this project and how others may benefit.





Collinsville Scottville and
District Historical Society Inc.
81 Garrick St Collinsville Qld 4804 – PO Box 25
Email: csdhs19@gmail.com



Project Details

Collinsville has a rich historical heritage, CSDHS would like to upgrade the existing 17 Historical Signs throughout the Collinsville, Scottville & Mt Coolon districts. The proposed upgrade to the interpretive signage will preserve the history within our communities & enhance our tourist infrastructure. Positive promotion of the signage has been undertaken using brochures & a map of the towns indicating the locations of the signs & places.

QR codes will be a new addition to the existing signage. QR codes take you directly to download the app and are a great showcase for both ad creativity and self-explanatory promotion of the site you are looking at. Visitors enter the QR code for a particular site, and get the inside scoop direct from the app.

We believe this will attract more visitors to our region as it offers a historical attraction. Places of historical significance reflect the diversity of our communities; they provide a sense of identity & a connection to our past & to our nation.

Project Benefits

Historical signs are an important cultural heritage resource, they are a resource that has given insight in our community for over 100 years or more. CSDHS would like to improve the existing historical signs to promote the community as a truly historical town. Having such historical sites adequately signposted will ensure ongoing interest from locals & visiting tourists. The signs have contributed to understanding the social value of our community.

Project Income (fully itemised)	Amount (\$)
Grant requested from Whitsunday Regional Council (no more than 75% of total (A) to a maximum of \$20,000)	7046 49
Applicant's cash contribution for this project	
Applicant's in-kind contribution value <i>instillation</i>	1500 00
[Together the above should equal at least 25% of the total project cost (A)]	
Other in-kind value (donations from suppliers, etc.)	
Cash sponsorship (please attach details)	
Participation fees	
Other grants (please detail below)	
Other	
Total Proposed Income (B)	1500 00
Surplus/Deficit (B - A)	
Total amount requested from Whitsunday Regional Council	7046 49

Section 7 – Applications for Other Grants

Have you applied for any other grants for this project? If yes, please provide details in the table below.

Funding Source	Amount Sought (\$)	Outcome
<i>NIL</i>		



Policy Schedule

Date of Issue 29 April 2020
Contact David Leijen
Telephone 1800 123 266
Email david.leijen@aon.com

Important Notice: This Schedule should be read in conjunction with your Policy Wording, which together comprise your contract of Insurance with the insurer. Please refer to both documents for full terms, conditions, exclusions and specific endorsements of your policy.

Vital Pack

Aon Reference PRM 1B6TK
Insured Collinsville, Scottville & District Historical Society Inc
Period of Insurance 4:00 PM 01 May 2020 to 4:00 PM 01 May 2021

Business Description Principally volunteer, community, charitable and not-for profit Organisations and all other associated and related activities including activities of volunteers.

General and Products Liability

Business Description Principally volunteer, community, charitable and not-for profit Organisations and all other associated and related activities as declared by you on the liability declaration.
Limit of Liability
General Liability (any one occurrence) \$ 20,000,000
Products Liability (any one period of Insurance) \$ 20,000,000
Sub Limits of Liability Property in physical or legal care, custody & control endorsement limit: \$ 250,000

The policy covers the organisation, its employees & volunteers from their legal liability to third parties for personal injury and/or property damage if proven legally liable or negligent as defined in the policy

Geographical Limits Anywhere in the Commonwealth of Australia

Endorsements

Molestation Endorsement (CGU & XL Insurance only):
The limit of the Insurer's liability in respect of any one Claim shall not exceed \$5,000,000.
The total aggregate liability of the Insurer during any one Policy Period shall not exceed \$5,000,000.
Supplementary Payments shall be included within the Limit of Liability.

This Policy does not provide cover for legal liability arising out of or in any way connected with actual, threatened or perceived sexual assault, sexual harassment or molestation of any person arising from the operation or ownership of any school, religious organisation or child care centre.

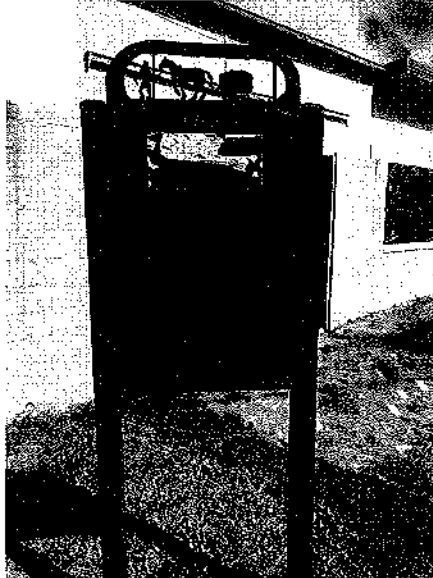
Molestation Endorsement (CGU & Catlin only)
The limit of the Insurer's liability in respect of any one Claim shall not exceed \$5,000,000.
The total aggregate liability of the Insurer during any one Policy Period shall not exceed \$5,000,000.
Supplementary Payments shall be included within the Limit of Liability.

Aon Reference: PRM 1B6TK A673766/006

Aon Risk Services Australia Limited ABN 17 000 434 720 AFSL 241141
PO Box 1331 Parramatta NSW 2124

Page 1 of 2

Historical Society Signage Upgrade
Current Signs in Conway & Garrick St



Attachment 2 – Special Projects Grant Application - Collinsville Community Association Inc.



Special Projects Grant Application

Special Projects Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Please note: Application Contact is responsible for acquitting grant.

Clear Form

Club/Entity Name	Collinsville Community Association Inc		
Application Contact	Heather Brown		
Contact Phone (H)	0747855 965	Contact Phone (M)	0431 443 574
Email Address	ccainc1@bigpond.com		
Club Location	Collinsville		

Section 2 – Club/Entity Details

Incorporation No	IA16143		
Public Liability Insurance Limit (A)	\$20,000,000		
Certificate of Currency Attached?	☒ Yes ☐ No		
Regional State or National Awarding Organisation Name			
Contact Person (A)	Contact Person (M)		
Email Address			

Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4800
P: 1300 WRC QLD (1300 972 753) F: (07) 4945 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Section 3 – Project Details

Please provide a brief description of the project and attach your completed Project Plan with any available documentation.

Christmas is a time for family bonding, renewing friendships, exchanging gifts or going on holidays. This year CCA aims to bring families & the community together to make the streets, buildings, houses & trees sparkle & dance in all their Christmas joy. Driving around town to see the lights displays has become a special part of the festive season for many families. Residents, Businesses & Community Groups will have 6 categories to choose from to take part & get involved in the community Christmas spirit.

Section 4 – Project Benefits

Please outline how this project will benefit your organisation and the local community. Also comment on community support for this project and how others may benefit.

Community events, activities & gatherings are a great way to connect with others, make new friends, nurture long lasting relationships, & often help people within our community in a multitude of ways. CCA are a proud part of the Collinsville/Scottville community that inspires people to become active within the community. Collinsville & everywhere around Australia has seen a decline in community participation especially now with the current COVID-19 pandemic. Whether it is due to globalism, technology, information overload, or our increasingly busy lives, we are spending less time physically connecting to others within communities or perhaps Australians are giving more time & money to causes online. Collinsville Lights Up Christmas Competition aims to bring participation & community connectedness back to the community, bringing people together lets everyone know the Christmas spirit really does exist.

Section 8 – Previous Funding

What funding has your organisation/club received from any sources over the last three (3) years? Please detail funding source, purpose of funding, amount and when it was received.

Funding Source	Purpose	Amount Sought (\$)	Date Received
Glencore	100 Years of Mining	\$ 4,000.00	01/10/2019
Glencore	Halloween Equipment	\$ 3,500.00	01/06/2020
Glencore	Social Media Sessions for Schools	\$ 3,000.00	01/06/2020
WRC	Halloween Equipment	\$ 3,500.00	01/04/2020

Section 9 – Acknowledgement of Funding Conditions

Upon signing and lodging this application, you acknowledge that you have read and understood the Council's Community Assistance Policy as far as it applies to SPECIAL PROJECT GRANTS and agree to abide by the conditions of funding. It is understood that a GRANT ACQUITTAL FORM must be submitted to the Council at the completion of the project.

Two signatures are required on this form. At least one (1) of these signatories must be an executive member of your club or organisation's management committee.

Name	[Redacted]	Position	[Redacted]
Signature	[Redacted]	Date	09/07/2020

Name	[Redacted]	Position	[Redacted]
Signature	[Redacted]	Date	09/07/2020

Section 10 – Privacy Statement

Privacy statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2014 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

Support Letter for Community Christmas Lights Competition

The Collinsville Connect Telecentre committee would like to add its full support to the Collinsville Community Association & Collinsville Youth Coalition's Community Christmas Lights Competition.

We believe the need for such an event is well needed within our small community & always look forward to community events such as these. As stated in the application submitted by the CCA, this competition aims to bring participation back to the community & bring people together, which is vital to all communities across the country suffering from the effects of the COVID-19 pandemic.

Our teams will continue to work collaboratively together as we have always done in the past. Our organisation will also assist CCA & CYC with any tasks they may need help with to ensure the best possible outcomes for the Collinsville/Scottville Community.

We wish CCA & CYC all the best with their funding application & praise them on their outstanding involvement within our community. We certainly look forward to seeing some great Christmas light displays.

Thank you for your time

[Redacted Signature]

Coordinator Collinsville Connect Telecentre

Attachment 3 - Special Projects Grant Application - Whitsunday Community & Education Centre



Special Projects Grant Application

Special Projects Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Please note: Application Contact is responsible for acquitting grant.

Club/Entity Name	WHITSUNDAY COMMUNITY & EDUCATION CENTRE .		
Application Contact	[REDACTED]		
Contact Phone (B)	[REDACTED]	Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]		
Club Location	18 BEACH AVE, QUEENS BEACH, BOWEN, 4805		

Section 2 – Club/Entity Details

Incorporation No.	ABN 66 828 456431		
Public Liability Insurance Limit (\$)	20,000,000		
Certificate of Currency Attached?	☒ Yes	☐ No	
Regional, State or National Governing Organisation Name	WHITSUNDAY COMMUNITY + EDUCATION CENTRE. ARTS CENTRE (NON FOR PROFIT)		
Contact Phone (B)	Contact Phone (M)	[REDACTED]	
Email Address	[REDACTED]		

Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4800
P: 1300 WRC QLD (1300 972 753) F: (07) 4945 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Section 3 – Project Details

Please provide a brief description of the project and attach your completed Project Plan with any available documentation.

To refurbish our gallery space, and bring up to date. So the community and Arts + Crafts groups, can utilise the space.

PLAN

1. New Paint
2. New floor coverings
3. New blinds for large windows to control light.

Section 4 – Project Benefits

Please outline how this project will benefit your organisation and the local community. Also comment on community support for this project and how others may benefit.

The WC+EC are the body that runs the centre. We house the Art society, Potters group and Family History Group. This project will benefit all members and the community as a whole. As in the past, the high school senior arts exhibition was held in this space. We would like to have a gallery of local works in the main section and a sales area at the entrance for local crafts. As we are non profit. We find it very hard to acquire funds for any improvements or maintenance.

Section 5 – Partners

Please provide details of who your partners are in this project and what contribution each will make. Please attach letters from these partners detailing their commitment to the project.

The Pottery group - Contributes Pots for exhibit
The Arts Society - Contribute Arts Works for display. Find attached letters of support.

Section 6 – Project Budget

Instructions on completing the budget:

- Aim to have your expenditure and income equal with as little surplus or deficit as possible.
- Ensure that your budget estimates are as accurate as possible. Inflated budget claims may negatively affect the funding decision.
- Enter all other grants you have applied for in the table provided below.
- Round all amounts to the nearest whole dollar. (e.g. \$8.00 instead of \$7.98 or \$405.00 instead of \$405.22)

Is your organisation registered for GST?

☐ Yes (If yes, Council will pay the grant plus GST. Amounts in the budget below should be exclusive of GST if you are registered for GST.)

☒ No (If no, amounts in the budget below should include GST as this is part of the cost of the project and you will be paid this amount.)

Project Expenditure (fully itemised)	Amount (\$)
new floor coverings estimated	3,900
new paint walls + ceiling	3,000
new blinds for windows	1,400
We will also add shelving lighting and plinths.	
Total Projected Expenditure (A)	ESTIMATED QUOTES ATTACHED \$ 8,300.

Project Income (fully itemised)	Amount (\$)
Grant requested from Whitsunday Regional Council [no more than 75% of total (A) to a maximum of \$20,000]	
Applicant's cash contribution for this project	\$250.00
Applicant's in-kind contribution value	\$1,800.00
[Together the above should equal at least 25% of the total project cost (A)]	\$2,050.00
Other in-kind value (donations from suppliers, etc.)	PAINTER DONATED SOME PAINT
Cash sponsorship (please attach details)	WCTEC. PAY FOR PITUC HANGING RAILS
Participation fees	CLUB MEMBERS WORKING BS
Other grants (please detail below)	CHEIN PREP AREA. FITOUT AFTER WORK IS DONE.
Other:	NO OTHER GRANTS APPLIED FOR.
Total Projected Income (B)	\$2,050.00
Surplus/Deficit (B-A)	10,350.00
Total amount requested from Whitsunday Regional Council:	\$8,300.00

Section 7 – Applications for Other Grants

Have you applied for any other grants for this project? If yes, please provide details in the table below.

Funding Source	Amount Sought (\$)	Outcome
N/A		

Section 8 – Previous Funding

What funding has your organisation/club received from any sources over the last three (3) years? Please detail funding source, purpose of funding, amount and when it was received.

Funding Source	Purpose	Amount Sought (\$)	Date Received
We have not had any funding for the WCEC for years			

Section 9 – Acknowledgement of Funding Conditions

Upon signing and lodging this application, you acknowledge that you have read and understood the Council's Community Assistance Policy as far as it applies to SPECIAL PROJECT GRANTS and agree to abide by the conditions of funding. It is understood that a GRANT ACQUITTAL FORM must be submitted to the Council at the completion of the project.

Two signatures are required on this form. At least one (1) of these signatories must be an executive member of your club or organisation's management committee.

Name	[Redacted]	Position	[Redacted]
Signature	[Redacted]	Date	21/9/20.

Name	[Redacted]	Position	[Redacted]
Signature	[Redacted]	Date	22/9/20

Section 10 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

Patricia Hourn
22 Marshall St
Bowen 4805
Ph.47851522

06.July 2020

To Whom It May Concern

It is with pleasure that I provide a letter supporting the application by the Whitsunday Community and Education Centre for funding to refurbish their Art Gallery at the Centre.

The W.C.E.C is an important organization in the Whitsunday region in that it provides an avenue for members and residents to pursue their various art and craft endeavours. It houses The Art Society, Potters Group, Family History Group and a Art Gallery which is the only venue in Bowen for members and artists in the community to display their art.

Funding to replace worn out carpet and fittings in the the Gallery is essential and needs to be at a level sufficient for the W.C.E.C to operate efficiently to continue providing for all artists the opportunity to display their work in a quality venue.

The W.C.E.C plays a very important role in the Whitsunday Shire and any reduction in the services offered by the Centre would result in a noticeable diminishment of cultural, social and artistic opportunities in the region.

I trust you will look upon this application favourable.

Sincerely

[Redacted Signature]

President

Bowen Potters Group.

[Redacted Signature]

BOWEN ART SOCIETY Assn. Inc.

P.O. Box 615.
BOWEN, Q. 4805

6 July, 2020

TO WHOM IT MAY CONCERN

The Bowen Art Society occupies a room in the W.E. & E.C. Arts Centre and we also display our work in the Art Gallery.

We wish to advise that we support the W.E. & E.C. 's application for a Grant to improve the facility and make it easier for public attendance.

[REDACTED]
[REDACTED]
[REDACTED]
President

103 Queens Beach Esp
Bowen QLD 4805
Ph 0439 712475

6 July 2020

TO WHOM IT MAY CONCERN

This letter is to express my support for the Whitsunday Community and Education Centre in their application for a grant for refurbishing their gallery at Beach Avenue Bowen.

I believe art in all its forms is an important part of our community. Engaging in art can assist with building community relationships, providing a creative outlet and I believe there can also be mental health benefits too.

I sincerely hope you will consider their grant application favourably.

Yours faithfully



Attachment 4 - Special Projects Grant Application - Gloucester Sports and Recreation Association Inc.



Special Projects Grant Application 2020/2021

Special Projects Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Please note: Application Contact is responsible for acquitting grant.

Clear Form

Club/Entity Name	Gloucester Sports and Recreation Association Inc.		
Application Contact	[REDACTED]		
Contact Phone (B)	[REDACTED]	Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]		
Club Location	417 Hydeaway Bay Drive, Hideaway Bay, 4800		

Section 2 – Club/Entity Details

Incorporation No.	IA32868		
Public Liability Insurance Limit (\$)	20,000,000		
Certificate of Currency Attached?	☒ Yes	☐ No	
Regional, State or National Governing Organisation Name	[REDACTED]		
Contact Phone (B)	[REDACTED]	Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]		

Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4800
P: 1300 WRC QLD (1300 972 753) F: (07) 4645 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-65 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conroy Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Section 3 – Project Details

Please provide a brief description of the project and attach your completed Project Plan with any available documentation.

1. Build a brick retaining wall.

NB: This retaining wall was part of a previous Council project to install additional rainwater tanks for the Public Toilets and Club House. This rainwater tank project was finished without the brick wall because of insufficient funds left in a "Works for Queensland" allocation.

Now this brick retaining wall is additionally essential for another sport and recreation project (that has funding) to proceed. This 100% funded sport and recreation project will -

Fence around the wall.

Install drainage pipe.

Back fill.

Install concrete slab 14m x 6m for sport and recreation activities.

Section 4 – Project Benefits

Please outline how this project will benefit your organisation and the local community. Also comment on community support for this project and how others may benefit.

Initially, 2018, the retaining wall was to hold back sloping ground for the installation of the new tanks.

Benefits -

1. Hold back sloping ground. (Initial project benefit)
2. Provide an area for other sport and recreation activities that the club has funds set aside for.
3. Allow the Club to concrete and fence a large level pad with Club funds and some grant funds already received for sport and recreation activities in this area. This grant will have to be returned if the brick wall is not built.
4. Make the area safe. Following the installation of the Tanks the ground is very steep, unusable, and a slip hazard. Pictures attached



Section 5 – Partners

Please provide details of who your partners are in this project and what contribution each will make. Please attach letters from these partners detailing their commitment to the project.

'Works for Queensland' will contribute most of the funds for the brick wall component.
Gloucester Sports and Recreation will contribute the fencing and concrete slab.
Volunteer labor from members to erect fencing on the brick wall
Whitsunday Regional Council has the engineering drawings, scope of works and tender process finalised for the retaining wall.

Section 6 – Project Budget

Instructions on completing the budget:

- Aim to have your expenditure and income equal with as little surplus or deficit as possible.
- Ensure that your budget estimates are as accurate as possible. Inflated budget claims may negatively affect the funding decision.
- Enter all other grants you have applied for in the table provided below.
- Round all amounts to the nearest whole dollar. (e.g. \$8.00 instead of \$7.98 or \$405.00 instead of \$405.22)

Is your organisation registered for GST?

☒ **Yes** (If yes, Council will pay the grant plus GST. Amounts in the budget below should be exclusive of GST if you are registered for GST.)

☐ **No** (If no, amounts in the budget below should include GST as this is part of the cost of the project and you will be paid this amount.)

Project Expenditure (fully itemised)	Amount (\$)
Council Project Grant	\$ 9,750
Works for Queensland Funding left over for project (amount know by Council) estimated	\$ 14,000
Gloucester Sports & Recreation Association Fencing materials, transport and funds	\$ 2,500
Gloucester Sports & Recreation Association "In kind support" to erect fencing on brick wall	\$ 1,500
Gloucester Sports & Recreation Association Grant funds for concrete slab	\$ 12,270
Total Projected Expenditure (A)	\$ 40,020



Project Income (fully itemised)	Amount (\$)
Grant requested from Whitsunday Regional Council [no more than 75% of total (A) to a maximum of \$20,000]	\$ 9,750
Applicant's cash contribution for this project	\$ 2,500
Applicant's in-kind contribution value	\$ 1,500
[Together the above should equal at least 25% of the total project cost (A)]	
Other in-kind value (donations from suppliers, etc.)	
Cash sponsorship (please attach details)	
Participation fees	
Other grants (please detail below)	
Other:	
Works for Queensland Funds (not known exactly) estimated	\$ 14,000
Active Restart Infrastructure Recovery Fund to install concrete slab	\$ 12,270
Total Projected Income (B)	\$ 40,020
Surplus/Deficit (B-A)	\$ 0
Total amount requested from Whitsunday Regional Council:	\$ 9,750

Section 7 – Applications for Other Grants

Have you applied for any other grants for this project? If yes, please provide details in the table below.

Funding Source	Amount Sought (\$)	Outcome
Active Restart Infrastructure Recovery Fund	\$ 12,270.00	Approved



Section 8 – Previous Funding

What funding has your organisation/club received from any sources over the last three (3) years? Please detail funding source, purpose of funding, amount and when it was received.

Funding Source	Purpose	Amount Sought (\$)	Date Received
Community Development Grant	Build a two lane bowling green	\$ 194,000.00	19/03/2020
QLD Reconstruction Auth	Build a Microwave Link for emergencies	\$ 59,558.00	30/07/2019
Gaming Fund	Deck and Wheel Chair Ramps	\$ 35,000.00	27/09/2019
Whitsunday Regional Council	Sports Club Grant	\$ 3,000.00	25/07/2019
Whitsunday Regional Council	Sports Club Grant	\$ 3,000.00	27/08/2020

Section 9 – Acknowledgement of Funding Conditions

Upon signing and lodging this application, you acknowledge that you have read and understood the Council's Community Assistance Policy as far as it applies to SPECIAL PROJECT GRANTS and agree to abide by the conditions of funding. It is understood that a GRANT ACQUITTAL FORM must be submitted to the Council at the completion of the project.

Two signatures are required on this form. At least one (1) of these signatories must be an executive member of your club or organisation's management committee.

Name	[REDACTED]	Position	[REDACTED]
Signature	[REDACTED]	Date	09/10/2020

Digitally signed by [REDACTED]
Date: 2020.10.09 09:48:24 +10'00'

Name	[REDACTED]	Position	[REDACTED]
Signature	[REDACTED]	Date	09/10/2020

Digitally signed by [REDACTED]
Date: 2020.10.09 09:58:09 +10'00'

Section 10 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.



Brick Wall and Fence Plan



Unusable and unsafe area left after Rainwater Tank Project



Attachment 5 - Special Projects Grant Application - Mackay Hospital Foundation



Special Projects Grant Application 2020/2021

Special Projects Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Please note: Application Contact is responsible for acquitting grant.

Clear Form

Club/Entity Name	Mackay Hospital Foundation		
Application Contact	[REDACTED]		
Contact Phone (B)		Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]		
Club Location	475 Bridge Road Mackay QLD		

Section 2 – Club/Entity Details

Incorporation No.	--		
Public Liability Insurance Limit (\$)	20000000		
Certificate of Currency Attached?	☒ Yes ☐ No		
Regional, State or National Governing Organisation Name	Mackay Hospital Foundation		
Contact Phone (B)	[REDACTED]	Contact Phone (M)	
Email Address	[REDACTED]		

Correspondence: Chief Executive Officer, Whitsunday Regional Council, PO Box 104, Proserpine, QLD 4800
P: 1300 WRC QLD (1300 072 753) F: (07) 4045 0222 E: info@whitsundayrc.qld.gov.au www.whitsundayrc.qld.gov.au

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Cotway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Section 3 – Project Details

Please provide a brief description of the project and attach your completed Project Plan with any available documentation.

Across the Whitsunday Region there are limited transport options available for patients and of particular concern, for those trying to attend important medical appointments at Mackay Base Hospital. Concerns have been raised by Whitsunday residents regarding the number of patients from the Propserpine and Cannonvale communities who can not attend medical appointments due to the lack of transport available to them.

The Mackay Hospital Foundation proposes a Voluntary Transport Program which will be a lifeline for patients who have no reliable way of getting to important appointments at Mackay Base Hospital.

Volunteer drivers will provide a door to door transport option to and from Mackay Base Hospital from Monday to Friday 8am to 4pm.

The people mover will have the capacity to assist 80 patients to and from appointments every week. This service will be valuable to the residents of Whitsunday Region who require treatment at Mackay Base Hospital.

Section 4 – Project Benefits

Please outline how this project will benefit your organisation and the local community. Also comment on community support for this project and how others may benefit.

The opportunity to implement this service will improve patient experience and reduce the number of patients missing important, and potentially lifesaving appointments. Patients frequently identify transportation barriers as a major reason for missing health care appointments. Missed appointments are associated with increased medical care costs for the patient, disruption of patient care and provider-patient relationships, delayed care and increased emergency department visits. When a patient is unable to find or afford a ride, costs accrue for patients, caregivers, providers, and taxpayers. Health care systems lose revenue from missed appointments because of the effects on delivery, cost of care and resource planning.

Mackay Hospital Foundation recognises that some rural and regional areas have extremely limited travel options and are addressing patients transportation needs to improve the health of our communities. We are committed to reducing transportation barriers and building partnerships with community organisations to improve transportation and health care access for regional and rural patients and families and create more equitable, healthier communities.

To be able to provide this important service the Mackay Hospital Foundation needs to purchase a people mover to facilitate the transporting of patients. The 2020 LDV People Mover is a suitable car with 9 comfortable seats, easy access via dual rear doors and a strong safety rating.

The service will allow for 16 patients to be transported daily to and from Mackay Base Hospital for higher care or specialist investigations.



Section 5 – Partners

Please provide details of who your partners are in this project and what contribution each will make. Please attach letters from these partners detailing their commitment to the project.

The total cost of the project will come to \$44,716. Mackay Hospital Foundation will contribute \$24,716 to the total project. We will make an initial contribution of \$24,716 to purchase and maintain the vehicle. The Foundation will also provide Volunteers to provide the transport service from Monday to Friday 8am to 4pm. The estimated value of the volunteer contribution is \$86,776 per annum in line with valuing volunteer labour.

<https://www.fundingcentre.com.au/help/valuing-volunteer-labour#:~:text=Based%20on%20May%202017%20to%20to%20from%20a%20volunteer>

We anticipate the average annual operating cost of this program to be \$9,726 (plus volunteer in kind support of \$86,776) which will be funded by the Foundation.

Section 6 – Project Budget

Instructions on completing the budget:

- Aim to have your expenditure and income equal with as little surplus or deficit as possible.
- Ensure that your budget estimates are as accurate as possible. Inflated budget claims may negatively affect the funding decision.
- Enter all other grants you have applied for in the table provided below.
- Round all amounts to the nearest whole dollar. (e.g. \$8.00 instead of \$7.38 or \$405.00 instead of \$405.22)

Is your organisation registered for GST?

☒ Yes (If yes, Council will pay the grant plus GST. Amounts in the budget below should be exclusive of GST if you are registered for GST.)

☐ No (If no, amounts in the budget below should include GST as this is part of the cost of the project and you will be paid this amount.)

Project Expenditure (fully itemised)	Amount (\$)
2020 LDV G10 Van Diesel Auto	\$ 29,990
Insurance, Depreciation & Roadside Assist	\$ 8,906
Fuel (25,000km/ year)	\$ 2,458
Tyres (25,000km/year)	\$ 362
Vehicle Wrapping Signage	\$ 5,000
Volunteer Labour	\$ 86,776
Total Projected Expenditure (A)	\$ 131,492



Project Income (fully itemised)	Amount (\$)
Grant requested from Whitsunday Regional Council [no more than 75% of total (A) to a maximum of \$20,000]	\$ 20,000
Applicant's cash contribution for this project	\$ 24,716
Applicant's in-kind contribution value	\$ 86,776
[Together the above should equal at least 25% of the total project cost (A)]	
Other in-kind value (donations from suppliers, etc.)	
Cash sponsorship (please attach details)	
Participation fees	
Other grants (please detail below)	
Other:	
Total Projected Income (B)	\$ 131,492
Surplus/Deficit (B-A)	\$ 0
Total amount requested from Whitsunday Regional Council:	\$ 20,000

Section 7 – Applications for Other Grants

Have you applied for any other grants for this project? If yes, please provide details in the table below.

Funding Source	Amount Sought (\$)	Outcome



Section 8 – Previous Funding

What funding has your organisation/club received from any sources over the last three (3) years? Please detail funding source, purpose of funding, amount and when it was received.

Funding Source	Purpose	Amount Sought (\$)	Date Received

Section 9 – Acknowledgement of Funding Conditions

Upon signing and lodging this application, you acknowledge that you have read and understood the Council's Community Assistance Policy as far as it applies to SPECIAL PROJECT GRANTS and agree to abide by the conditions of funding. It is understood that a GRANT ACQUITTAL FORM must be submitted to the Council at the completion of the project.

Two signatures are required on this form. At least one (1) of these signatories must be an executive member of your club or organisation's management committee.

Name		Position	
Signature		Date	15/10/2020

Name		Position	
Signature		Date	

Section 10 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.



13 October 2020

Rod Ferguson
Chief Executive Officer
Whitsunday Regional Council
PO Box 104
Proserpine QLD 4700

Email: info@whitsundayrc.qld.gov.au

Dear Mr Ferguson,

On behalf of the Mackay Hospital Foundation Board, I am writing a letter in support of the Mackay Hospital Foundation's *Special Projects Grant* application.

The Proserpine Community Reference Group approached the Foundation in September 2020 voicing their concerns that there are limited transport options available for patients in the Proserpine and Cannonvale communities to travel to Mackay Base Hospital for appointments and treatment.

The Mackay Hospital Foundation are devoted to improving patients experience and are making a commitment to these communities to reduce the limitations and barriers around transportation. Purchasing a people mover to transport patients from Proserpine and Cannonvale to Mackay Base Hospital will enable the Mackay Hospital Foundation to support these communities through the facilitation of transportation and enabling access to health care for all.

The opportunity to implement this service will improve patient experience and reduce the number of patients missing essential appointments at Mackay Base Hospital. The people mover will provide a service that will be greatly beneficial to the Whitsunday Region.

I am pleased to provide my support for this special projects' application.

Regards,



Board Member
Mackay Hospital Foundation

Mackay Hospital Foundation | PO Box 6011 | Mackay MC 4741 QLD
07 4855 5915 | mhf@health.qld.gov.au | mackayhospitalfoundation.com.au
ABN 573 599 391 76 | The Mackay Hospital Foundation is endorsed as a Deductible Gift Recipient (DGR)



Enquiries to: Executive Office
Mackay Hospital & Health
Service
Telephone: 07 4885 6202

Rod Ferguson
Chief Executive Officer
Whitsunday Regional Council
PO Box 104
PROSERPINE QLD 4800

Email: info@whitsundayrc.qld.gov.au

Dear Mr Ferguson

Letter of support – Mackay Hospital Foundation Special Projects Grant Application 2020/2021

On behalf of the Mackay Hospital and Health Service (MHHS), I am writing to support the Mackay Hospital Foundation (MHF) for its Special Projects Grant Application 2020/2021.

The MHF are applying for the grant to obtain a people mover which will enable them to facilitate transportation of patients from within the Whitsunday region to attend appointments at the Mackay Base Hospital.

Along with the MHF, the MHHS is committed to reducing transportation barriers and building partnerships with community organisations to improve transportation and health care access for regional and rural patients and families and create more equitable, healthier communities.

The opportunity for the MHF to provide this service will be tremendously beneficial to the Whitsunday region. The service will ensure improved patient experience and reduce the number of patients from the Whitsunday region missing critical health care appointments.

Yours sincerely


Chief Executive
Mackay Hospital and Health Service
7/10/2020



15. Community Services

15.3 2020 SPORT & RECREATION CLUB GRANT - BOWEN SWIMMING CLUB

AUTHOR: Jacqueline Neave - Arts & Community Programs Officer

RESPONSIBLE OFFICER: Rod Cousins - Manager Community Development & Libraries

OFFICER'S RECOMMENDATION

That Council approve the payment of a Sport & Recreation Club Grant, from budget code JC: 2967.10250 - Community Donations (2967) / Club Grants (10250), to Bowen Swimming Club Inc - Band 2 for \$3,000.00.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

Council offers annual funding to grass roots sport & recreation clubs across the region to support the general functions of the club.

PURPOSE

Council to consider the payment of the Sport & Recreation Club Grant in accordance with Council's Sport & Recreation Club Grants Guidelines.

BACKGROUND

To be eligible for the sport & recreation grant a club must meet the following criteria;

- Is incorporated and meets its obligations with the Office of Fair Trading;
- Is covered with the appropriate level of public liability insurance (\$20 million); and
- Provides membership data (as defined by Council) to the Council on an annual basis.

The level of funding available to clubs will be based on a progressive scale, the larger the participation rate, the larger the support to the club. Participation is defined as being the total number of active members within the club.

The Sport & Recreation Club Grants are allocated based on the following:

Band Level	No. of Active Participants	Grant Allocation (\$)
Band 1	> 250	\$5,500.00
Band 2	101 - 250	\$3,000.00
Band 3	51 - 100	\$1,500.00
Band 4	4 - 50	\$1,000.00

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009

Local Government Regulation 2012

LSP_C&ENV_03 – Community Grants Policy

ANALYSIS

Organisation Name	Junior Members	Senior Members	Total Members	Grant Type/ Band	Amount Requested
Bowen Swimming Club Inc.	82	36	118	Club / 2	\$3,000.00
Total					\$3,000.00

Council has the following options:

Option 1 – That Council approve the payment of the Sport & Recreation Club Grant.

Option 2 – That Council decline the Sport & Recreation Club Grant and defer the decision to a later date.

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.

Measure – 175 community and sporting groups are funded.

Financial Implications – The funds will be taken from budget code JC: 2967.10250 - Community Donations (2967) / Club Grants (10250). There is currently \$93,272.73 in this budget line item.

Risk Management Implications – Reputational Risk - Providing funding support to the community and recognising the efforts of local Sport & Recreational Clubs is a positive outcome for Council.

CONSULTATION

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 approve the payment of a Sport & Recreation Club Grant, from budget code JC: 2967.10250 – Community Donations (2967) / Club Grants (10250) to the Bowen Swimming Club.

ATTACHMENTS

Attachment 1 – Sport & Recreation Club Grant Application - Bowen Swimming Club Inc.

Attachment 1 - Sport & Recreation Club Grant Application - Bowen Swimming Club Inc.



Sport & Recreation Clubs Grant Application 2020/2021



Sport & Recreation Clubs Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Clear Form

Application Band Level (please see guidelines)	☐ Band 1	☒ Band 2	☐ Band 3	☐ Band 4
Club/Entity Name	Bowen Swimming Club			
Club/Entity Address	Bowen Town Pool Dalrymple Street, Bowen			
Application Contact	[REDACTED]			
Contact Phone (B)		Contact Phone (M)	[REDACTED]	
Email Address	[REDACTED]			

Section 2 – Club/Entity Details

Club Location	☐ Airlie Beach	☒ Bowen	☐ Cannonvale	☐ Collinsville	☐ Proserpine
Incorporation No.	IA11411		Public Liability Insurance Limit (\$)	20,000,000	
Certificate of Currency Attached?	☒ Yes	☐ No	GST Registered?	☐ Yes	☒ No
No. of Active Junior Participant Members	82		No. of Active Senior Participant Members	36	
Name of State/National Governing Organisation	Swimming Australia				

Section 3 – Applicant Declaration

Name	[REDACTED]		
Signature	[REDACTED]	Date	09/10/2020

Section 4 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23 Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

15. Community Services

15.4 SPORT & RECREATION CLUB GRANTS - OCTOBER 2020

AUTHOR: Jacqueline Neave - Arts & Community Programs Officer

RESPONSIBLE OFFICER: Julie Wright – Director Community Services

OFFICER'S RECOMMENDATION

That Council approve the payment of a Sport & Recreation Club Grant, from budget code JC: 2967.10250 - Community Donations (2967) / Club Grants (10250), to the following recipients:

- Proserpine Junior Cricket Association Inc. - Band 2 - \$3,000.00
- Whitsunday Weightlifting Association Inc. - Band 2 - \$3,000.00
- Port Denison Gun Club Inc. - Band 4 - \$1,000.00
- Collinsville/Scottville Amateur Swimming Club Inc. - Band 4 - \$1,000.00
- Bowen Netball Inc. - Band 2 - \$3,000.00
- Bowen Pistol Club Inc. - Band 3 - \$1,500.00
- Club Outrigger Whitsunday - Band 4 - \$1,000.00

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

Council offers annual funding to grass roots sport & recreation clubs across the region to support the general functions of the club.

PURPOSE

Council to consider the payment of the Sport & Recreation Club Grants for October 2020 in accordance with Council's Sport & Recreation Club Grants Guidelines.

BACKGROUND

To be eligible for the sport & recreation grant a club must meet the following criteria;

- Is incorporated and meets its obligations with the Office of Fair Trading;
- Is covered with the appropriate level of public liability insurance (\$20 million); and
- Provides membership data (as defined by Council) to the Council on an annual basis.

The level of funding available to clubs will be based on a progressive scale, the larger the participation rate, the larger the support to the club. Participation is defined as being the total number of active members within the club.

The Sport & Recreation Club Grants are allocated based on the following:

Band Level	No. of Active Participants	Grant Allocation (\$)
Band 1	> 250	\$5,500.00
Band 2	101 - 250	\$3,000.00
Band 3	51 - 100	\$1,500.00
Band 4	4 - 50	\$1,000.00

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009

Local Government Regulation 2012

LSP_C&ENV_03 – Community Grants Policy

ANALYSIS

Organisation Name	Junior Members	Senior Members	Total Members	Grant Type/ Band	Amount Requested
Proserpine Junior Cricket Association Inc.	126	0	126	Club / 2	\$3,000.00
Whitsunday Weightlifting Association Inc.	83	32	115	Club / 2	\$3,000.00
Port Denison Gun Club Inc.	3	40	43	Club / 4	\$1,000.00
Collinsville/Scottville Amateur Swimming Club Inc.	23	15	38	Club / 4	\$1,000.00
Bowen Netball Inc.	64	108	172	Club / 2	\$3,000.00
Bowen Pistol Club Inc.	0	62	62	Club / 3	\$1,500.00
Club Outrigger Whitsunday	4	28	32	Club / 4	\$1,000.00
Total					\$13,500.00

Council has the following options:

Option 1 – That Council approve the payment of the Sport & Recreation Club Grants.

Option 2 – That Council decline the Sport & Recreation Club Grants and defer the decision to a later date.

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.

Measure – 175 community and sporting groups are funded.

Financial Implications - The funds will be taken from budget code JC: 2967.10250 - Community Donations (2967) / Club Grants (10250). There is currently \$93,272.73 in this budget line item.

Risk Management Implications - Reputational Risk - Providing funding support to the community and recognising the efforts of local Sport & Recreational Clubs is a positive outcome for Council.

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 approve the payment of a Sport & Recreation Club Grant, from budget code JC: 2967.10250 - Community Donations (2967) / Club Grants (10250).

ATTACHMENTS

Attachment 1 - Sport & Recreation Club Grant Application - Proserpine Junior Cricket Association Inc.

Attachment 2 - Sport & Recreation Club Grant Application - Whitsunday Weightlifting Association Inc.

Attachment 3 - Sport & Recreation Club Grant Application - Port Denison Gun Club Inc.

Attachment 4 - Sport & Recreation Club Grant Application - Collinsville/Scottville Amateur Swimming Club Inc.

Attachment 5 - Sport & Recreation Club Grant Application - Bowen Netball Inc.

Attachment 6 - Sport & Recreation Club Grant Application - Bowen Pistol Club Inc.

Attachment 7 - Sport & Recreation Club Grant Application - Club Outrigger Whitsunday

Attachment 1 – Sport & Recreation Club Grant Application - Proserpine Junior Cricket Association Inc.



Sport & Recreation Clubs Grant Application



Doc # _____

Sport & Recreation Clubs Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Clear Form

Application Band Level (please see guidelines)	☐ Band 1	☒ Band 2	☐ Band 3	☐ Band 4
Club/Entity Name	Proserpine Junior Cricket Association Incorporated			
Club/Entity Address	52 Kelsey Creek Rd Proserpine Qld 4800			
Application Contact	[REDACTED]			
Contact Phone (B)	[REDACTED]		Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]			

Section 2 – Club/Entity Details

Club Location	☐ Airlie Beach	☐ Bowen	☐ Cannonvale	☐ Collinsville	☒ Proserpine
Incorporation No.	IA08122		Public Liability Insurance Limit (\$)	\$ 50,000,000.0	
Certificate of Currency Attached?	☒ Yes	☐ No	GST Registered?	☐ Yes	☒ No
No. of Active Junior Participant Members	126		No. of Active Senior Participant Members		
Name of State/National Governing Organisation	Queensland Cricket				

Section 3 – Applicant Declaration

Name	[REDACTED]		
Signature	[REDACTED]	Date	20 th July 2020

Section 4 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 2 – Sport & Recreation Club Grant Application - Whitsunday Weightlifting Association Inc.



Sport & Recreation Clubs Grant Application



Sport & Recreation Clubs Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Clear Form

Application Band Level (please see guidelines)	☐ Band 1	☒ Band 2	☐ Band 3	☐ Band 4
Club/Entity Name	Whitsunday Weightlifting Association Inc			
Club/Entity Address	28 Rifle Range Road Mount Marlow Qld 4800			
Application Contact	[REDACTED]			
Contact Phone (B)	[REDACTED]		Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]			

Section 2 – Club/Entity Details

Club Location	☐ Airlie Beach	☐ Bowen	☒ Cannonvale	☐ Collinsville	☒ Proserpine
Incorporation No.	IA 41480		Public Liability Insurance Limit (\$)	20 000 000	
Certificate of Currency Attached?	☒ Yes	☐ No	GST Registered?	☐ Yes	☒ No
No. of Active Junior Participant Members	83		No. of Active Senior Participant Members	32	
Name of State/National Governing Organisation	Queensland Weightlifting Association Inc, Powerlifting Australia, My Gym Club				

Section 3 – Applicant Declaration

Name	[REDACTED]		
Signature	[REDACTED]	Date	28-7-20

Section 4 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 3 – Sport & Recreation Club Grant Application - Port Denison Gun Club Inc.



**Whitsunday
Regional Council**

Sport & Recreation Clubs Grant Application

2020/2021



WHITSUNDAY REGIONAL
COUNCIL
14 OCT 2020
RECEIVED

Sport & Recreation Clubs Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

[Clear Form](#)

Application Band Level (please see guidelines)	☐ Band 1	☐ Band 2	☐ Band 3	☒ Band 4
Club/Entity Name	Port Denison Gun Club			
Club/Entity Address	P.O Box 795, Bowen QLD 4805			
Application Contact	[REDACTED]			
Contact Phone (E)	[REDACTED]		Contact Phone (M)	
Email Address	[REDACTED]			

Section 2 – Club/Entity Details

Club Location	☐ Airlie Beach	☒ Bowen	☐ Cannonvale	☐ Collinsville	☐ Proserpine
Incorporation No.	3448		Public Liability Insurance Limit (\$)	\$ 20,000,000.00	
Certificate of Currency Attached?	☒ Yes ☐ No		GST Registered?	☐ Yes ☒ No	
No. of Active Junior Participant Members	3		No. of Active Senior Participant Members	40	
Name of State/National Governing Organisation	Australian Clay Target Association				

Section 3 – Applicant Declaration

Name	[REDACTED]		
Signature	[REDACTED]		Date 8-10-20

Section 4 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

Bowen
Cnr Herbert & Powell Streets
Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 4 – Sport & Recreation Club Grant Application - Collinsville/Scottville Amateur Swimming Club Inc.



Sport & Recreation Clubs Grant Application



Doc # _____

Sport & Recreation Clubs Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Clear Form

Application Band Level (please see guidelines)	☐ Band 1	☐ Band 2	☐ Band 3	☒ Band 4
Club/Entity Name	COLLINSVILLE/SCOTTVILLE AMATEUR SWIMMING CLUB			
Club/Entity Address	37 CONWAY ST COLLINSVILLE Q 4804			
Application Contact	[REDACTED]			
Contact Phone (B)	[REDACTED]		Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]			

Section 2 – Club/Entity Details

Club Location	☐ Airlie Beach	☐ Bowen	☐ Cannonvale	☒ Collinsville	☐ Proserpine
Incorporation No.	IA16193		Public Liability Insurance Limit (\$)	\$20 000 000	
Certificate of Currency Attached?	☒ Yes ☐ No		GST Registered?	☐ Yes ☒ No	
No. of Active Junior Participant Members	23		No. of Active Senior Participant Members	15	
Name of State/National Governing Organisation	SWIMMING AUSTRALIA				

Section 3 – Applicant Declaration

Name	[REDACTED]		
Signature	[REDACTED]	Date	12/10/20

Section 4 – Privacy Statement

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Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 5 – Sport & Recreation Club Grant Application - Bowen Netball Inc.



Sport & Recreation Clubs Grant Application 2020/2021

Sport & Recreation Clubs Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Clear Form

Application Band Level (please see guidelines)	☐ Band 1	☒ Band 2	☐ Band 3	☐ Band 4
Club/Entity Name	Bowen Netball			
Club/Entity Address	Col Leather Sporting Complex Ryland Road BOWEN			
Application Contact	[REDACTED]			
Contact Phone (B)	[REDACTED]		Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]			

Section 2 – Club/Entity Details

Club Location	☐ Airlie Beach	☒ Bowen	☐ Cannonvale	☐ Collinsville	☐ Proserpine
Incorporation No.	10086		Public Liability Insurance Limit (\$)		
Certificate of Currency Attached?	☒ Yes	☐ No	GST Registered?	☐ Yes	☒ No
No. of Active Junior Participant Members	64		No. of Active Senior Participant Members	108	
Name of State/National Governing Organisation	Netball QLD				

Section 3 – Applicant Declaration

Name	[REDACTED]
Signature	[REDACTED] 13/10/2020

Section 4 – Privacy Statement

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83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802



Sport & Recreation Clubs Grant Application 2020/2021

Sport & Recreation Clubs Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

[Clear Form](#)

Application Band Level (please see guidelines)	☐ Band 1	☐ Band 2	☒ Band 3	☐ Band 4
Club/Entity Name	Bowen Pistol Club Inc			
Club/Entity Address				
Application Contact				
Contact Phone (B)		Contact Phone (M)		
Email Address				

Section 2 – Club/Entity Details

Club Location	☐ Airlie Beach	☒ Bowen	☐ Cannonvale	☐ Collinsville	☐ Proserpine
Incorporation No.	9614		Public Liability Insurance Limit (\$)	20 000 000	
Certificate of Currency Attached?	☒ Yes	☐ No	GST Registered?	☐ Yes	☒ No
No. of Active Junior Participant Members	0		No. of Active Senior Participant Members	62	
Name of State/National Governing Organisation	Pistol Shooting QLD				

Section 3 – Applicant Declaration

Name			
Signature		Date	8-10-20

Section 4 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

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Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

Attachment 7 – Sport & Recreation Club Grant Application - Club Outrigger Whitsunday



Sport & Recreation Clubs Grant Application

2020/2021



Sport & Recreation Clubs Grant Application

Please complete this application in BLOCK LETTERS and tick or fill in boxes where applicable. If a question does not apply, please indicate 'N/A'.

Section 1 – Applicant Details

Clear Form

Application Band Level (please see guidelines)	☐ Band 1	☐ Band 2	☐ Band 3	☒ Band 4
Club/Entity Name	CLUB OUTRIGGER WHITSUNDAY			
Club/Entity Address	P.O. BOX 158, CANNONVALE. 4802			
Application Contact	[REDACTED]			
Contact Phone (B)	[REDACTED]		Contact Phone (M)	[REDACTED]
Email Address	[REDACTED]			

Section 2 – Club/Entity Details

Club Location	☒ Airlie Beach	☐ Bowen	☐ Cannonvale	☐ Collinsville	☐ Proserpine
Incorporation No.	IA07640		Public Liability Insurance Limit (\$)	\$ 20,000,000.00	
Certificate of Currency Attached?	☒ Yes	☐ No	GST Registered?	☐ Yes	☒ No
No. of Active Junior Participant Members	4		No. of Active Senior Participant Members	28	
Name of State/National Governing Organisation	AUSTRALIAN OUTRIGGER CANOE RACING ASSOCIATION (AOCRA)				

Section 3 – Applicant Declaration

Name	[REDACTED]		
Signature	[REDACTED]	Date	22/10/2020

Section 4 – Privacy Statement

Privacy Statement: Your information is being collected for the purpose of processing your application. Your information is handled in accordance with the Information Privacy Act 2009 and will be accessed by persons who have been authorised to do so. Your information will not be given to any other person or agency unless you have given Council permission to or the disclosure is required by law.

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Bowen QLD 4805

Proserpine
83-85 Main Street
Proserpine QLD 4800

Collinsville
Cnr Stanley & Conway Streets
Collinsville QLD 4804

Cannonvale
Shop 23, Whitsunday Plaza
Shute Harbour Road, Cannonvale QLD 4802

15. Community Services

15.5 FINANCING AND FUNDING CLIMATE CHANGE ADAPTATION REPORT - IAN EDWARDS

AUTHOR: Scott Hardy - Coordinator Natural Resource Management & Climate

RESPONSIBLE OFFICER: Julie Wright - Director Community Services

OFFICER'S RECOMMENDATION

That Council receive the Financing Funding Climate Change Adaptation report and publish the report on Council's website.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

The Financing and Funding Climate Change Adaptation is Phase 6 of the Coastal Hazard Adaptation Strategy (CHAS). The Financing and Funding Climate Change Adaptation outlines the challenges of funding future adaptation options to sea level rise. The report describes some of the economic options available to Council to consider so that funds are raised and are available to off-set the costs for the defend and retreat options associated with a rising sea level into the future.

The funding for this report has come from the Queensland State government via the QCoast₂₁₀₀ program.

PURPOSE

To present to Council the report "Financing and Funding Climate Change Adaptation" written by Ian Edwards from Griffith University.

The purpose of presenting the report to Council is to note the progress of the Whitsunday Coastal Hazard Adaption Strategy (CHAS) project and seek support to place the report on Council's website.

BACKGROUND

The Queensland Government and the Local Government Association Queensland (LGAQ) have developed the QCoast₂₁₀₀ program to assist coastal Councils to assess and prepare for climate change and a rising sea level. The QCoast₂₁₀₀ program started in 2016 and is due to finish in April 2021.

The QCoast₂₁₀₀ program is a Queensland Government initiative and has committed \$13.234 million to assist Councils to 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.

Whitsunday Regional Council was one of the first Councils to have funding approved through the QCoast₂₁₀₀ program which occurred in October 2016. Our Council was granted \$513,500 in QCoast₂₁₀₀ funding to develop its Resilient Whitsunday: Coastal Hazards and Response project. The Council has co-contributed funds towards various stage 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.

In 2016, Whitsunday Regional Council started the development of the Coastal Hazard Adaptation Strategy (CHAS). The CHAS is partly funded by the Queensland Government and by Council. The CHAS has eight stages designed to systematically gather important information to form the final Coastal Hazard Adaptation Strategy for Council. 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 adaptation options**
- 7) Socio-economic adaptation options
- 8) Strategy development and implementation and review

The CHAS Implementation Plan (Phase 8) is designed to provide guidance to Council in planning for future changes to our coast caused climate change processes. The CHAS implementation Plan has commenced and is due to be finished by January 2021.

In July 2016, Council adopted a Climate Change Adaptation Policy and Coastal Hazard Adaptation Strategy (CHAS). The strategy aims to identify and respond to coastal hazards in order to provide a detailed assessment of current coastal hazards, as well as those predicted under future climate change scenarios.

The development and implementation of the CHAS will assist Council in implementing its Climate Change Adaptation Policy.

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009

ANALYSIS

The main points in the Financing and Funding adaptation to Climate Change:

- This analysis highlights that as impacts from climate change become more proximate, the ability of Councils to raise funding and financing needed to adapt will become severely hindered.
- Extreme weather events are not only expected to drive up maintenance and replacement costs of Council assets and demand for Council services, but also the capacity of residents and businesses to support a Council's revenue base required to fund them.

- As hazards increase in size and/or frequency, unless exposure to risk is reduced, Councils will be unable to retain access to affordable insurance.
- The earlier that climate risk is incorporated into Council decision making, the more effectively that such risks can be managed, and associated impacts minimised.
- It is argued that such integration is also consistent with the requirements and principles of Queensland's Local Government Act 2009 (the Act) and associated regulations that govern Council operations.

Some of the financing options listed in the Financing and Funding report include:

- Green bonds / Climate bonds
- Municipal Bonds
- Social impact Bonds
- Environmental upgrade agreements
- Energy efficiency bonus
- (Green) Revolving funds

The Financing and Funding report make the following conclusion:

Additionally, as the finance industry and those who regulate and rate them tighten their understanding of the implications of climate change for the integrity of individual and collective balance sheets, it is reasonable to envisage that access to reasonably priced finance will be conditional on the capacity of a council to effectively manage, and be seen to be managing their own climate change risk. It is this essential ingredient that will also enable ratings strategy consistent with legislative principles. In other words, the integration of climate change into council operational and strategic processes is critical to the level of risk management required to enable council to manage their financial requirements, including sustained access to relevant funding and financing sources. For each of the adaptation options we have noted which may be suitable or likely to require financing and funding. This initial analysis is only based on a scoping review of the Adaptation Options report and a further detailed analysis is required following the economic analysis in Phase 7.

It is recommended that Council receive the Financing and Funding Climate Change Adaptation report.

STRATEGIC IMPACTS

Financial

- The Financing and Funding Climate Change Adaptation report is a useful report for future economic planning for predicted sea level rise.
- The report lists some of the main financing and funding options for Council to consider to assist with funding either defend or retreat options.

Risk

- The Financing and Funding Climate Change Adaptation report outlines the risk to Council in not being prepared for sea level rise. Not being prepared may result in Council not being able to get affordable insurance and affordable loans to fund infrastructure into the future.

Legal

- Council will have legal obligations to consider the potential impacts of sea level rise along the coast.

- There is a risk that a lack of planning may result in the courts becoming increasingly involved in coastal development and insurance disputes.

Corporate / Strategic and Operational Plans

- The Financing and Funding Climate Change Adaptation report aligns with the Council's Climate Change Adaptation Policy and Strategy.

CONSULTATION

Julie Wright - Director Community 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

It is recommended that Council receive the Financing Funding Climate Change Adaptation report and publish the report on Council's website.

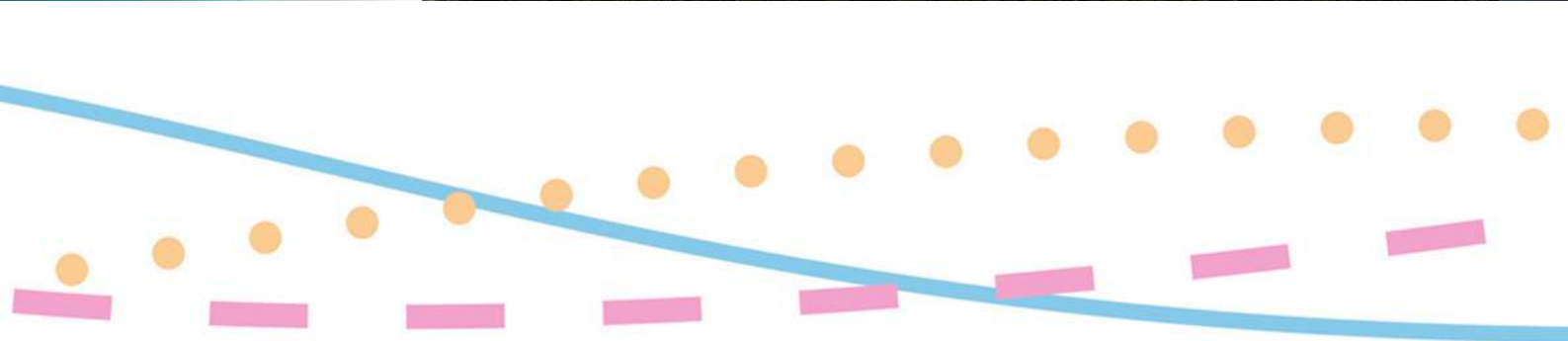
ATTACHMENTS

Attachment 1 - Financing and Funding Climate Change Adaptation Report - Ian Edwards

***Whitsunday Regional Council
Coastal Hazard Adaptation Strategy (CHAS)***

Financing and Funding Climate Change Adaptation

Written by Mr Ian Edwards



Document History

Version	Date	Author	Comments
Draft 1.0	Mar 20 2019	IE	Initial Draft.
Draft 1.5	Apr 2 2019	IE	Action review comments from AF and SF
Draft 2.0	Apr 6 2019	IE	Comments actioned. Awaiting confirmation re Fed financing.
Draft 2.2	Apr 7 2019	DB	Reviewed by Donovan Burton
Draft 3	3 March 2020	IE & JV	Included Executive Summary and updated to corporate design

Table of Contents

1. Executive Summary	3
2. Introduction	6
3. Important Concepts	6
3.1 Climate Change Adaption	6
3.2 Expenditure	7
3.3 Financing and funding	7
3.4 Financiers	7
3.5 Climate Risk Trends in the Finance Sector	8
4. Financing for Climate Adaptation	8
4.1 Funding Climate Adaptation	8
4.2 Climate Adaptation Funding Gaps	11
4.3 Financing Climate Adaptation	11
4.3.1 Sources of Finance	12
4.3.2 Accessing Finance	13
4.3.3 Accessing Climate Finance	13
4.3.4 Matching Finance to Expenditure	14
5. Innovative Mechanisms and Other Funding Sources	15
5.1 Funding	15
5.2 Financing	17
5.3 Insurance and Alternative Risk Transfer Mechanisms	19
5.4 Disaster Recovery Funding	20
5.5 Intersecting Financing, Funding and Insurance	21
6. Summary and Conclusion	23
7. References	27

1. Executive Summary



The Whitsunday Regional Council has commissioned this study as a part of its Coastal Hazard Adaption Strategy (CHAS). The CHAS identifies increasing risks on coastal infrastructure and ecosystems due to the changing climate. Sea level rise is only one of exposure which council needs to manage for together with storm tide inundation, more intense storm events and others. As an outcome of the CHAS a implementation plan will be devised that provides Council with guidance on actions to be taken at key environmental triggers to reduce risk and ensure a sustainable and prosperous Whitsundays.

This paper considers the differing factors that influence access to funds and finance that can be applied to climate change adaptation by Queensland local government. It argues that a requirement to service finance regardless of structure means that any application will need to consider funding, and that innovation required to enable climate change adaptation will necessarily evolve at the intersection of both of these funding sources.

Funding and financing are differentiated as follows: (i) Funding are revenue streams such as rates, user charges and grants that enable council service provision; (ii) financing is generally sought to plug funding gaps that arise due to mismatches in incoming and outgoing cashflows. Whereas financing is typically provided by an intermediary such as a bank with an expectation of repayment and some form of compensation (e.g. interest), there is no such expectation with funding. Importantly, any form of financing must ultimately be serviced by cash generated from council funding.

This analysis highlights that as impacts from climate change become more proximate, the ability of councils to raise funding and financing needed to adapt will become severely hindered. Extreme weather events are not only expected to drive up maintenance and replacement costs of council assets and demand for council services, but also the capacity of residents and businesses to support a council's revenue base required to fund them. Widening demand and capacity not only exacerbates funding gaps but also has implications for the affordability of any finance that is sought as a result. There is strong evidence that the financial sector and those who regulate and rate them are moving rapidly to incorporate the implications of climate risk into their decision-making processes. As this trend advances, it is reasonable to envisage that access to affordable finance will be conditional on council capacity to effectively manage and be seen to be managing their own climate risk. This applies not only to the raising of debt but also insurance. Consistent with debt the price of insurance premiums reflects the covered risk: as risk increases, so does price. As hazards increase in size and/or frequency, unless exposure to risk is reduced, councils will be unable to retain access to affordable

insurance¹. The earlier that climate risk is incorporated into council decision making, the more effectively that such risks can be managed, and associated impacts minimised. It is argued that such integration is also consistent with the requirements and principles of Queensland's Local Government Act 2009 (the Act) and associated regulations that govern council operations. As an example, it is hard to envisage how councils could effectively plan for asset and funding needs ten years in advance (as required by the Act) without any consideration of the impact of extreme weather events on asset repairs, maintenance and replacement.

Beyond early adoption of climate risk management practice, councils will also need to think creatively about how they fund and, where appropriate, finance climate change adaptation. Research to date has found limited examples of mechanisms applied specifically to adaptation projects. Funding examples specific to coastal protection infrastructure projects, such as the Toogoom Seawall and the New South Wales Coastal Protection Service Change, illustrate how identification and levying of infrastructure beneficiaries can help service capital expenditure. The capital nature of adaptation also lends itself to mainstream financing mechanisms (such as bonds and revolving funds) typically applied to large infrastructure projects. Whilst these mechanisms are outcome agnostic, the evolution in recent years of environmental- and ethical-specific products such as green and climate bonds potentially provide a source of finance specifically tailored and actively seeking activities such as climate change adaptation.

It should be noted that although the above mechanisms represent potential financing sources, their suitability within a Queensland and Australian regulatory and economic context requires consideration beyond the scope of this paper. For example, some mechanisms, e.g. bonds, may not be economical at a singular council scale but may make commercial sense where councils combine. Consideration of regulatory and commercial factors is obviously a prerequisite to potential application. If financing is to provide a tenable mechanism for councils, it will be necessary to minimise its cost and maximise community contribution to servicing it. In this regard and as a starting point, a detailed understanding of adaptation outcome will enable identification of beneficiaries, and the extent that, in accordance with the Act, they could explicitly contribute funds. It could also reveal the outcome's contribution to council's overall climate risk management and any flow-on effects such as insurance risk reduction. These findings may, as an example, not only provide an impetus for reduced premiums, but could also be applied to negotiations to minimise financing costs.

¹ In an analysis of six coastal councils (one of which was WRC) Edwards et al. (in press) identified evidence of underinsurance of industrial special risk due to unaffordable increases in insurance.

Integration of climate risk management into council operational and strategic processes is integral to unlocking the potential of innovative funding and financing mechanisms that not only enable adaptation activity but also safeguard council service provision going forward.

2. Introduction

The aim of this paper is to consider the differing factors that influence access to monies that enables climate change adaptation by local government in Queensland. Given the scope of this exercise, consideration is applied at a relatively high level as opposed to significant detail. The intention is not to run the reader through the logistics of the myriad of forms of monetary access. Rather it is to highlight the extent of mechanisms available and the inter-relationships that exist across the various determinants of their relevance and the mechanisms themselves.

The relevant information presented in this paper is part of Phase 6 of Coastal Hazard Adaptation Strategy (CHAS) project. The relevant information in this paper will be used to support some of the actions in the CHAS implementation strategy (Phase 8).

The paper proceeds as follows. First, in Section 2 concepts that underlie subsequent exploration and assertions are introduced. Amongst other things, financing and funding are differentiated as are the two predominant forms of expenditure. Next, Section 3 considers elements that influence access to funding and financing. This section delves beyond administrative factors to discuss the relationship of appropriate risk management and council practice to both finance and funding attainment. Section 4 provides examples of financing mechanisms and funding arrangements both in practice and emergent that could potentially be applied to adaptation. In recognition of the endless arrangements that both funding and financing mechanisms can take this paper then considers a diagram that draws the inter-relationship between demand and the characteristics of supply. A conclusion completes this analysis.

3. Important Concepts

3.1 Climate Change Adaption

Climate Change Adaptation is “the process of adjustment to actual or expected climate and its effects” (Oppenheimer et al., 2014, p. 9). Climate adaptation (or for the purposes of this paper, simply “adaptation”) is a change process that is proactive in nature and involves reducing vulnerability and increasing resilience in order to, at a minimum, moderate harm (Adger et al., 2007). From an implementation perspective, adaptation gives rise to activities intended:



to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience (OECD, 2011, p. 4).

Activities range across a broad spectrum from periodic activities, e.g. cooling and insurance to capital works such as the small-scale, e.g. derivation of household heatwave strategies, to large-scale construction and modification to new and existing infrastructure (Banhalimi-Zakar et al., 2016). Activities can occur in a stand-alone capacity or, more often than not, as an extension of a wider remit of work.

3.2 Expenditure

There are two categories of expenditure:

1. Capital expenditure. For fixed assets, which are expected to be productive for a long period of time.
2. Operational expenditure. Also known as revenue expenditure refers to costs related to revenue transactions or operating periods, such as maintenance and repairs.

Capital expenditure involves upfront costs which can be substantial. Operational expenditure is aligned with organisational operations (e.g. salaries) or across the useful life of assets (e.g. maintenance) and is typically smaller in magnitude than capital expenditure.

3.3 Financing and funding

Typically finance is defined as the provision of monies with full expectation that those monies be repaid in full with cost, e.g. interest (e.g. see (Banhalimi-Zakar et al., 2016)). Finance is usually provided by an intermediary such as a bank. Whilst many forms of finance are available, for the purposes of this analysis, unless specifically stated, finance equates to raising of debt. Finance is differentiated from funding, which are monies provided with no expectation of repayment. These monies are generally provided pursuant to an agreement (e.g. for the provision of services, to be applied in a specific way). It is important to recognise that any form of financing must be serviced and ultimately repaid by council funding.

3.4 3.4 Financiers

Traditionally the two main sources of finance for local government in Australia are the private banks and government treasuries (e.g. Queensland Treasury Corporation). Many other forms of financiers exist however, including insurers, and investment- and superannuation funds.

3.5 Climate Risk Trends in the Finance Sector

Although it is not the intention of this paper to extensively consider trends in the finance sectors relationship with climate change, it would be remiss not to raise it. Quite simply, the level of focus applied to climate change by the sector has increased exponentially in the last three years. This has been driven by the likes of the Financial Stability Board's Taskforce on Climate Related Financial Disclosure (TCFD) and increasing acknowledgment amongst the world's central banks and financial regulators of climate change's risk to the integrity of the financial system. For example, in Australia, all of the key financial regulators have issued concerns about climate change's risk to individual organisations and the broader economy².

Additionally, investors are demanding greater climate risk disclosure in regulatory accounts as are the rating agencies. All of the Big 4 banks and most of Australia's large cap insurers disclosed to some extent climate risk in their 2018 accounts. At this point much of the disclosure revolves around governance and risk management efforts to move forward. The next step will be to quantify exposure to climate risk with many working towards such disclosure for the 2019 reporting season. It's not difficult to see how such emphasis will create a flow on effect to finance clients. To fully understand and manage their exposure financiers will need to understand how exposed their clients are to climate change, potentially enabling them to adjust their rates or portfolios accordingly.

4. Financing for Climate Adaptation

The relevance of financing to climate adaptation is determined first and foremost by the presence, either designed or otherwise, of a funding gap. Funding gaps represent an incapacity or unwillingness of council to apply cash reserves or expected revenues to adaptation activities. This can occur for a myriad of reasons (e.g. cash flow issues unrelated to climate changes) but will primarily be driven by the nature of the activity.

4.1 Funding Climate Adaptation

There are a number of options available to councils to raise funds to meet expenditure. These include rates and user-charges, interest, fines and developer charges, state or federal grants and philanthropic funds. Of these, rates and user charges, collectively termed "own-source revenue" are

² For the Reserve Bank of Australia see: <https://www.rba.gov.au/speeches/2019/sp-dg-2019-03-12.html>; For the Australian Securities and Investments Commission (ASIC) see: <https://asic.gov.au/about-asic/news-centre/speeches/climate-change/>; for the Australian Prudential Regulation Authority (APRA) see: <https://www.apra.gov.au/media-centre/speeches/weight-money-business-case-climate-risk-resilience>

the two main sources of local government revenue in Queensland. There are four types of rates and charges (Queensland Audit Office, 2018, p. 3):

1. general rates—these contribute to services and facilities that everyone uses, such as roads, parks, sporting and cultural facilities, and general council administration
2. special rates and charges—for services and facilities that only benefit particular properties, such as rural fire equipment for certain rural areas
3. utility charges—for waste management, sewerage, and water services
4. separate rates and charges—for any other service or facility not already covered.

The nature by which a council in Queensland may raise funding is governed by the Local Government Act 2009 (the Act) and the Local Government Regulation 2012 (the Regulation). The Act and Regulation allow councils to raise monies from own-source revenue, provided they comply with a set of local government and own-source specific principles (Fig 1) (Queensland Audit Office, 2018)

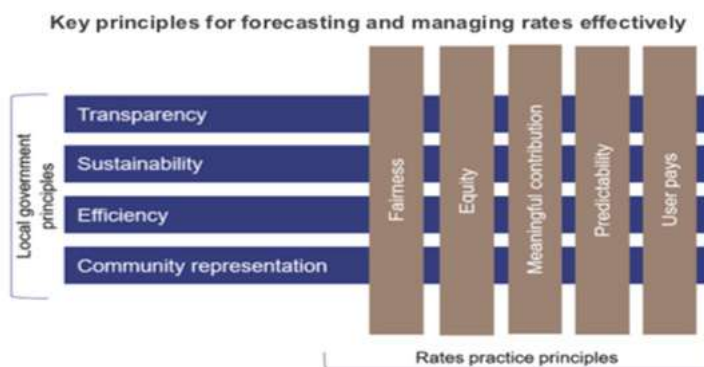


Figure 1 Key principles for forecasting and managing rates effectively (Source: Queensland Audit Office, 2018, p. 4: Figure A)

The objective of the principles illustrated in Figure 1 is to ensure that councils collect enough own-source revenue to ensure sustainable council operations and services at levels that are equitable to the community that pays them. In this regard and as asserted in Box 1 they provide an impetus for council to integrate climate change risk into their financial planning process.

Box 1. Mainstreaming Climate Adaptation into Funding Decisions

It's arguable that regardless of the challenges councils face (some of which are noted above) that regulation supports the collection of requisite rates and charges to enable adaptation activities. Councils are compelled by the Act to ensure that they are financially sustainable (Queensland Audit Office, 2018). "Financially sustainability" in this context infers that a council is able to maintain its financial and infrastructure capital (i.e. physical assets) over the long term (i.e. at least 10 years). An important element of financial sustainability is the planning and forecasting process, in turn, a critical part of which is the incorporation of asset maintenance and replacement costs. Consideration at this

point of how climate change impacts each of these elements, in addition to potential adaptation requirements, enables any additional costs to be captured and included in forecasting.

The inclusion of adaptation deep within the funding process is consistent with rates practice principles³, in particular:

- Earlier inclusion of increased levies due to climate adaptation smooths payments and reduces the risk of sudden shocks. This enhances levy predictability (principle of predictability);
- Identification of beneficiaries informs user-specific cost recovery funding mechanisms and impacts on projected budgets (principle of user pays); and
- Consideration given, based on beneficiaries and degree of levy increases, to concessions can ensure that charges do not unduly impact those with the least capacity to pay (principle of fairness).

Where suitably managed, the local government principles of transparency that requires the disclosure of drivers of levy increases provides a potential positive by-product. The economic lens that mainstreaming climate change into the financial forecasting process creates can raise awareness of the timely and economic ramifications of climate risk and steps council are taking to manage it. This enables the perceived remoteness of climate change to be dispelled through a tangible link to community. Research (e.g. see Ekstrom et al. (2011)) supports the potential for such a positive communicative outcome is maximised with a participatory approach, consistent with the community representation principle.

Results of a 2017-2018 audit undertaken by the Queensland Audit Office (2018) indicate that the implementation of the assertions of Box 1 are easier said than done. Invariably barriers due to economic and political issues such as residents' willingness to pay can significantly hinder tax and fee increases (Banham-Zakar et al., 2016). The Queensland Audit Office (2018, p. 6) found that decisions to increase rates and charges did not always reflect financial needs:

Rather, they [councils] increase rates at levels that councils consider to be fair and reasonable for their ratepayers, rather than with a focus on operating sustainably over the long term without eroding their physical asset base.

State decisions such as caps on developer contributions that are applied time to time can also significantly constrain council capacity to raise revenue (LGAQ, 2017). Additionally, the overall property base upon which rates are levied may shrink should owners abandon properties due to erosion, frequent flooding etc. Whilst conceptually individual rates could be increased to make up any income lost, its highly likely that the political ramifications of doing so would be a significant barrier. Constraints on collection of own-source revenue can generate increased reliance on transfers from State and Federal governments. The LGAQ (2017, p. 2) warns however that:

The 'boom and bust' cycle of grant and subsidy programs made available to local government from time to time, including 'competitive' (non-allocative) programs and those only available for new capital works, does not support meaningful long-term financial planning by councils.

³ Explanations of each of the rates practice principles are available in DILGP's Guideline on equity and fairness in rating for Queensland local governments (DILGP, 2017).

The LGAQ further asserts that such emphasis from grants on capital expenditure, leaves recipients with the task of funding “whole of life costs”, thus stretching own revenue allocation.

It is beyond the scope of this paper to list all grants and subsidies available to councils in Queensland⁴. However, recent changes to the focus of funding available to councils administered by the Queensland Reconstruction Authority is worth noting and is discussed in Box 2 below.

Box 2. Queensland Reconstruction Authority (QRA) Funding (QRA, n.d.)

The focus of the QRA has recently expanded from purely providing post-disaster support to incorporate community resilience. Two funding arrangements aligned to resilience and adaptation activities have been offered in the last year:

- Get Ready Queensland provides \$2 million in Queensland Government funding to help local governments improve their communities’ resilience. Applications for the current tranche of this scheme closed in September 2018.
- The Queensland Disaster Resilience Fund provides \$38 million over four years to support local governments, state agencies and non-government organisations to deliver resilience and mitigation projects. Monies to a maximum of \$2 million are available for infrastructure that “*improve resilience and functionality of at-risk infrastructure or communities*”, and non-infrastructure projects aimed at “*improving Queensland communities’ disaster risk understanding, preparedness, resilience, response and recovery*”. Examples of eligible non-infrastructure activities include natural hazard assessments, research, community education programmes, and resilience officer wages. Applications close April 18 2019.

4.2 Climate Adaptation Funding Gaps

The nature of council own-source revenue aligns its collection more to operational adaptation activities as opposed to capital works. This is because, regardless of their nature, own-source revenue will rarely if ever, meet the magnitude of capital expenditure needs. Unless, sufficient and assignable council savings exist or grants have been received specific to the capital works it is highly likely that a funding gap will arise. Additionally, a funding gap may arise as a result of cash flow inadequacies where operational expenses exceed revenues and available cash reserves.

4.3 Financing Climate Adaptation

By aligning payment with activities, relevant finance can close funding gaps. Whilst access to finance enables council to meet requisite payment profiles, ultimately financing must be funded by council revenues. Financing also comes at a cost (see Box 3).

⁴ LGAQ maintains an inventory of Grants and Funding at <https://www.lgaq.asn.au/grants>



Box 3. Costing Finance

Financing is provided with an expectation of some form of return, e.g. interest. In this regard, the level of return required is typically “priced” to provide a profit for the financier and to compensate the risk that the council will not repay the finance when it is due. This “credit risk” is one of the main drivers of price. Typically, the higher risk the higher return demanded. Beyond pricing for risk, costs typically also include some form of administrative/arrangement fee. This will generally be higher for more customised mechanisms as opposed to commonly (and hence standardised) transactions. Additionally, other factors such as competition and investor appetite can impact cost, at times overriding the pricing signal⁵.

4.3.1 Sources of Finance

Traditionally the two main sources of finance for local government in Australia are private banks and government treasuries (e.g. Queensland Treasury Corporation). Many other sources of finance exist however, including insurers, and investment- and superannuation funds. In addition to these, new operators, such as those leveraging financial technology, are opening up new pathways to finance for organisations and consumers alike. Crowdfunding, peer-to-peer lenders, mobile payments, and digital currencies such as Bitcoin, are examples of new innovations to access finance that the emerging Fin Tech sector is enabling (Australian Government, 2016).

Investor appetite for exposure to climate and other environmental and social justice-related projects is also driving a rapidly growing green market. In Australia, funds promoted as ethical or responsible more than quadrupled in size to A\$622 billion in the three years to 2017 (Pash, 2017). The market for green bonds, whose mandate amongst other things incorporates climate adaptation (see Box 4), have grown from less than A\$5 billion in 2010 to more than A\$150 billion in 2017 and 2018 (McCoach, 2019). Queensland, Victoria and New South Wales State treasuries have all issued green bonds, with the New South Wales’ bond raising A\$1.8 billion off investor demand of A\$2.6 billion. Globally, the green bond market is predicted to grow to between US\$210 billion and US\$240 billion in 2019 (McCoach, 2019).

Box 4. Application of Subnational Green Bond Proceeds

All monies raised from Queensland and Victoria’s green bonds were applied to greenhouse gas minimisation activities such as renewable energy, energy efficiency and low carbon building and transport infrastructure. However, part of monies raised from the New South Wales government’s

⁵ Although not directly relevant to the financial mechanisms under consideration here an example of risk pricing overridden by other factors are catastrophe bonds: a form of an alternative risk transfer mechanism. In this circumstance, Braun (2014) finds that pricing is more representative of investor appetite than the insurance risk that the bond assumes (for more detail see Edwards et al. (2018)).

green bond have been earmarked for resilient water infrastructure, resilient urban drainage systems and flood defences (see TCorp, 2018).

All of the big four banks have committed significant funds to varying forms of climate solutions with the National Australia Bank, as an example, noting in their 2018 Annual Report that they are:

Working with Climate-KIC and a number of other organisations to identify and demonstrate ways the finance sector can invest in, or lend to, climate adaptation initiatives which reduce climate risk exposure and deliver commercial returns and community resilience (National Australia Bank, 2018, p. 33).

An additional evolving form of green investor is the impact investor. Impact investments have evolved as a response to help governments fill funding shortfalls needed to provide social services. Investments are made with the intention of generating measurable social and environmental outcomes, alongside a financial return. Investments are structured to meet the need of a particular social or environmental issue and as such are bespoke.

The above emphasis on climate change from both the public and private sectors represents potential additional pipelines of finance for councils.

4.3.2 Accessing Finance

Access to financing by councils in Queensland is governed by the Statutory Bodies Financial Arrangements 1982 (Qld) (the SBFA Act). The SBFA Act requires a local government to obtain approval from the Queensland Treasurer to undertake borrowings sourced from either the State Government (i.e. the Queensland Treasury Corporation (QTC)) or elsewhere, e.g. the private sector⁶. Approval is granted subject to the results of an annual borrowing assessment (ABA) and amongst other things, the consistency between the council's long-term asset management plan and financial forecast (DLGRMA, 2018).

4.3.3 Accessing Climate Finance

Strict guidelines regulate the way that proceeds raised from the likes of green bonds may be applied (for example see the CBI in Box 5). To access these funds potential finance recipients must comply with these guidelines. In the context of this analysis this means ensuring that climate adaptation activities are labelled and are identifiable as such prior to financing.

⁶ Discussion with QTC indicates no tangible examples of borrowings from other than QTC as QTC is able to provide cheaper finance.



Box 5. Climate Bond Initiative and Climate Bond Standards

The Climate Bonds Initiative (CBI) is an international, investor-focused not-for-profit organisation working to mobilise the US\$100 trillion bond market for climate change solutions. The launch of the Climate Bond Standards in November 2011 was one of the early initiatives of the CBI (McCoach, 2019). The current version of the CBS (v2.1) provides an extensive taxonomy of green projects and asset types eligible for CBS certification, one of which is climate resilience infrastructure and climate adaptation (Climate Bonds Initiative, 2018). Eligibility requirements are currently not clear. Principles that will guide eligibility of resilience and adaptation initiatives are to be released in June 2019 for public consultation (Climate Bonds Initiative, 2019).

The Climate Bond Initiative maintains a library of bonds entering the market, which potentially represent financing sources for councils⁷. It is possible however that by the time bonds have been included in this list their proceeds have been pre-allocated.

4.3.4 Matching Finance to Expenditure**Operational Expenditure**

Facilities that provide short-term financing for relatively minor amounts such as overdrafts of working facilities would aid councils manage cash flow issues from short-term funding gaps. As an example, QTC offer a “Working Capital Facility” tailored to *“clients looking to borrow funds or invest surpluses around a term of 30 days”* (QTC, n.d.).

Capital Expenditure

Buchner et al. (2017) differentiate two predominant debt mechanisms used to raise monies for capital expenditure by the public sector: balance sheet financing and project financing. Balance sheet financing incorporates the assumption of debt into the balance sheet of the borrowing entity. The application of the debt may or may not be specific (i.e. project specific) and determination of creditworthiness and any collateral taken is balance sheet based. Conversely, as the name suggests project financing is raised specific to large complex projects such as dams and power plants. In this circumstance it is not uncommon for the project to be ring-fenced via a separate legal entity from the initiating organisation. Determination of finance is based predominantly on the considered merits of the project itself and, where approved, provided to the special purpose vehicle. This ‘off balance sheet’ transaction means that any debt is not included in the council balance sheet and the council is not exposed to project risk⁸. Despite these benefits, analysis by Banhamli-Zakar et al. (2016) determined that balance sheet financing is the primary form of financing used in Australia’s public sector and that exclusively applied by Queensland local governments.

⁷ see <https://www.climatebonds.net/bond-library>

⁸ This assumes that no loan guarantee or equivalent is provided by council to obtain finance for the project.

5. Innovative Mechanisms and Other Funding Sources

There is little doubt that adapting to climate change will increase expenditure for local governments. As argued above, it may be possible to manage these increases to an extent within current frameworks and mechanisms. Councils will however need to think creatively if they are to progress the full suite of adaptation projects and initiatives likely to be required as the implications of changing climate are felt. This section considers funding and financing mechanisms, both current and emerging, that could potentially 'lighten the load'. It also provides a briefing of how insurance and other risk transfer mechanisms can enable council adaptation. The section concludes with a framework designed to illustrate the relationship between the basic building blocks of funding and financing decisions.

5.1 Funding

Whilst currently, no pure adaptation funding examples have been identified, as noted above, the nature of adaptation expenditure is very similar to infrastructure spend. Specific to coastal protection, Ware and Banhalimi-Zakar (2017) assert that beyond public funds from differing levels of government, funding arrangements can incorporate an element of contribution from non-government beneficiaries, including:

- the owners of foreshore properties exposed to coastal hazards as well as local residents, tourists and businesses as the users and beneficiaries of coastal assets such as beaches, estuaries and surf zones (p. 2).

They further note that reaching agreement between stakeholders (in particular property owners) can create significant tension (see Box 6). Such tensions provide additional impetus for early and community inclusion in climate risk management.

Box 6. The Complexity of Funding Coastal Protection (Source: Ware & Banhalimi-Zakar, 2017, p. 3)

When protection works provide a benefit to private landowners, the process for reaching agreement to fund such projects is the source of significant tension between state and local governments and between foreshore property owners who directly benefit from the project and other local resident or rate payers. For local government the relatively large cost of coastal protection projects can introduce political risk of accusation of bias towards foreshore property owners (by other residents), and places strain on available capital. State governments are equally reluctant to provide funding fearing that this may establish a precedent that could become unfeasible across large stretches of coastline. This tension between parties delays and adds planning costs, compounding the already contested nature of many coastal protection projects.

In many coastal protection plans, local governments exclude funding issues for coastal protection expenditure on the grounds that coastal protection is a public good and therefore should be funded via consolidated revenue. So, while the exclusion of explicitly dealing with funding for coastal

protection plans may be justifiable, there is increasing recognition that identifying funding to meet the expenditure requirements of coastal protection plans is beyond the capacity of the current finance structures of local governments (Banhalimi-Zakar et al 2016).

Table 1 provides four examples of models applied to fund coastal protection. Each relies on some form of agreement concerning proportional benefit that results in a reduction in the absolute local government funding requirements.

Table 1 Coastal protection funding case studies (Unless noted drawn from: Ware et al., 2015; Ware & Banhalimi-Zakar, 2017)

Tweed River Entrance Sand Bypass (TRESP). Required to re-establish sand flow from NSW into Queensland following the extension of the Tweed River training walls by the NSW Government in 1964. Designed, built and financed by the private sector under a 24-year contract with NSW and Queensland State governments. Costs are allocated to these two governments and the Gold Coast City Council across the lifetime of the project.
City of Gold Coast A-Line Seawall. Evolved to provide a managed approach to coastal erosion on the Gold Coast after a series of storms resulted in ad hoc attempts to stabilise the Gold Coast shoreline by public and private actors. In 1968 the Gold Coast City Council (GCCC) responded by adopting a policy to construct a seawall along the erosion escarpment adjacent to public land (the A-line). Subsequently a standard seawall construction applicable to all foreshore strata development was adopted. Although GCCC funds seawall construction adjacent to public land private property owners are responsible for ensuring that portion of the seawall adjacent to their property reflects requisite standards. Evidence that construction is consistent with the Gold Coast City Council Constraint Code (also established by GCCC) is required prior to building work approval.
Toogoom Seawall. This project involves the construction of a rock boulder revetment wall that provides erosion protection for 15 properties located in close proximity to the shoreline. It was determined that the 15 property owners amounted a definable group of beneficiaries and as such should pay for the wall. To fund the project Fraser Coast Regional Council (FCRC) adopted a policy whereby they would undertake the project and essentially lend the property owners the initial cost of the seawall. These costs are allocated via a special rates levy across a ten year period to the 15 property owners based on the extent of each's frontage.
The New South Wales Coastal Protection Service Charge (CPSC). The CPSC is a levy that councils in New South Wales can apply to landowners who have benefitted, whether they contributed to the costs of construction to some degree or not, from coastal protection assets such as seawalls. The CPSC can be applied to councils' reasonable costs of providing coastal protection services to the land on which the charge is levied. The CPSC will also provide for maintaining and repairing the works and mitigating any impacts that the works may create (such as replacement of eroded beach sand) (DECCW, 2010; Smith & Glassbrow, 2011).

The above three case studies all display innovation enabled by various degrees of collaboration and assumption of responsibility. Participation of the private sector in the TRESP project reflected a desire of the public-sector partners to limit their own day to day involvement and share risk⁹. The involvement of ANZ as financier reflects the size of the project and the magnitude of funds required. Both the A-Line and Seawall reflect the application of council planning and/or funding mechanisms to ensure that beneficiaries contributed to standardised and council managed solutions. THE CSPC, whilst not mandatory is explicitly indoctrinated within Section 496B(1) of New South Wales' *Local Government Act 1993*. It is interesting that beyond the maintenance of structures themselves councils have the authority to levy landowners for costs to remedy any unintended consequences such as loss of beach amenity in front of the structure, increased downdrift erosion, beach erosion and long-term recession (DECCW, 2010).

5.2 Financing

Beyond a study undertaken by Banhalimi-Zaker et al in 2016 there has been little research into adaptation financing mechanisms. Banhalimi-Zakar et al. (2016) found limited examples of mechanisms applied to adaptation projects and none specifically designed and in current use to do so. They did however, identify a number of mainstream mechanisms (Table 2), that could potentially be applied to adaptation activities. It should be noted that the suitability of the application of these mechanisms within a Queensland and Australian regulatory and economic context has not been investigated here. For example, some mechanisms, e.g. bonds, may not be economical at a singular council scale but may make commercial sense where councils combine to create relevant scale. Consideration of regulatory and commercial factors is obviously a prerequisite to potential application.

Table 2 Overview of potential adaptation finance mechanisms (Table is an enhancement of Banhalimi-Zakar et al., 2016, p. 62, Table 13)

Finance mechanism	Main features and limitations	Australian Use
Green bonds / Climate bonds	Available only for large-scale investments targeting energy-efficiency projects – see Section 4.3 and Boxes 3 and 4 above.	Issued by some Australian financial institutions including State treasuries and banks such as ANZ.
Municipal bonds	A common mechanism in the US available for large projects, issued by a municipality or state government to finance capital and operating costs. Interest earned is usually federal tax free providing cheaper capital for the issuer and benefitting subscribers.	No.

⁹ Private sector payment was contingent on the performance of the system.

Social impact bonds	Bond proceeds are used to provide social services specific to a measurable level of service agreement. Where the level of service is met the bond proceeds plus a performance based rate of return are paid (Loxley, 2013).	Eight SIBs issued in Australia to July 2017. Predominantly applied to health and aged sector (Tomkinson, 2017).
Environmental upgrade agreements	EUAs are mechanisms that provide long-term financing for energy-efficient upgrading of commercial buildings, repaid through an environmental upgrade charge tied to council (land) rates passed on to the lender directly from local government (Office of Environment and Heritage NSW, 2016; CEFC, n.d.). EUAs rely on some type of standard or rating scheme to determine eligibility as they provide the guarantee that the new technology or upgrade achieves its objective (in energy reduction for instance). Potential to extend upgrades to resilience and adaptation features.	Available in most states.
Energy efficiency bonus	Reduced interest on loan for specific energy efficiency projects. Potential to extend these initiatives in principle to adaptation technologies assuming a suitable guideline for adaptation and climate resilience could be developed.	Commercial banks, e.g. NAB enabled by co-financing from Clean Energy Finance Corporation.
(Green) Revolving funds	With green revolving funds, a proportion of savings from green related cost reduction investments (e.g. energy efficiency) are repaid into the same fund for further cost saving or other investment (Dyer, 2013). Requires initial cashflow injection that may be prohibitive however. Successful cost-savings from a UK energy building retrofit program in the UK has led some commentators to assert that <i>“innovative financing arrangements such as revolving funds could enable states with limited capacities and resources to act in contexts and on issues where action might otherwise be impossible”</i> (Gouldson et al., 2015, p. 746) Revolving funds are similar to green revolving funds except rather than recycling of savings, interest repayments are “revolved” into further projects. An example is the Clean Water State Revolving Fund that exists as a partnership between the Environmental Protection Agency (EPA) and individual States to provide low interest loans to eligible projects (USEPA, 2015).	Application by Federal Dept of Environment and Energy where funds initially used to purchase land upon which a conservation covenant is placed. Land then sold to conservation-minded people where funds are recycled to buy more land (DEE, n.d.).

5.3 Insurance and Alternative Risk Transfer Mechanisms

Appropriately structured insurance can reduce the risk of extreme weather events and other hazards for local government. It can also enable, for example through the application of betterment clauses, councils to rebuild more resilient infrastructure subsequent to damages incurred from an event. In some cases, insurance may be required or influence access to finance and/or rate paid.

Insurance merely transfers risk however - from an economic perspective insurance doesn't reduce risk. There is a possibility that if hazards increase in size and/or frequency that unless exposure to risk is reduced councils will be unable to retain access to insurance that they can afford¹⁰. Ironically, this potential loss extends the impact of insurance beyond a compensatory mechanism triggered by a disaster to an incentive to apply sound risk management practice before a disaster. As noted by the Institute of Actuaries of Australia (2013, p. 23):

The price of an insurance policy reflects the level of risk that is being transferred from a policyholder to an insurer. As such, a high premium is a symptom of a real problem: a high level of risk. Concerns of affordability would be better framed as a discussion around the high level of risk, as this is something that can be actively managed over time through mitigation, adaptation and the appropriate usage of land.

Whilst still relatively novel some insurers have begun to offer products that, through the mechanism of the pricing signal noted in the above quote, motivate policy holders to reduce risk. Table 3 provides two such products available to personal consumers in Queensland.

Table 3 Australian extreme weather resilience insurance products (Source: Banhami-Zakar et al., 2016, p. 75, Table 16)

Provider	Programme /Product	Synopsis
Suncorp	Protecting the North	Awards discounted premiums for recognised cyclone proofing enhancement by way of a "cyclone resilience benefit" to eligible cyclone prone properties located north of the Tropic of Capricorn within 100kms of the coastline. Discounts are determined by consumer self-disclosure over the phone. Provision of up to \$10 000 towards resilience orientated enhancements subsequent to damage from an insured event, e.g. high winds from a tropical cyclone, bushfire.
IAG	Insurelite	Insured home replaced with accredited design where property severely damaged. Damages must exceed a "small stuff" threshold beyond which entire cost is covered. Main residence is covered only, thus excluding garages, sheds, pools, fences etc.

¹⁰ In an analysis of six coastal councils (one of which was WRC) Edwards et al. (in press) identified evidence of underinsurance of industrial special risk due to unaffordable increases in insurance.

At this point it is understood that no such products exist for local government. And, although it is assumed that risk reduction could result, via negotiation, in lower insurance premiums, there is no empirical research to support that the cost of risk reduction is fully (or at all) reflected in premium reductions.

In recent years, alternatives to traditional insurance have evolved. Known as alternative risk transfer mechanisms (or ART), these mechanisms range from self-insurance entities such as pools (e.g. LGM Assets and LGM Liability of which LGAQ is trustee) to instruments such as catastrophe bonds that combine features from insurance and financial products (one such that will potentially evolve from IAG and NAB collaboration – see Box 7).

Box 7. IAG and NAB

In their 2018 Annual Financial Return National Australia Bank (2018) state that they are “*partnering with IAG to identify a project which will: (i) reduce exposure to natural perils; (ii) deliver commercial returns for both parties; and (iii) improve community resilience*” (p. 33). No details are currently available but there is potential for such a collaboration to result in some form of innovative mechanism that incorporates both insurance and financing features.

ART represents an alternative to traditional insurance for councils but, as for the financial mechanisms introduced in

Table 2, application is contingent on regulatory and economic conditions. Regarding catastrophe bonds Edwards et al. (2018) found no regulatory constraints to their application by Queensland councils. Costs in issuing catastrophe bonds however, infers the need for commercial scale that would most likely only be met through a number of local governments pooling their risk.

5.4 Disaster Recovery Funding

Assistance is available from both the Queensland and Federal governments to local councils to aid recovery from natural disasters (Australian Coastal Councils Association Inc., 2017; Department of Home Affairs, 2018; QRA, 2018):

- Disaster Recovery Funding Arrangements (DRFA). From 1 November 2018 the DRFA replace the National Disaster Relief and Recovery Arrangements (NDRRA). The DRFA can only be activated due to a disaster that requires a coordinated multi-agency response and State expenditure exceeds \$240,000. Activation relies on the damage, loss and personal hardship information provided by state and local governments. The Federal government may fund up to 75 per cent of the assistance with the balance provided by the State. Funds are based on an

upfront damage estimate with any balance from actual costs to be applied to risk mitigation activities such as planning and regulations, infrastructure and education and awareness.

- State Disaster Relief Arrangements (SDRA). The aim of the SDRA is to provide relief where the DRFA is not triggered. The SDRA can be triggered when the Department of Communities, Disability Services and Seniors identifies that local service providers have reached their capacity to provide a service to people identified as experiencing personal hardship as a direct result of a disaster event, or that there are no local service providers to assist in the event of a disaster.

It's also worth noting that betterment funds were available to local governments under the umbrella of the NDRRA. Beyond, just building back to original state, betterment enabled councils to incorporate additional resilience features in design thus enabling councils to rebuild infrastructure "back better". It's unclear whether betterment arrangements will continue within the auspice of the DRFA and SDRA.

5.5 Intersecting Financing, Funding and Insurance

A hallmark of the financial services industry is its capacity to structure products to meet specific requirements. In this regard, a typology of financing mechanisms is a misnomer. Mechanisms are best represented along the dimensions of characteristics that define them rather than trying to list the myriad of combinations represented as disparate products. In recognition of this,

Figure 2 depicts the relationship between the factors that both influence and interact to determine characteristics of funding and financing mechanisms.



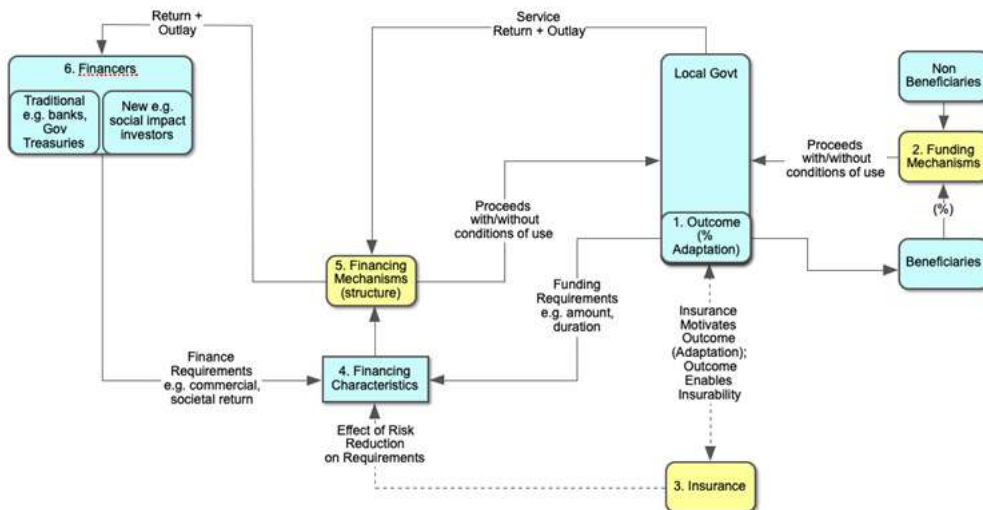


Figure 2 Relationship of funding and financing drivers

Figure 2 is prefaced on the following assertions:

1. The starting point is the desired outcome. Beyond the technical details of which, (e.g. sea wall, salaries or wages of community educators) three things are considered:
 - a. What is the nature of the outcome (e.g. is it operational or capital) and in this regard, can it be funded directly or is there a funding gap?
 - b. Can the beneficiaries of the outcome be identified and distinguished as a group
 - c. To what extent can the outcome be “branded” as climate change adaptation?
2. The response to Point 1 will drive the type of funding that is applied either directly to the outcome or to service any finance raised in its stead, e.g. where the response to point 1.b is positive the relevant funding mechanism may be some form of user charge. This in turn will determine whether proceeds can only be allocated to specific activities.

3. To a degree, access to affordable insurance may be a motivator for an outcome¹¹. On the flipside, the presence of, or ability to access insurance may impact the characteristics of the finance sought, e.g. price may be reduced to reflect lower risk assumed by the financier.
4. The characteristics of finance are determined from two sides:
 - a. Demand. This reflects the monies required by council to enable the outcome and a time preference over which to pay the monies back.
 - b. Supply. This reflects the requirements of the financier (Box 6) to make the monies available. This will reflect what the financier wants in return for providing the finance. This will be determined by, amongst other things, the nature and risk appetite of the financier and how this aligns with the perceived risk of the outcome and/or that of the council and potentially the degree that the outcome is to enable adaptation. Branding an activity as “adaptation” enables access to finance provided by investors beyond the traditional, e.g. impact investors. Attaining such finance may require the council to provide a societal as well as financial return. The adaptation brand also enables access to additional finance mechanisms, e.g. green/climate bonds from traditional providers.
5. The financing mechanism as a structure reflects some point of agreement between both the demand and supply requirements. It is this structure that dictates the proceeds and administers how the conditions of their repayment.

6. Summary and Conclusion

Certainly, although few currently exist, innovative solutions will evolve at the intersection of the funding and financing required to enable climate change adaptation activity. This represents no silver bullet however; any form of financing, regardless of its form or structure, will need to be serviced and ultimately repaid by council funding.

Additionally, as the finance industry and those who regulate and rate them tighten their understanding of the implications of climate change for the integrity of individual and collective balance sheets, it is

¹¹ An example of where loss of access to insurance has motivated risk mitigation works is Roma where, subsequent to repeated flooding, Suncorp required the construction of a flood levy as a condition of insurance provision.

reasonable to envisage that access to reasonably priced finance will be conditional on the capacity of a council to effectively manage, and be seen to be managing their own climate change risk. It is this essential ingredient that will also enable ratings strategy consistent with legislative principles. In other words, the integration of climate change into council operational and strategic processes is critical to the level of risk management required to enable council to manage their financial requirements, including sustained access to relevant funding and financing sources.

For each of the adaptation options we have noted which may be suitable or likely to require financing and funding. This initial analysis is only based on a scoping review of the Adaptation Options report and a further detailed analysis is required following the economic analysis in Phase 7 (Table 4).



Table 4 Adaptation options with likely resourcing options

Adaptation Option	Coastal Planning Approach	Hazard Type ^a	Benefits	Costs	Potential Funding / Finance / Resourcing Source
Regenerative Options					
Beach nourishment	Defend (existing)	CE, ST	Moderate	\$55 - \$80/m ³	Funding / service charges / existing budget
Dune construction and regeneration	Defend (existing)	CE, ST	Moderate – High	\$5,800-\$23,200/ha	Funding / service charges / existing budget
Riparian corridors restoration and generation	Accommodate (existing)	ST, SLR	Moderate	Costs vary	Funding / service charges / existing budget
Mangroves forests	Defend (existing)	CE, ST, SLR	Moderate – High	\$9,000/ha	Funding / service charges / existing budget
Coastal Engineering Options					
Artificial reefs	Defend (existing) Accommodate (future)	CE, ST	High	\$2.5 - \$18.2 million	Finance / funding / service charges
Detached breakwaters	Defend (existing) Accommodate (future)	CE	High	\$19,000 - \$94,000	E Finance / funding / service charges / existing budget
Groynes and artificial headlands	Defend (existing) Accommodate (future)	CE	High	Geotextile from \$3,100 Rock from \$5,600	Finance / funding / service charges / existing budget
Sea dykes or levees	Defend (existing) Accommodate (future)	ST, SLR	Moderate – High	\$1.4 - \$10.9 million/km	Finance / funding / service charges
Seawalls	Defend (existing) Accommodate (future)	ST, SLR	High	\$2,500 - \$5,600/m	Finance / funding / service charges
Coastal Settlement Design Options					
Climate resilient design	Accommodate (existing and future)	CE, ST, SLR	Moderate – High	Cost vary	Owner finance / funding
Elevated dwellings	Accommodate (existing and future)	ST, SLR	Moderate	Cost vary	Owner finance / funding

Raise land levels	Accommodate (existing) Avoid (future)	ST, SLR	Moderate – High	\$12 and \$35 /m²	Finance / funding / service charges
Planning Options					
Land use planning	Retreat (existing) Accommodate (existing and future)	CE, ST, SLR	High	Unknown	Development / infrastructure charges
Development setbacks	Accommodate (existing and future)	CE, ST, SLR	High	Costs vary – \$58,000 and \$580,000	Existing budget / service charges
Limited development	Accommodate (future)	CE, ST, SLR	Moderate	Unknown	Existing budget
Redefining planning objectives (rezoning)	Retreat (existing) Avoid (future)	CE, ST, SLR	Moderate – High	Unknown	Finance / funding / service charges
Land swap	Retreat (existing) Avoid (future)	CE, ST, SLR	High	Unknown	Finance / funding / service charges
Land buy-back	Retreat (existing) Avoid (future)	CE, ST, SLR	High	Unknown	Finance / funding
Land surrender	Retreat (existing)	CE	Moderate – High	Unknown	service charges / existing budget
Compulsory land acquisition	Retreat (existing)	CE, ST, SLR	Moderate – High	Unknown	Finance / funding / service charges / existing budget (if small number of lots)
Institution Options					
Monitoring of climate change adaptation governance	Accommodate (existing) Avoid (future)	CE, ST, SLR	Moderate – High	Unknown	Existing budget
Maintaining the status quo	Accept (future)	CE, ST, SLR	Low	Unknown	Existing budget
Social Options					
Raising community awareness	Accommodate (existing)	CE, ST, SLR	Moderate – High	Costs vary	Existing budget
Knowledge sharing	Accommodate (existing)	CE, ST, SLR	High	Costs vary	Existing budget
Hazard mapping	Accommodate (existing) Avoid (future)	CE, ST, SLR	High	Costs vary	Existing budget
Coastal imaging techniques	Accommodate (existing)	CE	Moderate – High	Costs vary	Existing budget
Communicating through social media	Accommodate (existing)	CE, ST, SLR	Moderate	Costs vary	Existing budget

a abbreviations for hazard types are: CE = coastal erosion, ST = storm tide inundation, SLR = sea level rise

b See Appendix A for a list of statutory instruments

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15. Community Services

15.6 MULTI-CRITERIA ANALYSIS AND COST BENEFIT ANALYSIS FOR CLIMATE CHANGE PLANNING

AUTHOR: Scott Hardy - Coordinator Natural Resource Management & Climate

RESPONSIBLE OFFICER: Julie Wright - Director Community Services

OFFICER'S RECOMMENDATION

That Council receive the following reports and publish them on Council's website:

- **Multi-Criteria Analysis of Climate Change Adaptation Options,**
 - **Cost Benefit Analysis of Coastal Hazard Adaptation Options,**
 - **Appraisal Report of Coastal Hazard Adaptation Options, and,**
 - **Coastal Hazards and Responses Project Consultation Report.**
-

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

The analysis of the socio-economic options for sea level rise is Phase 7 of the Coastal Hazard Adaptation Strategy (CHAS). The Phase seven stage investigates:

- The Multi-Criteria Analysis of possible defend and retreat options.
- The Cost Benefit Analysis of various defend and retreat options.

The Multi-Criteria analysis summarises the various sea level rise options available such as defending (e.g. building sea walls) and retreat (e.g. land surrender). This investigation involved conducting community consultation at various locations along the Whitsunday coast to gauge community interest and support for various defend and retreat options. Experts from Griffith University have reviewed the sea level rise adaptation options and have modelled the cost and benefits for Bowen and Wilson Beach.

The funding for these reports has come from the Queensland State government via the QCoast₂₁₀₀ program.

PURPOSE

To present to Council the results of the Coastal Hazard Adaptation Strategy (CHAS) Phase 7 reports which investigate the various response options to sea level rise and their respective costs and benefits. The two primary investigations associated with Phase 7 is the Multi-Criteria Analysis (MCA) and Cost Benefit Analysis (CBA), both reports are written by experts from Griffith University.

The purpose of presenting the reports to Council is to note the progress of the Whitsunday CHAS project and seek support to place the reports on Council's website.

BACKGROUND

The Queensland Government and the Local Government Association Queensland (LGAQ) have developed the QCoast₂₁₀₀ program to assist coastal Councils to assess and prepare for

climate change and a rising sea level. The QCoast₂₁₀₀ program started in 2016 and is due to finish in April 2021.

The QCoast₂₁₀₀ program is a Queensland Government initiative and has committed \$13.234 million to assist Councils to 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.

Whitsunday Regional Council was one of the first Councils to have funding approved through the QCoast₂₁₀₀ program which occurred in October 2016. Our Council was granted \$513,500 in QCoast₂₁₀₀ funding to develop its Resilient Whitsunday: Coastal Hazards and Response project. The Council has co-contributed funds towards various stage 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.

In 2016, Whitsunday Regional Council started the development of the Coastal Hazard Adaptation Strategy (CHAS). The CHAS is partly funded by the Queensland Government and by Council. The CHAS has eight stages designed to systematically gather important information to inform the final Coastal Hazard Adaptation Strategy for the Council. 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 adaptation options
- 7) Socio-economic adaptation options**
- 8) Strategy development and implementation and review

The CHAS Implementation Plan (Phase 8) is designed to provide guidance to Council in planning for future changes to our coast caused climate change processes such as sea level rise. The CHAS implementation Plan has commenced and is due to be finished by January 2021.

In July 2016, Whitsunday Regional 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.

STATUTORY/COMPLIANCE MATTERS

Local Government Act 2009

ANALYSIS

The Coastal Hazard Adaptation Strategy (CHAS) Phase 7 stage is comprised of a community Consultation process, a Multi-Criteria Analysis investigation and a Cost Benefit Analysis report.

In December 2019, Council held a series of community consultation workshops across the region's coastal communities, as part of the Coastal Hazards and Responses Project under the Coastal Hazards Adaptation Strategy (CHAS). The purpose of the Community Consultation process was to gauge community interest on the defend and retreat options available. The results of the community consultation workshops were:

- Six community consultation workshops took place over three days from Monday, 2 December to Wednesday, 4 December 2019, with two workshops per day. They took place in Bowen, Cannonvale, Conway Beach, Dingo Beach, Hydeaway Bay and Wilson Beach.
- There were 82 participants who attended the consultation sessions and a total of 54 surveys submitted from across each location.
- The results from the surveys demonstrate that further information and engagement with affected communities needs to occur prior to any decision-making by Council, now and into the future.

The community consultation process was used to inform the Multi-Criteria Analysis and Cost Benefit Analysis of the options.

Multi-Criteria Analysis (MCA) Report:

The MCA represents the socio-economic component of the CHAS. This stage identifies the various adaptation options and how they are accepted by the community. The MCA used the towns and of Bowen and Wilson Beach to rank the various adaptation options.

The MCA provides a qualitative framework that ensures that assessment criteria extend beyond financial criteria to incorporate community social, economic and environmental values. MCA provides a cost-effective platform to narrow down the range of identified adaptation options to a manageable number for which economic benefits and costs can be subsequently be analysed and compared. MCA is performed by screening each adaptation option through a range of qualitative or semi-quantitative criteria as discussed below.

The Bowen ranked adaptation options are shown below in table 1.

Table 1. The ranked adaptation options for Bowen.

Approach	Specific option	MCA score	MCA Ranking
Regenerative options	Mangrove planting	5945	4
Coastal engineering options	Sea dykes and levees	4450	10
	Sea walls	5030	7
Coastal settlement design options	Climate resilient design	5700	5
	Elevated buildings	4740	8
	Raised land levels	3570	12
Planning options	Land use planning	7460	1
	Development setbacks	5060	6
	Limited development	4740	8

	Redefining planning objectives (zoning)	6230	2
	Land swap	3390	13
	Land buy-back	4000	11
	Land surrender	5970	3
	Compulsory land acquisition	2740	14

The Wilson Beach ranked adaptation options are shown below in table 2.

Table 2. The ranked adaptation options for Wilson Beach.

Approach	Specific option	MCA Ranking	
Regenerative options	Beach nourishment	5780	3
	Mangrove planting	6060	1
Coastal engineering options	Sea dykes and levees	5100	7
	Sea walls	5030	8
Coastal settlement design options	Climate resilient design	5720	4
	Elevated buildings	4840	9
	Raised land levels	3490	12
Planning options	Land use planning	1430	14
	Development setbacks	5180	6
	Limited development	5190	5
	Redefining planning objectives (zoning)	1030	15
	Land swap	3610	11
	Land buy-back	4440	10
	Land surrender	5980	2
	Compulsory land acquisition	2740	13

Cost Benefit Analysis (CBA) Report:

The CBA focused on the Bowen and Wilson Beach areas. The purpose of the CBA was to develop costs for the defend and retreat options for Bowen and Wilson Beach.

A CBA applies an economic lens to the filtered inventory of adaptation options identified from the MCA. It can assist in identifying the option that achieves maximum value for money benefit for a council. It identifies many costs and benefits of an option, including social and environmental values according to their net economic benefit. The costs and benefits of an option are forecast over the life of the project, costs are subtracted from benefits to determine the net present economic value (NPEV) of the project. The option with the greatest NPEV should provide the greatest net benefit to the community or the most economic use of resources (i.e. Benefit/cost ratio greater than one or a positive NPEV). The results of the CBA were:

- There is a need to set expectations amongst the community. This CBA indicates that difficult decisions will need to be made that may involve specific protection zones.

- There will be winners and losers in this process and the sooner that community is brought on board the more effective and equitable the outcomes of such a process will be.
- All options return a negative NPV – no expenditure options provide a return on investment of more than 0.1 (i.e. 10c in every dollar spent).

Appraisal of the MCA and CBA Report Recommendations:

The Phase 7 appraisal report summaries and combines the information from the MCA and CBA and synthesises the implications of sea level rise and makes a number of recommendations. The main recommendations are:

- 1) Act Early
- 2) Consider funding and financing options now.
- 3) Agree an overall WRC risk comfort level
- 4) Prepare an adaptation option strategy
- 5) Consider who bears the costs
- 6) Incorporate climate change into planning decisions upfront
- 7) Start the conversation between Councillors, officers and the community

It is recommended that Council receive the following reports as part of the CHAS Phase 7:

- Multi-Criteria Analysis of Climate Change Adaptation Options,
- Cost Benefit Analysis of Coastal Hazard Adaptation Options,
- Appraisal Report of Coastal Hazard Adaptation Options, and,
- Coastal Hazards and Responses Project Consultation Report.

STRATEGIC IMPACTS

Financial

- The Phase 7 MCA and CBA reports are useful to identify adaptation options and place an estimated cost of providing these options to the community.
- The CBA has identified that to defend Bowen will cost \$270 million if built in year 1 (2021) and to protect Wilson beach will cost \$30 million if the sea walls and road raising were to occur next year.
- The CBA outlines how a staged approach to defend and retreat will be a more cost-effective strategy to manage the impacts of sea level rise.

Risk

- The MCA and CBA reports deal with the physical and financial risks associated with a predicted rising sea level to infrastructure.
- The MCA and CBA outline the financial risks associated with doing nothing, but also the option of “defend all areas” due to the high costs.

Legal

- Council will have legal obligations to consider the potential impacts of sea level rise along the coast.
- There are a myriad of future legal issues associated with the retreat or land surrender options. Some of the planned retreat options could be achieved through the use of planning controls and zoning over time.

Corporate / Strategic and Operational Plans

- The MCA and CBA Phase 7 reports aligns with the Council's Climate Change Adaptation Policy and Strategy.

CONSULTATION

Julie Wright - Director Community 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

It is recommended that Council receive the following reports:

- Multi-Criteria Analysis of Climate Change Adaptation Options,
- Cost Benefit Analysis of Coastal Hazard Adaptation Options,
- Appraisal Report of Coastal Hazard Adaptation Options, and,
- Coastal Hazards and Responses Project Consultation Report.

ATTACHMENTS

Attachment 1 - Multi-Criteria Analysis of Climate Change Adaptation Options,
Attachment 2 - Cost Benefit Analysis of Coastal Hazard Adaptation Options,
Attachment 3 - Appraisal Report of Coastal Hazard Adaptation Options, and,
Attachment 4 - Coastal Hazards and Responses Project Consultation Report.

Multi-criteria Analysis of Climate Change Adaptation Options

Prepared for:

Whitsunday Regional Council

Date / Version:

30 June 2020 / Version 2

Prepared by:

Griffith University and Ian Edwards

Citation:

Griffith University and Edwards, I. (2019)
Regional Council Coastal Hazard Adaptation Strategy:
Multi-criteria Analysis of Climate Change Adaptation Options

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Table of Contents

List of tables	iv
List of figures	v
1 Introduction	1
1.1 Project background	1
1.2 Phases of a CHAS	1
1.3 Phase 7 of the CHAS: socio-economic appraisal	2
1.4 Selection of areas of interest	3
1.5 Coastal hazards assessed	4
1.6 Structure of this document	5
1.7 Supporting documents	5
1.8 Limitations	5
2 Community survey (Stage 1)	6
2.1 Overview	6
2.2 Criteria selection and testing	6
2.3 Survey question summary	7
2.4 Survey results	7
2.4.1 Who responded	7
2.4.2 Value statement ranking	8
2.4.3 Criteria scoring	9
2.4.4 Qualitative responses	9
2.4.5 Quantitative analysis	10
2.4.6 Qualitative summary	11
3 Multi-criteria analysis (Stage 2)	13
3.1 MCA methodology	13
3.1.1 Selection of adaptation options	13
3.1.2 Scoring of MCA options	16
3.2 Multi-criteria analysis results and recommendations	16
3.2.1 Multi-criteria analysis output	16
3.2.2 Sensitivity analysis	17
4 Multi-criteria analysis results workshop	19
4.1 Overview	19
4.2 Workshop participants	20
4.3 Adaptation approaches	20
4.3.1 Adaptation approaches for Bowen	21
4.3.2 Adaptation approaches to Wilson Beach	21
5 Conclusion	23
6 References	24
7 Appendices	25

7.1	The project team	25
7.1.1	Professor Christopher Fleming	25
7.1.2	Ian Edwards	25
7.1.3	Andrew Buckwell.....	25
7.1.4	Maggie Muurmans	26
7.1.5	Dan Ware	26
7.2	Full MCA scores and justifications	27
7.3	Workshop attendance list	28
7.4	Examples of hazard maps used in MCA analysis	29
7.4.1	Storm tide inundation	29
7.4.2	Coastal Erosion.....	30
7.4.3	Storm tide inundation	31

List of tables

Table 1: Survey responses.....	7
Table 2: Non-Council survey respondent community group affiliation	7
Table 3: Respondent scoring of criteria from minimum standards document	9
Table 4: Summary of qualitative responses	10
Table 5: Weighting and ranking comparison between Council and non-Council respondents	11
Table 6: Final recommendation for scores for multi-criteria analysis	12
Table 7: First-pass feasibility assessment framework for coastal hazard adaptation approach	15
Table 8: Key justifications for adaptation approach inclusion in MCA for Bowen.....	15
Table 9: Key justifications for adaptation approach inclusion for MCA for Wilson Beach	15
Table 10: Final multi-criteria assessment rankings for Bowen	16
Table 11: Final multi-criteria assessment rankings for Wilson Beach	17
Table 12: Summary of sensitivity analysis for multi-criteria analysis for Bowne and Wilson Beach	18
Table 13: Comparison of the attributes of strategic and autonomous climate change adaptations	21
Table 14: List of workshop attendees.....	28

List of figures

Figure 1: Recommended process for Coastal Hazard Adaptation Strategy (QCoast 2100, 2016)	2
Figure 2: Extent of the Bowen area of interest	4
Figure 3: Extent of the Wilsons Beach area of interest	4
Figure 4: Value statement set 1 mean rankings	8
Figure 5: Value statement set 2 mean rankings	8
Figure 6: Value statement set 3 mean rankings	9
Figure 7: Decision tree for coastal management options (summary, adapted from Climate Planning, 2019)	14
Figure 8: Decision making space for Whitsunday Regional Council multi-criteria assessment	20
Figure 9: Exposure to storm tide inundation to 2050 for Bowen	29
Figure 10: Exposure to sea level rise in 2050 for Wilson Beach	30
Figure 11: Exposure to coastal erosion in 2018 for Bowen	30
Figure 12: Exposure to coastal erosion for Wilson Beach.....	31
Figure 13: Exposure to 1% AEP storm tide inundation in 2050 for Bowen	31
Figure 14: Exposure to 1% AEP storm tide inundation in 2050 for Wilson Beach	32

1 Introduction

1.1 Project background

Whitsunday Regional Council (WRC) is seeking to be one of the most advanced Councils in Queensland in regards to responding to coastal hazards and climate change. To achieve this goal, WRC is developing a Coastal Hazard Adaptation Strategy (CHAS) to assist in identifying and responding to coastal hazards in a way which minimises the risks to assets in the Whitsunday region.

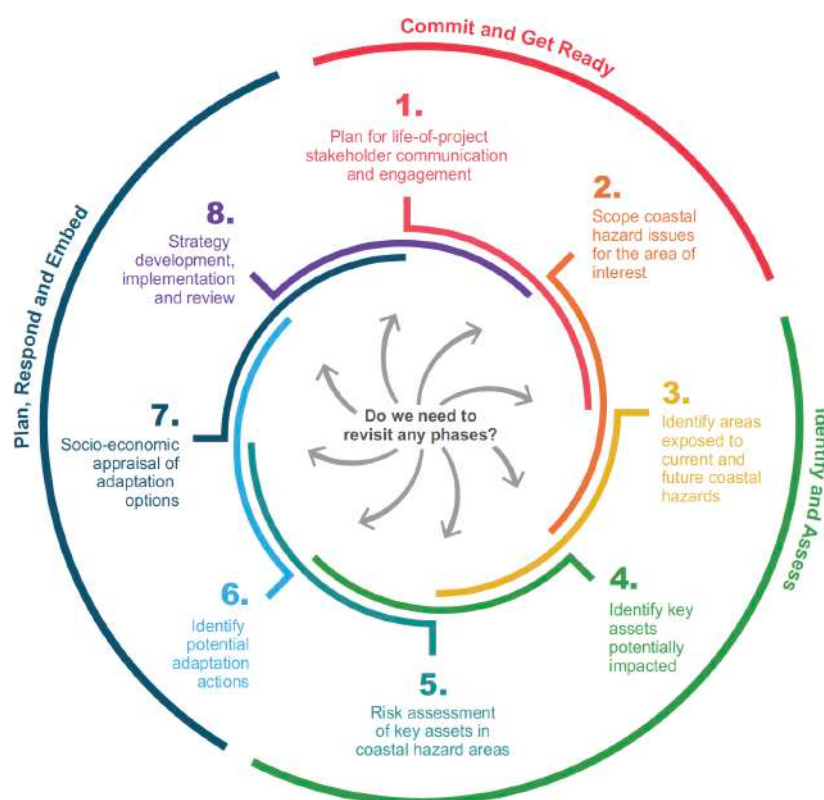
The strategy will enable more informed decisions about planning issues associated with coastal hazards and climate change. The objectives of the project are to:

- 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.

1.2 Phases of a CHAS

Each CHAS is delivered in eight phases which align with the QCoast₂₁₀₀ Minimum Standards and Guidelines (the 'minimum standards'), provided by Local Government Association of Queensland (LGAQ) (see Figure 1). This document describes findings from Phase 7 of the minimum standards, the *Socio-economic appraisal of adaptation options* (the 'socio-economic appraisal'), carried out by Griffith University and Ian Edwards (the 'project team') (the full project team is list in Appendix A).

Figure 1: Recommended process for Coastal Hazard Adaptation Strategy (QCoast 2100, 2016)



1.3 Phase 7 of the CHAS: socio-economic appraisal

The previous phase of the CHAS (Phase 6) identified an inventory of potential options that can be applied to reduce or eliminate priority risks identified in a risk assessment undertaken in Phase 5 of the CHAS. The objective of this phase of the CHAS (Phase 7) is to undertake a socio-economic appraisal of these options in order to aid council determine preferred options to be employed.

In accordance with the minimum standards the socio-economic appraisal is undertaken in two steps:

1. Multi-criteria Criteria Analysis (MCA)

An MCA provides a qualitative framework that ensures that assessment criteria extend beyond financial criteria to incorporate community social, economic and environmental values. MCA provides a cost-effective platform to narrow down the range of identified adaptation options to a manageable number for which economic benefits and costs can be subsequently be analysed and compared. MCA is performed by screening each adaptation option through a range of qualitative or semi-quantitative criteria as discussed below.

2. Cost Benefit Analysis (CBA)

A CBA applies an economic lens to the filtered inventory of adaptation options identified from the MCA. It can assist in identifying the option that achieves maximum value for money benefit for a council. It identifies many costs and benefits of an option, including social and environmental values according to their net economic benefit. The costs and benefits of an option are forecast over the life of the project, costs are subtracted from benefits to determine the net present economic value (NPEV) of the project. The option with the greatest NPEV should provide the greatest net benefit to the community or the most economic use of resources (i.e. Benefit/cost ratio greater than one or a positive NPEV).

The socio-economic appraisal comprises of three stages, reported here; namely:

- Stage 1. Online survey, designed to establish the criteria and scoring for a multi-criteria analysis (MCA) of adaptation options;
- Stage 2. MCA process, based on survey results, to make recommendations for adaptation approaches ¹ for two areas of interest (AOI): Wilson Beach and Bowen; and
- Stage 3. Social cost benefit analysis (SCBA) for two adaptation approaches (in addition to modelling the base case, or business-as-usual) in the AOIs.

The key conclusions from these stages will be combined and synthesised in an appraisal report that will be prepared at the end of this phase.

The purpose of this document is to report on the methodology and findings from stages (i) to (iii), described above, and to also report back preliminary findings from a workshop held in the Proserpine between WRC and the project team on 30 September 2019. This workshop covered reporting of the results of stages (i) and (ii), above, and the initial discussions for stage (iii); namely consideration of the social costs benefit analysis of the agreed adaptation approaches.

1.4 Selection of areas of interest

Budget and time constraints limit areas of interest (AOIs) to two representative sites, which were agreed in consultations between WRC and the project team. Whilst limitations in similarities are acknowledged, Bowen was selected as a location representative of a heterogenous, larger and relatively buoyant socio-economy, e.g. Cannonvale and Airlie Beach; Wilson Beach was selected to represent smaller, more isolated communities, such as Dingo Beach and Hideaway Bay. Both Bowen and Wilson Beach were both identified as relatively particularly vulnerable to coastal hazards during a vulnerability assessment undertaken as part of Phase 4 of the WRC CHAS.

For the purposes of the socio-economic appraisal, geographically, Bowen consists of the Australian Bureau of Statistics (ABS) Statistical Area 2, which includes Queens Beach, Bowen, the peninsular to the east of Bowen, westwards to the Don River and southwards to the dwellings at Ocean View Drive (see Figure 1). The Wilson Beach AOI comprises the small hamlet only (see Figure 2; images are not at same scale).

¹ Through this report, the authors use the term 'approaches' when considering adaptation strategies, in contrast to the term 'options'. When first considering the general strategy towards coastal hazard adaptation, an approach may define a general strategy: 'sea-walls and levees to defend a community', for example, and then provide a 'first-pass' cost benefit analysis on the general approach. Consideration of adaptation 'options' requires a higher level of definition than what is available through this process. For example, a cost benefit analysis of 'options' would include more defined maps and engineering plans (often called a 'detailed business case') to determine the locations, scale and construction of specific seawalls and levees.

Figure 2: Extent of the Bowen area of interest



Figure 3: Extent of the Wilsons Beach area of interest



1.5 Coastal hazards assessed

Adaptation approaches to two hazards are assessed here; that of storm tide inundation and erosion. It should be noted that 'sea level rise', widely predicted under climate change scenarios (IPCC, 2014), is not considered conceptually independent of either storm tide inundation and/or erosion, but as an additional factor in both types of risk. For example, the storm tide inundation risk area is comprised of additive measurements of Mean Sea Level, Highest Astronomical Tide, Storm Tide, Wave Set-Up and Sea Level Rise.

Both Bowen and Wilson Beach experience a high of risk from both storm tide inundation and coastal erosion. The key areas at risk are in Appendix 7.4.

The socio-economic appraisal will assess the risk to residential property, commercial property (which includes Council assets, such as offices and libraries), and community assets (for example, roads and wastewater treatment plants) at present day and years 2050 and 2100 for a range of Annual Exceedance Probabilities (AEPs).

1.6 Structure of this document

This document is structured in the following way. First, we detail the process methodology behind the Stage 1 survey (the intent, the audience, and the structure) and report on our recommendations from its findings. Next we report the methodology behind the MCA (Stage 2), explaining its purpose and benefits; the process of selecting the adaptation approaches to put forward to the MCA; and how the recommendations from the survey fed into it. We then justify the MCA scoring process, before presenting the MCA recommendations. The final sections of this document begin to assemble the identified social costs and benefits associated with the agreed adaptation approaches from the aforementioned workshop. As such, this document plays a 'reporting' function, rather than specifically making 'recommendations' for the SCBA stage of the CHAS Phase 7.

1.7 Supporting documents

The following documents prepared in previous phases of the CHAS have been applied to Phase 7:

- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Proposed Adaptation Options Report*
- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Risk Assessment Report*
- Climate Planning. (2018). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Methodology and Findings from Valuation of Key Assets*
- Edwards, I. (2019). *Whitsunday Regional Council Socio-Economic Vulnerability Assessment*

In addition, hazard maps provided by Climate Planning (see screen shots from Appendix 7.4) were used to both determine option feasibility and in the MCA workshop to help participants picture and consider the strengths and weaknesses of differing adaptation options. No formal critique of previous work and the hazard mapping has been undertaken. These are considered by the project team to be sound and approved by WRC for application to this phase of the CHAS.

1.8 Limitations

The process applied in this phase of the CHAS has been constrained by available budget and time. The project team has worked with WRC to identify an approach that, whilst not in all circumstances, is best practice provides a reasonable commercial alternative. As noted above an obvious limitation to work undertaken is the requirement to select representative areas of interest. Any other limitations and constraints specific to both the MCA and CBA will be identified in their respective reports.

2 Community survey (Stage 1)

2.1 Overview

The first stage of the socio-economic appraisal was to define the criteria against which coastal hazard adaptation approaches would be assessed in the Stage 3 MCA and to determine the relative weights, or scores, that these criteria should carry. To determine both the criteria and the scoring, we deployed an online survey (using SurveyGizmo) to elicit responses to:

- a) understand the full scope of the criteria; and
- b) enable a process to determine preferences for weighting the criteria in the MCA phase.

Online surveys are a cost-effective way of gathering community sentiment about land use planning issues in a structured way (Al-Kodmany, 2003). Whilst not as effective as carrying out a series of community workshops, due to budget constraints the project team considered it an acceptable method.

The survey also included questions to record respondents' organisations, whether they were speaking as an individual or on behalf of their organisation and additional, open-ended, questions designed to capture any additional comments or criteria concepts not already tested. The survey was open between 29 August 2019 and 17 September 2019, promoted in two email-outs. The two tranches of responses are reported together.

2.2 Criteria selection and testing

Our initial list of criteria for testing in the survey was defined by the QCoast₂₁₀₀ document *Developing a Coastal Hazard Adaptation Strategy* (QCoast 2100, 2016), which suggests seven particular criteria as forming the basis of an MCA process. These are: (i) capital cost; (ii) environment or social impact; (iii) community acceptability; (iv) the ability of option to be reversible/adaptable in the future; (v) effectiveness over time; (vi) legal/approval risk; and (vii) technical viability.

In our survey, we:

- a) separated 'social and environmental impacts' – determining social impact refers to *distributional* or *equity* issues associated with a particular adaptation options, whilst environmental impacts refer solely to habitat or ecological impacts;
- b) included the criteria of 'economic impact', which refers to the impact of an adaptation option on the local and regional economy; and
- c) included the criteria of 'property impact', which refers to the impact of adaptation strategy on direct, private costs to households and businesses.

Therefore, in all, 10 criteria were tested in the survey, against which respondents applied a score from a 'budget' of 100 points.

To independently verify the scoring applied to the criteria, we first tested respondents on three sets of value statements, which approximately aligned with the criteria statements. The purpose of testing the value statements was to triangulate both internalised and externalised opinions when it came to applying a score to the criteria. To illustrate: whilst it is likely individuals would rank 'property impact' highly, as they are possibly conceptualising the loss of their own property, it is important to verify the complexity of the values by testing statements that only obliquely refer to potential private losses. Conversely, with 'environmental' value statements, respondents can assume a 'warm glow' associated with rating environmental impact highly (Andreoni, 1990), only to place secondary importance to

environmental impacts when potentially faced with uncertainty or private property losses. The role of the value statements was to enable 'fine tuning' of the scores applied directly in the criteria scoring section.

2.3 Survey question summary

The following provides a broad summary of the questions presented in the online survey.

Questions 1 – 4: About the respondent: Name, email address, organisation, speaking as individual or on behalf of the organisation.

Questions 5 – 7: Value statements – three sets of value statements (aligned with the 10 criteria) ranked by the respondent in order of importance from a randomised list of statements presented all at once.

Questions 9: Criteria weighting and comments – respondent allocates a budget of 100 points towards the 10 (explicit) criteria. Additional comments were also elicited, in an open-ended question.

Questions 10 – 12: Additional criteria – respondent asked open-ended questions to recommend the additional criteria for the MCA.

2.4 Survey results

Partial results were not counted, as the intent of the methodology was to determine a correlation between value statements and criteria scoring.

2.4.1 Who responded

The number and source of respondents is shown below in Tables 1 and 2.

Table 1: Survey responses

Respondent	Responses	Percent
Council employee	16	26.7
Other	44	73.3

Table 2: Non-Council survey respondent community group affiliation

Community group	Responses
Gloucester Sports and Recreation Inc	18
Whitsunday Catchments Landcare	6
Conway Beach Progress Association	5
Not associated	4
Proserpine Chamber of Commerce	3
Canegrowers	3
Bowen Chamber of Commerce	3
Other	3
Hydeaway Bay Progress Association	2
Queens Beach Action Group	2
Reef Catchments	2

2.4.2 Value statement ranking

The raw data from the ranking of the three value statement sets are reported in Figures 4 – 6 below.

Figure 4: Value statement set 1 mean rankings

Item	Overall Rank	Rank Distribution	Score	No. of Rankings
Our coastal habitats are incredibly important to the region's identity.	1		379	48
If there are approval constraints to coastal hazard mitigation actions, WRC should make efforts to change the planning framework.	2		257	48
WRC should set and implement its own priorities from a regional council perspective.	3		255	48
It is vital that any coastal management actions don't lock the region into following a particular pathway.	4		252	48
It is better we plan and spend less today, when there is greater uncertainty, than potentially more later, when we might know more about future coastal conditions.	5		246	48
Actions that safeguard economic activity should be prioritised over all other considerations	6		196	48
Community willingness to pay for actions that reduce exposure to coastal hazards should not be a consideration when devising adaptation options.	7		196	48
If necessary, to protect the community, WRC should raise funds for coastal hazards by borrowing money, or raising rates.	8		196	48
All coastal hazards can be mitigated by engineering solutions, given enough money.	9		183	48

Figure 5: Value statement set 2 mean rankings

Item	Overall Rank	Rank Distribution	Score	No. of Rankings
Whitsunday residents need to be deeply engaged in the local planning and decision making processes of WRC.	1		330	47
It's better we fund long term coastal projects now, even under uncertainty, as it will be more cost-effective.	2		279	47
It is important that WRC's decisions prioritise the protection of vulnerable people and/or communities.	3		272	47
WRC should never make decisions that expose WRC to any legal risks.	4		250	47
As far as possible, coastal processes should be left to run their natural course.	5		239	47
We should remain flexible and quite short term with our options to enable us to respond easily to new coastal information.	6		231	47
The level of engineering, or disturbance required for to reduce coastal hazard risk, should not be considered a barrier to implementation.	7		193	47
Actions that limit the region's economic growth, should not be considered.	8		169	47
WRC should only consider projects where the costs of coastal adaptation or protection can be recouped from direct beneficiaries.	9		152	47

Figure 6: Value statement set 3 mean rankings

Item	Overall Rank	Rank Distribution	Score	No. of Rankings
We should plan for the longer-term, even if future conditions are uncertain.	1		360	50
Our agricultural assets are as important to our region's economy as our built environment.	2		300	50
We should prioritise projects that WRC has the current capacity to implement.	3		293	50
A local community should ultimately be able to decide what coastal adaptation options are acceptable and should be implemented in their community.	4		272	49
WRC should always prioritise the environmental impact of decisions in the coastal zone over other impacts.	5		266	49
We should only implement decisions that can be changed as new information becomes available.	6		221	49
Protection of cultural heritage sites should be a high-priority.	7		212	49
WRC should spend all it can to protect coastal communities from erosion and inundation, whatever the costs.	8		171	49
If there's a reasonable chance of an action not getting approval it should not be considered.	9		134	49

2.4.3 Criteria scoring

The final criteria scoring averages, minimums, maximums and standard deviations are reported in Table 3.

Table 3: Respondent scoring of criteria from minimum standards document

Criteria	Average	Min	Max	StdDev
Environmental and social impact: Impact on the natural environment and on the cultural and social fabric of the Whitsunday region.	19.2	0.0	50.0	12.3
Property impact: Impact on Whitsunday homes and business premises.	13.7	0.0	40.0	10.4
Economic impact: Impact on the Whitsunday businesses and their capacity to generate profits and jobs.	12.7	0.0	58.0	9.6
Technical viability: The technical feasibility of an option, taking into consideration the magnitude of the job at hand and the capacity of the Council to implement it.	10.7	0.0	30.0	6.1
Effectiveness over time: Consideration of how long an option will be effective; e.g. will it only provide a short-term benefit that may require further action or an upgrade in the future.	11.7	0.0	40.0	8.3
Flexibility to new information: Can the option be reversed, enhanced, or redirected as new information comes to hand, or once implemented, is it effectively locked-in.	9.5	0.0	95.0	13.4
Community acceptability: Will be accepted by the community.	10.5	0.0	50.0	9.0
Raising additional funds: Will new (forms) of funding or finance be required to implement it.	8.2	0.0	30.0	6.5

2.4.4 Qualitative responses

Two further questions towards the end of the survey invited respondents to provide ideas for additional criteria for consideration in the MCA and a potential weighting for these suggestions. These qualitative responses are recorded

in Table 4 below. None of the additional statements revealed any requirement for the addition of a new criteria. Most referenced a preference for a specific coastal climate change adaptation option, or general strategy.

Table 4: Summary of qualitative responses

Comment (summarised)	Criterion / comments
A local community should have input into decisions, but not have total say.	'Community acceptability' criteria
Cultural heritage needs to be balanced with other criteria.	'Social impact' criteria
Better to invest our energy in working with nature to enhance its systems to our benefit than heavily engineer, at great cost, the protection of homes or infrastructure that won't last the test of time unless we keep 'doubling down' on protections.	'Environmental impact' criteria
Council should be working towards a long-term plan including identification of areas for retreat to ensure our coastal ecosystems are retained in acceptable levels.	Considered to be an adaptation response
We shouldn't expect other regional communities i.e Collinsville to have their rates increased to do works to protect the coastal communities.	'Social impact' criteria (distributional impact)
• Bolstering emergency services as an adaptation options (specifically access of sea rescue) • Investment in innovation to develop creative responses to drive climate change adaptation at cheaper cost. • Community needs to be told of the cost of defending some assets, to make informed choices about what to save or otherwise. • Retreat should be considered, rather than sinking money into undefendable positions. • Stricter planning controls in the coastal areas to ensure local community will not be responsible for adaptation that defends private assets.	Considered to be specific climate change adaptation options
Climate change is not an issue.	Not engaging with the issue

2.4.5 Quantitative analysis

To determine a final, recommended score for each of our criteria for the MCA stage—based on both the value statement rankings (section 2.2.1.2) and the direct criteria scores (section 2.2.1.3)—we applied the following method:

- i) Results of the survey were downloaded to MS Excel.
- ii) Partial survey responses were excluded.
- iii) The completed results were analysed in two distinct groups: council employees and others (non-council employees).
- iv) Social and legal/approval criteria lines were generated based on the standard deviation around aggregated value statement mean.
- v) Council respondent criteria were weighted and adopted as initial baseline and normalised to 100.
- vi) This normalised weighting was then adjusted to reflect material difference to other weighting's mean ranks from the value statements, e.g. Effectiveness weighting of 12 was reduced by 1, due to lower ranking from 'other'; Economic weighting of 11 reduced by 2, due to significant variance with value statements

2.4.6 Qualitative summary

We found that the criteria scores *broadly* consistent between Council and Non-Council respondents, with the exception of:

- a) property impact (more important to non-council); and
- b) community acceptability (more important to non-council)

The full comparison between Council and non-Council respondents is reported in Table 5. Departing from the minimum standards, we tested 'environment' and 'social' as separate criteria. These value statements and criteria scoring ranked quite differently, therefore, we believe it supports their inclusion as two separate criteria.

The value statements were *broadly* consistent with criteria scores, with the key differences being (value statement/criteria):

- Council: Economic (4/8)
- Council: Community acceptability (9/3)
- Council: Flexibility (10/6)
- Non-council: Effectiveness over time (6/3)
- Non-Council: Flexibility (7/4)

Table 5: Weighting and ranking comparison between Council and non-Council respondents

Criterion	Weighting		Rank			
	Council	Non-council	Comparison (%)	Council	Non-council	Comparison
Environment	15	16	(0.05)	1	1	0
Effectiveness over time	12	9	0.26	2	6	-4
Technical	11	9	0.24	3	9	-6
Economic	11	10	0.12	4	4	0
Social	10	9	0.05	5	5	0
Property impact	10	13	(0.37)	6	2	4
Legal / approval	8	9	*(0.00)	7	8	-1
Funding	8	6	0.16	8	10	-2
Community acceptability	8	10	(0.35)	9	3	6
Flexibility	7	9	(0.28)	10	7	3
Total	100	100				

Key output or recommendation: The scores for the assessment criteria, as presented in Table 6, are submitted to the multi-criteria analysis.

Table 6: Final recommendation for scores for multi-criteria analysis

Criterion	Council	Non-	Recom'n	Adj	Justification
Environment	15	16	15	-	
Effectiveness over time	12	9	11	(1)	To reflect non-council disparity
Technical	11	9	11	-	
Economic	11	10	9	(2)	Significantly higher than VS but political importance
Social	10	9	10	-	
Property impact	10	13	11	1	Skew towards higher score of non-council
Legal / approval	8	8	8	-	
Funding	8	6	8	-	
Community acceptability	8	10	10	2	Reflect significantly higher VS ranking and weighting of non-council
Flexibility	7	9	7	-	
Total	100	100	100	-	

3 Multi-criteria analysis (Stage 2)

MCA (often referred to academic literature as Multi-Criteria Decision Making, or MCDM) is a general technique for the comparative assessment of alternative projects based on several criteria. The method is designed to help decision-makers to integrate the different impacts, based on the preferences and scores of stakeholders, analysts and actors concerned. An MCA is concerned with structuring and solving decision and planning problems involving multiple criteria, which maybe quantifiable, unquantifiable, or both and which maybe conflicting or synergistic (Pohekar & Ramachandran, 2004).

Use of MCA is based on the assumption that there is often not an easily determined optimal solution for a problem and it is therefore necessary to use decision-maker's preferences to differentiate between solutions. The MCA is, therefore, necessarily subjective and inevitably must result in a compromise. Nevertheless considered accessible, consultative, iterative, and generally robust, particularly where significant uncertainty in future conditions exists (Triantaphyllou, 2000).

There are 4 general steps to carrying out MCA in the context of climate change adaptation approaches assessment (Triantaphyllou, 2000):

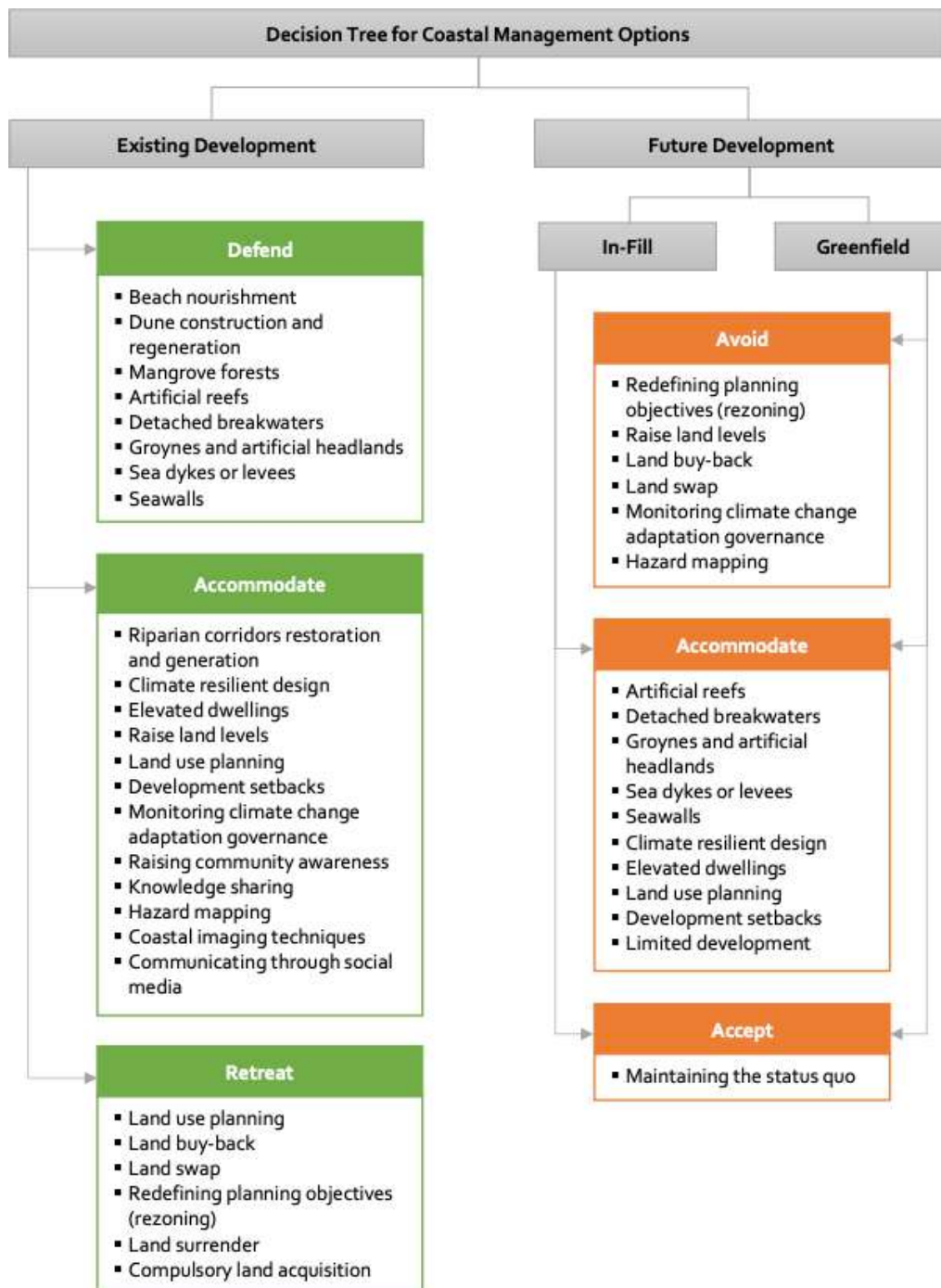
- 1) Determine the feasible options;
- 2) Determine the relevant, or appropriate criteria;
- 3) Attach numerical measures to the relative importance of the criteria and to the impacts of the alternatives on these criteria; and
- 4) Process the numerical values to determine a ranking of each alternative.

3.1 MCA methodology

3.1.1 Selection of adaptation options

The first stage of our MCA was to determine a list of *feasible* adaptation approaches in the coastal zone for the two AOIs, Wilson Beach and Bowen. Our initial list of adaptation approaches was drawn from the *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Proposed Adaptation Options Report* (the 'options report') prepared by Climate Planning (2019). The responses determined in this report comprised a comprehensive list of potential options that may be applied at some point in the future in some location in the WRC region; i.e. it represented a relatively exhaustive list containing approaches that may be viable at the two AOIs. Coastal adaptation responses (whether considered options or approaches) are generally classified in a decision tree, summarised in Figure 7 below. Refer to the options report for the full list and description of coastal adaptation responses.

Figure 7: Decision tree for coastal management options (summary, adapted from Climate Planning, 2019)



The options report also developed assessment criteria for the “screening of options [...] to eliminate clearly non-viable adaptation options” (Climate Planning, 2019, p. 7), therefore the feasibility of an option provided a first-pass ‘yes/no’ decision point for inclusion in the MCA. The decision-making framework is shown in Table 7 below.

Table 7: First-pass feasibility assessment framework for coastal hazard adaptation approach (Climate Planning, 2019)

2019	Description
Priority (P)	The adaptation option is considered a priority for the area of interest.
Feasible/ relevant (F)	The adaptation option is feasible or relevant for the area of interest.
Not feasible (N)	The adaptation option is not feasible for the area of interest.
Unsure (U)	Unsure of the feasibility of the adaptation option for the area of interest.
Not applicable (NA)	The adaptation option is not applicable to the area of interest.

Our feasibility assessment was based on local knowledge, aerial photography/Google Maps, expert judgement and a review of coastal hazard maps for sea level rise (SLR) and storm tide risk today, at 2050 and 2100. This assessment took place in workshops between the project team and the consultancy, Climate Planning, on 18 and 19 September 2019.

The full and final feasibility assessment is reported in the datasheets in Appendix 7.2. Reported below in Tables 8 and 9 are key justifications for feasibility assessments and inclusion in the MCA for Bowen and Wilson Beach:

Table 8: Key justifications for adaptation approach inclusion in MCA for Bowen

Strategy	Broad approach	Adaptation approach	Feasibility	Justification
Defend	Regenerative	Beach nourishment; dune construction and regeneration; riparian corridors restoration and generation	N	Area for regeneration too large; lack of certainty; area not naturally sand-dune/beach habitat; region not affected by large, continuous flow rivers
		Mangroves	U	Lack of certainty; location likely not to support mangroves, or enable sufficient natural migration of mangrove in response to projected sea level rise
	Engineering	Artificial reefs; detached breakwaters; groynes and artificial headlands	N	Area already well-protected by headlands; insufficient longshore drift for sand replenishment from groynes
Accommodate	All adaptation approached considered feasible			
Retreat	All adaptation approaches considered feasible			

Table 9: Key justifications for adaptation approach inclusion for MCA for Wilson Beach

Strategy	Broad approach	Adaptation approach	Feasibility	Justification
Defend	Regenerative	Dune construction and regeneration; riparian corridors restoration and generation	N	Area not naturally sand-dune/beach habitat; region not affected by large, continuous flow rivers
		Mangroves	U	Location may not support mangroves
	Engineering	Artificial reefs; detached breakwaters; groynes and artificial headlands	N	Area already well-protected by headlands; insufficient longshore drift for sand replenishment from groynes
Accommodate	All adaptation approached considered feasible			
Retreat	All adaptation approaches considered feasible			

3.1.2 Scoring of MCA options

To derive the final MCA score for each of the adaptation approaches considered 'feasible', or 'unsure', we used the weighted sum method for approach assessment (Triantaphyllou, 2000). Our general application of this method is as follows:

- 1) Finalise list of 'feasible' and 'unsure' adaptation approaches in rows of a datasheet.
- 2) List assessment criteria and criteria scores (as recommended in Section 2) in columns of the datasheet.
- 3) Apply a prioritisation score for each adaptation approach against each assessment criteria. We applied a score of 100 to the most appropriate adaptation approach, zero to the least appropriate, and then scored the remaining approaches in between 1 and 99. (In this regard, consistent with the determination of feasibility, the expert judgement of the project team and Climate Planning was applied. Expertise and experience 'in the room' incorporated coastal hazards adaptation solutions, economic analysis and regional planning in addition to a working knowledge of the WRC region and its socio-economy).
- 4) Apply a written justification for each prioritisation score.
- 5) Multiply the prioritisation score by criteria score for each of the assessment criteria.
- 6) Total the product of prioritisation score and criteria score along the rows for each adaptation approach.
- 7) Rank the adaptation approaches by the final score applied.
- 8) Run a sensitivity analysis by adjusting the criteria weighting score (see Section 3.2.2 below).

3.2 Multi-criteria analysis results and recommendations

3.2.1 Multi-criteria analysis output

The results of our MCA process (rankings) is reported below in Table 10 for Bowen and Table 11 for Wilson Beach. The full prioritisation score for each adaptation approach and the written justification for each score is in Appendix 7.2.

Table 10: Final multi-criteria assessment rankings for Bowen

Approach	Specific option	MCA score	MCA Ranking
Regenerative options	Mangrove planting	5945	4
Coastal engineering options	Sea dykes and levees	4450	10
	Sea walls	5030	7
Coastal settlement design options	Climate resilient design	5700	5
	Elevated buildings	4740	8
	Raised land levels	3570	12
Planning options	Land use planning	7460	1
	Development setbacks	5060	6
	Limited development	4740	8

	Redefining planning objectives (zoning)	6230	2
	Land swap	3390	13
	Land buy-back	4000	11
	Land surrender	5970	3
	Compulsory land acquisition	2740	14

Table 11: Final multi-criteria assessment rankings for Wilson Beach

Approach	Specific option	MCA Ranking	
Regenerative options	Beach nourishment	5780	3
	Mangrove planting	6060	1
Coastal engineering options	Sea dykes and levees	5100	7
	Sea walls	5030	8
Coastal settlement design options	Climate resilient design	5720	4
	Elevated buildings	4840	9
	Raised land levels	3490	12
Planning options	Land use planning	1430	14
	Development setbacks	5180	6
	Limited development	5190	5
	Redefining planning objectives (zoning)	1030	15
	Land swap	3610	11
	Land buy-back	4440	10
	Land surrender	5980	2
	Compulsory land acquisition	2740	13

3.2.2 Sensitivity analysis

We performed a sensitivity analysis on the criteria weighting scores. A sensitivity analysis is a check of how uncertainty in the output of a mathematical system can be divided and allocated to different sources of uncertainty in its inputs (Sassone & Schaffer, 1978).

We assessed the sensitivity of the MCA final output scores through adjusting the assessment criteria scores as detailed in Table 12. (Note: that the full results are not re-produced here, as the changes to the output were marginal; only the key results are reported.

The initial results displayed little sensitivity to the lines of analysis undertaken and as such were adopted unchanged.

Table 12: Summary of sensitivity analysis for multi-criteria analysis for Bowne and Wilson Beach

Criteria	Explanation	Result
Standard deviation	Weightings resident beyond one standard deviation of mean normalised to one standard deviation.	No material change from MCA weightings.
No weighting	Weightings equalised	For Bowen no material change from MCA weightings. For Wilson Beach, a slight increase in preference for non-hard engineering options.
Community acceptability/ Property impact Adjustment	Weighting of community acceptability and property impact increased until weighted score of hard engineering option (seawall or levy) ranked in top two.	For Bowen almost need to increase weightings of each criteria by 150% for seawall. For Wilson Beach need to double weighting for levy.
Environment/economy adjustment	Environment weighting decreased by increase in economic weighting until weighted score of hard engineering adaptation option ranked in top two.	For Bowen and Wilson Beach need to adjust weightings by 8 (reduce environment by approx. 50%; increase economy by close to 90%).

Key output or recommendation: The multi-criteria analysis recommendations from Table 10 (Bowen) and Table 11 (Wilson Beach) are accepted.

4 Multi-criteria analysis results workshop

4.1 Overview

The results of the MCA were presented to a broad range of WRC employees in Proserpine at a workshop held on 30 September 2019 (for participant list, see Appendix 6.3). The objective of the workshop was to enable participants to raise any significant concerns with the methodology and/or the weighting applied to the MCA and subsequent results.

No specific concerns or changes to the weighting or MCA results were raised and, as such, were accepted as valid for the purposes of this analysis.

Whilst the MCA was applied to the selection of adaptation approaches for further analysis (in the SCBA) it should be noted that some approaches expected to be low priority in the MCA were also selected at this point; with particular reference to defensive engineering approaches, including sea walls and levee. These approaches, when adopted in widespread fashion around urban and suburban areas, tend to be perceived as having a high degree of certainty around their defensive capabilities ².

This further high-level analysis was considered an important step in communicating the (likely) extremely high capital and maintenance costs of these approaches. Whilst not strictly in accordance with minimum guidelines it was considered within the room that such divergence was justified from a stakeholder engagement and communications perspective.

The effect of this decision-making process was a developing community and WRC expectation that three adaptation approaches be considered in SCBA: (i) 'business-as-usual' (strategic planning cycle and enabling market corrections); (ii) 'protect everything with certainty' (sea walls and levees); and (iii) remaining adaptation approaches as recommended by the MCA process. Options (i) and (ii) represent two 'default' options for the community – the cost of doing nothing and the cost of doing everything. The space in-between, is, in effect, the 'decision making space' (see Figure 8).

² Sea walls and levees was scored at 90 out of 100 in the MCA in terms of "Effectiveness over time", second only to complete retreat. This approach also scored highly (80) in terms of impact on property. Note that the terms of this project cover the period of time to 2100. Further sea level, beyond 80cm, may continue depending on GHG emissions scenarios.

Figure 8: Decision making space for Whitsunday Regional Council multi-criteria assessment

Full scope of adaptation approaches available		
Defend everything	Decision making space	
	Approaches subject to MCA framework	Business as usual
Community and policy makers expectation is to understand the costs and benefits of "defending everything" with the perceived certainty of (likely very significant) defensive engineering approaches, such as sea walls and levees. (Note: many defend options not considered in this scenario.) Though the costs may be significant, there will be a reasonable degree of certainty.	Most adaptation approaches subject to MCA methodology. This decision space includes defensive approaches that lack the perceived certainty of defensive sea walls and levees, such as artificial reefs, beach nourishment, and mangrove planting. All accommodate and retreat, planning adaptation approaches are included here,	Community and policy makers expectation is to understand the costs and benefits of "business as usual", sometimes called 'base case', or 'leave it the market'. This option involves no specific planning adaptation strategy. Though capital costs of defensive infrastructure are not incurred, the costs and distribution of those costs (winners and losers) is virtually unknown.

4.2 Workshop participants

The minimum guidelines caution about the composition of participants in an MCA and note that "shortfalls can be mitigated through very careful selection of workshop participants" (QCoast 2100, 2016, p. 34). Although a broader range of residents were surveyed regarding the MCA criteria, given time constraints, status of community engagement and the sensitivity of the subject matter, the project team highly recommended limiting participation of the workshop to council employees only. Such limitation would also enable manageable participation of relevant expertise in the form of frank, technical discussion. This advice was accepted by WRC.

The full attendee list is in Table 14, in Appendix 7.3.

4.3 Adaptation approaches

The workshop spent time considering the 'defend everything' and the recommended approaches from the MCA. It is useful to consider these in the framework presented in Table 13. Adaptations fall into two broadly recognised categories: *strategic* and *autonomous* (Buckwell, 2015; Callaway, Naess, & Ringius, 1998; T. Carter, Kenkyū, & Kankyō, 1994). Interpretation of the distinctions should not be strictly enforced; instead the categorisation is defined by particular set of characteristics, as set out in Table 13. It should also be acknowledged this classification is further dependent on individual spatial and temporal perception. For example, for a singular household, an autonomous adaptation (with the attendant characteristics from Table 13) might be to become 'storm-ready' and informed of the nature of a particular impending peril, perhaps by taping windows and securing property. A more strategic adaptation would be to invest in raising floor levels to protect habitable areas from a quantifiable, but non-specific risk of flooding.

Conversely, if such an adaptation is not mandated in any state building code, from the perspective of a planning agency this adaptation would be classified as an autonomous, non-coordinated, micro-level incremental change. Importantly, Callaway et al. (1998) note small-scale, generally private responses to climate changes should not necessarily be classified as 'unplanned'. The myriad adjustments undertaken by households and businesses may well be emergent or autonomous (that is, they have not been directed by clearly articulated public policy), but the benefits and costs have been evidently rationally determined at a micro-level, taking the same conceptual risk assessment approach as any larger entity.

Table 13: Comparison of the attributes of strategic and autonomous climate change adaptations. Such a comparison is further dependent on relative temporal and spatial scale of the subject. Sources from Park et al. (2012), Callaway, Naess, & Ringius (1998), Carter et al. (1994) and Leary (1999).

Strategic / Planned	Autonomous
“A discrete process that fundamentally (but necessarily irreversibly) results in change in [...] a system from one form, function or location to another” (Park et al., 2012, p. 119).	“The essence and integrity of an incumbent system or process remains intact” (Park et al., 2012, p. 119).
Adaptions are co-ordinated between public (or quasi-public) agencies and private agents.	Adaptations are not coordinated neither between public and private agents, nor between communities of private agents.
Adaptions are informed by a benign public policy and the science community. (Administrative rationalism)	Agent adaptations are informed by localised and limited knowledge and tend to be emergent from individual decisions.
Adaptions are pre-emptive and planned to account for the extent of future climate change at a defined point in time.	Agent adaptions tend to be reactive to current or recent past events and only. No account is given to the extent of climate change and a given future point in time.
Adaptations tend to be transformative and large-scale and therefore tend to be more complex and subject to greater risks and costs.	Adaptations are incremental and at the micro level and therefore tend to be less complex and present a lower risks and costs.
Adaptations require higher capital costs that require explicit recognition in organisational financial plans, budgets and reports.	Adaptations do not demand high capital costs and can therefore be opaquely subsumed into business-as-usual operations, which does not require specific reporting.

4.3.1 Adaptation approaches for Bowen

The workshop considered the adaptation approaches (two planned, one autonomous) for Bowen to be put forward to SCBA to be:

1. Full protection, using a combination of sea walls and levees, protecting Queen’s Beach on the north of the Bowen peninsular from the mouth of the Don River, extending eastwards to The Pocket, then southwards through the wetlands to Denison Park; protection of the harbour, protection along the sea front along Thomas Street, continuing north westwards in front of Norris Street.
2. A combination of buy-backs, land-swaps, and medium term protection by a sea wall in front of Thomas Street (the main town of Bowen is already considered at risk of inundation from storm tide). The buy-backs can be augmented by nuances, such as buy-backs to lease-back; that is property in the risk areas are secured, but leased back until thresholds are reached when evacuation is deemed most appropriate. In the longer term, the normal strategic planning process will limit further development in greenfield areas that are at risk of coastal hazards.
3. The ‘business-as-usual’, whereby the market (through land values and insurance market implications) and future strategic planning processes encourage unplanned, autonomous adaptations and reduction of inappropriate development in the risk areas (see Table 13). Business-as-usual approaches may also entail significant works to the sewerage systems of the town, as parts of the network would begin to suffer salt-water intrusion, long before any property itself is at direct risk of storm tide and SLR.

4.3.2 Adaptation approaches to Wilson Beach

The workshop considered the adaptation approaches (two planned, one autonomous) for Wilson Beach to be put forward to SCBA to be:

1. Full protection, using a combination of sea walls and levees, protecting the beach front of the hamlet and levees through the mangrove wetland through the north of the hamlet. The access road may require uplift.
2. A combination of buy-backs and land-swaps. The buy-backs can be augmented by nuances in policy, such as buy-backs to lease-back; that is property in the risk areas are secured, but leased back until thresholds are reached when evacuation is deemed most appropriate. No new land will be likely opened to new development at Wilson Beach.
3. The 'business-as-usual', whereby the market (through land values and insurance market implications) is augmented by autonomous adaptations, such as raising of land.

Key output or recommendation: The options presented in Section 3.4.1 (Bowen) and 3.4.2 (Wilson Beach) be subject to detailed social cost benefit analysis in Stage 3 of the socio-economic appraisal.

5 Conclusion

The recommendations from the MCA in the 'decision making space' are broadly supported by the climate change adaptation literature. The degree of uncertainty in the changes for which adaptation is necessary has implication on the scale, timing and types of adaptations that are most appropriate. Failing global action and the potential for 4.8°C of warming and more than a metre of sea level rise by 2100 requires radically different adaptation approaches and responses to one experiencing just 1.5°C of warming and 0.26m of sea level rise (IPCC, 2014).

However, if an adaptation is implemented in a way that is inflexible to new information and the current and future benefits are uncertain (as new conditions may not transpire), assessing the benefits of such an adaptation becomes problematic and sometimes counter-intuitive (Leary, 1999).

To account for this, Leary (1999) puts forward a high-level cost benefit framework for judging the net value of climate change adaptation in light of climatic uncertainty, paraphrased below :

- a) Adaptations with entail large irreversible costs, which provide limited present benefits, and which can be delayed until there is greater certainty, should be delayed.
- b) Conversely, adaptations that might reduce vulnerability in the future, but create present benefits, "are a good place to start".
- c) Investments should be targeted at those that maintain options, flexibility and opportunities to learn and adapt into the future.

The next stage (3) in socio-economic analysis is to undertake a SBCA on the options presented in 4.3.1 and 4.3.2: business-as-usual, defend everything and a series of buy-backs and land-swaps, with the potential for construction of localised responses to the current day hazards.

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7 Appendices

7.1 The project team

The research team members have extensive experience in economics, accounting, spatial planning, and coastal management, particularly in the context of climate change adaptation in the Indo-Pacific region. The team members have a great track record and reputation in working on both large- and smaller-scale projects in a wide range of industries, and for government, non-government and the not-for-profit sectors, as evidenced in each member's list of publications and prior projects (see individual CVs in Annex B). The project team members have successfully collaborated in the past on a number of industry-facing and government-sponsored projects.

7.1.1 Professor Christopher Fleming

Lead Investigator

Christopher Fleming is a Professor and MBA Director at Griffith Business School, a founding member of the Griffith Centre for Sustainable Enterprise, a member of Griffith University's Cities Research Institute, a member of Griffith University's Australian Rivers Institute and of the Griffith Climate Change Response Program.

An applied micro-economist with teaching, consulting and public policy experience, Christopher's research and consulting interests include, social and economic project/program evaluation, natural resource and environmental economics, sustainable development, the economic determinants of subjective wellbeing and the sustainable management of natural resources. Christopher is currently the economics lead on *EcoAdapt in the Pacific*, a five-year project that aims to identify appropriate climate change adaptation interventions in the coastal zone of Pacific island states and territories in Melanesia.

Prior to joining Griffith Business School, Christopher worked as a senior consultant for MainStream Economics and Policy, and Marsden Jacob Associates, as well as a senior advisor within the Sustainable Development Policy Group of the New Zealand Ministry for the Environment.

7.1.2 Ian Edwards

Project manager

Ian Edwards is an independent climate change consultant. He specialises in the socio-economic and financial implications of climate change adaptation. He is a chartered accountant with twenty years' experience in national and international financial services. He has worked across a broad spectrum of the financial industry including accounting public practice, investment banking and reinsurance. His career has focused predominantly on affecting system change at a multinational scale, which has afforded him strong analytical, financial, information technology and project management skills. Ian has worked on climate change adaptation projects both within Australia (state and local governments) and internationally (NGOS, development banks and universities).

7.1.3 Andrew Buckwell

Economic analysis and digital engagement

Andrew Buckwell is a Senior Research Assistant at Griffith Business School. He is an applied environmental economist by training, with significant experience in field research design, execution and analysis, and consulting – specialising in benefit cost and policy analysis. He also has teaching experience at under-graduate and Masters level. Andrew is currently deployed as a research environmental economist (including in the field) on two global, multi-disciplinary projects: *EcoAdapt in the Pacific*, which is a five year project engaged in the identifying and valuing appropriate ecosystem-based adaptations to climate change, mainly focussed on Vanuatu; and a global primary forests preservation project, which has a focus on researching community livelihoods and addressing gaps in forest protection, which case studies in the Democratic Republic of Congo, the Brazilian, and Melanesia.

Prior to joining Griffith Business School, Andrew spent 12 years as a senior digital and web professional, gaining extensive experience in digital strategy, marketing and communications, user experience design, agile project management and solutions implementation, content strategy, and social media marketing.

7.1.4 Maggie Muurmans

Stakeholder engagement, workshop facilitation and infographic production

Maggie Muurmans has over 19 years' experience in community conservation and sustainable livelihood development in Europe, Latin America, Asia and Oceania. Her projects include the establishment of community conservation areas, protected area management and alternative livelihood development. She also manages a coastal community engagement program on the Gold Coast which reaches over 9000 community members each year.

Maggie has successfully implemented debt-for-nature swaps, micro-credit systems and fishery alternatives. Her experience also extends to comprehensive coastal community engagement, education and conservation programs.

Maggie has received a number of national and international awards for her work. She has also extensive experience in event management, capacity building activities and workshop facilitation for all levels of community and governance.

7.1.5 Dan Ware

Coastal process management and GIS

Dan Ware is a Research Fellow from Griffith University's Centre for Coastal Management and Climate Change Response Program, working on design of ecosystem-based adaptation for small island developing states in Melanesia. He is a geographer, with experience in coastal planning and climate change risk assessment and is working on a PhD in the history of coastal planning and management on the Southern Gold Coast.

Dan is an active contributor to the development of Australian coastal management policy and practice, holding leadership positions with local stakeholder groups. Dan is currently a technical advisor on climate change and sustainable development for the Melanesian Spearhead Group and the Infrastructure and Settlements Expert Advisor for the LGAQ Climate Resilient Councils program. Dan has held previous roles as Director of the Surfrider Foundation Australia, as a member of the Queensland Committee of the Australian Coastal Society, and as President of Gold Coast Surf Council.

Prior to joining the Griffith Centre for Coastal Management, Dan led a climate and sustainability consulting team for Sinclair Knight Merz where he worked on climate risk assessment and adaptation planning policy for Infrastructure and State and Local Government Clients.

7.2 Full MCA scores and justifications

Appendix 7.2a: Multi-criteria analysis for Bowen

Criteria: Weighting	Feasibility	Environment	Env weight 15	Env justification	Effectiveness over Time	Eff weight 11	Effectiveness Justification	Technical	Tech weight 11	Technical Justification	Economic	Econ weight 9	Economy Justification	Social	Social weight 10	Social Justification	Property Impact	Property weight 11	Property Justification	Legal/Approval	Legal weight 8	Legal justification	Funding	Funding weight 8	Funding Justification	Community Acceptability	Community weight 10	Comm Accept Justification	Flexibility	Flex weight 7	Flexibility Justification	TOTAL MCA Score	Total Weighting 100
Defend																																	
Regenerative Options																																	
Beach nourishment	N																																
Dune construction and regeneration	N																																
Riparian corridors restoration and generation	N																																
Mangrove forests	U	100	1500	Mangroves (where feasible) allow for maximum ecological function / flexibility	20	220	Mangroves are subject to high levels of uncertainty over time	100	1100	Technically feasible in the right conditions	20	180	Mangroves are moderately cost effective, however allocated areas for new mangroves can be costly	100	1000	Mangrove construction provides public goods benefits	15	165	Mangroves is likely to provide only limited further defensive capability at Bowen	80	640	Response requires few legal approvals	80	640	Response is relatively cheap to implement	50	500	Response likely considered to be subject to a high degree of uncertainty and scepticism by community	0	0	Response is slow to build protection; if in appropriate, response is slow to rectify	5945	4
Coastal Engineering Options																																	
Artificial reefs	N																																
Detached breakwaters	N																																
Groynes and artificial headlands	N																																
Sea dykes or levees	F	20	300	Sea dykes generally unsympathetic to EF/CP, but provide for some natural migration	90	990	Built infrastructure subject to low levels of uncertainty over a given period of time. Beyond this set period uncertainty is greater	0	0	High level of technical speciality required to constructed effective dykes / levees	80	720	Sea dykes and levees are expensive, but enable existing footprint to be retained	20	200	Dykes and levees provides public goods benefits, which are mostly exploited by private land owners	100	1100	Defensive options have the least impact on property	20	160	Response subject to significant and wide ranging approvals	10	80	Response can be significantly costly to implement	80	800	Engineered defense response will be highly acceptable by community	10	100	Once response is in place, there are low levels of flexibility if deemed ineffective	4450	10
Seawalls	F	0	0	Seawalls generally unsympathetic to EF/CP	90	990	Built infrastructure subject to low levels of uncertainty over a given period of time. Beyond this set period uncertainty is greater	10	110	High level of technical speciality required to constructed effective sea walls	100	900	Sea walls are expensive, but enable existing footprint to be retained	70	700	Sea walls provides public goods benefits (defending public parks etc), but are mostly exploited by private land owners	90	990	Defensive options have the least impact on property	20	160	Response subject to significant and wide ranging approvals	10	80	Response can be significantly costly to implement	100	1000	Engineered defense response will be highly acceptable by community	10	100	Once response is in place, there are low levels of flexibility if deemed ineffective	5030	7
Coastal Settlement Design Options																																	
Climate resilient design	F	80	1200	CRD is a built-environmental response that enables ecological functions to continue	0	0	Response likely to eventually be ineffective to inevitable SLR	40	440	Climate resilient design is moderately feasible in most circumstances	50	450	Retrofitting can be expensive, but costs not born by WRIC	10	100	Costs are born by private land owner, leading to distribution impacts	50	550	Response enables properties to remain in situ, but costs put on private property owners	70	560	Response requires few legal approvals	100	800	Response requires expenditure from private land property owners; none by WRIC	90	900	Maintaining property rights likely to be popular, however costs are born by private property owners	70	700	Response is reasonably flexible to future information and conditions; however flexibility is limited by limits to adaptation	5700	5
Elevated buildings	F	80	1200	Elevated buildings is a built-environmental response that enables ecological functions to continue	10	110	Response likely to eventually be ineffective to inevitable SLR	30	330	Depending on the type of property, raising floor levels can be difficult	50	450	Retrofitting can be expensive, but costs not born by WRIC	10	100	Costs are born by private land owner, leading to distribution impacts	50	550	Response enables properties to remain in situ, but costs put on private property owners	70	560	Response requires few legal approvals	80	640	Response requires expenditure from private land property owners; none by WRIC (apart from development approvals)	70	700	Maintaining property rights likely to be popular, however costs are born by private property owners	10	100	Once building is elevated, there are no further options available if not effective enough	4740	8
Raise land levels	F	30	450	Raising land levels can result in a disruption to ecological functions by altering flow and tides, but preserves erosion risk	10	110	Response likely to eventually be ineffective to inevitable SLR	10	110	High level of technical speciality required to constructed effective sea walls	50	450	Retrofitting raised land levels can be very expensive, but costs not born by WRIC	10	100	Costs are born by private land owner, leading to distribution impacts	50	550	Response enables properties to remain in situ, but costs put on private property owners	20	160	Response subject to significant and wide ranging approvals	80	640	Response requires expenditure from private land property owners; none by WRIC (apart from development approvals)	60	600	Maintaining property rights likely to be popular, however costs are born by private property owners	40	400	Once building is elevated, there are no further options available if not effective enough; further raising is somewhat possible	3570	12
Planning Options																																	
Land use planning	F	90	1350	Managing future development in Bowen likely to be highly sympathetic to environment	90	990	Managing future development in response to SLR projections will reduce property exposure over time	80	880	With new dwellings planned, reducing CHZ with expanding population likely to be highly effective	50	450	Removal of public or private land from the CHZ entails a significant economic cost	70	700	Significant social impact experienced from land retreat	50	550	Significant property impact associated with voluntary / involuntary surrender	50	400	Planning instruments subject to range of competing legal and state and federal interest tests	80	640	Radical strategic planning processes can be lengthy and expensive	50	500	A planning scheme will go through usual consultation process	100	1000	With significant likely future development, response is very flexible	7460	1
Development setbacks	F	90	1350	Managing future development in Bowen likely to be highly sympathetic to environment	70	770	Managing future development in response to SLR projections will reduce property exposure over time	20	220	Response will have limited effectiveness on low-lying areas of Bowen	50	450	Removal of public or private land from the CHZ entails a significant economic cost	20	200	Limited social impact of response, though some limits on development flexibilities	30	330	At Bowen development set backs will have limited impact; but no account made for future damages	50	400	Response subject to some legal challenge	80	640	Can be achieved through business as usual planning processes	50	500	Response likely to be considered acceptable as no compulsory surrender considered	20	200	With likely future development, response is flexible only in the short term	5060	6
Limited development	F	90	1350	Managing future development in Bowen likely to be highly sympathetic to environment	90	990	Managing future development in response to SLR projections will reduce property exposure over time	20	220	Response will have limited effectiveness on low-lying areas of Bowen	10	90	Removal of public or private land from the CHZ entails a significant economic cost	20	200	Limiting further development can increase property values in short- to medium- term	30	330	At Bowen limiting development will have limited impact; but no account made for future damages	40	320	Limiting development subject to potential legal challenges	80	640	Can be achieved through business as usual planning processes	50	500	Limiting development to existing footprint likely to be highly acceptable to Wilson's Beach community	10	100	With significant property already present, limiting future development only has limited potential	4740	8
Redefining planning objectives (rezoning)	F	90	1350	Managing future development in Bowen likely to be highly sympathetic to environment	90	990	Managing future development in response to SLR projections will reduce property exposure over time	40	440	Rezoning land out of further development likely to be effective; risks remain from existing property	20	180	Removal of public or private land from the CHZ entails a significant economic cost	70	700	Significant social impact experienced from land retreat	30	330	Significant property impact associated with voluntary / involuntary surrender	25	200	Planning instruments subject to range of competing legal and state and federal interest tests	80	640	Radical strategic planning processes can be lengthy and expensive	50	500	Response likely to be considered a surrender; communities significantly disrupted	90	900	With significant likely future development, response is very flexible	6230	2
Land swap	F	90	1350	Removing property from CHZ will enable EF/CP to continue	90	990	Removing property from CHZ removes all risk / uncertainty	10	110	Land swaps - finding alternative areas - are difficult to implement	0	0	Removal of public or private land from the CHZ entails a significant economic cost	30	300	Private property owners are compensated for loss	0	0	Significant property impact associated with voluntary / involuntary surrender	10	80	Response subject to significant and wide ranging approvals	20	160	Land swaps demand considerable effort on behalf of WRIC	20	200	Response likely to be considered a surrender; communities significantly disrupted	20	200	Once response is implemented there is "no going back"	3390	13
Land buy-back	F	90	1350	Removing property from CHZ will enable EF/CP to continue	90	990	Removing property from CHZ removes all risk / uncertainty	10	110	Land buy backs have proven to be difficult to find support in the community	10	90	Removal of public or private land from the CHZ entails a significant economic cost	30	300	Private property owners are compensated for loss	0	0	Significant property impact associated with voluntary / involuntary surrender	10	80	Response subject to significant and wide ranging approvals	10	80	Response requires significant effort on behalf of WRIC	80	800	Private property owners will be compensated in voluntary deal.	20	200	Once response is implemented there is "no going back"	4000	11
Land surrender	F	90	1350	Removing property from CHZ will enable EF/CP to continue	100	1100	Removing property from CHZ removes all risk / uncertainty	80	880	Voluntary removal of private land from the CHZ is straightforward	0	0	Removal of public or private land from the CHZ entails a significant economic cost	10	100	Significant social impact experienced from land retreat	0	0	Significant property impact associated with voluntary / involuntary surrender	100	800	Response is voluntary	80	640	Response is voluntary	90	900	Response is voluntary	20	200	Once response is implemented there is "no going back"	5970	3
Compulsory land acquisition	F	90	1350	Removing property from CHZ will enable EF/CP to continue	90	990	Removing property from CHZ removes all risk / uncertainty. However compulsory acquisition adds complexity	10	110	CLA is difficult to implement	10	90	Removal of public or private land from the CHZ entails a significant economic cost	0	0	Significant social impact experienced from land retreat	0	0	Significant property impact associated with voluntary / involuntary surrender	0	0	Response subject to significant and wide ranging approvals	0	0	Response requires significant effort on behalf of WRIC	0	0	Compulsory nature of response likely to be unpopular	20	200	Once response is implemented there is "no going back"	2740	14

Appendix 7.2b: Multi-criteria analysis for Wilson Beach

Criteria:	Feasibility	Environment	Env weight	Env justifications	Effectiveness over Time	Eff weight	Eff justification	Technical	Tech weight	Tech justification	Economic	Econ weight	Econ justification	Social	Social weight	Social justification	Property Impact	Property weight	Property justification	Legal/Approval	Legal weight	Legal justification	Funding	Funding weight	Funding justification	Community Acceptability	Community weight	Community acceptability justification	Flexibility	Flex weight	Flexibility justification	TOTAL MCA Score	Total Weighting	
Weighting			15			11			11			9			10			11				8			8			10				7		100
Defend																																		
Regenerative Options																																		
Beach nourishment	F	50	750	Beach nourishment can enable ecological functioning, however, environmental cost associated with future commitment to continuous replenishment	30	330	Beach nourishment is subject to high levels of uncertainty, both from a CP perspective and future commitment to ongoing funding	80	880	Technically feasible in the right conditions	70	630	Beach nourishment enables retreat to be avoided, but has moderate ongoing costs indefinitely into the future	70	700	Beach nourishment provides public goods benefits, which are mostly exploited by private land owners	90	990	Defensive options have the least impact on property	25	200	Response subject to significant and wide ranging approvals	5	40	Response is moderately expensive, but will require continual, indefinite funding	70	700	Defense response likely to be acceptable to community, but lacking certainty compared to engineered options	80	560	Nourishment rates are highly flexible in their application	5780	3	
Dune construction and regeneration	N																																	
Riparian corridors restoration and generation	N																																	
Mangrove forests	U	100	1500	Mangroves (where feasible) allow for maximum ecological function / flexibility	20	220	Mangroves are subject to high levels of uncertainty over time	100	1100	Technically feasible in the right conditions	50	450	Mangroves are moderately cost effective, however allocated areas for new mangroves can be costly	100	1000	Mangrove construction provides public goods benefits	30	330	Mangrove is likely to provide only limited further defensive capability at Wilson's Beach	90	720	Response requires few legal approvals	80	640	Response is relatively cheap to implement	10	100	Response likely considered to be subject to a high degree of uncertainty and scepticism by community	0	0	Response is slow to build protection; if in appropriate, response is slow to rectify	6060	1	
Coastal Engineering Options																																		
Artificial reefs	N																																	
Detached breakwaters	N																																	
Groynes and artificial headlands	N																																	
Sea dykes or levees	F	20	300	Sea dykes generally unsympathetic to EF/CP, but provide for some natural migration	90	990	Built infrastructure subject to low levels of uncertainty over a given period of time. Beyond this set period, uncertainty is greater	0	0	High level of technical speciality required to constructed effective dykes / levees	80	720	Sea dykes and levees are expensive, but enable existing footprint to be retained	70	700	Dykes and levees provides public goods benefits, which are mostly exploited by private land owners	100	1100	Defensive options have the least impact on property	20	160	Response subject to significant and wide ranging approvals	10	80	Response can be significantly costly to implement	95	950	Engineered defense response will be highly acceptable by community	10	100	Once response is in place, there are low levels of flexibility if deemed ineffective	5100	7	
Seawalls	F	0	0	Seawalls generally unsympathetic to EF/CP	90	990	Built infrastructure subject to low levels of uncertainty over a given period of time. Beyond this set period, uncertainty is greater	10	110	High level of technical speciality required to constructed effective sea walls	100	900	Sea walls are expensive, but enable existing footprint to be retained	70	700	Sea walls provides public goods benefits (defending public parks etc), but are mostly exploited by private land owners	90	990	Defensive options have the least impact on property	20	160	Response subject to significant and wide ranging approvals	10	80	Response can be significantly costly to implement	100	1000	Engineered defense response will be highly acceptable by community	10	100	Once response is in place, there are low levels of flexibility if deemed ineffective	5030	8	
Coastal Settlement Design Options																																		
Climate resilient design	F	80	1200	CRD is a built-environmental response that enables ecological functions to continue	0	0	Response likely to eventually be ineffective to inevitable SLR	60	660	Climate resilient design is moderately feasible in most circumstances	50	450	Retrofitting can be expensive, but costs not born by WRC	10	100	Costs are born by private land owner, leading to distribution impacts	50	550	Response enables properties to remain in situ, but costs put on private property owners	70	560	Response requires few legal approvals	100	800	Response requires expenditure from private land property owners; none by WRC	70	700	Maintaining property rights likely to be popular, however costs are born by private property owners	70	700	Response is reasonably feasible to future information and conditions; however flexibility is limited by limits to adaptation	5720	4	
Elevated buildings	F	80	1200	Elevated buildings is a built-environment response that enables ecological functions to continue	10	110	Response likely to eventually be ineffective to inevitable SLR	30	330	Depending on the type of property, raising floor levels can be difficult	50	450	Retrofitting can be expensive, but costs not born by WRC	10	100	Costs are born by private land owner, leading to distribution impacts	50	550	Response enables properties to remain in situ, but costs put on private property owners	70	560	Response requires few legal approvals	80	640	Response requires expenditure from private land property owners; none by WRC (apart from development approvals)	70	700	Maintaining property rights likely to be popular, however costs are born by private property owners	20	200	Once building is elevated, there are no further options available if not effective enough	4840	9	
Raise land levels	F	30	450	Raising land levels can result in a disruption to ecological functions by altering flow and tides, but preserves erosion risk	10	110	Response likely to eventually be ineffective to inevitable SLR	10	110	High level of technical speciality required to constructed effective sea walls	30	270	Retrofitting raised land levels can be very expensive, but costs not born by WRC	10	100	Costs are born by private land owner, leading to distribution impacts	50	550	Response enables properties to remain in situ, but costs put on private property owners	20	160	Response subject to significant and wide ranging approvals	80	640	Response requires expenditure from private land property owners; none by WRC (apart from development approvals)	70	700	Maintaining property rights likely to be available if not effective enough; further raising is somewhat possible	400	400	Once building is elevated, there are no further options available if not effective enough; further raising is somewhat possible	3490	12	
Planning Options																																		
Land use planning	F	10	150	As few new dwellings are likely in Wilson's Beach, LUP will have a low impact on CHR	10	110	As few new dwellings are likely in Wilson's Beach this unlikely to effective	10	110	With few nes dwellings planned, reducing CHR with existing footprint is difficult	10	90	Removal of public or private land from the CHZ entails a significant economic cost	10	100	Significant social impact experienced from land retreat	10	110	Significant property impact associated with voluntary / involuntary surrender	10	80	Planning instruments subject to range of competing legal and state and federal interest tests	10	80	Radical strategic planning processes can be lengthy and expensive	50	500	Any change to the planning scheme will go through the normal, contested consultation process	10	100	With little likely future development, response is not flexible	1430	14	
Development setbacks	F	90	1350	Removing property from CHZ will enable EF/CP to continue	50	550	Removing property from CHZ removes all risk / uncertainty	20	220	With few nes dwellings planned, reducing CHR with existing footprint is difficult	20	180	Removal of public or private land from the CHZ entails a significant economic cost	60	600	Limited social impact of response, though some limits on development flexibilities	40	440	In Wilson's Beach, development setbacks will have limited impact; but no account made for future damages	50	400	Response subject to some legal challenge	80	640	Can be achieved through business as usual planning processes	60	600	Response likely to be considered acceptable as no compulsory surrender considered	20	200	With little likely future development, response is not flexible	5180	6	
Limited development	F	90	1350	Limiting development at Wilson's Beach will prevent greater CHR	90	990	As few new dwellings are likely in Wilson's Beach this unlikely to effective	20	220	With few nes dwellings planned, reducing CHR with existing footprint is difficult	10	90	Removal of public or private land from the CHZ entails a significant economic cost	20	200	Limiting further development can increase property values in short- to medium- term	30	330	In Wilson's Beach, limiting development will have limited impact; but no account made for future damages	40	320	Limiting development subject to potential legal challenges	80	640	Can be achieved through business as usual planning processes	95	950	Limiting development to existing footprint likely to be highly acceptable to Wilson's Beach community	10	100	With little likely future development, response is not flexible	5190	5	
Redefining planning objectives (rezoning)	F	10	150	As few new dwellings are likely in Wilson's Beach, redefining planning objectives will have a low impact on CHR	10	110	As few new dwellings are likely in Wilson's Beach this unlikely to effective	10	110	With few nes dwellings planned, reducing CHR with existing footprint is difficult	10	90	Removal of public or private land from the CHZ entails a significant economic cost	10	100	Significant social impact experienced from land retreat	10	110	Significant property impact associated with voluntary / involuntary surrender	10	80	Planning instruments subject to range of competing legal and state and federal interest tests	10	80	Radical strategic planning processes can be lengthy and expensive	10	100	Response likely to be considered a surrender; communities significantly disrupted	10	100	With little likely future development, response is not flexible	1030	15	
Land swap	F	90	1350	Removing property from CHZ will enable EF/CP to continue	90	990	Removing property from CHZ removes all risk / uncertainty	10	110	Land swaps - finding alternative areas - are difficult to implement	0	0	Removal of public or private land from the CHZ entails a significant economic cost	30	300	Private property owners are compensated for loss	20	220	Significant property impact associated with voluntary / involuntary surrender	10	80	Response subject to significant and wide ranging approvals	20	160	Land swaps demand considerable effort on behalf of WRC	20	200	Response likely to be considered a surrender; communities significantly disrupted	20	200	Once response is implemented there is "no going back"	3610	11	
Land buy-back	F	90	1350	Removing property from CHZ will enable EF/CP to continue	90	990	Removing property from CHZ removes all risk / uncertainty	30	330	Land buy backs have proven to be difficult to find support in the community	10	90	Removal of public or private land from the CHZ entails a significant economic cost	30	300	Private property owners are compensated for loss	20	220	Significant property impact associated with voluntary / involuntary surrender	10	80	Response subject to significant and wide ranging approvals	10	80	Response requires significant effort on behalf of WRC	80	800	Private property owners will be compensated in voluntary deal.	20	200	Once response is implemented there is "no going back"	4440	10	
Land surrender	F	90	1350	Removing property from CHZ will enable EF/CP to continue	100	1100	Removing property from CHZ removes all risk / uncertainty	80	880	Voluntary removal of private property from the CHZ is straightforward	0	0	Removal of public or private land from the CHZ entails a significant economic cost	0	0	Significant social impact experienced from land retreat	10	110	Significant property impact associated with voluntary / involuntary surrender	100	800	Response is voluntary	80	640	Response is voluntary	90	900	Response is voluntary	20	200	Once response is implemented there is "no going back"	5980	2	
Compulsory land acquisition	F	90	1350	Removing property from CHZ will enable EF/CP to continue	90	990	Removing property from CHZ removes all risk / uncertainty. However compulsory acquisition adds complexity	10	110	CLA is difficult to implement	10	90	Removal of public or private land from the CHZ entails a significant economic cost	0	0	Significant social impact experienced from land retreat	0	0	Significant property impact associated with voluntary / involuntary surrender	0	0	Response subject to significant and wide ranging approvals	0	0	Response requires significant effort on behalf of WRC	0	0	Compulsory nature of response likely to be unpopular	20	200	Once response is implemented there is "no going back"	2740	13	

7.3 Workshop attendance list

Table 14: List of workshop attendees (30 September 2019)

Invited	Position	Directorate	Response
Adam Folkers	Manager Health, Environment & Climate	Community & Environment	Attended
Monica Regan	Environment Officer	Community & Environment	Attended
Julie Giguere	Environment Officer	Community & Environment	Attended
Stephen Fernando	Chief Financial Officer	Office of the Mayor & CEO	Apology
Katie Coates	Management Accountant	Office of the Mayor & CEO	Attended
Shane Neville	Manager Strategic Planning	Planning & Development	Attended
Matthew Twomey	Senior Development Assessment Officer	Planning & Development	Attended
Melanie Davis	Executive Officer Economic Development	Office of the Mayor & CEO	Apology
Libby Humphrey	Asset Coordinator	Corporate Services	Attended
Joanne Vlismas	Engagement & Marketing Coordinator	Office of the Mayor & CEO	Attended
Peter Stapleton	Treatment Operation Manager	Engineering Services	Apology
Yestin Hughes	Principal Engineer – Civil & Environmental - Whitsunday Water	Engineering Services	Attended
Jessica Cristaudo	Coordinator Transport Planning & Assets	Engineering Services	Apology
Michael Downing	Coordinator Capital Project Delivery	Engineering Services	Attended
Mark Callaghan	Manager Parks & Gardens	Customer Experience	Apology
Alicia Palmer	Disaster Management Coordinator	Engineering Services	Apology
Sandra Black	Community Development Officer	Engineering Services	Apology
Scott Hardy	Manager Natural Resource Management	Community & Environment	Apology
Elouise Lamb	Project Officer Economic Development & Grants	Office of the Mayor & CEO	Attended
John Gwydir	Executive Manager Roads and Drainage	Engineering Services	Attended
Vashti Sawdy	Laboratory Technician	Engineering Services	Attended
Jason Bradshaw	Acting Director Corporate Services	Corporate Services	Apology

7.4 Examples of hazard maps used in MCA analysis

A dynamic application, Tableau Reader, that enables the user to select various coastal hazard attributes (erosion, storm tide inundation, sea level rise and annual exceedance probabilities (AEP)) was used to spatially scrutinise the impacts of coastal hazards on Bowen and Wilson Beach. Screen shots of examples of the maps (screenshots below) are provided below. The tool developed by Climate Planning incorporates coastal hazard layers produced by WBM BMT in Phase 3 of the CHAS overlaying satellite imagery of the region

7.4.1 Storm tide inundation

The following figures (9 and 10) provide examples of maps for projected sea level rise at 2050 for Bowen and Wilson Beach.

Figure 9: Exposure to storm tide inundation to 2050 for Bowen



Figure 10: Exposure to sea level rise in 2050 for Wilson Beach



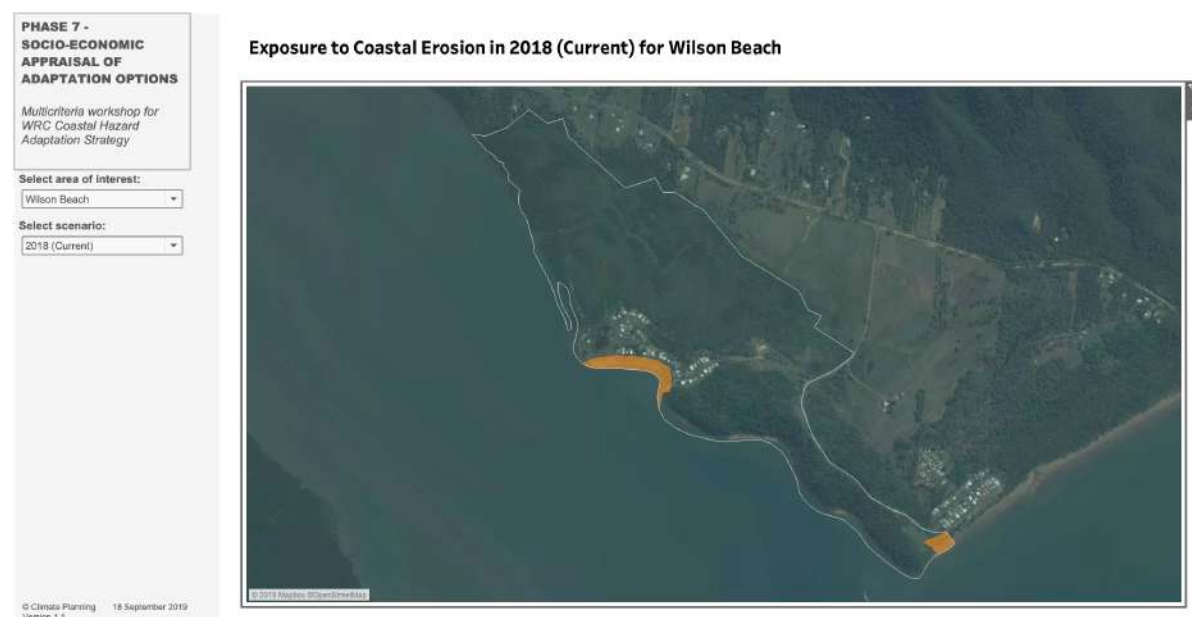
7.4.2 Coastal Erosion

The following figures (11 and 12) provide examples of maps for current coastal erosion. Coastal erosion as at 2050 and 2100 was also analysed.

Figure 11: Exposure to coastal erosion in 2018 for Bowen



Figure 12: Exposure to coastal erosion for Wilson Beach



7.4.3 Storm tide inundation

The following figures (14 and 15) provides AEP 1% screenshots for 2050. AEPs 0.2% and 0.5% for current, 2050 and 2100 were also analysed when assessing the feasibility of the adaptation responses.

Figure 13: Exposure to 1% AEP storm tide inundation in 2050 for Bowen

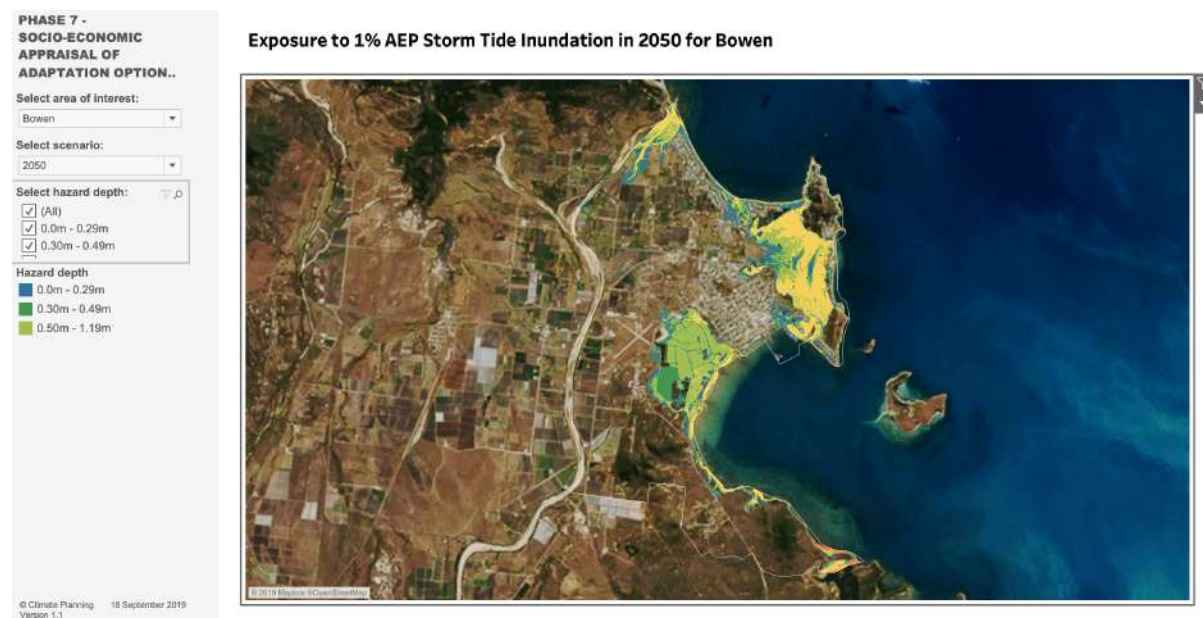
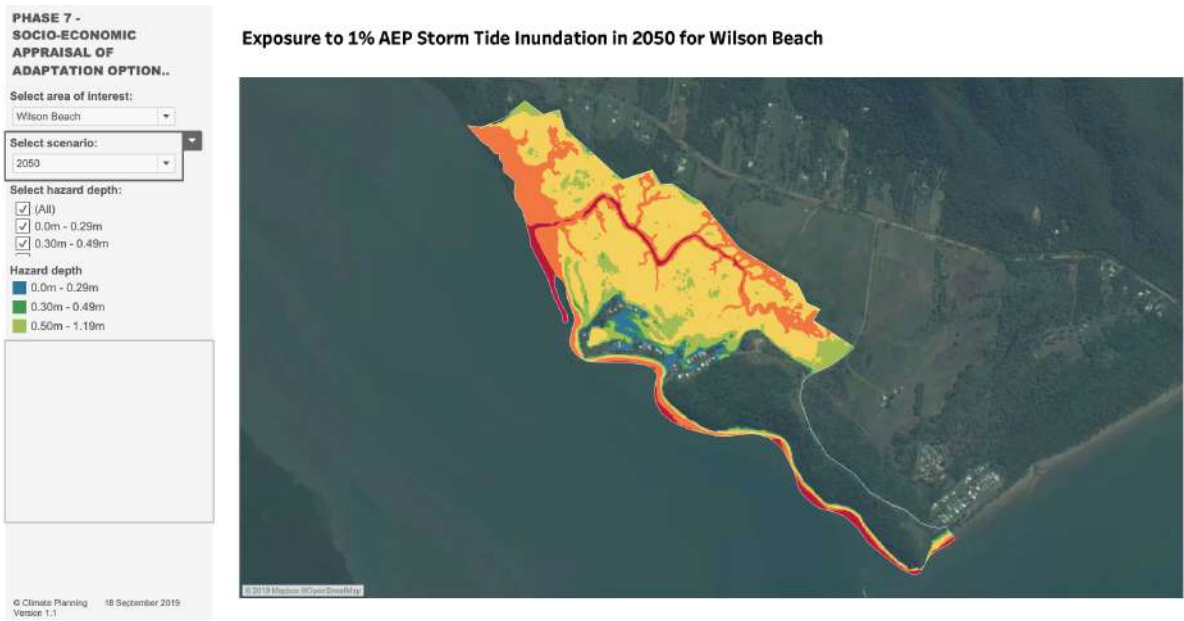


Figure 14: Exposure to 1% AEP storm tide inundation in 2050 for Wilson Beach



Report to Whitsunday Regional Council: Cost benefit analysis of coastal hazard adaptation options

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Whitsunday Regional Council

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Prepared by:

Griffith University and Ian Edwards

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Contents

List of tables	iv
List of figures	v
Acronyms	vi
Definition of key terms	vii
1 Introduction	1
1.1 Project background	1
1.2 Phases of a CHAS	1
1.3 Phase 7 of the CHAS: socio-economic appraisal	2
1.4 Selection of areas of interest	3
1.5 Coastal hazards assessed	4
1.6 Adaptation options considered	5
1.6.1 Adaptation approaches for Bowen	5
1.6.2 Adaptation approaches to Wilson Beach	6
1.7 Structure of this document	6
1.8 Source of CBA Input Data	6
1.9 Supporting documents	6
1.10 Limitations of the Phase 7 methodology	7
2 Cost benefit analysis: general approach	8
2.1 Phases of a cost benefit analysis	8
2.1.1 CBA stage 1: Specify the set of options	8
2.1.2 CBA stage 2: Decide whose benefits and costs count	8
2.1.3 CBA stage 3: Identify the impacts and select measurement indicators	9
2.1.4 CBA stage 4: Predict the impacts over the life of the proposal	9
2.1.5 CBA stage 5: Monetise (attach dollar values to) impacts	9
2.1.6 CBA stage 6: Discount future benefits and costs to obtain present values	9
2.1.7 CBA stage 7: Compute the net present value of each option	10
2.1.8 CBA stage 8: Perform sensitivity analysis and draft conclusions	10
2.2 Calculations and assumptions for monetised costs and benefits	10
2.2.1 Costs and benefits associated with the base case	11
2.2.2 Costs and benefits associated with defend approaches	13
2.2.3 Costs and benefits associated with property buy-backs	16
2.3 Non-monetised costs	18
3 Costs benefit analysis results	19
3.1 Headline results	19
3.2 Sensitivity analysis	21
3.2.1 Sensitivity to discount rate	22
3.2.2 Sensitivity to property values	23
3.2.3 Sensitivity to inflation rate	24
3.2.4 Sensitivity to defensive infrastructure costs	25
3.2.5 Ranking of sensitivities	26
3.3 Decision making in situations of deep uncertainty	27

4	Conclusion	34
4.1	Outcomes of this CBA.....	34
4.2	Key Messages	34
4.3	Limitations of CBA and decision making under uncertainty	35
4.4	Next Steps	36
5	References.....	37
6	Appendices.....	38
6.1	The role of discounting in cost benefit analysis	38
6.2	The project team	38
6.2.1	Professor Christopher Fleming	39
6.2.2	Ian Edwards	39
6.2.3	Andrew Buckwell.....	39
6.2.4	Maggie Muurmans	39
6.2.5	Dan Ware	40
6.3	CBA workshop attendance list.....	41
6.4	Workshop notes.....	41

List of tables

Table 1: Summary of approaches and scenarios considered for adaptation approaches	10
Table 2: Total average annual damage to residential, commercial and WRC council buildings	11
Table 3: Unit costs for sea defences structures and road raising for WRC CHAS.....	13
Table 4: Total costs of coastal defensive approach for Bowen and Wilson Beach	14
Table 5: Avoided damage associated with defending property in the erosion prone area	15
Table 6: Summary of costs associated with the proposed property buy-back regime.	17
Table 7: Social cost benefit analysis for coastal adaptation approaches for Bowen	19
Table 8: Social cost benefit analysis for coastal adaptation approaches for Wilson Beach	20
Table 9: Cost benefit analysis for perspective for coastal adaptation options for Bowen	20
Table 10: Cost benefit analysis for perspective for coastal adaptation options for Wilson Beach	21
Table 11: Key sensitivities in the cost benefit analysis.....	21
Table 12: Sensitivity analysis for discount rate for adaptation approaches for Bowen	22
Table 13: Sensitivity analysis for discount rate for adaptation approaches for Wilson Beach	23
Table 14: Sensitivity analysis for house price inflation for adaptation approaches for Bowen	23
Table 15: Sensitivity analysis for house price inflation for adaptation approaches for Wilson Beach	24
Table 16: Sensitivity analysis for general rate of inflation for adaptation approaches for Bowen	24
Table 17: Sensitivity analysis for general rate of inflation for adaptation approaches for Wilson Beach	25
Table 18: Sensitivity analysis for defensive infrastructure costs for adaptation approaches for Bowen	25
Table 19: Sensitivity analysis for defensive infrastructure costs for adaptation approaches for Wilson Beach	26
Table 20: Ranking of intervention approaches and rank mean for BCA sensitivities for Bowen.....	26
Table 21: Ranking of intervention approaches and rank mean for BCA sensitivities for Wilson Beach.....	27
Table 22: Performance of adaptation approaches for Bowen in the full sensitivity matrix	28
Table 23: Performance of adaptation approaches for Wilson Beach in the full sensitivity matrix	28
Table 24: List of workshop attendees.....	41

List of figures

Figure 1: Recommended process for Coastal Hazard Adaptation Strategy (QCoast 2100, 2016)	2
Figure 2: Extent of the Bowen area of interest	3
Figure 3: Extent of the Wilson Beach area of interest	4
Figure 4: Conceptualisation of contributing factors to storm tide inundation in coastal areas.....	5
Figure 5: Average annual damage curve for Bowen	12
Figure 6: Average annual damage curve for Wilson Beach	13
Figure 7: Location of sea walls, sea dykes and road raising for estimation of costs for Bowen.....	14
Figure 8: Location of sea walls, sea dykes and road raising for estimation of costs for Wilson Beach.....	15
Figure 9: House price inflation for Bowen (2010 - 2019)	17
Figure 10: House price inflation for Wilson Beach (2017-2019)	17
Figure 11: Performance of BCR for each adaptation approach in sensitivity matrix for Bowen	30
Figure 12: Performance of rank for the BCR for each adaptation approach in sensitivity matrix for Bowen.....	31
Figure 13: Performance of BCR for each adaptation approach in sensitivity matrix for Wilson Beach	32
Figure 14: Performance of rank for the BCR for each adaptation approach in sensitivity matrix for Wilson Beach..	33

Acronyms

AAD	Average annual damages
AEP	Annual exceedance probability
AOI	Area of Interest (namely Bowen and Wilson Beach)
BCR	Benefit cost ratio
CAPEX	Capital expenditure
CBA	Cost benefit analysis
CHAS	Coastal Hazard Adaptation Strategy
FV	Future value
LGAQ	Local Government Association of Queensland
MCA	Multi-criteria assessment
NPV	Net present value
OPEX	Operational expenditure
PV	Present value
SLR	Sea level rise
WRC	Whitsunday Regional Council

Definition of key terms

Average exceedance probability (AEP)	The likelihood of a given inundation event occurring in any given year. In this instance we model average annual damages from inundation based on three AEPs: 0.01, 0.005, and 0.002, equating to a 1-in-100 year event, a 1-in-200 year event, and a 1-in-500 year event. Note that in any given year, each AEP can occur any number of times, according to their probability of occurrence.
Average annual damage (AAD)	Each inundation event will cause a certain amount of damage to properties in at-risk area. The AAD is the average damage per year that would occur in a nominated development situation from inundation over a very long period of time. In this instance, AADs are constructed from the sum of AAD that occurs from a 0.01 AEP, a 0.005 AEP, and a 0.002 AEP, based on the assumption that each event has a chance of happening in any given year. The damages associated with each AEP is function of the severity; that is a 0.002 AEP event causes greater damage than a 0.01 AEP, but is five-times less likely to occur in any given year.
Benefit cost ratio (BCR)	Fraction of present value costs to present value benefits. Values greater than 1 represent a positive return on investment. Values less than 1 represent a negative return on investment.
Discount rate (r)	The rate of return used to discount future cash flows back to their present value, associated with the time value of money. This is usually expressed as a percentage per annum. Conventionally, the discount rate is assumed to reflect human impatience; i.e. the extent to which people prefer to defer costs and obtain benefits sooner, rather than later. It also reflects their attitudes towards risk and their expectation from alternative investments. From a societal perspective, the discount rate applied reflects whether society prefers to obtain beneficial outcomes sooner rather than later, society's attitude towards the risk of investments failing to deliver the expected return, and a reflection of the time value of money. The Australian government recommends cost benefit analysis for domestic projects apply a discount rate of 7%, with sensitivity analysis undertaken at 3% and 10%.
Present value (PV)	Benefit cost analysis compares costs and benefits that arise at different points in time. To compare these values from a present-day perspective, these costs and benefits are converted into their 'present value' by applying an annual discount rate – the rate at which the value erodes over time. Present value benefits and costs are calculated using the standard formula: $PV = FV(1+r)^t$ where PV is present value (value in today's money), FV is future value, r is the discount rate and t is the time period.
Net present value (NPV)	Net present value (NPV) The value of present value benefits minus the present value costs. A positive NPV indicates, from an economic perspective, a project should proceed. A negative NPV indicates the project does not return a value and should not proceed.
Social costs	The social costs of a project are the sum of the private costs (often expressed in financial terms) and any additional costs borne by people who are not party to any financial transaction in relation to the project. Social costs may be incurred financially or experienced as a loss of a non-monetary benefit, such as environmental amenity or health impacts. The latter may be quantified in monetary terms using appropriate economic valuation techniques/

1 Introduction

1.1 Project background

Whitsunday Regional Council (WRC) is seeking to be one of the most advanced Councils in Queensland in regards to responding to coastal hazards and climate change. To achieve this goal, WRC is developing a Coastal Hazard Adaptation Strategy (CHAS) to assist in identifying and responding to coastal hazards in a way which minimises the risks to assets in the Whitsunday region.

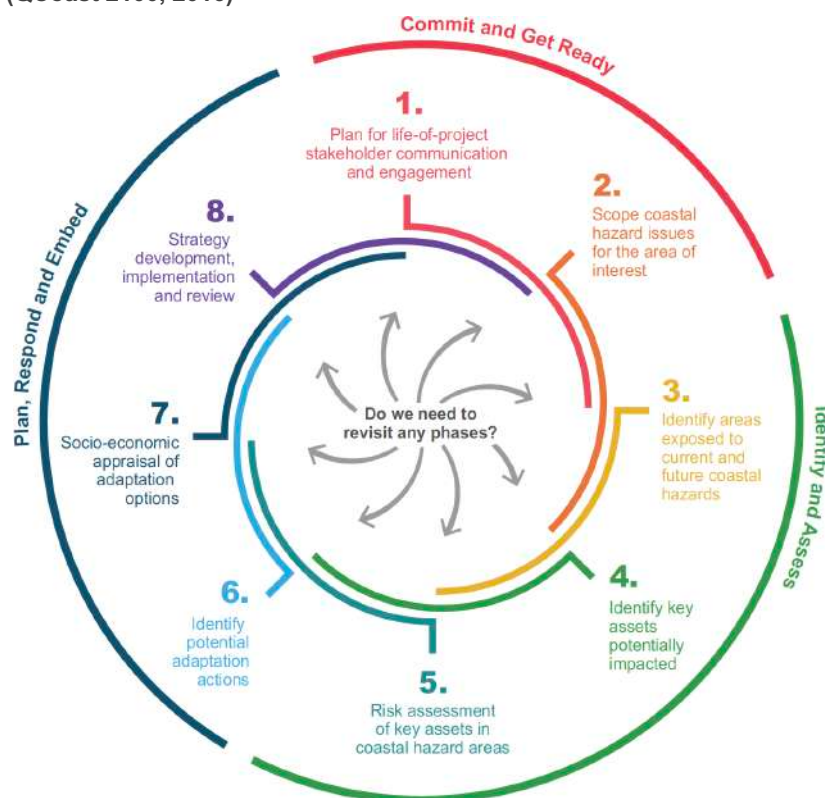
The strategy will enable more informed decisions about planning issues associated with coastal hazards and climate change. The objectives of the project are to:

- 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.

1.2 Phases of a CHAS

Each CHAS is delivered in eight phases which align with the QCoast₂₁₀₀ Minimum Standards and Guidelines (the 'minimum standards'), provided by Local Government Association of Queensland (LGAQ) (see Figure 1). This document describes findings from Phase 7 of the minimum standards, the *Socio-economic appraisal of adaptation options* (the 'socio-economic appraisal'), carried out by Griffith University and Ian Edwards (the 'project team') (the full project team is list in Appendix A).

Figure 1: Recommended process for Coastal Hazard Adaptation Strategy (QCoast 2100, 2016)



1.3 Phase 7 of the CHAS: socio-economic appraisal

The previous phase of the CHAS (Phase 6) identified an inventory of potential options that can be applied to reduce or eliminate priority risks identified in a risk assessment undertaken in Phase 5 of the CHAS. The objective of this phase of the CHAS (Phase 7) is to undertake a socio-economic appraisal of these options in order to aid council determine preferred options to be employed.

In accordance with the minimum standards the socio-economic appraisal is undertaken in two steps:

1. Multi-criteria Criteria Analysis (MCA)

An MCA provides a qualitative framework that ensures that assessment criteria extend beyond financial criteria to incorporate community social, economic and environmental values. MCA provides a cost-effective platform to narrow down the range of identified adaptation options to a manageable number for which economic benefits and costs can be subsequently be analysed and compared. MCA is performed by screening each adaptation option through a range of qualitative or semi-quantitative criteria as discussed below.

2. Cost Benefit Analysis (CBA)

A CBA applies an economic lens to the filtered inventory of adaptation options identified from the MCA. It can assist in identifying the option that achieves maximum value for money benefit for a council. It identifies many costs and benefits of an option, including social and environmental values according to their net economic benefit. The costs and benefits of an option are forecast over the life of the project, costs are subtracted from benefits to determine the net present economic value (NPEV) of the project. The option with the greatest NPEV should provide the greatest net benefit to the community or the most economic use of resources (i.e. Benefit/cost ratio greater than one or a positive NPEV).

The key conclusions from these stages will be combined and synthesised in an appraisal report that will be prepared at the end of this phase.

The purpose of this document is to report on the methodology and findings from Step 2 (the CBA). This includes a summary of a workshop held in the Proserpine Community Centre between WRC and the project team on 18 November 2019. The project team took WRC participants through the CBA methodology and results with the objective to garnering feedback concerning the reasonableness of each. A workshop summary is provided in Appendix 6.4. No significant concerns were raised and both methodology and results were considered reasonable by participants.

1.4 Selection of areas of interest

Budget and time constraints limited the CBA areas of interest (AOIs) to two representative sites, which were agreed in consultations between WRC and the project team. Whilst limitations in similarities are acknowledged, Bowen was selected as a location representative of a heterogenous, larger and relatively buoyant socio-economy, e.g. Cannonvale and Airlie Beach; Wilson Beach was selected to represent smaller, more isolated communities, such as Dingo Beach and Hideaway Bay. Both Bowen and Wilson Beach were both identified as relatively particularly vulnerable to coastal hazards during a vulnerability assessment undertaken as part of Phase 4 of the WRC CHAS.

For the purposes of the socio-economic appraisal, geographically, Bowen consists of the Australian Bureau of Statistics (ABS) Statistical Area 2, which includes Queens Beach, Bowen, the peninsular to the east of Bowen, westwards to the Don River and southwards to the dwellings at Ocean View Drive (see Figure 2). The Wilson Beach AOI comprises the small hamlet only (see Figure 3; images are not at same scale).

Figure 2: Extent of the Bowen area of interest

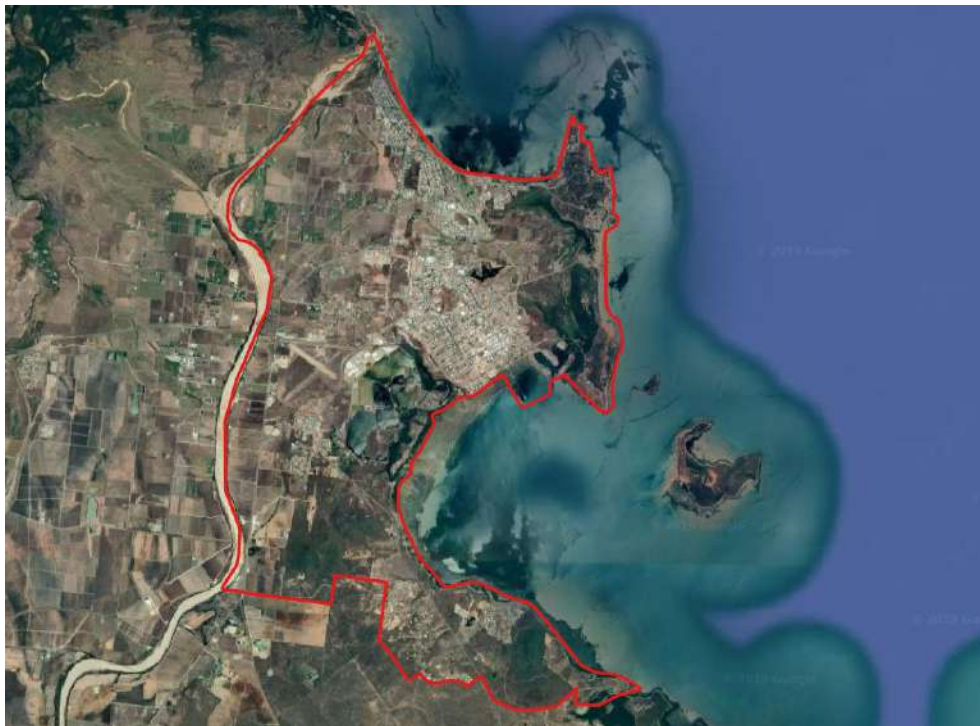


Figure 3: Extent of the Wilson Beach area of interest



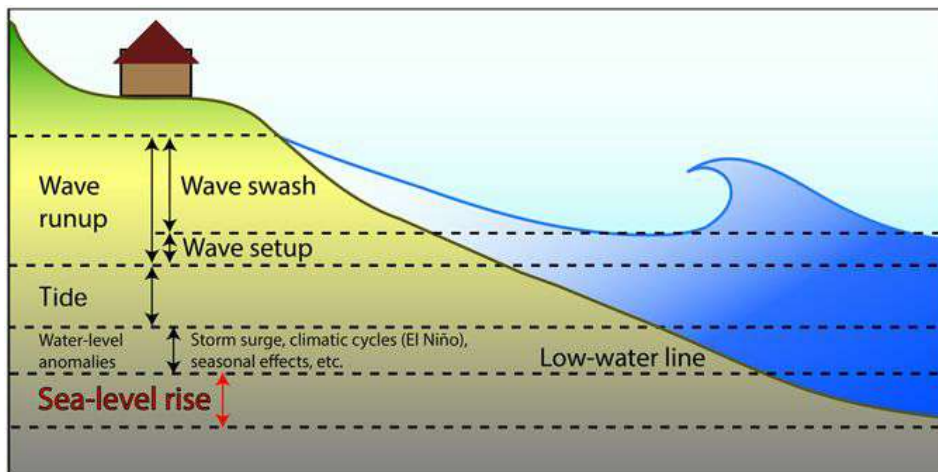
1.5 Coastal hazards assessed

Adaptation approaches to two hazards are assessed here; that of storm tide inundation and erosion ¹. Global climate change drives sea-level rise (SLR), which will increase the frequency of coastal inundation. In coastal regions, the amount of sea-level rise occurring over years to decades is significantly smaller than normal ocean-level fluctuations caused by tides, waves, and storm-tide, however its impacts are felt at the margins and during significant weather events, such as tropical cyclones (Vitousek et al., 2017). Storm tides are a result of combination of winds driving waves towards coastal areas and an uplift in ocean height caused by significant low pressure systems. Coastal erosion is caused by wave energy working against exposed and soft coastal land areas.

It should be noted that 'sea level rise', widely predicted under climate change scenarios (IPCC, 2014), is not considered conceptually independent of either storm tide inundation and or erosion, but as an additional factor in both types of risk. For example, the storm tide inundation risk area is comprised of additive measurements of Mean Sea Level, Highest Astronomical Tide, Storm Tide, Wave Set-Up and Sea Level Rise (see Figure 4).

¹ Riverine and coincidental flooding, in particular from the Don River, is not considered in this report, though this is likely to be a considerable coincident risk. It is also probable flood flow management will strongly influence the specifics of any defend approaches that deploy sea walls and sea dykes.

Figure 4: Conceptualisation of contributing factors to storm tide inundation in coastal areas (Vitousek et al., 2017).



Both Bowen and Wilson Beach are exposed to a high level of risk from both storm tide inundation and coastal erosion. The key areas at risk are shown in the Appendix of the prior MCA report.

1.6 Adaptation options considered

An outcome of the MCA undertaken as Step 1 of this socio-economic appraisal was the identification of two adaptation options to be cost benefit assessed in addition to a base case (i.e. 'business-as-usual', or 'leave to the market') strategy:

- surrender and retreat; and
- hard engineering solution designed to defend.

Each of these options is discussed in the context of Bowen and Wilson Beach below.

1.6.1 Adaptation approaches for Bowen

Details of the adaptation approaches (two planned, one autonomous) determined during the MCA process to be put forward to CBA for Bowen are:

1. Full protection, using a combination of sea walls and sea dykes, protecting Queen's Beach on the north of the Bowen peninsular from the mouth of the Don River, extending eastwards to The Pocket, then southwards through the wetlands to Denison Park; protection of the harbour, protection along the sea front along Thomas Street, continuing north westwards in front of Norris Street.
2. A combination of buy-backs, land-swaps, and medium term protection by a sea wall in front of Thomas Street (the main town of Bowen is already considered at risk of inundation from storm tide). The buy-backs can be augmented by nuances, such as buy-backs to lease-back; that is property in the risk areas are secured, but leased back until thresholds are reached when evacuation is deemed most appropriate. In the longer term, the normal strategic planning process will limit further development in greenfield areas that are at risk of coastal hazards.
3. The 'business-as-usual', whereby the market (through land values and insurance market implications) and future strategic planning processes encourage unplanned, autonomous adaptations and reduction of inappropriate development in the risk areas (see Table 13). Business-as-usual approaches may also entail significant works to the sewerage systems of the town, as parts of the network would begin to suffer salt-water intrusion, long before any property itself is at direct risk of storm tide and SLR.

1.6.2 Adaptation approaches to Wilson Beach

Details of the adaptation approaches (two planned, one autonomous) determined from the MCA process to be put forward to SCBA for Wilson Beach are:

1. Full protection, using a combination of sea walls and sea dykes, protecting the beach front of the hamlet and levees through the mangrove wetland through the north of the hamlet. The access road may require uplift.
2. A combination of buy-backs and land-swaps. The buy-backs can be augmented by nuances in policy, such as buy-backs to lease-back; that is property in the risk areas are secured but leased back until thresholds are reached when evacuation is deemed most appropriate. No new land will be likely opened to new development at Wilson Beach.
3. The 'business-as-usual', whereby the market (through land values and insurance market implications) is augmented by autonomous adaptations, such as raising of land.

1.7 Structure of this document

This document is structured in the following way. First, we outline our general approach to undertaking a CBA through eight main steps. Next, we detail the methodology of our calculations, both qualitatively and quantitatively for each of three climate change adaptation approaches assessed. The results section reports the quantitative findings from the CBA, including several sensitivity analyses. Lastly, in the conclusion, we discuss the outputs of the CBA, summarise the key findings, outline some of the limitations of this CBA and set out the next steps.

1.8 Source of CBA Input Data

By its very nature each subsequent phase of this CHAS builds on work undertaken in previous phases. This is particularly relevant to damage estimates applied in this CBA. Residential and commercial damage estimates calculated in Phase 5 were enhanced in in this CBA with estimates of damages to council assets. All costs required to undertake adaptation options were sourced (as specified in relevant sections below) during this CBA.

1.9 Supporting documents

The following documents prepared in previous phases of the CHAS have been applied to this CBA:

- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Proposed Adaptation Options Report*
- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Risk Assessment Report*
- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Economic Indicators Report*
- Climate Planning. (2018). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Methodology and Findings from Valuation of Key Assets*
- Edwards, I. (2019). *Whitsunday Regional Council Socio-Economic Vulnerability Assessment*
- Griffith University and Edwards, I. (2019) *Regional Council Coastal Hazard Adaptation Strategy: Multi-criteria Analysis of Climate Change Adaptation Options*

In addition, hazard maps provided in earlier phases of the CHAS were used to both determine option feasibility and in the MCA workshop to help participants picture and consider the strengths and weaknesses of differing adaptation options. No formal critique of previous work and the hazard mapping has been undertaken. These are considered by the project team to be sound and approved by WRC for application to this phase of the CHAS.

1.10 Limitations of the Phase 7 methodology

The process applied in this phase of the CHAS has been constrained by available budget and time. The project team has worked with WRC to identify an approach that, whilst not in all circumstances is best practice, provides a reasonable commercial alternative. As noted above an obvious limitation to work undertaken is the requirement to select representative areas of interest. Any other limitations and constraints specific to both the MCA and CBA will be identified in their respective reports.

2 Cost benefit analysis: general approach

We base our cost benefit analysis (CBA) process on that detailed by the Australian Government's Cost-benefit Analysis Guidance Note and the Queensland Government's Project Assessment Framework for cost benefit analysis for infrastructure projects (Australian Government Department of Prime Minister and Cabinet, 2016; Queensland Government, 2015), with further guidance provided by Boardman et al. (2017). CBA is a process that identifies and evaluates net benefits (benefits minus costs) associated with alternative paths of action towards achieving defined public goals. The process is a form of economic appraisal that can be used to estimate changes to the economic wellbeing of local and wider communities.

In most instances, a CBA is used to estimate and compare the net benefits of a project with the costs and benefits of a 'base case', (sometimes called 'business as usual', or BAU), which represents a continuation of current conditions under which the proposed project/ policy is not implemented. Note: this is not necessarily a 'do nothing' approach, as this entails WRC from withdrawing from *any* coastal management activities.

In the case of coastal management activities, the base case represents a continuation of WRC's prevailing approach to coastal management, which, at the moment, is not yet fully formulated and, as such, representative of an approach of 'leave it to the market'². The costs and benefits of alternative management options are then compared with the costs and benefits of the base case to identify any incremental differences between the base case and the alternative approaches.

A CBA considers direct costs and benefits for different groups and also any positive or negative effects on 'third parties' (called positive and negative 'externalities'), such as the changes in the value of beach recreation and amenity. It should be noted that although individual groups in the community may benefit from a particular management action, others may be disadvantaged. However, if the sum of the benefits of a particular option exceed the sum of the costs incurred, the option would appear to provide an overall benefit.

A CBA also considers the timing of each of the costs and benefits associated with particular options and converts future costs and benefits into today's prices so that all impacts can be meaningfully compared regardless of timing. In this way, a CBA can enable a comparison of options that deliver different streams of benefits and costs over time.

2.1 Phases of a cost benefit analysis

The CBA was undertaken in the eight disparate stages noted below.

2.1.1 CBA stage 1: Specify the set of options

As discussed in Section 1.6 above the adaptation options to be subject to CBA were identified as an outcome of the MCA.

2.1.2 CBA stage 2: Decide whose benefits and costs count

For this work we restrict the scope of the CBA to WRC (assets and operations) and the residents and businesses of the Council area. Our scope incorporates private costs and benefits. Private costs and benefits are those paid for or received directly in money or time (valued monetarily), by the parties within the scope.

² 'Leave it to the market' is representative of a policy that enables the normal laws of supply and demand for housing and commercial property are enabled to apply, with minimum intervention. In the case of coastal adaptation, this entails no coastal protection is built to protect property and that property values will change (in the long term, likely fall) in accordance with attributes of the house, such as increased risk to storm tide inundation, erosion hazard and cyclone activity. These increased risks discourage people from staying and increases costs of insurance (or even entail a complete removal of insurance coverage), thus prompting people to move. Alternatively, property owners may choose to fund their own adaptation options, reduce their risk and stay. Such an approach rates very poorly from an economic distribution perspective, as residents effectively take on all their personal risk.

By their nature, social costs and benefits cannot be estimated easily, or directly, in monetary terms and will commonly require proxy valuations ascertained through econometric techniques and published in peer-reviewed journals and applied through a process called 'benefit transfer' – a method of estimating the economic value of an environmental or social good or service at a target site by using information from an existing study (or studies) conducted at an alternative source site or sites.

2.1.3 CBA stage 3: Identify the impacts and select measurement indicators

The next stage identified the full range of impacts of each of the options in the CBA. These can be highly-specific to both the case study and the option although each relied on interpreting and projecting data forwards. The base case was also forward-looking, in recognition that business-as-usual trends can lead to significant future costs (rising sea levels, for example). That is, the base case did not simply assume that nothing will change over time—changes that could be reasonably expected and recognised when identifying the impacts of each option were included.

The choice of indicators to measure the impacts was dependent on data availability and ease of monetisation. For example, a regulatory change may reduce risks of a hazard (inundation, for example), its positive impact could be measured in terms of reduced damage costs from a storm tide, which can be measured in dollars per year.

2.1.4 CBA stage 4: Predict the impacts over the life of the proposal

A CBA should present the best estimates of expected costs and benefits, along with a description of the major uncertainties and how they were taken into account. We quantified costs and benefits annually out to years 2050 and 2100 to align with WRC expectations and assumed asset useful lives. In general, the period of assessment needs to be long enough to capture all the potential costs and benefits. We note, however, that long assessment periods necessarily entail very high levels of uncertainty in forecasts of the benefits and costs.

Although it is difficult to predict what the effects of a proposed adaptation might be in 10 or 20 years—or in some cases, even to attach objective probabilities to various scenarios—decisions require some assumptions to be made. For this reason, assumptions are disclosed for future sensitivity analysis (CBA stage 8). Justifying the assumptions that lay behind the forecasts can also improve implementation and planning and identifies where more effort can be made to improve the analysis, most cost effectively, by importing the most important new datasets.

2.1.5 CBA stage 5: Monetise (attach dollar values to) impacts

In stage 5, is to assign net dollar values based on the estimated annual costs and benefits of the proposed adaptation options and the base case are assigned.

2.1.6 CBA stage 6: Discount future benefits and costs to obtain present values

CBA compares the relative value of benefits and costs over time. In general, for adaptation options, most of the costs are incurred soon after the option is approved, while the benefits are realised over decades, sometimes making it difficult to justify any action. As benefits in the distant future are considered to be 'worth less' than benefits enjoyed in the present, future values need to be discounted back to a present value. This is a reflection of the inherent uncertainty in estimating future benefits and costs, the risk profile of the project and the long-term rate of return on alternative investments or projects (the opportunity cost). Generally, this is done with a consistent annual rate, known as the discount rate, which compounds similar to interest on a savings account (except in reverse) to provide 'present values'.

A social discount rate reflects society's relative valuation of today's wellbeing versus future well-being. Choosing an appropriate social discount rate is crucial for CBA (and other forms of project/policy/program evaluation) when the benefits and costs of the proposal are spread over multiple time periods. A relatively high social discount rate, by attaching less weight to benefits and costs that occur in the future, favours proposals with benefits occurring at earlier dates. In contrast, a relatively low social discount rate favours proposals with benefits occurring at later dates. Choice of discount rate is particularly important for climate change adaptation projects, where the majority of costs are likely to be in a project's early years, with the benefits mostly accruing in later years.

In the current low interest rate environment, the application of an appropriate social discount rate remains contentious. For Commonwealth projects the Australian Government recommends the application of rates between 3% and 10%. Given the long-term focus of our CBA, and that our options will include costs and benefit flows that maybe considered irreplaceable, we use a discount rate of 7%.

2.1.7 CBA stage 7: Compute the net present value of each option

Various metrics can be computed for project assessment: firstly, the 'net present value' (NPV) is the total present value benefit minus the total present value cost for the project as a whole; secondly, the 'benefit-cost ratio' (BCR) is the ratio of the present value benefits to present value costs (this determines a 'return on investment' for each unit of present value cost incurred); and thirdly, the internal rate of return (IRR), which reflects the rate of 'growth' in the value of the investment (computed by determining the discount rate at which the NPV of a project equals zero). We compute all of these values, as appropriate, for each CBA undertaken.

2.1.8 CBA stage 8: Perform sensitivity analysis and draft conclusions

Further, we will undertake sensitivity analysis with our discount rate. Undertaking a sensitivity analysis with a range of discount rates can reveal quite different conclusions as, in most instances, the costs and benefits of adaptation options will be experienced at very different times. In particular, a sensitivity analysis might reveal alternative scenarios for the optimal timing for implementation of adaptation options. We will undertake sensitivity analysis at 3% and 10%.

In some instances, it might also be appropriate to undertake sensitivity analysis on some of the impact (and hence financial costs and benefits) of key indicators (CBA stage 3). For instance, sea level rise is also subject to uncertainty, therefore it may be appropriate to perform sensitivity analysis on this metric.

A key element in a CBA is drawing out the distribution of costs and benefits over time – defining who are the 'winners' and who are the 'losers' under any given adaptation option scenario. For example, the building of a seawall defends some properties and not others. Determining distributional impacts for climate change adaptation options is particularly important given the spatial nature of many of the risks associated with inundation, flooding and coastal erosion.

2.2 Calculations and assumptions for monetised costs and benefits

This section provides both a qualitative description and quantitative determination of the costs and benefits considered in this CBA. The broad approaches, based on the preferred options identified by WRC during the MCA process and the scenarios considered in this CBA are summarised in Table 1.

Table 1: Summary of approaches and scenarios considered for adaptation approaches for Bowen and Wilson Beach.

Approach	Scenario	Description
Base case		Base case, or 'leave it to the market'
Defend approach	Defend at Y1	Construction of sea walls and sea dykes and road raising in year 1
	Defend at Y2035	Construction of sea walls and sea dykes and road raising in year 2035
	Defend at Y2050	Construction of sea walls and sea dykes and road raising in year 2050
	Defend at Y2075	Construction of sea walls and sea dykes and road raising in year 205
Retreat approach	Retreat 1% AEP	WRC implements buy-back schemes 2019, 2050 and 2100, based on property at risk of inundation in a 1% AEP event
	Retreat 0.5% AEP	WRC implements buy-back schemes 2019, 2050 and 2100, based on property at risk of inundation in a 0.5% AEP event
	Retreat 0.2% AEP	WRC implements buy-back schemes 2019, 2050 and 2100, based on property at risk of inundation in a 0.2% AEP event

2.2.1 Costs and benefits associated with the base case

2.2.1.1 Costs associated with the base case (annual average damages)

The key cost associated with the base case is based on the annual average damage (AAD) cost. Each inundation event will cause a certain amount of damage to an at-risk area. This damage is incurred from clean-up, repair or replacement costs by private individuals and by WRC for their own buildings and non-building council assets. The average annual damage (AAD) is the average damage per year that would be expected to occur in a nominated development situation from inundation over a very long period of time. In reality, damages are experienced in intermittent peaks, as a result of extreme weather events coinciding with high tides, causing coastal inundation as a result of a tropical cyclone, for example, rather than regularly, in small amounts. The AAD value represents a levelling of these damages cost over an extended period of time.

In this instance, AADs are constructed from the sum of AAD that occurs from a 1% AEP, 0.5% AEP, and 0.02% AEP, based on the assumption that each event has a chance of happening in any given year. The damages associated with each AEP is a function of the severity; that is a 0.2% AEP event causes greater damage than a 1% AEP, but is five-times less likely to occur in any given year.

The average annual exceedance probability is likelihood of a given inundation event occurring in any given year. In this instance we model average annual damages from inundation based on three AEPs: 1%, 0.5%, and 0.2%, equating to a 1-in-100 year event, a 1-in-200 year event, and a 1-in-500 year event. Note that in any given year, each AEP can occur any number of times, according to their probability of occurrence. AADs are calculated for residential property, commercial property, Council buildings and non-building Council assets³ for storm tide inundation only.

AADs for residential buildings, commercial buildings and council buildings calculated as part of the Phase 5 of this CHAS are applied in this CBA⁴. The AAD values are relatively fine-grained and based on a wide range of building attributes, including building type, footprint, construction materials and likely contents, averaged for each of the AOIs. For example, council buildings and commercial buildings may contain a wide range of contents, inventory, or equipment, which are subject to damage, clean-up, repair and replacement.

AADs for non-building council assets (for example, roads, golf courses, sewerage infrastructure) were calculated as part of this CBA from unit cost data provided by WRC. These unit costs are summarised in Table 2 and reported, in full, in the packaged-up accompanying datasheets (WRC CHAS CBA.zip).

Table 2: Total average annual damage to residential, commercial and WRC council buildings for Bowen and Wilson Beach in 2019, 2050, and 2100.

Building type	Year	Bowen	Wilson Beach
Residential	2019	\$ 59,797	\$ 2,702
	2050	\$ 259,065	\$ 22,544
	2100	\$ 653,039	\$ 36,606
Commercial	2019	\$ 91,230	\$ 0
	2050	\$ 230,719	\$ 0
	2100	\$ 542,561	\$ 0
Council buildings	2019	\$ 12,331	\$ 473
	2050	\$ 99,884	\$ 3,882
	2100	\$ 373,988	\$ 16,421

³ We do not include the AAD calculated with loss of sea walls currently in situ, as we assume these are not lost during a storm tide inundation event, nor are they subject to erosion.

⁴ For a detailed description of the process applied to derive residential and commercial AADs in Phase 5 of this CHAS please refer to the Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Economic Indicators Report (April, 2019)

Non-building Council assets	2019	\$ 531,716	\$ 5,284
	2050	\$ 1,253,341	\$ 15,657
	2100	\$ 3,703,938	\$ 124,517

As sea level rises, more land will be situated inside the storm tide inundation hazard area. In a general sense, this means that more property falls inside this zone and the AAD value will increase. However, this is not always the case, as the AAD is also dependent on the development patterns and at what elevation the properties at risk are situated in any given developed area. Simultaneously, the AAD is subject to inflation.

Table 2 represents the AAD at three points in time, for which we have data. In reality, the AAD increases incrementally, between the values, in the intervening years. To calculate the AAD for each of these intervening years, we plotted exponential curves that best fit three AAD values at 2019, 2050, and 2100 for Bowen and Wilson Beach. These curves and the equations that fit each curve as shown in Figure 5 (for Bowen) and Figure 6 (for Wilson Beach).

Figure 5: Average annual damage curve for Bowen. The total average annual damaging incurred is the area underneath the curve. Note, each chart is not at scale with the others.

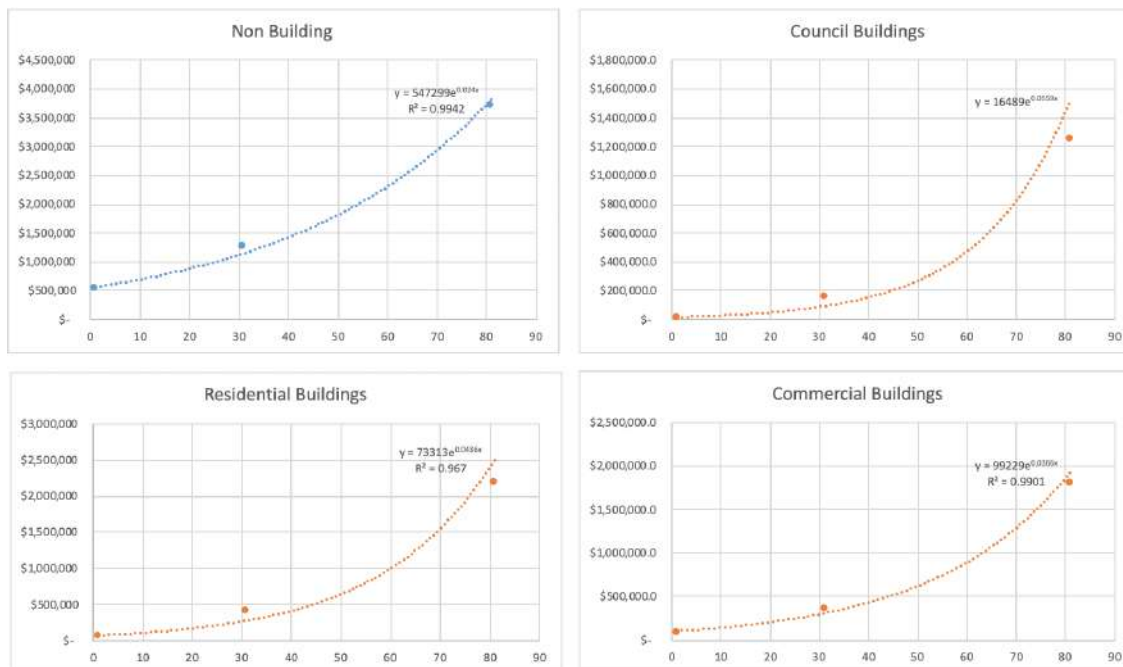
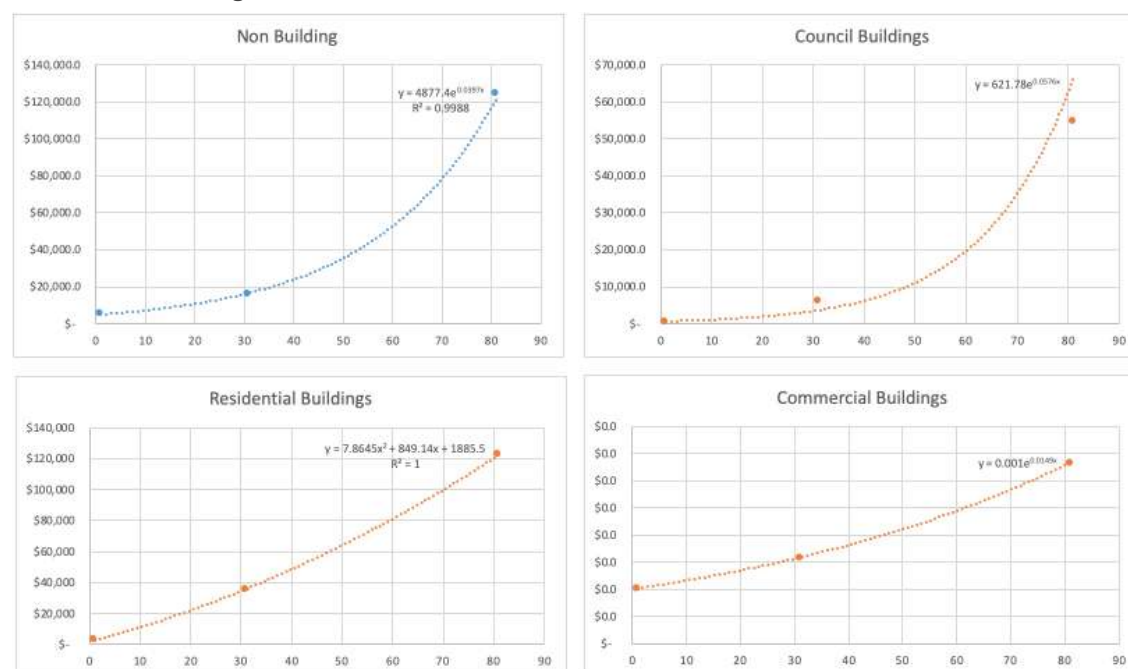


Figure 6: Average annual damage curve for Wilson Beach. The total average annual damage incurred is the area underneath the curve. Note, each chart is not at scale with the others; there are no commercial buildings in Wilson Beach.



2.2.1.2 Benefits associated with the base case

There are no benefits considered in the base case.

2.2.2 Costs and benefits associated with defend approaches

2.2.2.1 Costs associated with defensive approach

Given its geographical and temporal proximity, unit costs of construction of coastal defences (capital expenditure, or CAPEX), including sea walls and sea dykes, and road raising costs are assumed to be that used in the CHAS pilot study of Townsville (GHD, 2012, p. 25) inflated to 2019 prices using data from the Australian Bureau of Statistics (ABS, 2019). The Townsville CHAS sea dyke costs are presented in a range; in this study we used a median value of this range (then subject to inflation). Costs of sea defences also demand operational costs (operational expenditure, or OPEX). In accordance with the Townsville CHAs these are applied as 0.1% of the CAPEX per annum. OPEX costs are subject to the base rate of inflation each year. The CAPEX and OPEX costs used in our CBA are reported in Table 3. Total costs for the protection of Bowen and Wilson Beach are reported in Table 4.

Table 3: Unit costs for sea defences structures and road raising for WRC CHAS (GHD, 2012).

Item	High cost (Townsville CHAS)		Medium cost (Mid-point)		Low cost (Climate Planning)	
	Unit CAPEX (2019 \$/m)	Unit OPEX (2019 \$/m/annum)	Unit CAPEX (2019 \$/m)	Unit OPEX (2019 \$/m/annum)	Unit CAPEX (2019 \$/m)	Unit OPEX (2019 \$/m/annum)
Sea wall	\$ 31,907	\$ 319	\$ 15,475	\$ 154	\$ 2,500	\$ 25
Sea dyke	\$ 6,858	\$ 69	\$ 3,725	\$ 37	\$ 1,400	\$ 14
Road raising	\$ 4,710 ‡	- \$	\$4,710 ‡	- \$	\$ 4,710 ‡	- \$

‡ Only Townsville CHAS values available for road raising costs

§ OPEX costs for road raising included in Average Annual Damage costs

Table 4: Total costs of coastal defensive approach for Bowen and Wilson Beach in high, medium and low defensive cost scenarios

Item	Cost scenario	Bowen			Wilson Beach		
		Units required (m)	Total cost	Year 1 OPEX	Units required (m)	Total cost	Year 1 OPEX
Sea wall	High	7,978	\$ 254,544,572	\$ 254,544	955	\$ 30,470,999	\$ 30,471
	Medium		\$ 123,459,550	\$ 123,460		\$ 14,778,625	\$ 14,779
	Low		\$ 19,945,000	\$ 19,945		\$ 2,387,500	\$ 2,388
Sea Dykes	High	5,312	\$ 36,430,864	\$ 36,431	1,025	\$ 7,029,707	\$ 7,029
	Medium		\$ 19,787,200	\$ 19,787		\$ 3,818,125	\$ 3,818
	High		\$ 7,436,800	\$ 7,437		\$ 1,435,000	\$ 1,435
Road raising	Standard	5,109	\$ 24,064,065	- \$	284	\$ 1,337,731	- \$

\$ OPEX costs for road raising are included in Average Annual Damage costs

Figure 7: Location of sea walls, sea dykes and road raising for estimation of costs for Bowen



Figure 8: Location of sea walls, sea dykes and road raising for estimation of costs for Wilson Beach



2.2.2.2 Benefits associated with defensive approach (avoided damages)

Under a scenario of defend all property (through construction of sea walls and sea dykes) in storm tide inundation hazard areas, all AADs (residential, commercial, and Council buildings, and non-building Council assets) are avoided ⁵ and thus counted as a benefit, as an ‘avoided cost’. In addition, all property in the erosion prone areas are also protected, as a co-benefit. The avoided costs associated with defending property in the erosion prone area is in Table 5 ⁶. Note, the calculations of avoided costs for property in the inundation hazard area are detailed as costs in Section 2.2.1.1. Note also that 2100 and 2050 values for residential are discounted future values of the modelled residential property values.

Table 5: Avoided damage associated with defending property in the erosion prone area for Bowen and Wilson Beach in 2019, 2050, and 2100.

Building type	Year	Bowen		Wilson Beach	
		Cumulative properties protected	Value of avoided costs (inflated)	Cumulative properties protected	Value of avoided costs (inflated)
Residential	2019	0	\$ 0	0	\$ 0
	2050	19	\$ 1,743,465	16	\$ 107,492
	2100	70	\$ 788,121	23	\$ 131
Commercial	2019	0	\$ 0	0	\$ 0
	2050	0	\$ 0	0	\$ 0
	2100	0	\$ 0	0	\$ 0
Council buildings	2019	NA	\$ 0	NA	\$ 0
	2050	NA	\$ 393,471	NA	\$ 0

⁵ See Section 2.2.1.1 for derivation of the AAD. For the base case, the AAD is a cost, for any retreat, or defence option, the AAD (or at least a proportion of them) are an avoided cost, or benefit.

⁶ It is accepted that there is potential for properties to be ‘double counted’; that is, a property is in both the erosion prone area and in the coastal inundation hazard area. This is potential is higher for Wilson Beach. For Bowen, a rule of thumb assessment revealed the vast majority of property in the erosion prone area is in Queen’s Beach, which is not at specific risk to coastal inundation.

	2100	NA	\$ 396,052	NA	\$ 0
Non-building Council assets	2019	NA	\$ 545,274	NA	\$ 366,223
	2050	NA	\$ 4,576,824	NA	\$ 225,475
	2100	NA	\$ 13,428,517	NA	\$ 408,290

2.2.3 Costs and benefits associated with property buy-backs

The preferred approach for WRC coastal hazard adaptation was a system of property buy-backs, where private property is subject to voluntary purchase by WRC at market price where it falls within coastal inundation hazard areas. Ultimately, the timing and scope of the property buyback regime will be a business decision driven largely by WRC's (or some other government institution's) appetite for risk. Given that this information is not currently available, for the purposes of this analysis it is assumed that a residential or commercial property is subject to a buyback offer when part of it falls within the storm tide inundation hazard area of a 1% AEP in years 2019, 2050, and 2100⁷. Thus, the buy-back scheme is carried out in three tranches in those respective years. In addition, the CBA also assessed benefits and costs of offering the buy-backs of property when subject to 0.5% AEP and 0.2% AEP⁸. It is assumed that all offers of buy-back are accepted.

2.2.3.1 Costs associated with buy-back scheme

Costs associated with the proposed buy-back scheme are qualified and quantified below.

- Purchase of residential property at a market price, as quantified in data provided in Phase 5 of the CHAS.** Our CBA is based on a property value of \$277,609 for Bowen and \$257,810 for Wilson Beach (2019 prices). Properties are subject to a property value inflation rate over the period of consideration of -3.25% pa for Bowen and -11.1% pa for Wilson Beach. Both these (negative) inflation rates reflect trends determined from data specific to suburb profiles extracted from onthefhouse.com.au (onthefhouse.com.au, 2019) over 9 years for Bowen, but just 2 years for Wilson Beach; see Figure 9 and Figure 10.
- Purchase of commercial property at a market price.** Commercial property values are determined from a survey of recent commercial property transfers for Bowen (there is no commercial property in Wilson Beach). A search of domain.com.au revealed 7 recent commercial property transfers; we used the median value of these sales: \$300,000. Properties are subject to a property value inflation rate over the period of consideration of -3.25% pa for Bowen and -11.1% pa for Wilson Beach (the same rate as residential property). Both these (negative) inflation rates are determined by data from suburb profiles from onthefhouse.com.au (onthefhouse.com.au, 2019).
- Residential and commercial property that has been successfully bought-back needs demolition.** Demolition costs are fixed at \$28,038 per property (2019 prices), based on the demolition costs from the Townsville CHAS (GHD, 2012). This cost is subject to the base rate of inflation over the period of assessment.
- As WRC progressively purchases residential and commercial property and demolishes it, it takes on the additional liability of managing the land.** The quantity of land taken-on is calculated by multiply the number of properties by 800m² for residential property and 1,700m² for commercial property⁹. The CBA factors in a management cost 1,000 \$/ha/yr. This value is based on park management costs provided by WRC and is subject to the base rate of inflation over the period of assessment.

⁷ Note that in this CBA, property buy-back is not considered for properties in the erosion prone area. Given current data and without further significant spatial analysis, it is impossible to determine whether the extent of property listed as affected in inundation dataset are same or different to the extent of property listed as affected in erosion prone area dataset, meaning there is a list of double counting. Given that WRC has expressed a view that storm tide inundation is the most significant hazard to assess, we have only included properties in this dataset in the buy-back regime.

⁸ To assess a more gradual approach to property buy backs, for example, hazard mapping would need to be completed for intervening years. This data is not available to this study.

⁹ The property size for commercial property was calculated using a sample commercial block from central Bowen.

- **As WRC progressively purchases residential and commercial property it forgoes Council rates.** Forgone rates are calculated using WRC's annual rates schedule and unimproved land values from Queensland Government (Queensland Government, 2019), which reduce in line with the property value inflation rate for that AOI.

Figure 9: House price inflation for Bowen (2010 - 2019)

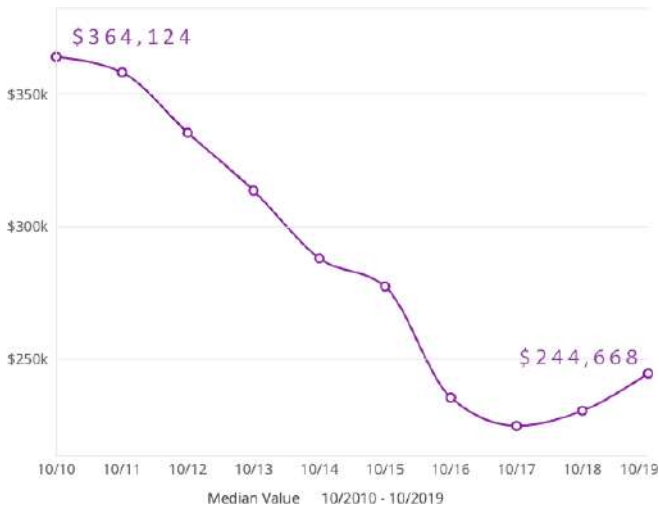
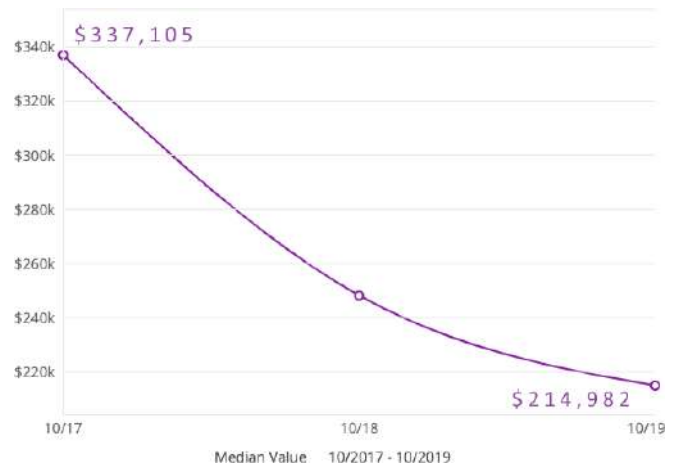


Figure 10: House price inflation for Wilson Beach (2017-2019)



It is assumed that property belonging to WRC are not subject to any buy-back offers. A summary of the values used in the CBA from the above methodologies is in Table 6.

Table 6: Summary of costs associated with the proposed property buy-back regime.

Type	Measure	Bowen	Wilson Beach
Residential	Median property value (2019)	\$ 286,934	\$ 290,000
	Property value inflation (per yr)	-3.25%	-11.1%
	Area per property	240m ²	240m ²
	Unimproved land value (2019)	\$ 137,500	\$ 137,500
	Annual rates calculation (%)	0.012	0.012
Commercial	Median property value (2019)	\$ 300,000 ‡	-
	Area per property	1,700m ²	-
	Unimproved land value	\$ 382,500 ‡	-
	Annual rates calculation (%)	0.020	-

‡ This represents an anomaly. Theoretically, the unimproved land value should be less than the median property value.

2.2.3.2 Benefits associated with buy-back scheme

As WRC progressively buys-back at risk residential and commercial property, this property is removed from further inundation hazard and thus no AAD is incurred from the proportion of land removed (an 'avoided cost'). For the scenario where properties are bought-back in the 0.02% AEP hazard area, it is assumed that 100% of the properties are removed from the hazard zone; thus the avoided damage benefit is the full value of all properties removed from the hazard risk area. For details on the calculation of avoided costs, see Section 2.2.1.1.

2.3 Non-monetised costs

Some of the tangible costs and benefits have not been monetised in our CBA due to data and budgetary limitations and have been assessed qualitatively. These include:

- Opportunity costs: Storm tide inundation will likely incur considerable expenditure of public and private effort during the disruption and subsequent clean-up. This causes the redirection of public expenditure (for WRC and other governments) and in lost operating time for businesses. Both these expenditures represent forgone benefit elsewhere.
- Human health and cultural heritage: Inundation events, particularly when accompanied by severe weather events will potentially cause injury and death. While this can be assessed monetarily, using the metric of Daily Adjusted Life Years (DALYs), for example, it is not estimated here. In addition, the threat or experience of inundation over long periods of time can cause mental health issues.
- Ecosystem services: Repeated sea water inundation from storm tides and high tides will have an impact on the *location* of local natural habitats – coastal habitats will generally shift landwards and potentially up-river at the Don River mouth. In addition, the impacts of sea level rise will very likely include a general *reduction* in habitat extent.

Despite not being monetised these social costs should not be under-estimated. In lieu of not being monetised and assessed in the benefit cost ratio, we instead present case studies of where and when such costs have been observed elsewhere.

3 Costs benefit analysis results

This section outlines the results of the CBA and runs several sensitivity analyses on some of the key variables. The CBA is performed for the base case, then four options for defend approaches and three options for retreat approaches. These are summarised in Table 7 and consistently used across the results section. All values in brackets are negative values.

The methodology and results of this CBA were presented to a workshop with WRC on 18 November 2019. The attendance list is in the Appendix in Section 6.3 and the notes are in Section 6.4.

3.1 Headline results

Table 7 through to Table 10 reports the cost benefit analysis for the default scenarios for Bowen and Wilson Beach. Table 7 and Table 8 report the *social* CBA – that is the cost benefit analysis from the perspective of WRC and its residents and businesses, while Table 9 and Table 10 report the cost benefit analysis from a WRC perspective only. The default economic parameters are based on the following key variables:

- General level of inflation: 1.5% pa (applies to damage costs, maintenance costs)
- House price inflation: -3.5% pa for Bowen and -11.1% pa for Wilson Beach (applies to buy-back purchase price; unimproved land value for forgone rateable property value)
- Discount rate: 7% pa (discounts all future values to present values)

Table 7: Social cost benefit analysis for coastal adaptation approaches for Bowen; (default scenario; r=7).

Scenario	Present value benefits	Present value costs	Net present value	Benefit cost ratio
Base case	\$ -	\$ 18,279,324	\$ (18,279,324)	0.000
Defend at Y1	\$ 19,641,160	\$ 290,594,308	\$ (270,953,148)	0.068
Defend at Y2035	\$ 10,533,208	\$ 135,538,853	\$ (125,005,645)	0.078
Defend at Y2050	\$ 6,081,752	\$ 70,661,706	\$ (64,579,954)	0.086
Defend at Y2075	\$ 1,638,310	\$ 33,015,362	\$ (31,377,052)	0.050
Retreat 1% AEP	\$ 690,252	\$ 10,380,605	\$ (9,690,082)	0.066
Retreat 0.5% AEP	\$ 1,760,591	\$ 23,974,093	\$ (22,181,756)	0.074
Retreat 0.2% AEP	\$ 5,495,346	\$ 80,342,553	\$ (74,667,526)	0.069

Table 8 shows that all adaptation approaches for Bowen return a negative NPV and a BCR of less than 1. The scenario with the best BCR is 'defend at Y2050', but this still returns of less than 10% of expenditure. However, it should be noted this scenario entails significant PV costs: ~\$72.8 m. The scenario with the lowest NPV is 'Retreat at 1% AEP'; but this option still incurs a PV cost of ~\$10.4 m, though represents an improvement on the base case.

Table 8: Social cost benefit analysis for coastal adaptation approaches for Wilson Beach; (default scenario; r=7).

Scenario	Present value benefits	Present value costs	Net present value	Benefit cost ratio
Base case	\$ -	\$ 343,863	\$ (343,863)	0.000
Defend at Y1	\$ 725,923	\$ 34,880,480	\$ (34,880,480)	0.020
Defend at 2035	\$ 256,920	\$ 15,870,947	\$ (15,870,947)	0.016
Defend at Y2050	\$ 175,202	\$ 7,547,442	\$ (7,372,240)	0.023
Defend at 2075	\$ 51,288	\$ 2,514,112	\$ (2,462,823)	0.020
Retreat 1% AEP	\$ 70,299	\$ 689,125	\$ (620,121)	0.102
Retreat 0.5% AEP	\$ 80,889	\$ 956,083	\$ (876,688)	0.084
Retreat 0.2% AEP	\$ 154,610	\$ 3,142,398	\$ (2,990,691)	0.049

Table 9 shows that all adaptation approaches for Wilson Beach return a negative NPV and a BCR of less than 1. The scenario with the best BCR is 'Retreat 1% AEP', but this still returns only just over 10% of expenditure. This is also the scenario with the lowest NPV. No scenario returns a NPV greater than the base case.

Table 9: Cost benefit analysis for Whitsunday Regional Council perspective for coastal adaptation options for Bowen; (default scenario; r=7).

Scenario	Present value benefits	Present value costs	Net present value	Benefit cost ratio
Base case	\$ -	\$ 12,783,978	\$ (12,783,978)	0.000
Defend at Y1	\$ 13,942,698	\$ 300,162,160	\$ (286,219,463)	0.046
Defend at Y2035	\$ 7,029,039	\$ 137,285,084	\$ (130,256,045)	0.051
Defend at Y2050	\$ 3,911,846	\$ 68,786,908	\$ (64,875,063)	0.057
Defend at Y2075	\$ 964,001	\$ 27,731,509	\$ (26,767,509)	0.035
Retreat 1% AEP	\$ -	\$ 10,380,605	\$ (10,380,605)	0.000
Retreat 0.5% AEP	\$ -	\$ 23,974,093	\$ (23,974,093)	0.000
Retreat 0.2% AEP	\$ -	\$ 80,342,553	\$ (80,342,553)	0.000

Table 10: Cost benefit analysis for Whitsunday Regional Council perspective for coastal adaptation options for Wilson Beach; (default scenario; $r=7$).

Scenario	Present value benefits	Present value costs	Net present value	Benefit cost ratio
Base case	\$ -	\$ 189,253	\$ (189,253)	0.000
Defend at Y1	\$ 558,979	\$ 37,004,341	\$ (36,445,362)	0.015
Defend at Y2035	\$ 145,524	\$ 16,206,356	\$ (16,060,833)	0.009
Defend at Y2050	\$ 100,510	\$ 7,764,809	\$ (7,664,299)	0.013
Defend at Y2075	\$ 28,243	\$ 2,108,909	\$ (2,080,666)	0.013
Retreat 1% AEP	\$ -	\$ 689,125	\$ (689,125)	0.000
Retreat 0.5% AEP	\$ -	\$ 956,083	\$ (956,083)	0.000
Retreat 0.2% AEP	\$ -	\$ 3,142,398	\$ (3,142,398)	0.000

3.2 Sensitivity analysis

This section presents and discusses key sensitivities of our CBA model. A sensitivity analysis is a check of how uncertainty in the output of a mathematical system can be divided and allocated to different sources of uncertainty in its inputs (Sassone & Schaffer, 1978). Parameters subject to sensitivity analysis can be determined *a priori* (that is, before constructing the CBA model) or once the model has been constructed.

Sensitivity analyses were carried out on the model parameters detailed in Table 11.

Table 11: Key sensitivities in the cost benefit analysis.

Sensitivity	Explanation	Parameter adjustments tested
Discount rate	The rate of return used to discount future cash flows back to their present value, associated with the time value of money. This is usually expressed as a percentage per annum. Conventionally, the discount rate is assumed to reflect human impatience; i.e. the extent to which people prefer to defer costs and obtain benefits sooner, rather than later. It also reflects their attitudes towards risk and their expectation from alternative investments. From a societal perspective, the discount rate applied reflects whether society prefers to obtain beneficial outcomes sooner rather than later, society's attitude towards the risk of investments failing to deliver the expected return, and a reflection of the time value of money.	The Australian government recommends cost benefit analysis for domestic projects apply a discount rate of 7% , with sensitivity analysis undertaken at 3% and 10% .
Property values	Property values have an impact on the cost of the buy-back scheme to WRC. Property transfer prices are subject to significant uncertainty, particularly in relation to increased risks in the coastal zone. Bowen <i>residential</i> property transfer values have fallen on average 3.25% per annum in 9 years (just under 30% over 9 nine years) (onthehouse.com.au, 2019). This is likely heavily influenced by fluctuations in labour demand from the resource sector.	We applied sensitivity assessment on current rates of (negative) growth in the default scenarios for Bowen and Wilson's Beach (- 3.5% pa and -11.1% respectively) by applying further assessment at an annual growth rate of 0% pa

	Wilson Beach <i>residential</i> property transfer values have fallen on average 11.1% per annum in 33 months (onthehouse.com.au, 2019).	and 2.5% pa for both Wilson Beach and Bowen ¹⁰ .
General inflation rate	Predicting future inflation rates is subject to a very high degree of uncertainty. The annual rate at the September 2019 quarter, as reported by the Australian Bureau of Statistics is 1.7%, up from 1.5% from the June 2019 quarter.	We applied additional sensitivity analysis at general annual inflation rates of 2.5% and 3.5%.
Defensive infrastructure costs	There is inherent uncertainty in the costs associated with construction of defensive infrastructure. The default case is based on construction and maintenance costs derived from the Townsville CHAS (GHD, 2012) for sea wall and sea dyke construction.	We applied additional sensitivity, based on Low cost scenario – sea wall: \$2,500/m ; sea dyke: \$1,400/m Medium cost scenario – sea wall: \$15,475/m ; sea dyke: \$3,725/m High – Based on Townsville CHAS (see Error! Reference source not found.)

3.2.1 Sensitivity to discount rate

The first set of sensitivity analysis undertaken shows NPV and BCR responses to changes in the discount rate for Bowen (Table 12) and Wilson Beach (Table 13). Discount rates impact the present values of future benefits and costs. The higher the discount rate, the faster future values are eroded. Lower discount rates allow for long-future benefits to retain higher present values.

Table 12: Sensitivity analysis for discount rate for adaptation approaches for Bowen (general inflation rate=1.5%, house price inflation=-3.5%).

Scenario	r=3%		r=7%		r=10%	
	NPV	BCR	NPV	BCR	NPV	BCR
Base case	\$ (63,250,240)	0.00	\$ (18,279,324)	0.00	\$ (10,767,569)	0.00
Defend at Y1	\$ (253,038,308)	0.21	\$ (280,521,000)	0.07	\$ (278,554,125)	0.04
Defend at Y2035	\$ (212,679,021)	0.21	\$ (129,455,771)	0.08	\$ (84,723,948)	0.05
Defend at Y2050	\$ (182,782,838)	0.20	\$ (66,743,314)	0.08	\$ (32,449,452)	0.05
Defend at Y2075	\$ (161,276,415)	0.12	\$ (32,152,104)	0.05	\$ (14,343,433)	0.02
Retreat 1% AEP	\$ (14,598,562)	0.19	\$ (9,690,353)	0.07	\$ (8,485,571)	0.04
Retreat 0.5% AEP	\$ (27,598,529)	0.24	\$ (22,213,502)	0.07	\$ (20,389,699)	0.04
Retreat 0.2% AEP	\$ (85,410,108)	0.21	\$ (74,847,207)	0.07	\$ (69,953,344)	0.04

¹⁰ It is highly likely that any activity undertaken to protect homes, or even any indication of intent to protect homes will have an impact on house price inflation in Bowen and Wilson Beach.

Table 13: Sensitivity analysis for discount rate for adaptation approaches for Wilson Beach (general inflation rate=1.5%, house price inflation=-11.1%).

Scenario	r=3%		r=7%		r=10%	
	NPV	BCR	NPV	BCR	NPV	BCR
Base case	\$ (1,528,892)	0.00	\$ (343,863)	0.00	\$ (179,798)	0.00
Defend at Y1	\$ (37,495,569)	0.05	\$ (36,278,418)	0.02	\$ (35,241,620)	0.01
Defend at 2035	\$ (30,738,749)	0.05	\$ (16,514,586)	0.02	\$ (10,529,425)	0.01
Defend at Y2050	\$ (24,582,621)	0.05	\$ (7,681,858)	0.02	\$ (3,427,760)	0.01
Defend at 2075	\$ (17,781,143)	0.04	\$ (2,569,656)	0.02	\$ (914,138)	0.01
Retreat 1% AEP	\$ (632,553)	0.44	\$ (618,827)	0.10	\$ (564,871)	0.04
Retreat 0.5% AEP	\$ (867,048)	0.38	\$ (875,195)	0.08	\$ (818,620)	0.04
Retreat 0.2% AEP	\$ (2,896,784)	0.19	\$ (2,987,788)	0.05	\$ (2,904,886)	0.03

In general, application of lower discount rates make both retreat options less cost effective and have a relatively neutral impact on retreat options.

3.2.2 Sensitivity to property values

The second set of sensitivity analyses undertaken show NPV and BCR responses to changes in house price inflation for Bowen (Table 14) and Wilson Beach (Table 15). House price inflation values drive changes to the cost to WRC in the buy-back scheme ('retreat approach') and to changes in the rateable value of property lost to WRC either through the buy-back scheme.

Table 14: Sensitivity analysis for house price inflation for adaptation approaches for Bowen (r=7, inflation=1.5%).

Scenario	-3.5% pa		0% pa		2.5% pa	
	NPV	BCR	NPV	BCR	NPV	BCR
Base case	\$ (18,279,324)	0.00	\$ (18,279,324)	0.00	\$ (18,279,324)	0.00
Defend at Y1	\$ (280,521,000)	0.07	\$ (280,041,574)	0.07	\$ (278,913,818)	0.07
Defend at Y2035	\$ (129,455,771)	0.08	\$ (128,976,345)	0.08	\$ (127,848,588)	0.09
Defend at Y2050	\$ (66,743,314)	0.08	\$ (66,263,888)	0.09	\$ (65,136,131)	0.11
Defend at Y2075	\$ (32,152,104)	0.05	\$ (32,523,667)	0.05	\$ (32,901,910)	0.06
Retreat 1% AEP	\$ (9,690,353)	0.07	\$ (13,373,344)	0.05	\$ (21,227,876)	0.03
Retreat 0.5% AEP	\$ (22,213,502)	0.07	\$ (28,506,573)	0.06	\$ (41,321,155)	0.04
Retreat 0.2% AEP	\$ (74,847,207)	0.07	\$ (90,985,441)	0.06	\$ (120,167,721)	0.04

Table 15: Sensitivity analysis for house price inflation for adaptation approaches for Wilson Beach (r=7, inflation=1.5%).

Scenario	-11.1% pa		0% pa		2.5% pa	
	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio
Base case	\$ (343,863)	0.00	\$ (343,863)	0.00	\$ (343,863)	0.00
Defend at Y1	\$ (36,278,418)	0.02	\$ (35,750,446)	0.03	\$ (35,057,581)	0.05
Defend at 2035	\$ (16,514,586)	0.02	\$ (15,986,614)	0.05	\$ (15,293,749)	0.09
Defend at Y2050	\$ (7,681,858)	0.02	\$ (7,153,886)	0.09	\$ (6,461,020)	0.18
Defend at 2075	\$ (2,569,656)	0.02	\$ (3,081,814)	0.02	\$ (3,670,706)	0.03
Retreat 1% AEP	\$ (618,827)	0.10	\$ (1,497,195)	0.04	\$ (2,624,713)	0.03
Retreat 0.5% AEP	\$ (875,195)	0.08	\$ (1,776,983)	0.04	\$ (2,891,925)	0.03
Retreat 0.2% AEP	\$ (2,987,788)	0.05	\$ (4,095,380)	0.04	\$ (5,148,031)	0.03

In general, the higher the rate of property price inflation, the less cost-effective retreat options become and the more effective defensive options become. However, in no instances is there a positive NPV or BCR greater than 1 returned.

3.2.3 Sensitivity to inflation rate

The third sensitivity analysis reflects on the impacts of the general rate of inflation. The general rate of inflation drives changes in the costs associated with the damage curves for residential and commercial property, council buildings and non-building council assets, the costs associated with maintenance of land under WRC management and the costs associated with demolition. Table 16 reports the sensitivity of the NPV and BCR to changes in the general inflation rate for Bowen; Table 17 reports these values for Wilson Beach.

Table 16: Sensitivity analysis for general rate of inflation for adaptation approaches for Bowen (r=7, house price inflation=-3.5%).

Scenario	1.5% pa		2.5% pa		3.5% pa	
	Net present value	Benefit cost analysis	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio
Base case	\$ (18,279,324)	0.00	\$ (23,487,794)	0.00	\$ (31,443,202)	0.00
Defend at Y1	\$ (280,521,000)	0.07	\$ (276,256,189)	0.08	\$ (269,612,993)	0.11
Defend at Y2035	\$ (129,455,771)	0.08	\$ (149,612,651)	0.09	\$ (171,435,739)	0.12
Defend at Y2050	\$ (66,743,314)	0.08	\$ (87,001,477)	0.10	\$ (113,061,636)	0.12
Defend at Y2075	\$ (32,152,104)	0.05	\$ (46,375,905)	0.06	\$ (69,177,230)	0.08
Retreat 1% AEP	\$ (9,690,353)	0.07	\$ (9,757,521)	0.09	\$ (9,863,770)	0.13
Retreat 0.5% AEP	\$ (22,213,502)	0.07	\$ (22,041,715)	0.10	\$ (21,743,214)	0.14
Retreat 0.2% AEP	\$ (74,847,207)	0.07	\$ (74,070,225)	0.09	\$ (72,791,000)	0.12

The general impact of increasing the general inflation rate for Bowen is that defend approaches become even less cost effective (the costs of implementation of defensive structures in the future become greater) and retreat options remain relatively neutral.

Table 17: Sensitivity analysis for general rate of inflation for adaptation approaches for Wilson Beach (r=7, house price inflation=-11.1%).

Scenario	1.5% pa		2.5% pa		3.5% pa	
	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio
Base case	\$ (343,863)	0.00	\$ (468,232)	0.00	\$ (668,272)	0.00
Defend at Y1	\$ (36,278,418)	0.02	\$ (36,290,468)	0.02	\$ (36,285,007)	0.03
Defend at Y2035	\$ (16,514,586)	0.02	\$ (19,397,309)	0.02	\$ (22,746,811)	0.03
Defend at Y2050	\$ (7,681,858)	0.02	\$ (10,335,127)	0.03	\$ (13,903,924)	0.03
Defend at Y2075	\$ (2,569,656)	0.02	\$ (4,071,479)	0.02	\$ (6,626,335)	0.03
Retreat 1% AEP	\$ (618,827)	0.10	\$ (627,862)	0.15	\$ (629,944)	0.22
Retreat 0.5% AEP	\$ (875,195)	0.08	\$ (881,152)	0.12	\$ (878,174)	0.18
Retreat 0.2% AEP	\$ (2,987,788)	0.05	\$ (2,971,242)	0.07	\$ (2,936,064)	0.09

The general impact of increasing the general inflation rate for Bowen is that defend approaches become even less cost effective (the costs of implementation of defensive structures in the future become greater) and retreat options remain relatively neutral.

3.2.4 Sensitivity to defensive infrastructure costs

The final sensitivity analysis reflects on the impacts of the unit costs of defensive infrastructure options, which influences the costs of construction and maintenance of the defend. Table 18 reports the sensitivity of the NPV and BCR to changes in the infrastructure costs for Bowen; Table 19 reports these values for Wilson Beach.

Table 18: Sensitivity analysis for defensive infrastructure costs for adaptation approaches for Bowen (r=7, house price inflation=-11.1%)

Scenario	Low cost scenario		Medium cost scenario		High cost (default case)	
	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio
Base case	\$ (18,279,324)	0.000	\$ (18,279,324)	0.00	\$ (18,279,324)	0.000
Defend at Y1	\$ (33,306,121)	0.371	\$ (152,129,634)	0.114	\$ (271,007,626)	0.068
Defend at Y2035	\$ (21,610,888)	0.328	\$ (73,308,267)	0.126	\$ (125,029,347)	0.078
Defend at Y2050	\$ (17,881,891)	0.254	\$ (41,230,922)	0.129	\$ (64,590,659)	0.086
Defend at Y2075	\$ (19,099,871)	0.079	\$ (25,238,461)	0.061	\$ (31,379,866)	0.050
Retreat 1% AEP	\$ (9,690,082)	0.066	\$ (9,690,082)	0.066	\$ (9,690,082)	0.066
Retreat 0.5% AEP	\$ (22,181,756)	0.074	\$ (22,181,756)	0.074	\$ (22,181,756)	0.074
Retreat 0.2% AEP	\$ (74,667,526)	0.069	\$ (74,667,526)	0.069	\$ (74,667,526)	0.069

Table 19: Sensitivity analysis for defensive infrastructure costs for adaptation approaches for Wilson Beach (r=7, house price inflation=-11.1.%)

Scenario	Low cost scenario		Medium cost scenario		High cost (default case)	
	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio	Net present value	Benefit cost ratio
Base case	\$ (343,863)	0.000	\$ (343,863)	0.000	\$ (343,863)	0.000
Defend at Y1	\$ (4,576,614)	0.137	\$ (19,728,547)	0.035	\$ (34,890,992)	0.020
Defend at Y2035	\$ (2,686,432)	0.087	\$ (9,278,690)	0.027	\$ (15,876,521)	0.016
Defend at Y2050	\$ (1,417,476)	0.110	\$ (4,394,858)	0.038	\$ (7,374,305)	0.023
Defend at Y2075	\$ (897,283)	0.054	\$ (1,680,053)	0.030	\$ (2,463,366)	0.020
Retreat 1% AEP	\$ (620,121)	0.102	\$ (620,121)	0.102	\$ (620,121)	0.102
Retreat 0.5% AEP	\$ (876,688)	0.084	\$ (876,688)	0.084	\$ (876,688)	0.084
Retreat 0.2% AEP	\$ (2,990,691)	0.049	\$ (2,990,691)	0.049	\$ (2,990,691)	0.049

3.2.5 Ranking of sensitivities

Table 20 and Table 21 report a summary of the sensitivity analyses, ranked by BCR, for Bowen and Wilson Beach. It also reports the mean ranking of each scenario across the different sensitivities. This calculation demonstrates the general robustness of each scenario in achieving the set outcome of adaptation to climate change in the coastal hazard zone for the two AOIs. For Bowen, this suggests across all sensitivities, 'Defend at Y2050' and 'Defend at Y2035' are the most attractive options (notwithstanding the high capital costs). For Wilson Beach, retreat options are, on average, more preferable.

Table 20: Ranking of intervention approaches and rank mean for benefit cost analysis sensitivities for Bowen.

Scenario	Default	Discount rate		Inflation rate		House price inflation		Defensive infrastructure costs		Rank mean
		3%	10%	2.50%	3.50%	0%	2.50%	Low	Med	
Defend at Y1	6	2	5	6	6	3	3	1	3	3.89
Defend at Y2035	2	4	2	3	5	2	2	2	2	2.67
Defend at Y2050	1	5	1	1	3	1	1	3	1	1.89
Defend at Y2075	7	7	7	7	7	6	4	4	7	6.22
Retreat 1% AEP	5	6	6	4	2	7	7	7	6	5.56
Retreat 0.5% AEP	3	1	4	2	1	4	6	5	4	3.33
Retreat 0.2% AEP	4	3	3	5	4	5	5	6	5	4.44

Table 21: Ranking of intervention approaches and rank mean for benefit cost analysis sensitivities for Wilson Beach

Scenario	Default	Discount rate		Inflation rate		House price inflation		Defensive infrastructure costs		Rank mean
		3%	10%	3%	4%	0%	3%	Low	Med	
Defend at Y1	5	4	4	6	5	6	3	1	5	4.40
Defend at Y2035	7	6	6	7	7	2	2	4	7	5.50
Defend at Y2050	4	5	5	4	4	1	1	2	4	3.40
Defend at Y2075	6	7	7	5	6	7	4	6	6	6.00
Retreat 1% AEP	1	1	1	1	1	3	7	3	1	2.00
Retreat 0.5% AEP	2	2	2	2	2	4	6	5	2	2.90
Retreat 0.2% AEP	3	3	3	3	3	5	5	7	3	3.80

3.3 Decision making in situations of deep uncertainty

This CBA sets out scenarios based on a significant number of assumptions on a range of costs and benefits into the long future. It is also based on economic parameters, which, though subject to sensitivity analysis, are constrained to a fairly tight range. For example, predicting property prices into the future is subject to deep uncertainty (Lempert, Popper, & Bankes, 2003; Workman, Dooley, Lomax, Maltby, & Darch, 2020), in particular as prices are likely related to the adaptation approach adopted by WRC. Therefore, a CBA can provide a false sense of certainty for something that is inherently deeply uncertain (Dooley et al., 2018; Haikola and Hansson, 2018).

A CBA is based in a ‘predict-then-act’ mindset, which is rooted in the ‘expected utility’ hypothesis of classical decision theory. There is a “tendency to view model outputs as objective, capable of defining “optimal” goals and strategies for which climate policy should strive, rather than as *exploratory* tools within a broader policy development process” (Workman et al., 2020, p. 1). This approach assumes decision makers can make reasonable predictions about the future – or at least reliably characterise the probabilities of different outcomes. However, climate change, extreme weather events, and social and institutional responses to the impacts of climate change are unprecedented and unpredictable – or subject to “deep uncertainty”, defined as “circumstances when the parties to a decision do not know - or agree on – the best model for relating actions to consequences or the likelihood of future events” (Lempert et al., 2003, p. xii).

A classical decision making approach fails on three primary counts, when it comes to climate change:

1. Outcomes can be highly sensitive to sensitivities in input data or assumptions;
2. Results typically optimise for one or two criteria (e.g. cost efficiency), rather than seeking acceptable trade-offs between multiple values; and
3. Decisions are assumed to be taken at a global level in accordance with a global goal, rather than through negotiation between many actors with different values and interests.

To counter these challenges, we briefly consider an alternative analysis to interpret the data from the CBA. This reframes the question from, “*What will the long-term future bring?*” to “*How can we choose actions today that will be consistent with our long-term interests?*” (Lempert et al., 2003, p. xii). This enables more long-term policy assessment that can help identify and provide data to choose from near-term options, which can help shape the future, or—at least—keep open options available to future generations.

One method to achieve this is to test the full range of sensitivities, in a matrix, and calculate which adaptation approach performs the best in the differing permutations. In this instance, we start with three sensitivities of four variables. We thus tested 3 x 3 x 3 x 3 (3⁴ or 81) permutations of our original sensitivities for discount rate, general

inflation rate, property value inflation rate and the cost of defensive options (see *Report to Whitsunday Regional Council: Cost benefit analysis of coastal hazard adaptation options*, Table 11 for the range of sensitivities).

Table 22 and Table 23 report the performance of each adaptation approach in the 81 sensitivity combinations for Bowen and Wilson Beach. The ranking columns report the mean rank of each scenario and the rank of the mean ranking (i.e. a direct comparison of option preferences). The BCR columns report the mean benefit cost ratio ¹¹ and the rank of the BCR mean. The reported values are for illustrative purposes only and are only reported on the benefit cost ratios only. This approach could also be undertaken on values for the NPV of the project, though it is likely retreat values, which avoided the very high costs associated with defensive options, would generally perform better.

Table 22: Performance of adaptation approaches for Bowen in the full sensitivity matrix

Scenario	Ranking mean	Rank of rank mean	BCR mean	BCR rank of mean
Defend at Y1	3.457	2	0.412	1
Defend at Y2035	3.580	4	0.358	2
Defend at Y2050	2.185	1	0.303	3
Defend at Y2075	6.309	7	0.141	4
Retreat 100 AEP	3.556	3	0.097	7
Retreat 200 AEP	3.827	5	0.123	5
Retreat 500 AEP	5.086	6	0.119	6

Table 23: Performance of adaptation approaches for Wilson Beach in the full sensitivity matrix

Scenario	Ranking mean	Rank of rank mean	BCR mean	BCR rank of mean
Defend at Y1	3.457	2	0.201	2
Defend at Y2035	3.580	4	0.197	3
Defend at Y2050	2.185	1	0.256	1
Defend at Y2075	6.309	7	0.066	7
Retreat 100 AEP	3.556	3	0.138	4
Retreat 200 AEP	3.827	5	0.129	5
Retreat 500 AEP	5.086	6	0.094	6

Figures 11 – 14 show the full results of the data in Tables 22 and 23 for Bowen (Figures 11 and 12) and Wilson Beach (Figures 13 and 14). As can be seen from Figures 11 and 12, there are a number of permutations for Bowen and Wilson Beach where a BCR of greater 1 is returned. This was the case where inflation rates were high (3.5%; pushing up annual average damages, defence costs were low, discount rates were low (3%; meaning future benefit flows remained higher) and the BCR was higher with higher rates of property price inflation. permutations

The 81 permutations are a just subset of the full range of all sensitivities that could be performed. For example, additional sensitivities could be performed on the rate of success of the buy-back scheme, average annual damages, or any intermediate value for each of the tested sensitivities. Therefore, reported values should be treated with similar caution as any returned values in headline results of the CBA. For each tested sensitivity there can be no claim that one value is more likely than another; suffice to say, they are each, independently *feasible*.

¹¹ The BCR is the fraction of present value costs to present value benefits. Values greater than 1 represent a positive return on investment. Values less than 1 represent a negative return on investment

The implications of this are that a small proportion of sensitivity combinations (9 out of 81, for example, in the 'defend at 2019' and 'defend at 2035' options) do return a positive BCA; *but only under conducive circumstances*. The majority of the permutations tested was negative (as can be seen in the BCR Mean column in Tables 22 and 23). Two permutations for retreat options (both for Wilson Beach) returned a BCR of greater than 1, however this is more a mathematical artefact, as sensitivities for costs of defensive options (an important driving variable) are not considered in retreat options.

Permutations that return a BCR of greater than 1 are particularly reliant on the costs of the defensive infrastructure, which can be more accurately determined if a detailed business case was commissioned. Such a study, narrowing a controllable sensitivity, would help to reduce uncertainty. Other sensitivities, namely property inflation and general inflation, will always be uncontrollable.

Overall, reporting of this data is intended to demonstrate that CBA results are not definitive and clear-cut. Data should be considered as *exploratory*; to be used as one of the many factors in decision making.

Figure 11: Performance of benefit cost ratio for each adaptation approach in sensitivity matrix for Bowen.

The following set of charts report the distribution of the benefit cost ratio in each of the 81 sensitivity combinations for Bowen.

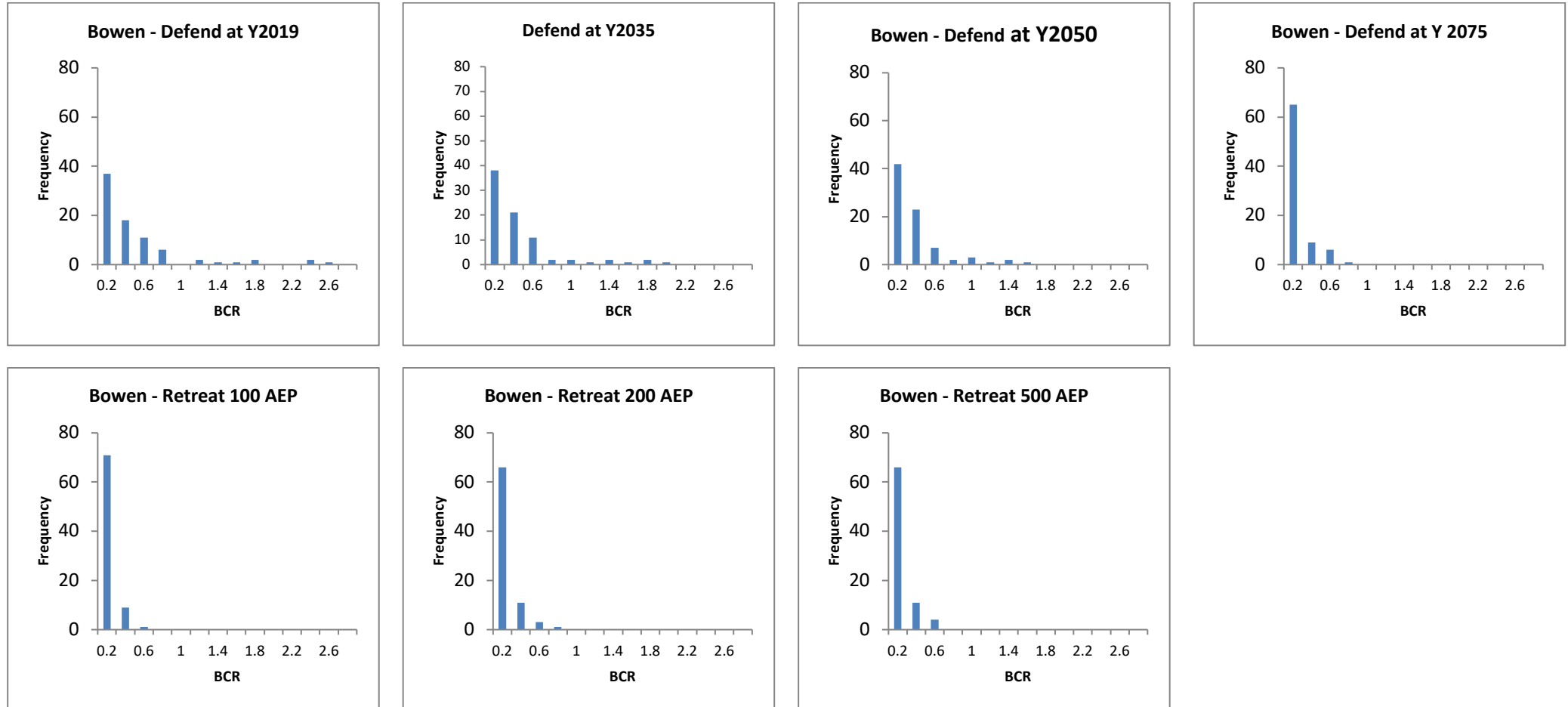


Figure 12: Performance of rank for the benefit cost ratio for each adaptation approach in sensitivity matrix for Bowen.

The following set of charts report the distribution of the rank of the BCR in each of the 81 sensitivity combinations for Bowen

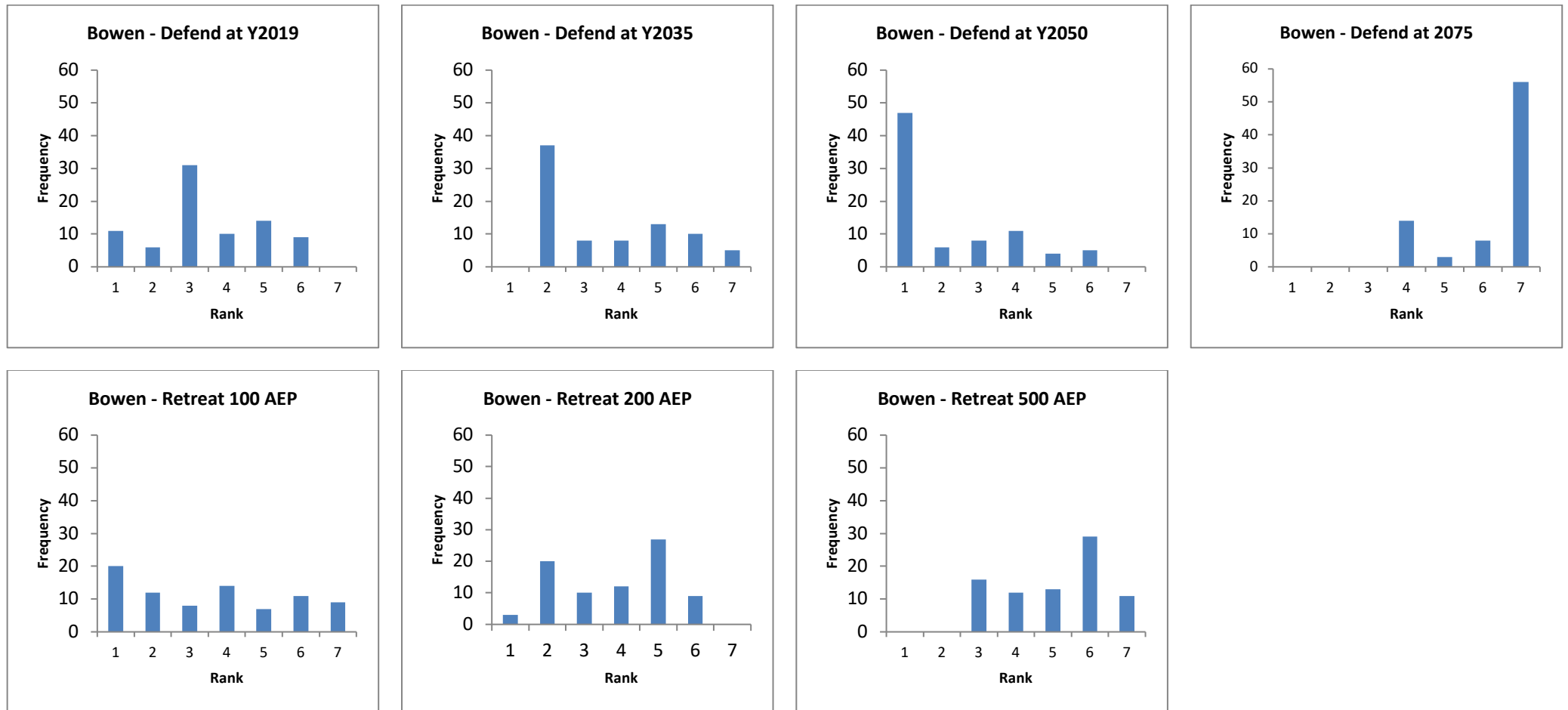


Figure 13: Performance of benefit cost ratio for each adaptation approach in sensitivity matrix for Wilson Beach.

The following set of charts report the distribution of the benefit cost ratio in each of the 81 sensitivity combinations for Wilson Beach.

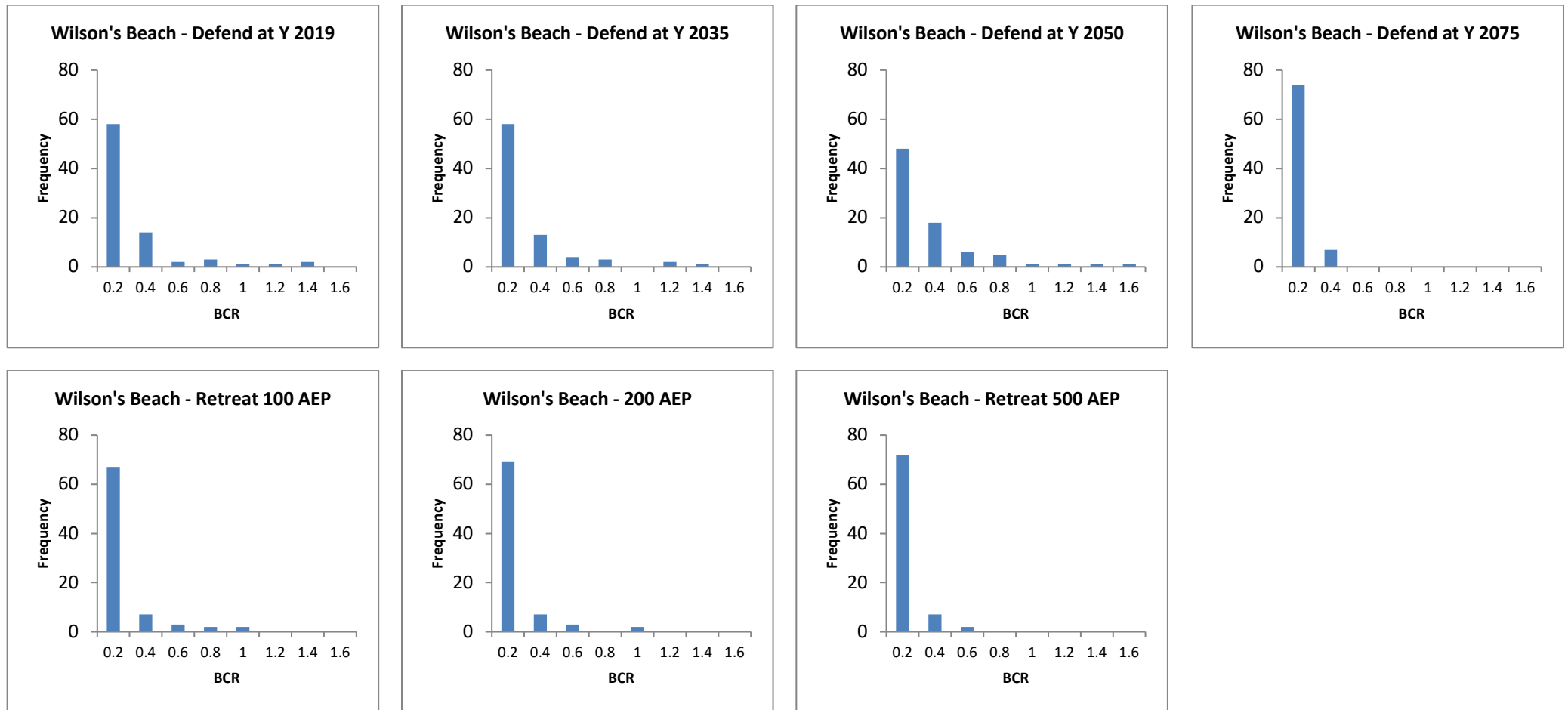
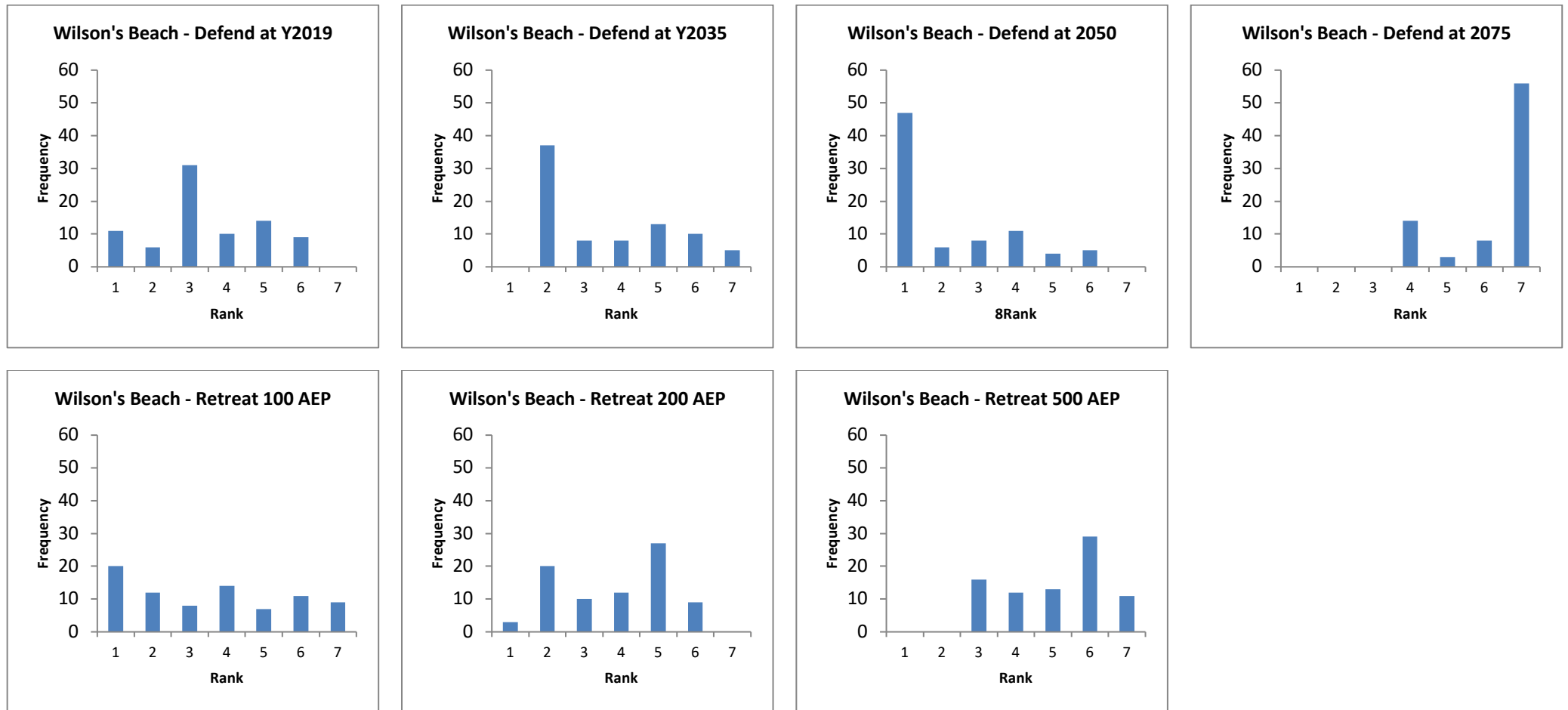


Figure 14: Performance of rank for the benefit cost ratio for each adaptation approach in sensitivity matrix for Wilson Beach.

The following set of charts report the distribution of the rank of the BCR in each of the 81 sensitivity combinations for Wilson Beach



4 Conclusion

4.1 Outcomes of this CBA

No scenarios in this CBA, nor any of the sensitivity analyses taken in isolation, generate a positive NPV or a BCR of greater than 1. However, it should be noted that in the case of Bowen, the 'Retreat 100 AEP' option returns a higher NPV than the base case, suggesting that from a social perspective, at least, the buy-back intervention, based on a planned and strategic process of offering to buy-back properties at risk of a 1-in-100 year event of coastal inundation, is a better option than 'leaving it to the market' and placing the burden of risk completely on the community. However, from an internal perspective for WRC, no retreat options return any benefits.

Both interventionist approaches to coastal hazard adaptation (retreat and defend) come at a considerable cost to the implementing agency and represent unprecedented financing challenges. The consideration of who bears the cost, when that cost is born, and how funds are raised is an urgent conversation WRC needs to commence with other levels of government, the region's residents and businesses, and – potentially – with the finance sector.

In addition, as raised and recommended by participants in the MCA process, the buy-back scheme is also subject to nuance and refinement. This CBA considers buy-backs in a relatively coarse manner; that is WRC is assumed to purchase properties, which are immediately demolished, and the land is resumed as a liability for WRC. In practice, buy-and-let-back (where WRC purchases the freehold and lets back to occupiers until such time as AADs become intolerable) and land-swaps will also potentially mitigate some of the costs to WRC.

It should also be noted that this CBA assesses costs and benefits of a range of coastal hazards through to 2100. Future sea level rise scenarios, post-2100 are – unsurprisingly – uncertain, but will continue to be decided every year, dependent on how successfully the global community tackles rising greenhouse gas emissions (Nauels et al., 2019), which so far continue to rise at an accelerating rate (IPCC, 2014).

4.2 Key Messages

A number of key messages are evident from this CBA and the workshop undertaken in Proserpine to review it. These messages revolve around the significant disparity between costs and benefits exposed in this first pass analysis. These are:

1. This is a first-pass analysis, based on constrained data, and (currently) limited and non-interdependent sensitivity analysis. It should be used as a 'conversation starter' with the WRC community.
2. There is no simple solution to addressing coastal hazards in the Whitsunday region. Work undertaken in previous phases of the CHAS and the costs of adaptation options quantified in this CBA illustrate the significant challenges that the region faces to mitigate coastal hazard risk.
3. There is a need to set expectations amongst the community. This CBA indicates that difficult decisions will need to be made that may involve specific protection zones. There will be winners and losers in this process and the sooner that community is brought on board the more effective and equitable the outcomes of such a process will be.
4. There is enough information for WRC to act now. The results of this CBA are significant enough to compel action now. Waiting for greater certainty also entails acceptance of increasing risk. The sooner that the risks exposed in this process are embraced the more effective their risk management will be.
5. The results of the CBA apply beyond Bowen and Wilson Beach. As noted, due to budgetary and time constraints the CBA was applied to two representative sites only. Whilst every area of interest in the region is differentiated to some degree the challenges faced by Bowen and Wilson Beach are sure to be relevant to other locations in the region to some degree.

6. Costs analysed in this CBA are potentially understated. The requirement to only assess coastal hazards excludes both the implications of coincident events, in particular flooding from the Don River and flooding from rain trapped by hard engineered structures.
7. All options return a negative NPV – no expenditure options provide a return on investment of more than 0.1 (i.e. 10c in every dollar spent). Whilst the scale of the negative NPVs may be disappointing, it should not be surprising that the net of the benefit and costs associated with adaptation to climate change in coastal hazard zones is negative. Climate change represents a major environmental challenge to current infrastructure and development patterns. Notwithstanding, for Bowen, the NPV of 'Retreat 1% AEP' was of greater net social benefit (though still negative) than the base case; that is, the cost of intervention was less than the cost of not intervening. However, this was not the case at Wilson Beach.
8. All options generate significant funding challenges for WRC. Defend approaches, through building sea defences, such as sea walls and sea dykes could cost up to \$290 m for Bowen and \$35 m to defend Wilson Beach. Retreat options could potentially cost up to \$10 m in PV for Bowen and nearly \$700,000 in PV in Wilson Beach. While Bowen is one of the regional centres, Wilson Beach is generally typically of a dozen hamlets on the WRC coast, which potentially need similar treatment.

4.3 Limitations of CBA and decision making under uncertainty

This CBA sets out scenarios based on a significant number of assumptions on a range of costs and benefits into the long future. It is also based on economic parameters, which, though subject to sensitivity analysis, are constrained to a fairly tight range. For example, predicting property prices into the future is subject to deep uncertainty (Lempert, Popper, & Bankes, 2003; Workman et al., 2020), in particular as prices are likely related to the adaptation approach adopted by WRC. Thus, the CBA becomes subject to circular assumptions – if WRC signals an intention to defend property with hard infrastructure, such as sea walls and sea dykes, this is likely to lead to stabilisation of prices in the two AOI and perhaps lead to property value inflation, outside the range of sensitivity analysis. Conversely, a decision to assist the communities to retreat, through a buy-back scheme, would likely see a further acceleration of property price deflation; potentially outside the range of sensitivity analysis. Property values are simply one variable in the entire CBA. Therefore, a CBA can provide a false sense of certainty for something that is inherently deeply uncertain (Dooley et al., 2018; Haikola and Hansson, 2018).

A CBA is based in a 'predict-then-act' mindset, which is rooted in the 'expected utility' hypothesis of classical decision theory. This approach assumes decision makers can make reasonable predictions about the future – or at least reliably characterise the probabilities of different outcomes. However, climate change, extreme weather events, and social and institutional responses to the impacts of climate change are unprecedented and unpredictable – or subject to "deep uncertainty", defined as "circumstances when the parties to a decision do not know - or agree on – the best model for relating actions to consequences or the likelihood of future events" (Lempert et al., 2003, p. xii).

A classical decision making approach fails on three primary counts, when it comes to climate change:

4. Outcomes can be highly sensitive to sensitivities in input data or assumptions;
5. Results typically optimise for one or two criteria (e.g. cost efficiency), rather than seeking acceptable trade-offs between multiple values; and
6. Decisions are assumed to be taken at a global level in accordance with a global goal, rather than through negotiation between many actors with different values and interests.

To counter these challenges, in the forthcoming appraisal report we will consider an alternative option to interpreting the data in this CBA. This should reframe the question "What will the long-term future bring?" to 'how can we choose actions today that will be consistent with our long-term interests?' (Lempert et al., 2003, p. xii). This enables more long-term policy analysis (LTPA) that can help identify and provide data to choose from near-term options that can help shape the future, or keep open options available to future generations, based on testing the robustness of the adaptation responses across a wider range of sensitivities (Bendell, 2016).

4.4 Next Steps

As noted above this report presents the results of a CBA undertaken specific to the second step of a socio-economic appraisal of potential adaptation options for the reason. These results and those attained from the MCA undertaken in Step 1 will be considered in combination to form the final outcome of this Phase 7 of the CHAS: an adaptation options appraisal report.

Beyond a more holistic view of the implications of the MCA and CBA, the appraisal report will also provide a considered list of recommendations for WRC's consideration.

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6 Appendices

6.1 *The role of discounting in cost benefit analysis*

A key part of a project assessment process is the use of benefit cost analysis (BCA). This type of assessment weighs-up the costs and benefits of a project over the period of the project's life. Costs include capital and operational expenditure, in coastal defences, or buy-backs, for example, whilst benefits include avoided damages as a result of implementation of adaptation options. Over the period of a project, the differential between the total present value benefit and present value costs is called the benefit-cost ratio (BCR). If the BCR is greater than 1, from an economic perspective the project, should be supported, at least from an economic perspective. If this is less than 1, the project is not supported.

However, it is important to remember a BCA does not provide a definite 'answer' as to whether a project should proceed or not; but merely provides the decision maker with economic information on which to make a decision. The scope of the line items that are 'costs' and 'benefits' is contested. A narrow BCA might only include actual financial costs and benefits, a broader BCA might also include quantification of social costs, such as environmental impact.

A key element of a BCA is the application of a discount rate. The discount rate reflects the perceived future value of money and determines the rate at which future values erode in terms of their present value. The choice of which discount rate to use in a BCA can have significant impacts on what recommendations an assessment supports.

As the discount rate is lowered, the present value of future costs and benefits are more slowly eroded; that is, they have a higher relatively higher value in today's terms. The opposite is also true. At higher discount rates, future benefits and costs are eroded more quickly. As a result, the point in time at which benefits and costs accrue is important in determining a project's economic viability. For example, if most of the costs are up-front (the capital costs of construction of a new dam, for example), and smaller annual benefits are experienced each year over a long period time (sale of irrigation water, for example), then a higher discount rate would more likely return an adverse BCR, when compared to a lower rate. Conversely, if a lower discount rate is applied, future flows of benefits are not eroded at such a high rate, therefore would more likely return a positive BCR.

This appears to work against supporting development of capital-intense infrastructure projects that have high up-front costs and smaller, but consistent, benefits that flow into the future. However, it is important to remember the role of discount rates is to also illustrate the value of alternative projects by reflecting how the capital costs of one project (building a new dam) might stack-up against alternative uses of that capital, such as investments in using existing water sources more efficiently – the differential being the 'opportunity cost'. As such, the discount rate reflects a long-term general rate of return on investment in the economy as a whole. In this instance, investment in more efficient use of water for agriculture will have generally lower capital costs, but these costs are more evenly spread through the project lifetime, which will erode in present value at the same rate as the flow of benefits. The value of investments in sustainable agriculture, therefore, represent the alternative general return on investment in alternative enterprises.

The Commonwealth Government, recommends analysts use a discount rate of 7% (Parliament of Australia, 2018). Analysts also use lower discount rates, also known as 'social discount rates' (between 0% and 3%), to reflect that public policy decision making requires a longer timeline of consideration or that social and environmental costs are often irreversible.

6.2 *The project team*

The research team members have extensive experience in economics, accounting, spatial planning, and coastal management, particularly in the context of climate change adaptation in the Indo-Pacific region. The team members have a great track record and reputation in working on both large- and smaller-scale projects in a wide range of industries, and for government, non-government and the not-for-profit sectors, as evidenced in each member's list of publications and prior projects (see individual CVs in Annex B). The project team members have successfully collaborated in the past on a number of industry-facing and government-sponsored projects.

6.2.1 Professor Christopher Fleming

Lead Investigator

Christopher Fleming is a Professor and MBA Director at Griffith Business School, a founding member of the Griffith Centre for Sustainable Enterprise, a member of Griffith University's Cities Research Institute, a member of Griffith University's Australian Rivers Institute and of the Griffith Climate Change Response Program.

An applied micro-economist with teaching, consulting and public policy experience, Christopher's research and consulting interests include, social and economic project/program evaluation, natural resource and environmental economics, sustainable development, the economic determinants of subjective wellbeing and the sustainable management of natural resources. Christopher is currently the economics lead on *EcoAdapt in the Pacific*, a five-year project that aims to identify appropriate climate change adaptation interventions in the coastal zone of Pacific island states and territories in Melanesia.

Prior to joining Griffith Business School, Christopher worked as a senior consultant for MainStream Economics and Policy, and Marsden Jacob Associates, as well as a senior advisor within the Sustainable Development Policy Group of the New Zealand Ministry for the Environment.

6.2.2 Ian Edwards

Project manager

Ian Edwards is an independent climate change consultant. He specialises in the socio-economic and financial implications of climate change adaptation. He is a chartered accountant with twenty years' experience in national and international financial services. He has worked across a broad spectrum of the financial industry including accounting public practice, investment banking and reinsurance. His career has focused predominantly on affecting system change at a multinational scale, which has afforded him strong analytical, financial, information technology and project management skills. Ian has worked on climate change adaptation projects both within Australia (state and local governments) and internationally (NGOS, development banks and universities).

6.2.3 Andrew Buckwell

Economic analysis and digital engagement

Andrew Buckwell is a Senior Research Assistant at Griffith Business School. He is an applied environmental economist by training, with significant experience in field research design, execution and analysis, and consulting – specialising in benefit cost and policy analysis. He also has teaching experience at under-graduate and Masters level. Andrew is currently deployed as a research environmental economist (including in the field) on two global, multi-disciplinary projects: *EcoAdapt in the Pacific*, which is a five year project engaged in the identifying and valuing appropriate ecosystem-based adaptations to climate change, mainly focussed on Vanuatu; and a global primary forests preservation project, which has a focus on researching community livelihoods and addressing gaps in forest protection, which case studies in the Democratic Republic of Congo, the Brazilian, and Melanesia.

Prior to joining Griffith Business School, Andrew spent 12 years as a senior digital and web professional, gaining extensive experience in digital strategy, marketing and communications, user experience design, agile project management and solutions implementation, content strategy, and social media marketing.

6.2.4 Maggie Muurmans

Stakeholder engagement, workshop facilitation and infographic production

Maggie Muurmans has over 19 years' experience in community conservation and sustainable livelihood development in Europe, Latin America, Asia and Oceania. Her projects include the establishment of community conservation areas, protected area management and alternative livelihood development. She also manages a coastal community engagement program on the Gold Coast which reaches over 9000 community members each year.

Maggie has successfully implemented debt-for-nature swaps, micro-credit systems and fishery alternatives. Her experience also extends to comprehensive coastal community engagement, education and conservation programs.

Maggie has received a number of national and international awards for her work. She has also extensive experience in event management, capacity building activities and workshop facilitation for all levels of community and governance.

6.2.5 Dan Ware

Coastal process management and GIS

Dan Ware is a Research Fellow from Griffith University's Centre for Coastal Management and Climate Change Response Program, working on design of ecosystem-based adaptation for small island developing states in Melanesia. He is a geographer, with experience in coastal planning and climate change risk assessment and is working on a PhD in the history of coastal planning and management on the Southern Gold Coast.

Dan is an active contributor to the development of Australian coastal management policy and practice, holding leadership positions with local stakeholder groups. Dan is currently a technical advisor on climate change and sustainable development for the Melanesian Spearhead Group and the Infrastructure and Settlements Expert Advisor for the LGAQ Climate Resilient Councils program. Dan has held previous roles as Director of the Surfrider Foundation Australia, as a member of the Queensland Committee of the Australian Coastal Society, and as President of Gold Coast Surf Council.

Prior to joining the Griffith Centre for Coastal Management, Dan led a climate and sustainability consulting team for Sinclair Knight Merz where he worked on climate risk assessment and adaptation planning policy for Infrastructure and State and Local Government Clients.

6.3 CBA workshop attendance list

Table 24: List of workshop attendees (18 November 2019)

Invited	Position	Directorate	Response
Adam Folkers	Manager Health, Environment & Climate	Community & Environment	Attended
Monica Regan	Environment Officer	Community & Environment	Attended
Julie Giguere	Environment Officer	Community & Environment	Attended
Stephen Fernando	Chief Financial Officer	Office of the Mayor & CEO	Apology
Katie Coates	Management Accountant	Office of the Mayor & CEO	Apology
Shane Neville	Manager Strategic Planning	Planning & Development	Attended
Leonie Meurant	Strategic Planner	Planning & Development	Attended
Matthew Twomey	Senior Development Assessment Officer	Planning & Development	Apology
Melanie Davis	Executive Officer Economic Development	Office of the Mayor & CEO	Attended
Libby Humphrey	Asset Coordinator	Corporate Services	Attended
Joanne Vlismas	Engagement & Marketing Coordinator	Office of the Mayor & CEO	Attended
Peter Stapleton	Treatment Operation Manager	Engineering Services	Apology
Yestin Hughes	Principal Engineer – Civil & Environmental - Whitsunday Water	Engineering Services	Attended
Jessica Cristaudo	Coordinator Transport Planning & Assets	Engineering Services	Apology
Michael Downing	Coordinator Capital Project Delivery	Engineering Services	Attended
Mark Callaghan	Manager Parks & Gardens	Customer Experience	Attended
James McEvoy-Bowe	Planner	Planning & Development	Attended
Sandra Black	Community Development Officer	Engineering Services	Attended
Scott Hardy	Manager Natural Resource Management	Community & Environment	Apology
Elouise Lamb	Project Officer Economic Development & Grants	Office of the Mayor & CEO	Apology
John Gwydir	Executive Manager Roads and Drainage	Engineering Services	Attended
Vashti Sawdy	Laboratory Technician	Engineering Services	Attended
Jason Bradshaw	Acting Director Corporate Services	Corporate Services	Apology

6.4 Workshop notes

See attachment, below.

1 Workshop Details

Notes: WRC Cost Benefit Analysis (CBA) Workshop

Date: November 18 2019

Time: 9.00am to 12.00pm

Location: Proserpine Community Centre

Facilitators: Andrew Buckwell (Griffith University); Ian Edwards

2 Presentation Format

Ian Edwards (IE) provided a brief background to the CHAS and phase 7 work to date. IE also took participants through an overview of the agenda and objectives of the workshop (pls see below). No issues or questions were raised by participants with any of these workshop elements.

Andrew Buckwell (AB) took participants through the underlying assumptions and results of the Cost Benefit Analysis (CBA). Dan Ware was available by teleconference (although connection was very poor).

3 Notes gathered during CBA presentation

The following table and subsequent points reflect issues or points raised in the workshop.

Slide (where relevant)	Point raised by participants	GU+IE response (action required)
21	MD and JG noted that given aspirational growth targets for the region to 2050 are quite high whether a higher inflationary factor should be applied.	Whilst advising that inflation is generally driven by factors broader than local activities AB agreed to undertake some sensitivity analysis with higher inflation rates. It was also noted that given the severity of CBA

Slide (where relevant)	Point raised by participants	GU+IE response (action required)
		ratios that it was unlikely that tweaking inflation rates would have any discernible impact on the CBA results. RESPONSE: Additional sensitivity assessed for inflation. Furthermore, for the appraisal report, multiple, overlapping sensitivities will be applied to the scenarios.
	The point was made that there is no current insurer in the region that provides cover against acts of the sea.	IE confirmed that only 2 insurers provide coverage for acts of sea (neither is present in North Qld)
27	JG and YH raised concerns that riverine flooding would flow in behind the engineering structures as located.	IE noted that the scope of the CHAS was coastal hazards only and that somewhat (though acknowledged not optimal) constrained analysis. Also meant that CAPEX and OPEX costs were very conservative (given they don't include defence from Don River).
28	Noted that OPEX were incorrect.	AB checked underlying figure and confirmed was a transcription error.
39	JG pointed out that "Defend at Y1" numbers seemed incorrect as r=3, 7 and 10 pattern inconsistent with other sensitivity lines	AB to check underlying spreadsheet. RESPONSE: This is correct and an artefact of discount rates applied to costs and benefits over time.

Slide (where relevant)	Point raised by participants	GU+IE response (action required)
	Raised that there could be an issue raising support to reduce coastal risk of those not present in the hazard zones.	AB and IE concurred.

At the end of the presentation AB checked whether there were any issues with the assumptions or results of the CBA and whether they seemed reasonable. No concerns were raised amongst participants.

The severity of the results of the CBA was accepted by those in attendance with a general acknowledgement amongst the likes of engineers, JG and YH that engineering costs would likely be much greater, e.g. pumps would be required beyond engineering structures to remove rainwater etc.

4 Key Messages

IE prompted participants to add their thoughts to those presented by AB on the key messages that arose from the CBA results. The following key messages were noted:

- need to set expectations amongst community
- no simple solution
- there may be a requirement to buy back agricultural land which would accentuate issues further (**need to highlight in report**)
- this impacts current decision making
- the results of this analysis apply beyond Bowen and Wilsons Beach
- there is enough information to act now

5 Detailed workshop agenda and objectives

1. Introduction
 - a. Where we are in the CHAS

- b. Background recap of options assessed
- 2. Objectives
 - a. Agree assumptions and parameters
 - b. Agree reasonableness of CBA results
 - c. Agree key messages
- 3. Structure of a CBA
 - a. The seven steps
 - b. Economic parameters
 - c. Meaning of the output metrics
- 4. Our approach
 - a. Qualitative assessment of costs and benefits associated with the adaptation scenarios
 - b. Explanation of the costs and benefits we have monetised
 - c. What we haven't monetised and why
- 5. Explanation of how we derived each of the costs
 - a. Explanation of the economic parameters (inflation, discount rates, house price inflation)
 - b. Flag some areas of uncertainty - costs of seawall, levees, Council land management costs
- 6. Results and sensitivity tests
 - a. Social costs and benefits
 - b. WRC costs and benefits
 - c. Comparison of the adaptation options
- 7. What the results mean
 - a. Limitations of this CBA
 - b. Integrating the monetised and non-monetised costs and benefits
- 8. Key take-away messages - setting expectations for the community
- 9. Discuss and agree key messages
- 10. Next steps

Report to Whitsunday Regional Council: Appraisal report of coastal hazard adaptation options

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Prepared by:

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Contents

List of tables	iii
List of figures	iv
Acronyms	v
Definition of key terms	vi
1 Introduction	7
1.1 Purpose of document.....	7
1.2 Main Findings.....	7
1.3 Appraisal Structure	7
1.4 Supporting documents	8
2 The Coastal Hazard Adaptation Strategy	9
2.1 Project background.....	9
2.2 Phases of a CHAS.....	9
2.3 Phase 7 of the CHAS: socio-economic appraisal.....	10
2.3.1 Process overview.....	10
2.3.2 Areas of interest assessed.....	10
2.3.3 Coastal hazards assessed.....	11
3 Summary of findings from multi-criteria analysis	13
3.1 Key findings of the MCA	13
3.2 Multi-criteria analysis summary.....	14
3.2.1 Online survey.....	14
3.2.2 Adaptation option selection.....	15
3.2.3 Scoring of the MCA options	15
3.2.4 Reporting the MCA process.....	16
3.2.5 Agreed adaptation approaches.....	17
4 Summary findings from cost benefit analysis	19
4.1 Key findings of the CBA.....	19
4.1.1 Findings	19
4.1.2 Caveats.....	19
4.1.3 Messages.....	20
4.2 Cost benefit analysis summary.....	20
4.2.1 Cost Benefit Analysis	20
4.2.2 Reporting the CBA results and testing their sensitivity	21
5 Limitations of the MCA / CBA process	25
6 Implications	27
6.1 Adaptation options.....	27
6.2 Financial implications of CBA results	27
6.3 Adaptation pathways.....	29
6.4 Triggers and thresholds.....	30
7 Recommendations and conclusion	32
References	34

List of tables

Table 1: Final recommendations for scoring for the MCA process.....	15
Table 2: Final multi-criteria assessment rankings for Bowen	16
Table 3: Final multi-criteria assessment rankings for Wilson Beach	16
Table 4: Cost benefit analysis for coastal adaptation approaches for Bowen	22
Table 5: Cost benefit analysis for coastal adaptation approaches for Wilson Beach	22
Table 6: Performance of adaptation approaches for Bowen in the full sensitivity matrix	23
Table 7: Performance of adaptation approaches for Wilson Beach in the full sensitivity matrix	23
Table 8: Summary of constraints of the MCA and CBA	25
Table 9: Ratio of total Bowen defend capital costs against budgeted capital funding sources	27
Table 10 Per capita cost at both AOI and regional level required to meet present value of property	28

List of figures

Figure 1: Recommended process for Coastal Hazard Adaptation Strategy.....9

Figure 2: Extent of the Bowen area of interest 11

Figure 3: Extent of the Wilson Beach area of interest 11

Figure 4: Conceptualisation of contributing factors to storm tide inundation in coastal areas..... 12

Figure 5: Illustrative break even chart 30

Acronyms

AAD	Average annual damages
AEP	Annual exceedance probability
AOI	Area of Interest (namely Bowen and Wilson Beach)
BCR	Benefit cost ratio
CAPEX	Capital expenditure
CBA	Cost benefit analysis
CHAS	Coastal Hazard Adaptation Strategy
FV	Future value
LGAQ	Local Government Association of Queensland
MCA	Multi-criteria assessment
NPV	Net present value
OPEX	Operational expenditure
PV	Present value
SLR	Sea level rise
WRC	Whitsunday Regional Council

Definition of key terms

Average exceedance probability (AEP)	The likelihood of a given inundation event occurring in any given year. In this instance we model average annual damages from inundation based on three AEPs: 1%, 0.5%, and 0.2%, equating to a 1-in-100 year event, a 1-in-200 year event, and a 1-in-500 year event, respectively. Note that in any given year, each AEP event can occur any number of times, according to their probability of that occurrence.
Average annual damage (AAD)	Each inundation event will cause a certain amount of damage to properties in the at-risk area. The AAD is the average damage per year that would occur in a nominated development situation from inundation over a very long period of time. In this instance, AADs are constructed from the sum of AAD that occurs from a 1% AEP, a 0.5% AEP, and a 0.2% AEP, based on the assumption that each event has a chance of happening in any given year. The damages associated with each AEP is function of the severity; that is a 0.002 AEP event causes greater damage than a 0.01 AEP, but is five-times less likely to occur in any given year.
Benefit cost ratio (BCR)	Fraction of present value costs to present value benefits. Values greater than 1 represent a positive return on investment. Values less than 1 represent a negative return on investment.
Discount rate (r)	The rate of return used to discount future cash flows back to their present value, associated with the time value of money. This is usually expressed as a percentage per annum. Conventionally, the discount rate is assumed to reflect human impatience; i.e. the extent to which people prefer to defer costs and obtain benefits sooner, rather than later. It also reflects their attitudes towards risk and their expectation from alternative investments. From a societal perspective, the discount rate applied reflects whether society prefers to obtain beneficial outcomes sooner rather than later, society's attitude towards the risk of investments failing to deliver the expected return, and a reflection of the time value of money. The Australian government recommends cost benefit analysis for domestic projects apply a discount rate of 7%, with sensitivity analysis undertaken at 3% and 10%.
Present value (PV)	Cost benefit analysis compares costs and benefits that arise at different points in time. To compare these values from a present-day perspective, these costs and benefits are converted into their 'present value' by applying an annual discount rate – the rate at which the future value erodes over time from today's perspective. Present value benefits and costs are calculated using the standard formula: $PV = FV(1+r)^t$ where PV is present value (value in today's money), FV is future value, r is the discount rate and t is the time period.
Net present value (NPV)	Net present value (NPV) The value of present value benefits minus the present value costs. A positive NPV indicates, from an economic perspective, a project should proceed. A negative NPV indicates the project does not return a value and should not proceed.
Social costs	The social costs of a project are the sum of the private costs (often expressed in financial terms) and any additional costs borne by people who are not party to any financial transaction in relation to the project. Social costs may be incurred financially or experienced as a loss of a non-monetary benefit, such as environmental amenity or health impacts. The latter may be quantified in monetary terms using appropriate economic valuation techniques.

1 Introduction

1.1 Purpose of document

This document provides an appraisal of defend and retreat options for responding to climate change coastal hazards at Bowen and Wilson Beach following a multi-criteria (MCA) and cost-benefit analysis (CBA) undertaken as part of Phase 7 of the Whitsunday Regional Council (WRC) Coastal Hazard Adaptation Strategy (CHAS). The document also considers implications of these analyses and how their results may inform further work by WRC to mitigate coastal hazard risks to the Whitsunday region. Whilst it is the intention of the authors that the key message that this document seeks to impart are readable on their own, for readers seeking a deep understanding of the issues this document raises, it is not a stand-alone. By its very nature, beyond the MCA and CBA reports that it summarises, this document references significant work undertaken in previous phases of the CHAS. This document should be read in combination with these earlier reports (detailed in Section 1.4) for a more detailed appreciation of the significant challenges for the region that this work highlights.

1.2 Main Findings

The main finding is that under conditions of climate change, coastal hazards will present significant challenges for the region as the climate changes. Whilst due to the constraints noted below this study can only represent a first pass analysis, the disparity between costs and benefits highlighted in the CBA are compelling. As noted by one council representative at a CBA workshop: “this is serious”.

The main findings of the socio-economic assessment are:

1. We have quantified the Net Present Value (NPV) of the cost over the coming century of continuing the current approach to managing coastal inundation at Bowen to exceed \$18 million and at Wilson Beach to exceed \$300,000.
2. For Bowen, the option with the lowest cost was retreat of properties within the 1% AEP event extent at three points in time. This option reduced the cost over the coming century of managing coastal inundation at Bowen to a NPV of -\$9.5 million.
3. For Wilson Beach, all of the options had a greater cost over the coming century of managing coastal inundation than continuing the current approach; the retreat of properties within the 1% AEP extent being second lowest cost with an NPV of around -\$600,000.
4. For both cases, defend approaches represented the greatest cost with the defend approach at Bowen increasing the cost over the coming century of managing coastal inundation at Bowen to an NPV exceeding \$270 million and exceeding \$30 million for Wilson Beach

If WRC is to meet the challenges the above points highlight, it is advised that it embark on this journey much sooner rather than later. As illustrated in this document and others previously prepared as part of the CHAS, the sooner that council prepares and implements relevant adaptation actions, the greater the chance it will do so effectively and at minimised cost. With regard to any adaptation strategy, the results of the MCA indicate a strong preference within the region for nature-based solutions. Whilst the MCA is subject to a number of limitations (as noted below) this strong preference should be tested with the view to incorporation wherever feasible.

1.3 Appraisal Structure

This document is structured as follows. Section 2 provides the broader background of the CHAS with a focus on Phase 7 of which this study forms part. The results and key messages from the MCA and CBA are then presented in turn. Each section also provides a brief synopsis of the process undertaken with regard to each. Next the limitations of this study overall are presented. These are important to take into consideration as to appreciate the salience of

the key messages presented in this report it is critical to understand the underlying premises from which they have been drawn. The implications of the results of each of these studies are then discussed, including a potential framework and other factors that the authors consider worthy of consideration when undertaking next steps.

1.4 Supporting documents

The following documents prepared in previous phases of the CHAS have been applied to this CBA:

- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Proposed Adaptation Options Report*
- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Risk Assessment Report*
- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Economic Indicators Report*
- Climate Planning. (2019). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Financing and Funding Climate Change Adaptation*
- Climate Planning. (2018). *Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Methodology and Findings from Valuation of Key Assets*
- Edwards, I. (2019). *Whitsunday Regional Council Socio-Economic Vulnerability Assessment*
- Griffith University and Edwards, I. (2019) *Whitsunday Regional Council Coastal Hazard Adaptation Strategy: Multi-criteria Analysis of Climate Change Adaptation Options*
- Griffith University and Edwards, I. (2019) *Whitsunday Regional Council Coastal Hazard Adaptation Strategy: Cost benefit analysis of Climate Change Adaptation Options*

In addition, coastal hazard maps provided in earlier phases of the CHAS were used to both determine option feasibility and in the MCA workshop to help participants picture and consider the strengths and weaknesses of differing adaptation options. No formal critique of previous work and the hazard mapping has been undertaken. These are considered by the project team to be sound and approved by WRC for application to this phase of the CHAS.

2 The Coastal Hazard Adaptation Strategy

2.1 Project background

WRC is seeking to be one of the most advanced councils in Queensland in regards to responding to coastal hazards and climate change. To achieve this goal, WRC is developing a Coastal Hazard Adaptation Strategy (CHAS) to assist in identifying and responding to coastal hazards in a way that minimises the risks to assets in the Whitsunday region.

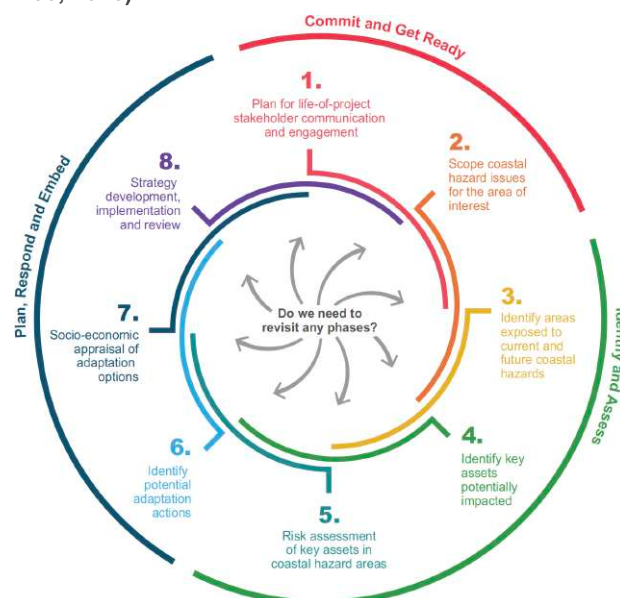
The strategy will enable more informed decisions about planning issues associated with coastal hazards and climate change. The objectives of the project are to:

- understand how climate change and coastal hazards affect coastal communities, the local economy, the 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 WRC 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.

2.2 Phases of a CHAS

Each CHAS is delivered in eight phases which align with the QCoast₂₁₀₀ Minimum Standards and Guidelines (the 'minimum standards'), provided by the Local Government Association of Queensland (LGAQ) (see Figure 1). This document describes findings from Phase 7 of the minimum standards, the *Socio-economic appraisal of adaptation options* (the 'socio-economic appraisal'), carried out by Griffith University and Ian Edwards (the 'project team').

Figure 1: Recommended process for Coastal Hazard Adaptation Strategy (QCoast 2100, 2016)



2.3 Phase 7 of the CHAS: socio-economic appraisal

2.3.1 Process overview

The previous phase of the CHAS (Phase 6) identified an inventory of potential options that can be applied to reduce or eliminate priority risks identified in a risk assessment undertaken in Phase 5 of the CHAS. The objective of this phase of the CHAS (Phase 7) is to undertake a socio-economic appraisal of these options in order to aid council determine preferred options to be employed.

In accordance with the minimum standards, the socio-economic appraisal is undertaken in two steps:

1. Multi-Criteria Analysis (MCA)

An MCA provides a qualitative framework that ensures that assessment criteria extend beyond financial criteria to incorporate community social, economic and environmental values. MCA provides a cost-effective platform to narrow down the range of identified adaptation options to a manageable number for which economic benefits and costs can be subsequently analysed and compared. MCA is performed by screening each adaptation option through a range of qualitative or semi-quantitative criteria as discussed below.

2. Cost Benefit Analysis (CBA)

A CBA applies an economic lens to the filtered inventory of adaptation options identified from the MCA. It can assist in identifying the option that achieves maximum value for money benefit for a council. It identifies as many of the costs and benefits of an option as possible, including social and environmental values, according to their net economic benefit. The costs and benefits of an option are forecast over the life of the project, costs are subtracted from benefits to determine the net present economic value (NPEV) of the project. The option with the greatest NPEV should provide the greatest net benefit to the community or the most economic use of resources (i.e. benefit/cost ratio greater than one or a positive NPEV).

3. Appraisal report

The key conclusions from these stages are now combined and synthesised into this *Appraisal Report*. The purpose of this document is to summarise and report the prior stages and to flesh out in more detail the recommendations from the CBA to provide key messages and to recommend what the next steps could look like.

2.3.2 Areas of interest assessed

Budget and time constraints limited the analysis to two representative sites, which were agreed in consultation between WRC and the project team. Whilst limitations in similarities are acknowledged, Bowen was selected as a location representative of a heterogeneous, larger and relatively buoyant socio-economy, e.g. Cannonvale and Airlie Beach; Wilson Beach was selected to represent smaller, more isolated communities, such as Dingo Beach and Hideaway Bay. Both Bowen and Wilson Beach were identified as particularly vulnerable to coastal hazards during a vulnerability assessment undertaken. For the purposes of the socio-economic appraisal, geographically, Bowen consists of the Australian Bureau of Statistics (ABS) Statistical Area 2, which includes Queens Beach, Bowen, the peninsular to the east of Bowen, westwards to the Don River and southwards to the dwellings at Ocean View Drive (see Figure 2). The Wilson Beach AOI comprises the small hamlet only (see Figure 3; images are not at same scale).

It is recognised that these two AOIs are sites at relatively greater risk than many coastal communities in WRC.

Figure 2: Extent of the Bowen area of interest

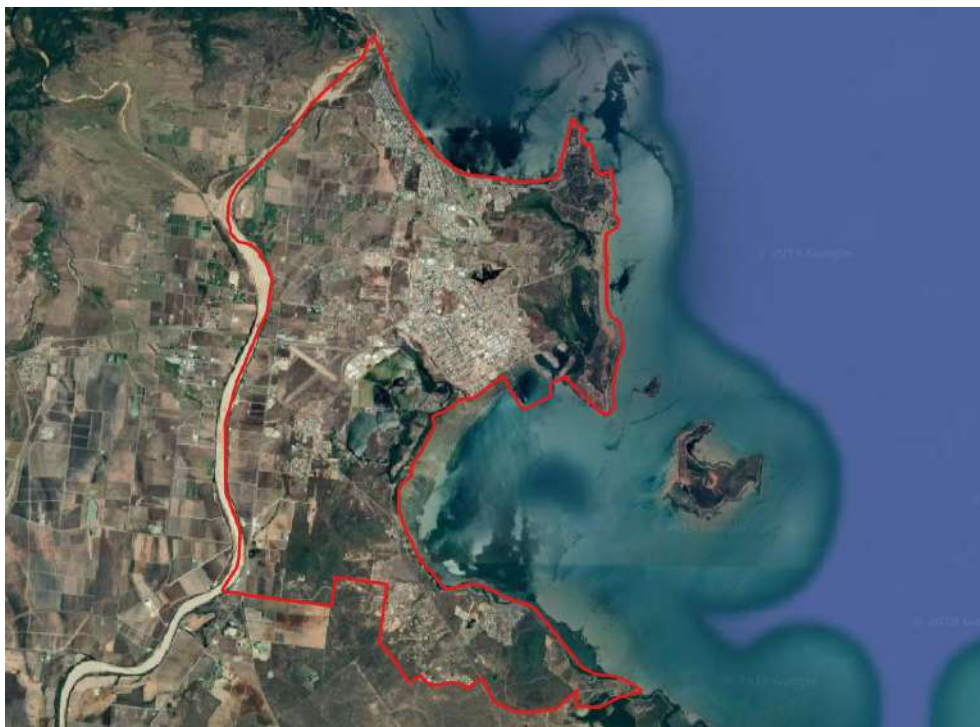


Figure 3: Extent of the Wilson Beach area of interest



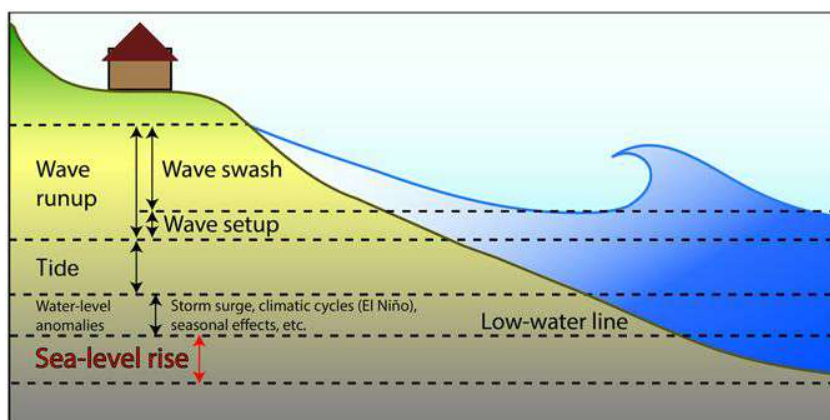
2.3.3 Coastal hazards assessed

Adaptation approaches to two hazards are assessed here; that of storm tide inundation and erosion¹. Global climate change drives sea-level rise (SLR), which will increase the frequency of coastal inundation. In coastal regions, the amount of sea-level rise occurring over years to decades is significantly smaller than normal ocean-level fluctuations

¹ Riverine and coincidental flooding, in particular from the Don River, is not considered in this report, though this is likely to be a considerable coincident risk. It is also probable flood flow management will strongly influence the specifics of any defend approaches that deploy sea walls and sea dykes.

caused by tides, waves, and storm-tide, however its impacts are felt at the margins and during significant weather events, such as tropical cyclones (Vitousek et al., 2017). Storm tides are a result of a combination of winds driving waves towards coastal areas and an uplift in ocean height caused by significant low pressure systems. Coastal erosion is caused by wave energy working against exposed and soft coastal land areas. It should be noted that 'sea level rise', widely predicted under climate change scenarios (IPCC, 2014), is not considered conceptually independent of either storm tide inundation and/or erosion, but as an additional factor in both types of risk. For example, the storm tide inundation risk area is comprised of additive measurements of Mean Sea Level, Highest Astronomical Tide, Storm Tide, Wave Set-Up and Sea Level Rise (see Figure 4). It should also be recognised that the CBA estimated costs and benefits of adaptation options out to year 2100; this year does not represent an end-point for sea level rise and planning for future coastal hazards should continue through this century.

Figure 4: Conceptualisation of contributing factors to storm tide inundation in coastal areas (Vitousek et al., 2017).



Both Bowen and Wilson Beach are exposed to a high level of risk from both storm tide inundation and coastal erosion. The key areas at risk are shown in the Appendix of the prior MCA report.

3 Summary of findings from multi-criteria analysis

The first stage of Phase 7 of the CHAS was to undertake a multi-criteria analysis (MCA) to establish which adaptation approaches would be submitted to a cost benefit analysis (CBA). A MCA evaluates multiple conflicting criteria, or criteria that has multiple metrics for measurements, in decision making in a consistent way (Triantaphyllou, 2000).

Our MCA process was designed to, first, establish stakeholder preferences for both the criterion to assess and the relative weight assigned to each criterion. This was achieved through an online survey. The second stage was to determine which climate change adaptation approaches were feasible in the AOIs and then, in the third stage, to submit the feasible approaches to the MCA criterion.

3.1 Key findings of the MCA

A number of key findings became evident as the process of the MCA progressed. Presented by step below, the MCA revealed the following two main points:

1. Whilst the community places a high regard on property, there was a distinctly higher impetus on environmental and social values than economic;
2. Based on the results noted in point 1 above, the MCA found a strong preference for non-engineering, proactive adaptation options aligned with social and environmental values such as the application of land use planning, rezoning and regenerative options.

The key findings from the various stages of the MCA were:

1. Community values

The first step, completed through an online survey distributed to stakeholders, was undertaken to understand what *values*² are important to the Whitsunday community when considering coastal processes and potential adaptations. We were able to determine that values associated with 'environmental and social impacts', 'property impacts', and 'economic impacts' were most important (see the full MCA report, for more details).

2. Weighting the criterion

The second step was to test the survey respondents' preferences for weighting specific criteria³ in the MCA, through the same online survey. Again, 'environmental impacts' scored highly, however (and surprisingly), 'economic impacts' were rated somewhat lower. The triangulated results and final recommendations for MCA scoring are in Table 1. 'Environmental impacts' were assessed as most important, followed by 'Effectiveness over time', 'Technical considerations', and 'Property impact' (equal 2nd).

3. Multi-criteria analysis

The third step was to submit a list of *feasible*⁴ adaptation options to the MCA. We used the weighted sum method (Triantaphyllou, 2000) to score each option. For Bowen, the highest scored options were: (i) Land use planning; (ii) Redefining planning objectives; (iii) Land surrender; and (iv) Mangrove planting. For Wilson Beach, the highest scored options were: (i) Mangrove planting; (ii) Land surrender; (iii) Beach nourishment; and (iv) Climate resilient design. (See Table 2 and Table 3 for full details.)

4. Determining options for cost benefit analysis

The final step, accomplished through a workshop process between the project team and WRC, was to determine the adaptation approaches that would be subject to cost benefit analysis (CBA). At this stage, the importance of 'Community acceptability' was highlighted by the group as being the primary factor in determining which adaptation options should be considered. (It was originally scored at equal 5th in the MCA process.) This should not be seen as

² We tested community values separately from directly testing community attitudes towards specific criteria.

³ The set of original criteria were set down by in the 'Minimum standards' document (QCoast 2100, 2016).

⁴ An initial filter was applied to the adaptation options to determine which were feasible at the two areas of interest.

undermining the MCA process, but instead as a reflection of the importance of community acceptability *at this stage* of the CHAS and the forthcoming conversations with the community about adaptation options. As a result of the MCA and workshop discussions, the adaption options that would be subject to CBA at the two AOIs were determined to be: (i) 'Defend everything', with sea-walls and sea-dykes; and (ii) 'Retreat through property buy-backs' (in addition to an assessment of a 'base case').

3.2 Multi-criteria analysis summary

The section provides a summary of the MCA process. For more detail, please consult the *Whitsunday Regional Council Coastal Hazard Adaptation Strategy: Multi-criteria Analysis of Climate Change Adaptation Options*.

3.2.1 Online survey

The first stage of the socio-economic appraisal was to define the criteria against which coastal hazard adaptation approaches would be assessed in the MCA and to determine the relative weights, or scores, that these criteria should carry. To determine both the criteria and the scoring, we deployed an online survey (using SurveyGizmo) to elicit responses to:

- a) understand the full scope of the criteria; and
- b) enable a process to determine preferences for weighting the criteria in the MCA phase.

The survey was open between 29 August 2019 and 17 September 2019, promoted in two email-outs. The two tranches of responses are reported together.

3.2.1.1 Survey question summary

The primary purpose of the survey was to determine stakeholder preferences for the criteria that should guide decision making in the MCA process and to determine the relative weighting of each criteria. To independently verify the scoring applied to the criteria, we first tested respondents on three sets of value statements, which approximately aligned with the criteria statements. The survey also included questions to record respondents' organisations, whether they were speaking as an individual or on behalf of their organisation and additional, open-ended, questions designed to capture any additional comments or criteria concepts not already tested.

3.2.1.2 Survey Participants

The survey was distributed to a cohort of expert employees from WRC and community groups associated with recreation, industry, environmental activities and resident associations. These groups were selected as representative of the WRC community. Sixteen full responses from WRC staff and forty-four from community groups were received and analysed.

3.2.1.3 Survey findings

Through both quantitative and qualitative assessment of the survey findings (detailed in the MCA report), the criterion and criterion scores reported in Table 1 were determined for the MCA process

Table 1: Final recommendations for scoring for the MCA process

Rank	Criterion	Description	Mean Council respondent score	Mean non-Council respondent score	Final recommendation
1	Environment	Impact on the natural environment and on the cultural and social fabric of the Whitsunday region.	15	16	15
2=	Property impact	Impact on Whitsunday homes and businesses.	10	13	11
2=	Effectiveness over time	Consideration of how long an option will be effective; e.g. will it only provided a short-term benefit that may require further action or an upgrade in the future.	12	9	11
2=	Technical	The technical feasibility of an option, taking into consideration the magnitude of the job at hand and the capacity of Council to implement it.	11	9	11
5=	Community acceptability	Will the option be acceptable to the community.	8	10	10
5=	Social	What are the income and wealth distributional and fairness implications of the options.	10	9	10
7	Economic	Impact on Whitsunday businesses and their capacity to generate profits and jobs.	11	10	9
8=	Legal approval /	The impact of any legal or approval constraints from different jurisdictions.	8	8	8
8=	Funding	Will new (forms) of funding or finance be required to implement it	8	6	8
10	Flexibility	Can the option be reversed, enhanced, or redirected as new information comes to hand, or once implemented, is it effectively locked-in.	7	9	7
	Total		100	100	100

3.2.2 Adaptation option selection

A list of *feasible* adaptation approaches in the coastal zone for the two AOIs, to submit to the MCA was drawn from the Whitsunday Regional Council Coastal Hazard Adaptation Strategy (CHAS): Proposed Adaptation Options Report (the 'options report') prepared by Climate Planning (2019). This represented a relatively exhaustive list of approaches that may be viable at the two AOIs, which was first subject to initial screening for viability, based on local knowledge, aerial photography/Google Maps, expert judgement and a review of coastal hazard maps for sea level rise (SLR) and storm tide risk today, at 2050 and 2100.

3.2.3 Scoring of the MCA options

To derive the final MCA score for each of the adaptation approaches considered, we used the weighted sum method for approach assessment (Triantaphyllou, 2000). The final outcome of the MCA process is reported in Table 2 and Table 3. The higher the MCA score, the more preferred that option is. Rankings are also shown.

Table 2: Final multi-criteria assessment rankings for Bowen

Approach	Specific option	MCA score	MCA Ranking
Regenerative options	Mangrove planting	5945	4
Coastal engineering options	Sea dykes and levees	4450	10
	Sea walls	5030	7
Coastal settlement design options	Climate resilient design	5700	5
	Elevated buildings	4740	8
	Raised land levels	3570	12
Planning options	Land use planning	7460	1
	Development setbacks	5060	6
	Limited development	4740	8
	Redefining planning objectives (zoning)	6230	2
	Land swap	3390	13
	Land buy-back	4000	11
	Land surrender	5970	3
	Compulsory land acquisition	2740	14

Table 3: Final multi-criteria assessment rankings for Wilson Beach

Approach	Specific option	MCA score	MCA Ranking
Regenerative options	Beach nourishment	5780	3
	Mangrove planting	6060	1
Coastal engineering options	Sea dykes and levees	5100	7
	Sea walls	5030	8
Coastal settlement design options	Climate resilient design	5720	4
	Elevated buildings	4840	9
	Raised land levels	3490	12
Planning options	Land use planning	1430	14
	Development setbacks	5180	6
	Limited development	5190	5
	Redefining planning objectives (zoning)	1030	15
	Land swap	3610	11
	Land buy-back	4440	10
	Land surrender	5980	2
	Compulsory land acquisition	2740	13

3.2.4 Reporting the MCA process

The results of the MCA were presented to a broad range of WRC employees in Proserpine at a workshop held on 30 September 2019. The objective of the workshop was to enable participants to raise any significant concerns with the methodology and/or the weighting applied to the MCA and subsequent results.

Whilst the MCA was applied to the selection of adaptation approaches for further analysis (in the CBA) it should be noted that some approaches expected to be low priority in the MCA were also selected at this point; with particular reference to defensive engineering approaches, including sea walls and levee. These approaches, when adopted in widespread fashion around urban and suburban areas, tend to be perceived as having a high degree of certainty around their defensive capabilities.

This further high-level analysis was considered an important step in communicating the (likely) extremely high capital and maintenance costs of these approaches. Whilst not strictly in accordance with minimum guidelines; it was

considered within the room that such divergence was justified from a stakeholder engagement and communications perspective.

The effect of this decision-making process was a developing community and WRC expectation that three adaptation approaches be considered in CBA: (i) 'business-as-usual' (strategic planning cycle and enabling market corrections); (ii) 'protect everything with certainty' (sea walls and levees); and (iii) remaining adaptation approaches as recommended by the MCA process. Options (i) and (ii) represent two 'default' options for the community – the cost of doing nothing and the cost of doing everything. The space in-between, is, in effect, the 'decision making space'.

3.2.5 Agreed adaptation approaches

The recommendations in the MCA are broadly supported by the climate change adaptation literature. The degree of uncertainty in the changes for which adaptation is necessary has implication on the scale, timing and types of adaptations that are most appropriate. If an adaptation is implemented in a way that is inflexible to new information, and the current and future benefits are uncertain (as new conditions may not transpire), assessing the benefits of such an adaptation becomes problematic and sometimes counter-intuitive (Leary, 1999).

To account for this, Leary (1999) puts forward a high-level cost benefit framework for judging the net value of climate change adaptation in light of climatic uncertainty, paraphrased below :

- (a) Adaptations that entail large irreversible costs, which provide limited present benefits, and which can be delayed until there is greater certainty, should be delayed.
- (b) Conversely, adaptations that *might* reduce vulnerability in the future, but create present benefits, "are a good place to start".
- (c) Investments should be targeted at those that maintain options, flexibility and opportunities to learn and adapt into the future.

The final adaptation approaches agreed to and submitted to the CBA are below.

3.2.5.1 Adaptation approaches for Bowen

The final approaches for Bowen to be put forward to the CBA were:

1. Full protection, using a combination of sea walls and levees, protecting Queen's Beach on the north of the Bowen peninsular from the mouth of the Don River, extending eastwards to The Pocket, then southwards through the wetlands to Denison Park; protection of the harbour, protection along the sea front along Thomas Street, continuing north westwards in front of Norris Street.
2. A combination of buy-backs, land-swaps, and medium term protection by a sea wall in front of Thomas Street (the main town of Bowen is already considered at risk of inundation from storm tide). The buy-backs can be augmented by nuances, such as buy-backs to lease-back; that is property in the risk areas are secured but leased back until thresholds are reached when evacuation is deemed most appropriate. In the longer term, the normal strategic planning process will limit further development in greenfield areas that are at risk of coastal hazards.
3. The 'business-as-usual', whereby the market (through land values and insurance market implications) and future strategic planning processes encourage unplanned, autonomous adaptations and reduction of inappropriate development in the risk areas. Business-as-usual approaches may also entail significant works to the sewerage systems of the town, as parts of the network would begin to suffer salt-water intrusion, long before any property itself is at direct risk of storm tide and SLR.

3.2.5.2 Adaptation approaches to Wilson Beach

The final approaches for Wilson Beach to be put forward to the CBA were:

1. Full protection, using a combination of sea walls and levees, protecting the beach front of the hamlet and levees through the mangrove wetland through the north of the hamlet. The access road may require raising.

2. A combination of buy-backs and land-swaps. The buy-backs can be augmented by nuances in policy, such as buy-backs to lease-back; that is property in the risk areas are secured but leased back until thresholds are reached when evacuation is deemed most appropriate. No new land will be likely opened to development at Wilson Beach.
3. The 'business-as-usual', whereby the market (through land values and insurance market implications) is augmented by autonomous adaptations, such as raising of land.

4 Summary findings from cost benefit analysis

The second stage of Phase 7 of the CHAS was to undertake a (CBA) of the agreed adaptation approaches (and the base case) to establish which approaches achieves the best outcome, from an economic perspective.

We based our cost benefit analysis (CBA) process on that detailed by the Australian Government's Cost-benefit Analysis Guidance Note and the Queensland Government's Project Assessment Framework for cost benefit analysis for infrastructure projects (Australian Government Department of Prime Minister and Cabinet, 2016; Queensland Government, 2015), with further guidance provided by Boardman et al. (2017).

4.1 Key findings of the CBA

A number of key caveats, findings and messages are evident from this CBA and the workshop undertaken in Proserpine to review it. These messages revolve around the significant disparity between costs and benefits exposed in this first pass analysis. These are:

4.1.1 Findings

1. All options return a negative NPV – no expenditure options provide a return on investment of more than 0.1 (i.e. 10c in every dollar spent). Whilst the scale of the negative NPVs may be disappointing, it should not be surprising that the net of the benefits and costs associated with adaptation to climate change in coastal hazard zones is negative. Climate change represents a major environmental challenge to current infrastructure and development patterns. Notwithstanding, for Bowen, the NPV of 'Retreat 1% AEP' was of greater net social benefit (though still negative) than the base case; that is, the cost of intervention was less than the cost of not intervening. However, this was not the case at Wilson Beach.
2. The NPV of the cost over the coming century of continuing the current approach to managing coastal inundation at Bowen exceeds \$18 million and at Wilson Beach exceeds \$300,000.
3. For Bowen the option with the lowest cost was retreat of properties within the 1% AEP event extent at three points in time. This option reduced the cost over the coming century of managing coastal inundation at Bowen to a NPV of -\$9.5 million.
4. For Wilson Beach all of the options had a greater cost over the coming century of managing coastal inundation than continuing the current approach, with the retreat of properties within the 1% AEP extent being second lowest cost with an NPV of around -\$600,000.
5. For both cases, defend approaches represented the greatest cost with the defend approach at Bowen increasing the cost over the coming century of managing coastal inundation at Bowen to an NPV exceeding \$270 million and exceeding \$30 million for Wilson Beach

4.1.2 Caveats

1. This is a first-pass analysis, based on constrained data, and (currently) limited and non-interdependent sensitivity analysis. It should be used as a 'conversation starter' with the WRC community.
2. CBA provides assessment through an economic lens only. The outputs of this CBA need to be considered alongside non-economic/non-financial considerations and community concerns. For example, the MCA process⁵ revealed considerable community support for nature-based solutions, or ecosystem based adaptations.
3. The results of the CBA apply beyond Bowen and Wilson Beach. As noted, due to budgetary and time constraints the CBA was applied to two representative sites only. Whilst every area of interest in the region is differentiated

⁵ And subsequent community engagement undertaken by Whitsunday Regional Council.

to some degree, the challenges faced by Bowen and Wilson Beach are relevant to other locations in the region, but the intensity of development and the value of assets at risk in other locations could be quite different.

4. Costs analysed in this CBA are potentially understated. The requirement to only assess coastal hazards excludes both the implications of coincident events, in particular flooding from the Don River and flooding from rain trapped by hard engineered structures.

4.1.3 Messages

1. There is no simple solution to addressing coastal hazards in the Whitsunday region. Work undertaken in previous phases of the CHAS and the costs of adaptation options quantified in this CBA illustrate the significant challenges that the region faces to mitigate coastal hazard risk.
2. There is a need to set expectations amongst the community. This CBA indicates that difficult decisions will need to be made that may involve specific protection zones. There will be winners and losers in this process and the sooner that community is brought on board, the more effective and equitable the outcomes of such a process will be.
3. There is sufficient economic analysis for WRC to act now. The results of this CBA are significant enough to compel action now. Waiting for greater certainty also entails acceptance of increasing risk. The sooner that the risks exposed in this process are embraced, the more effective their risk management will be.

These findings present substantial funding (or financing) challenges for WRC. Defensive approaches potentially cost up to \$290 m for Bowen and \$35 m for Wilson Beach (high cost scenario ⁶). Retreat options potentially cost up to \$10 m (in PV) for Bowen and nearly \$700,000 (in PV) for Wilson Beach. While Bowen is a significant regional centre, Wilson Beach is typical of a dozens of hamlets on the WRC coastline, which potentially need similar treatment.

Both interventionist approaches to coastal hazard adaptation (retreat and defend) come at a considerable cost to the implementing agency and represent unprecedented financing challenges. The consideration of who bears the cost, when that cost is born, and how funds are raised is an urgent conversation WRC needs to commence with other levels of government, the region's residents and businesses, and – potentially – with the finance sector.

In addition, as raised and recommended by participants in the MCA process, the buy-back scheme is also subject to nuance and refinement. This CBA considers buy-backs in a relatively coarse manner; that is WRC is assumed to purchase properties, which are immediately demolished, and the land is resumed as a liability for WRC. In practice, buy-and-let-back (where WRC purchases the freehold and lets back to occupiers until such time as AADs become intolerable) and land-swaps will also potentially mitigate some of the costs to WRC.

It should also be noted that this CBA assesses costs and benefits of a range of coastal hazards through to 2100. Future sea level rise projections, post-2100 are (unsurprisingly) uncertain and will need continual reappraisal going forward, with reassessment of the costs and benefits of adaptation dependent on how successfully the global community tackles rising greenhouse gas emissions (Nauels et al., 2019), which so far continue to rise at an accelerating rate (IPCC, 2014).

4.2 Cost benefit analysis summary

The section provides a summary of the CBA process. For more detail, please consult the *Whitsunday Regional Council Coastal Hazard Adaptation Strategy: Cost-Benefit Analysis of Climate Change Adaptation Options*.

4.2.1 Cost Benefit Analysis

A cost benefit analysis (CBA) is a process that identifies and evaluates net benefits (benefits minus costs) associated with alternative paths of action towards achieving defined public goals. The process is a form of economic appraisal

⁶ High cost scenario figures are derived from Townsville CHAS.

that can be used to estimate changes to the economic wellbeing of local and wider communities. A CBA also considers the timing of each of the costs and benefits associated with particular options and converts future costs and benefits into today's prices so that all impacts can be meaningfully compared regardless of timing. In this way, a CBA can enable a comparison of options that deliver different streams of benefits and costs over time.

In most instances, a CBA is used to estimate and compare the net benefits of a project with the costs and benefits of a 'base case', (sometimes called 'business as usual', or BAU), which represents a continuation of current conditions under which the proposed project/ policy is not implemented. Note: this is not necessarily a 'do nothing' approach, as this would entail WRC from withdrawing from *any* coastal management activities.

In the case of coastal management activities, the base case represents a continuation of WRC's prevailing approach to coastal management, which, at the moment, is not yet fully formulated and, as such, representative of an approach of 'leave it to the market' ⁷. The costs and benefits of alternative management options are then compared with the costs and benefits of the base case to identify any incremental differences between the base case and the alternative approaches.

4.2.2 Reporting the CBA results and testing their sensitivity

This section outlines the results of the CBA and runs several sensitivity analyses on some of the key variables. The CBA is performed for the base case, then four options for defend approaches and three options for retreat approaches. These are summarised in Table 7 and consistently used across the results section. All values in brackets are negative values. The methodology and results of this CBA were presented to a workshop with WRC on 18 November 2019. The attendance list is in the Appendix in Section 6.3 and the notes are in Section 6.4.

4.2.2.1 Headline results

Table 4 and Table 5 report the social cost benefit analysis for the default scenarios for Bowen and Wilson Beach. The default economic parameters are based on the following key variables: (i) general level of inflation: 1.5% pa (applies to damage costs, maintenance costs); (ii) house price inflation: -3.5% pa for Bowen and -11.1% pa for Wilson Beach (applies to buy-back purchase price; unimproved land value for forgone rateable property value); and (iii) discount rate: 7% pa (discounts all future values to present values).

Table 4 shows that all adaptation approaches for Bowen return a negative NPV and a BCR of less than 1. The scenario with the best BCR is 'defend at Y2050', but this still returns less than 10% of expenditure. However, it should be noted this scenario entails significant PV costs: ~\$72.8 m. The scenario with the lowest NPV is 'Retreat at 1% AEP'; but this option still incurs a PV cost of ~\$10.4 m, though represents an improvement on the base case.

Table 5 shows that all adaptation approaches for Wilson Beach return a negative NPV and a BCR of less than 1. The scenario with the best BCR is 'Retreat 1% AEP', but this still returns only just over 10% of expenditure. This is also the scenario with the lowest NPV. No scenario returns a NPV greater than the base case.

⁷ 'Leave it to the market' is representative of a policy that enables the normal laws of supply and demand for housing and commercial property to apply, with minimum intervention.

Table 4: Cost benefit analysis for coastal adaptation approaches for Bowen; (default scenario; r=7).

Scenario	Present value benefits	Present value costs	Net present value	Benefit cost ratio
Base case	\$ -	\$ 18,279,324	\$ (18,279,324)	
Defend at Y1	\$ 19,641,160	\$ 290,594,308	\$ (270,953,148)	0.068
Defend at Y2035	\$ 10,533,208	\$ 135,538,853	\$ (125,005,645)	0.078
Defend at Y2050	\$ 6,081,752	\$ 70,661,706	\$ (64,579,954)	0.086
Defend at Y2075	\$ 1,638,310	\$ 33,015,362	\$ (31,377,052)	0.050
Retreat 1% AEP	\$ 690,252	\$ 10,380,605	\$ (9,690,082)	0.066
Retreat 0.5% AEP	\$ 1,760,591	\$ 23,974,093	\$ (22,181,756)	0.074
Retreat 0.2% AEP	\$ 5,495,346	\$ 80,342,553	\$ (74,667,526)	0.069

Table 5: Cost benefit analysis for coastal adaptation approaches for Wilson Beach; (default scenario; r=7).

Scenario	Present value benefits	Present value costs	Net present value	Benefit cost ratio
Base case	\$ -	\$ 343,863	\$ (343,863)	
Defend at Y1	\$ 725,923	\$ 34,880,480	\$ (34,880,480)	0.020
Defend at 2035	\$ 256,920	\$ 15,870,947	\$ (15,870,947)	0.016
Defend at Y2050	\$ 175,202	\$ 7,547,442	\$ (7,372,240)	0.023
Defend at 2075	\$ 51,288	\$ 2,514,112	\$ (2,462,823)	0.020
Retreat 1% AEP	\$ 70,299	\$ 689,125	\$ (620,121)	0.102
Retreat 0.5% AEP	\$ 80,889	\$ 956,083	\$ (876,688)	0.084
Retreat 0.2% AEP	\$ 154,610	\$ 3,142,398	\$ (2,990,691)	0.049

4.2.2.2 Sensitivity: decision making in situations of deep uncertainty

Our CBA sets out scenarios based on a significant number of assumptions on a range of costs and benefits into the long future. It is also based on economic parameters, which, though subject to sensitivity analysis, are constrained to a fairly tight range. For example, predicting property prices into the future is subject to deep uncertainty (Lempert, Popper, & Bankes, 2003; Workman, Dooley, Lomax, Maltby, & Darch, 2020), in particular as prices are likely related to the adaptation approach adopted by WRC. Therefore, a CBA *can* provide a false sense of certainty for something that is inherently deeply uncertain (Dooley et al., 2018; Haikola and Hansson, 2018).

A CBA is based in a ‘predict-then-act’ mindset, which is rooted in the ‘expected utility’ hypothesis of classical decision theory. There is a “tendency to view model outputs as objective, capable of defining “optimal” goals and strategies for which climate policy should strive, rather than as *exploratory* tools within a broader policy development process” (Workman et al., 2020, p. 1). This approach assumes decision makers can make reasonable predictions about the future – or at least reliably characterise the probabilities of different outcomes. However, climate change, extreme weather events, and social and institutional responses to the impacts of climate change are unprecedented and unpredictable – or subject to “deep uncertainty” (Lempert et al., 2003, p. xii).

To counter these challenges, we considered an alternative analysis to interpret the data from the CBA. This reframes the question from “What will the long-term future bring?” to “How can we choose actions today that will be consistent

with our long-term interests?” (Lempert et al., 2003, p. xii). One method is to test the full range of sensitivities, in a matrix, and calculate which adaptation approach performs the best in the differing circumstances. In this instance we tested 3 x 3 x 3 x 3 (81) combinations of our original sensitivities for discount rates, general inflation rates, property value inflation rates and cost of defensive options (see *Report to Whitsunday Regional Council: Cost benefit analysis of coastal hazard adaptation options*, Table 12 for the range of sensitivities).

The 81 scenarios we use are merely a subset of the full range of sensitivities that could be performed; for example, additional sensitivities could be performed on the rate of success of buy-back scheme, average annual damages, or any intermediate value for each of the tested sensitivities⁸. For each tested sensitivity there can be no claim that one value is more likely than another; suffice to say, they are each, independently *feasible*. Therefore, reported values here should be treated with the same caution as any returned values in a CBA and should be merely used to *explore* options available – and potentially be commissioned as an additional piece of work using Monte Carlo analysis (Ferson, 1996).

Table 6 and Table 7 report the performance of each adaptation approach in the 81 sensitivity combinations for Bowen and Wilson Beach. The ranking columns report the mean rank of each scenario and the rank of the mean ranking (i.e. a direct comparison of option preferences). The BCR columns report the mean benefit cost ratio⁹ and the rank of the BCR mean. The reported values are for illustrative purposes only and are only reported on the benefit cost ratios. This approach could also be undertaken on values for the NPV of the project, though it is likely retreat values, which avoided the very high costs associated with defensive options, would generally perform better.

Table 6: Performance of adaptation approaches for Bowen in the full sensitivity matrix

Scenario	Ranking mean	Rank of rank mean	BCR mean	BCR rank of mean
Defend at Y1	3.457	2	0.412	1
Defend at Y2035	3.580	4	0.358	2
Defend at Y2050	2.185	1	0.303	3
Defend at Y2075	6.309	7	0.141	4
Retreat 1% AEP	3.556	3	0.097	7
Retreat 0.5% AEP	3.827	5	0.123	5
Retreat 0.2% AEP	5.086	6	0.119	6

Table 7: Performance of adaptation approaches for Wilson Beach in the full sensitivity matrix

Scenario	Ranking mean	Rank of rank mean	BCR mean	BCR rank of mean
Defend at Y1	3.457	2	0.201	2
Defend at Y2035	3.580	4	0.197	3
Defend at Y2050	2.185	1	0.256	1
Defend at Y2075	6.309	7	0.066	7
Retreat 1% AEP	3.556	3	0.138	4
Retreat 0.5% AEP	3.827	5	0.129	5
Retreat 0.2% AEP	5.086	6	0.094	6

⁸ Note that this would have to be completed programmatically.

⁹ The BCR is the fraction of present value costs to present value benefits. Values greater than 1 represent a positive return on investment. Values less than 1 represent a negative return on investment

Table 6 and Table 7 suggest that across the range of sensitivities, for Bowen and Wilson Beach, 'Defend at Y2050' performs well, having the highest mean ranking across all 81 scenarios and returning the third and first highest mean BCR for the AOIs, respectively. In a small number of instances defend options return a BCR ratio higher than 1. (See the *Cost Benefit Analysis Final Report*, Section 3 for all the data). This was generally the case with high general inflation rates (AADs increased quickly), low defensive option costs (CAPEX and OPEX were low) and at low discount rates (future benefits retain higher present values). However, overwhelmingly, the BCRs for the combinations of sensitivities remained well below zero.

5 Limitations of the MCA / CBA process

It is important to understand the role of a CBA in a decision-making process. Whilst a CBA nominally returns a seemingly 'definitive' answer (or a narrow series of answers, from sensitivity tests), which suggest a clear direction for decision makers, in reality, and in practice, they should always be considered with caveats.

A CBA should not be interpreted as providing *the* answer to a specific problem. It should only be considered as providing evidence, from an economic perspective, to help lead the decision maker towards an answer, based also on social considerations, and finance and funding implications. Whilst a *social* CBA attempts to take into consideration environmental and monetizable social costs and benefits, the difficulty in obtaining data and the bounded knowledge of the analyst will always demand broader considerations in the decision making process. In this instance we included private costs to the residents and businesses of the WRC region and costs born collectively by the community through expenditure by the WRC.

In addition to the context provided above, we have also identified a number of limitations specific to this study. The CBA and MCA findings summarised in this appraisal represent a first pass analysis of the commercial viability of adaptation options for the Whitsunday region. The first pass analysis is constrained by a number of factors:

1. Data coarseness and availability

Budgetary and time constraints along the full journey of the CHAS has limited the analysis to that of a 'first pass' assessment. The main data constraints specific to the CBA and MCA are summarised in Table 8.

Table 8: Summary of constraints of the MCA and CBA

Analysis Tool	Constraints (for further detail refer to specific report)
MCA	Criteria analysis derived from WRC experts and relatively small external population
CBA	- Damage curves applied at coarse level without regard for flooding velocity - Intangible and non-property costs (e.g. fatalities, medical) largely unquantified due to data and time constraints - Hazard impacts calculated independently as opposed together - Assumed linear relationship between current, 2050 and 2100 year impacts as no modelling applied to underlying years

2. Representative sites

As noted above, budgetary and time constraints limited the CBA to two AOIs only, i.e. Bowen and Wilson Beach. Whilst, as noted, these communities share some commonalities with the other AOIs analysed as part of the wider CHAS, ultimately, the socio-economic and physical attributes of each AOI deem them unique. As such, care should be exercised in trying to apply the conclusions from this analysis to other locations.

The low lying and flat topography of both Bowen and Wilson Beach significantly exposes these communities to coastal hazards. It is arguable that this exposure and their relatively lower socio-economic profiles place them in a position of greater risk than the other AOIs in the Whitsunday region. Whilst, the results of this economic appraisal hardly constitute good news, these two locations and the financial parameters applied to the adaptation options should be considered to represent a worst-case scenario, with an expectation that the disparity found between costs and benefits for both Bowen and Wilson Beach may not be as wide for the other locations.

3. Limited adaptation options

Once again budgetary and time limitations constrained option cost benefit analysis to only a subset of those available. Due to their positions at either end of the options spectrum, only 'defend everything' and 'retreat' options were considered. As noted in the MCA report, the selection of these options departed from accepted practice in consideration of supporting stakeholder and community engagement. 'Accommodate' options were not considered, nor were 'adaptation strategies'. Rather than implementation of one specific approach, adaptation strategies involve the more practical and realistic implementations consistent with knowledge and conditions at the time, e.g. a beach may be nourished for a number of years until conditions are such that it must be either defended or abandoned.

4. Coastal hazard focus

The focus of the CHAS as a whole on only one set of climatic hazards potentially undervalues both the scale and scope of climatic risks that the region faces at any one time. For example, the weather conditions that might bring about storm tide inundation, e.g. tropical cyclones and rain depressions, will also likely bring co-incident flooding from the Don River to Bowen. Additionally, as was witnessed with Tropical Cyclone Debbie, damages from extreme winds are also highly likely to impact the region at the same time as coastal events are at their most hazardous.

5. CBA parameters and assumptions

In addition to the above there are limitations inherent in the CBA process itself. These revolve predominantly around the necessary economic parameters required to undertake the analysis, e.g. discount rates, future property prices. As noted in the CBA report, future property prices due to their tight relationship with adaptation options potentially subject to circular assumptions. In this regard:

“[I]f WRC signals an intention to defend property with hard infrastructure, such as sea walls and sea dykes, this is likely to lead to stabilisation of prices in the two AOI and perhaps lead to property value inflation, outside the range of sensitivity analysis. Conversely, a decision to assist the communities to retreat, through a buy-back scheme, would likely see a further acceleration of property price deflation; potentially outside the range of sensitivity analysis.”

(CBA Report, p.29)

Even with parameters, whilst they are stress-tested with sensitivity analysis as with any projections exercise, uncertainty remains.

6 Implications

6.1 Adaptation options

Unfortunately, the environmental, as opposed to economic preferences revealed in the MCA may not reflect the reality of options available to the region to adapt to climate changed coastal hazards. Rising sea levels coupled with established property boundaries pose the greatest impediment to nature-based options such as mangrove planting and regeneration. The significant economic challenges revealed by the CBA also add impetus to the attraction of the two most preferred adaptation options identified in the MCA: land use planning and relevant zoning demand consideration. Quite simply, many of the hard decisions and issues that arise from current development can be proactively avoided through appropriate application of planning.

6.2 Financial implications of CBA results

The significant disparity between the costs and benefits apparent in this study's cost benefit analysis highlights the challenges that climate change presents to the region and the council. The magnitude of these costs is illustrated in Table 9 and Table 10 below.

Table 9 provides the range of low, medium and high defence costings for Bowen utilised in this study (ID: A) compared as a ratio to WRC's 2019/20 forecast capital expenditure budget. Three figures are applied from the 2019/2020 budget (Whitsunday Regional Council, 2019, p.5). The first figure (ID: B) represents the total of capital funding sources applied for the period (\$164,008,262). Because the projection contains a significant amount of funding from NDDRA flood grants and insurance payments (assumedly related to Tropical Cyclone Debbie) which could skew typical funding, the total of these monies (\$77,887,300¹⁰) is deducted from the 2019/20 total to provide a net amount. The third figure (ID: E) represents the average of projected funds for the nine years from 2020/21 to 2028/29. It is arguable that this figure (\$50,212,523) is more representative of annual capital costs as it doesn't include disaster funds such as those noted above.

Table 9: Ratio of total Bowen defend capital costs against budgeted capital funding sources

ID		Low	Medium	High
A	Total defence capital costs	\$51,443,580	\$115,861,673	\$147,732,838
B	Total budgeted capital funding sources (2019/20)	\$164,008,262	\$164,008,262	\$164,008,262
C	NDDRA and insurance funding (2019/20)	\$(77,887,300)	\$(77,887,300)	\$(77,887,300)
D: B-C	Budgeted capital sources net of NDDRA and insurance	\$86,120,962	\$86,120,962	\$86,120,962
E	Average budgeted capital funding source (2020/21 to 2018/29)	\$50,212,513	\$50,212,513	\$50,212,513
Ratio of defend costs to:				
A/B %	Total budgeted capital funding sources (2019/20)	31%	71%	90%
A/D %	Budgeted capital sources net of NDDRA and insurance	60%	135%	172%
A/E %	Average budgeted capital funding source (2020/21 to 2018/29)	102%	231%	294%

The ratio of defence costs against the net capital budget in particular illustrate the magnitude of the costs for the region to defend Bowen alone. Even at the lower range of costs applied to construct defences for Bowen, 60% of the annual 2019/2020 budget would be required. The magnitude of these costs can be appreciated even more when

¹⁰ \$77,887,300 is composed of \$73,244,826 (NDDRA flood grant) + \$1,026,394 (insurance restoration reserve) + \$3,616,080 (insurance reimbursement reserve)

compared to the average budgeted capital funding for the nine years between 2020/21 and 2028/29. In this circumstance all defend costs exceed the average annual budget, rising to almost three times for a high cost scenario. Although not quantified here, it seems reasonable that even if these defence costs were raised from other sources (e.g. State or Federal grants) that additional costs required to maintain the defences would severely stress council budget.

The cost challenge that has been revealed in this analysis is further illustrated in Table 10 below. This table details the calculated present value and per capita costs specific to location and the region as a whole of a surrender and retreat strategy for both Bowen and Wilson Beach. The present value of total costs to buy back properties in each AOI is used due to the difficulty in determining exactly when affected properties would be purchased. The scenario which is applied is the base scenario utilised in the CBA. This scenario is deliberately applied due to its favourability to the purchaser. It incorporates falling property prices for both locations (11.1% and 3.5% reduction per annum for Wilson Beach and Bowen respectively) and a relatively high discount rate of 7%. From a purchaser's perspective (from which the analysis in Table 10 is taken) falling house prices and higher discount rates reduce the present value of purchase prices as time progresses and as such very readily represents a best-case scenario for purchase cost. Figures are provided for each of the hazard scenarios considered in this analysis, i.e. annual exceedance probabilities of the more likely 1% to less likely 0.5% and 0.2%.

Table 10 Per capita cost at both AOI and regional level required to meet present value of property to be purchased

ID	Area of Interest	Bowen			Wilson Beach		
	Hazard scenario	@1.0% AEP	@.5% AEP	@.2% AEP	@1.0% AEP	@.5% AEP	@.2% AEP
A	\$ Total PV cost	10,380,605	23,974,093	80,342,553	689,125	956,083	3,142,398
B	AOI population¹¹	10,384	10,384	10,384	57	57	57
C	Whitsunday region population	35,050	35,050	35,050	35,050	35,050	35,050
A/B %	\$ per Capita (AOI)	1,000	2,309	7,737	12,090	16,773	55,130
A/C %	\$ per Capita (region)	296	684	2,292	20	27	90

Beyond the magnitude of the total purchase cost, the results depicted in Table 10 illustrates that per capita costs can be reduced significantly where they are shared as widely as possible across the region. The per capita costs to purchase property at Wilson Beach, for example, is significantly less when shared across the region than when assumed by Wilson Beach residents only (note that this cost for Wilson Beach residents would represent loss of property value not an outlay of cash *per se*, i.e. a resident is hardly likely to purchase their own house merely to surrender it). Thus, while costs may be high when borne solely by affected residents, these costs can be reduced significantly when spread more widely across the region.

Regardless of magnitude, climate change doesn't only represent a cost-multiplier it also threatens the capacity of the region to generate the economic activity required to meet those costs. As detailed in the socio-economic vulnerability assessment, the region's three economic pillars are all particularly vulnerable to changes in climatic conditions. There is a risk that as the impacts of climate change intensify, a gap between increasing costs and decreasing revenues will widen. WRC may find itself more reliant on debt to finance both capital and operational expenditures. If recent trends in municipality financing are any indication however (see Box 1) it is reasonable to expect that, where it is available, that financing costs will also increase.

¹¹ Population figures sourced from <https://www.communityprofile.com.au/whitsunday>

Box 1 illustrates that exposure to climate change risk such as increasing sea levels has real implications on the capacity of organisations to borrow money. It also reflects a broader trend, i.e. the increasing attention that climate change is receiving in the global and Australian financial sectors. An increasing focus on climate risk amongst Australia's financial regulators (e.g. see APRA (2019) and ASIC (2019)) and the globe's credit rating agencies, a recently released disclosure framework and guidance commissioned by the G20's Financial Stability Board (e.g. see TCFD (2017)) and a legal imperative advised by leading Queen's Counsel Noel Hutley (Hutley & Hartford-Davis, 2016, 2019) have intersected to raise the attention of corporate boards to the financial and economic risks of climate change. At this point whilst there is no indication that such exposure has influenced the cost of debt, Moody's (one of the world's leading credit rating agencies) has highlighted the link in Australia between climate change and mortgage default risk (Yeates, 2019). As the financial industry increasingly and more sophisticatedly manages its exposure to climate risk it is only a matter of time before the additional risk that climate change generates is priced into borrowing costs. Whilst, given the advantages of borrowing from the Queensland State Government (via the Queensland Treasury Corporation) as opposed to the open market, this may not have direct implications for Queensland local government it may have so indirectly: it is hard to envisage that should the Queensland Treasury Corporation suffer a reduction in credit rating that any increase in borrow costs that it would incur would not be passed on to Queensland local governments.

Box 1: Sea level rise is driving higher borrowing costs for US Municipalities

In the USA, as in many countries, municipalities and cities finance much of their capital investment with municipality bonds (Rashidi, Stadelmann, & Patt, 2019). The amount of interest that municipalities pay to bond investors that purchase the bonds is determined to large degree by the credit risk of the municipality. Credit risk reflects the risk that the municipality won't be able to repay the principal of the bond when it is due: the greater the risk is considered to be the more interest demanded by investors to compensate. In a study in 2017 Cornaggia, Cornaggia and Israelsen found that credit ratings assigned by credit rating agencies such as Moody's and Standard & Poor's was an integral determinant of how much interest a municipality would have to pay: the lower the rating the higher the interest (or borrowing cost). In a study in the same year, Adelino, Cunha and Ferreira found that a low credit rating didn't only impact the cost of borrowing for a municipality but also had a broader impact on the local economy. They found that an increase in borrowing costs meant that local governments had less to spend and employed less people which had a trickle down impact on the local economy. In 2018 Miller presented evidence that some US coastal municipalities exposed to sea level rise had been downgraded (i.e. their credit ratings reduced) by credit rating agencies. This had been done, in part, because of concerns that exposure to sea level rise would reduce property valuations thus reducing the municipality's tax base and hence capacity to raise revenue. A study in 2019 by Painter supported these findings. Painter found that investors demanded significantly higher borrowing costs from municipalities exposed to sea level rise compared to those not exposed.

6.3 Adaptation pathways

An adaptation framework recommended by CSIRO (2018) for commonwealth agencies that is consistent with the development of an adaptation options strategy noted in limitations above, is the adaptation pathways approach. An 'adaptation pathways' approach provides a framework to undertake flexible and responsive climate change adaptation actions in environments of uncertainty; also providing relevance for sequencing events or alternative courses, signalled by predefined triggers and thresholds. Adaptation pathways generally establish a structured, continuous process of assessing and implementing risk treatments in response to new information and changing circumstances. The approach enables decision makers to identify no regrets actions that can be taken now without cutting off options later, creating an adaptive, robust response to uncertainty.

CSIRO (2018) cites Hallegatte (2009) in identifying a number of key ways of thinking that can be incorporated into an adaptation pathways approach to reduce the risk of making inappropriate decisions as circumstances progress (Box 2). Where adaptation options are not clear or not *prima facie* attractive due to (as in this study) economic or other criteria, an adaptation approach can enable the implementation of an options strategy.

Box 2: Strategies for reducing decision risk (Source: CSIRO (2018): p.92; Box 2)

Hallegatte (2009) suggests a variety of approaches to seeking options that reduce the riskiness of decision-making in the face of uncertainty:

- (i) Select “no-regret” strategies that yield benefits even in absence of climate change, or across many possible futures.
- (ii) Favour reversible and flexible options, such as demand management, before committing to major infrastructure investment.
- (iii) Buy “safety margins” in new investments, such as building larger foundations for a bridge so its height can be increased cheaply later if needed.
- (iv) Promote soft adaptation strategies, including a long-term perspective, such as institutional change, instruments like insurance, and changes in practice such as planning for longer time frames.
- (v) Reduce decision time horizons, such as building movable homes so the commitment to a location is shorter term.

Any of these strategies can be adopted in adaptation pathways and may trigger thoughts about different options. It is always important to consider whether an option creates path dependency (locking you into future directions rather than ensuring future options remain open) and possible later maladaptation (Barnett et al., 2015; Leary, 1999).

6.4 Triggers and thresholds

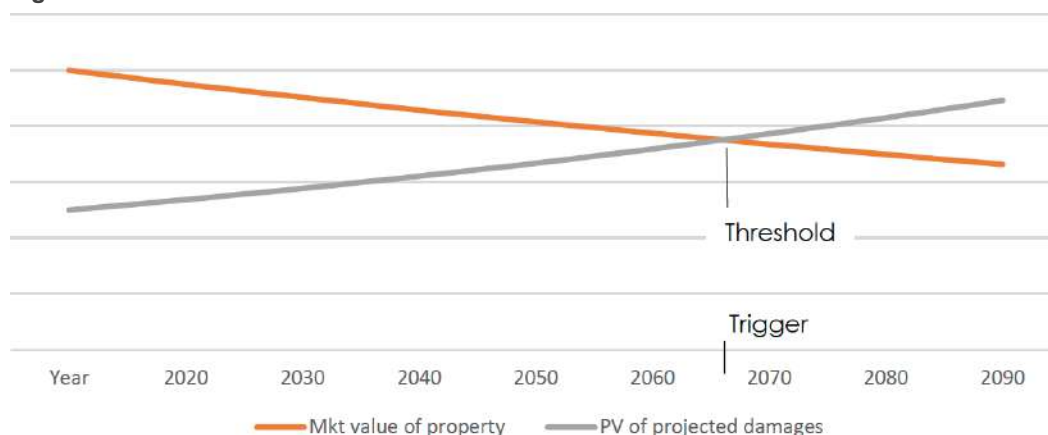
Selection of appropriate triggers and thresholds is an integral element of a successful adaptation pathways approach

A threshold describes the time until, or level of change at which, goals, objectives or outcomes cannot be achieved without changes. A threshold can represent a point that both delineates the introduction of a new, or cessation of a current, action (e.g. Figure 5 below illustrates a point of new action). They can be one-off or a series of events that materialise within a particular timeframe or across a period of time (CSIRO, 2018). In the context of coastal hazards, a threshold may be physical, like a designated point of sea level rise; economic such as a particular increase in adaptation option maintenance costs; or social where for example storm tide inundation now threatens critical infrastructure such as hospitals or community access to such.

A trigger is applied to prevent crossing a threshold. It designates the point at which relevant adaptation decisions must be made. As such, a trigger should be applied at a point with enough of a safety buffer to enable a decision to be made and subsequent action to be undertaken prior to reaching a threshold. Triggers are reliant on an effective monitoring, which in turn is reliant on the availability of relevant information.

An example threshold and trigger for a buy-back scheme is depicted in Figure 5.

Figure 5: Illustrative break even chart



The above figure illustrates a conceptual threshold based on an economic break-even point, i.e. when the expected cost of property purchases equals projected coastal hazard damages. It is beyond this threshold that it's arguable that the most economically effective action is to buy out the properties thus avoiding future damages. A trigger is

applied prior to the threshold to enable enough time for decision and administrative tasks to be taken in anticipation of threshold buyback. Note that the years provided in this figure are for illustrative purposes only. No actual economic figures have been provided in this conceptual diagram, as the threshold point is dynamic. This is because, as more information comes to light and circumstances change, the point where purchase price equals avoided future damages will change, e.g. property may appreciate in value one year and then decrease or stay flat the next. This dynamic highlights that the process of determining trigger and threshold points is a continuous one that requires frequent monitoring and consideration.

7 Recommendations and conclusion

As noted above, future coastal hazards will create significant risks for WRC and the region. A number of actions and considerations that will aid meet these challenges are provided below.

1. Act Early

As argued in the CHAS “Financing and Funding Climate Change Adaptation” report the capacity of WRC and the region to manage climate change impacts will be significantly influenced by how early and proactively they choose to do so.

2. Consider funding and financing options now.

Closely aligned with the above recommendation, it is highly advised that WRC look to tailor funding and financing mechanisms to expected capital and operational expenditures as soon as possible. It is beyond the scope of this appraisal to recommend the nature of such instruments, however Box 3 illustrates the implications of building something akin to a simple future/resilience fund sooner rather than later.

3. Agree an overall WRC risk comfort level

The very core of the work undertaken in this study revolves around the concept of risk. Conceptualised simplistically as a function of probability and consequence, council should consider what level of risk they are comfortable to assume. This will inform decisions related to differing probabilities of storm tide inundation and form an integral part of thresholds and triggers that may be applied relevant to the following recommendation.

4. Prepare an adaptation option strategy

As noted above, a limitation of this study is the inclusion of only a limited set of individual options. In reality it is expected that best results will ensue where the council and region apply a range of options specific to the conditions of the times. It is recommended that an ‘adaptations pathway’ form the basis of such a strategy, with relevant thresholds and triggers defining decision and action points.

5. Consider who bares the costs

Table 10 in Section 6.2 illustrates the implications of spreading cost beyond the impacted AOI to the broader region. As part of any adaptation strategy, beyond consideration of options, thought should be applied to who bares the costs of adaptation work. As discussed in the CHAS “Financing and Funding Climate Change Adaptation” report, any decision in this regard will be ultimately dictated by the Local Government Act 2009 and the Local Government Regulation 2012 (refer to the aforementioned report for a detailed analysis of the implications of this regulation and related own-source revenue principles to adaptation funding).

6. Incorporate climate change into planning decisions upfront

As discussed above, the significant costs involved in both adaptation options analysed as part of this study emphasise the adage “prevention is better than cure”. Incorporating climate change risk upfront will minimise potential negative impacts, including potential legal action going forward (for an excellent synopsis of local government legal risk that can arise from climate change see Bell and Baker-Jones (2014)).

7. Start the conversation between Councillors, officers and the community

The implications of the costs, disruption, and risks associated with adaptation to climate change are considerable. They will entail a reassessment of spending and planning priorities towards more policies and priorities that optimise adaptation options. Optimisation entails trade-offs and trade-offs inevitably mean there will be winners and losers from the status quo. The impacts of the need to adapt to climate change risks need to be socialised at an organisational level and to be communicated to the community to avoid shocks and to mitigate unforeseen consequences.

Box 3: Illustration of a simple future fund

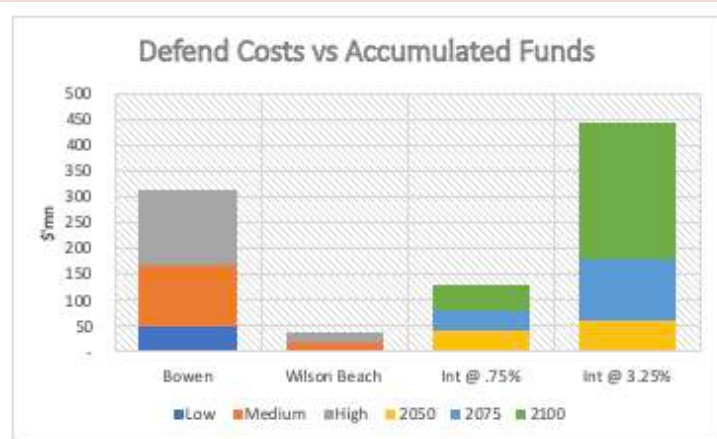
The following table compares the impact of \$10 set aside with respect to all Whitsunday residents on a quarterly basis, i.e. 30,000 for this analysis (\$300,000 collected per quarter). These monies could be collected any number of ways including as some sort of rates levy, as a percentage of the capital expenditure budget etc (e.g. The City of Okaparinga in South Australia applied a one off charge of 1% in general rates to cover anticipated adaptation capital costs in 2008 (Banhalimi-Zakar et al., 2016)).

Illustration of a simple future fund

Commencement year	Annual compounded	2025	2050	2075	2100
2020	0.75%	\$ 6,107,781	\$ 40,316,378	\$ 81,550,965	\$ 131,254,584
2020	3.25%	\$ 6,480,397	\$ 60,179,595	\$ 179,638,713	\$ 445,387,208
2025	0.75%	\$ 0	\$ 32,954,141	\$ 72,676,622	\$ 120,557,570
2025	3.25%	\$ 0	\$ 45,763,317	\$ 147,568,292	\$ 374,043,419
2050	0.75%		\$ 0	\$ 32,954,141	\$ 72,676,622
2050	3.25%		\$ 0	\$ 45,763,317	\$ 147,568,292

Note: Start year represents January of the year that funds are deposited. Monies depicted against the years 2025 to 2100 are calculated as at December of that year based on the annual interest rate provided compounded quarterly.

Defend costs versus accumulated funds



From the above, the advantage of setting aside monies earlier than later is obvious. This figure compares funds accumulated against the low, medium and high defence cost scenarios for Bowen and Wilson Beach. The interest bars are extracted from above and represent monies accumulated to the years 2050, 2075 and 2100 should funds be deposited at the start of 2020.

Evident from the above chart is that at an interest rate of 3.25% funds are available by 2100 to meet a worst cost scenario (actual year of intersection for Bowen based on 3.25% is 2090)

This document has presented a summary and appraisal of the results of a MCA and CBA undertaken as part of Phase 7 of the Whitsunday Regional Council Coastal Hazard Adaptation Strategy. The document has also considered implications of these analyses and how their results may inform further work by WRC to mitigate coastal hazard risks to the Whitsunday region. Whilst constraints limit this study to a first pass analysis, the key findings are clear: future coastal hazards will create significant challenges for the WRC and the region that it services. A set of recommendations have been made that the authors consider will aid council meet these challenges as effectively as possible and at minimum cost. In this regard, the first recommendation is arguably the most critical: 'get started'.

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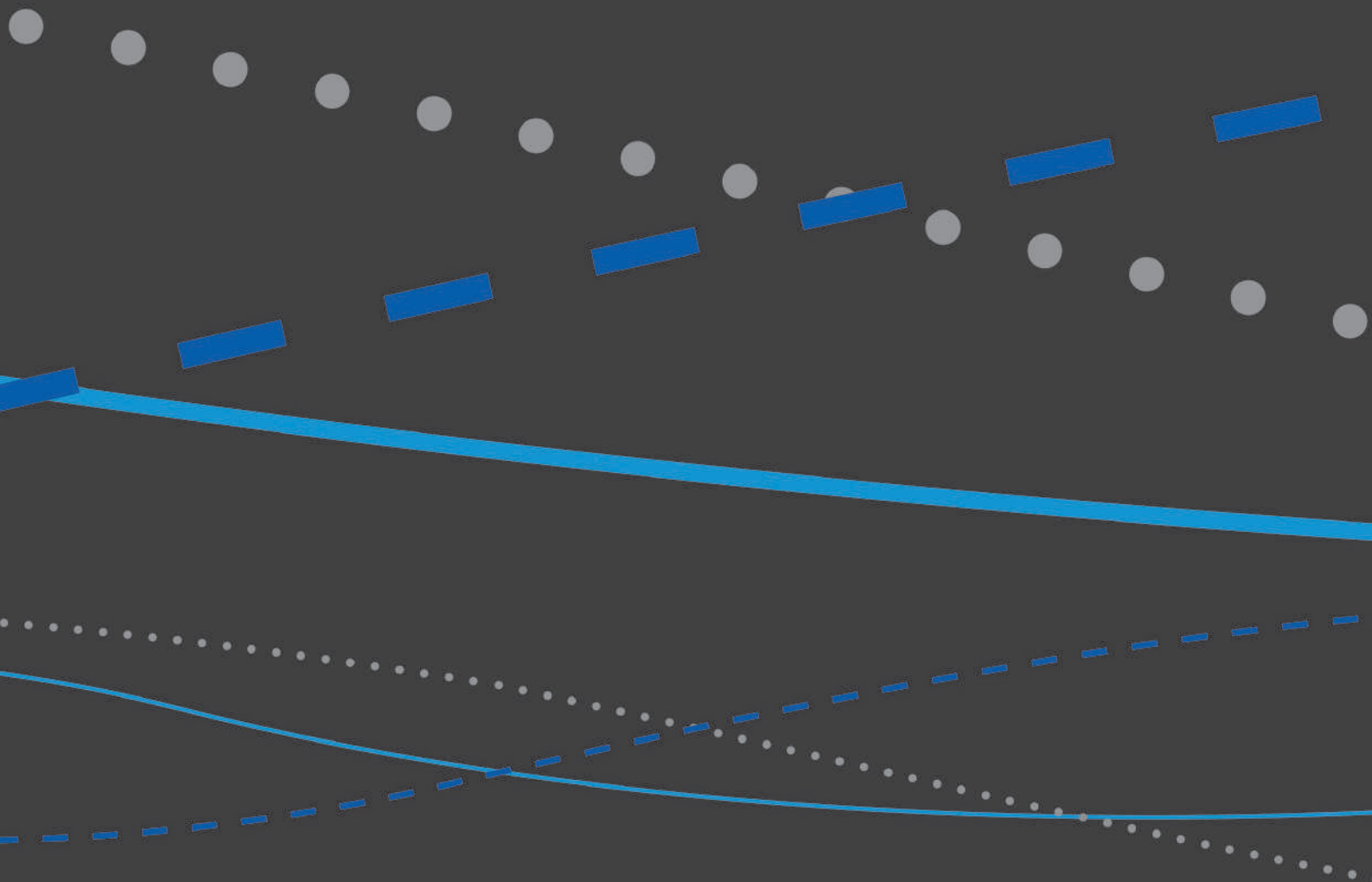
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Coastal Hazards Adaptation Strategy

Resilient Whitsundays: Coastal Hazards and Responses Project Consultation Report

February 2020



Contents

1. Executive Summary	3
2. Background	3
3. Overview of the Consultation.....	4
4. Overview of the Responses	6
5. Recommendations	10
6. Next Steps	11

Attachment A: All Survey Responses

Attachment B: Feedback Analysis

Document History

Title	Version No.	Date	Author	Reviewer	Approved by
Report	1.0	February 2020	Joanne Vlismas	Monica Regan; Julie Giguere	Greg Martin; Scott Hardy

1. Executive Summary

In December 2019, Whitsunday Regional Council held a series of community consultation workshops across the region's coastal communities, as part of the Coastal Hazards and Responses Project under the Coastal Hazards Adaptation Strategy (CHAS).

One of the key activities under the Project and 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 community engagement through awareness and education. During these workshops Council informed the community of the hazard assessments and mapping completed under the Project and consulted with residents on a series of adaptation options.

The small coastal communities in the Whitsunday region were identified as being the most at risk and so workshops were held in each location to ensure residents had the opportunity to participate. The workshops were held over three days in early December 2019, with two workshops per day. The locations chosen were Wilsons Beach, Conway Beach, Cannonvale Beach, Queens Beach in Bowen, Hydeaway Bay and Dingo Beach.

The workshops were promoted with targeted advertising in the local papers and social media to increase participation, and progress associations and other community groups were involved as co-hosts to further advertise the sessions. Food and tea/coffee was provided at each location and advertised to encourage attendance.

Council staff received very positive responses to the workshops in all locations, and the sessions generated good engagement and conversation regarding the options for the future. A record of all the feedback received is included in this report, along with analysis of the responses to the survey which was distributed at the end of each workshop.

There were 82 participants who attended the consultation sessions and a total of 54 surveys submitted from across each location. The results from the surveys demonstrate that further information and engagement with affected communities needs to occur prior to any decision-making by Council, now and into the future.

2. Background

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.

The Whitsunday Region is exposed to many natural hazards, all of which are likely to be exacerbated by climate change. Recent modelling undertaken by BoM and CSIRO shows that climate change is projected to affect the Whitsunday Region in the form of temperature increases, changes to rainfall, increased storm surge events, coastal erosion, the intensity of tropical cyclones and a rise in sea levels.

In July 2016, Whitsunday Regional Council adopted a Climate Change Adaption Policy and Coastal Hazard Adaptation Strategy (CHAS). The strategy aims to identify and respond to coastal hazards in order to provide a detailed assessment of current coastal hazards, as well as those predicted under future climate change scenarios. The CHAS has been jointly funded by the Local Government Association of Queensland (LGAQ) and Whitsunday Regional Council, with activities occurring in 2017, 2018 and 2019.

3. Overview of the Consultation

Six community consultation workshops took place over three days from Monday 2 December to Wednesday 4 December 2019, with two workshops per day. They took place in Bowen, Cannonvale, Conway Beach, Dingo Beach, Hydeaway Bay and Wilsons Beach. The workshops were well attended and participants were interested and engaged in the conversations.

3.1 Purpose of the consultation

To inform the affected communities of the results of the coastal hazard mapping and to work directly with residents regarding their input into options to address the impacts of coastal hazards, now and into the future.

Under the IAP2 Public Participation Spectrum, WRC was seeking to inform, consult and involve the affected communities.

3.2 Who was consulted

The affected coastal communities were identified early in the project planning as these residential areas are the most impacted by the mapping activities. There were no restrictions placed on who could attend the workshops, however they were marketed directly to each location with sponsored posts on social media and advertising in the relevant local papers.

It was anticipated the small coastal communities including Wilsons Beach, Conway Beach, Hydeaway Bay and Dingo Beach would attract only residents and regular visitors, whereas the sessions in the larger towns of Cannonvale and Bowen attracted a wider audience than those personally impacted by coastal hazards.

3.3 Advertising and promotional activities

The progress associations and community groups in the small coastal villages were contacted prior to beginning advertising activities, to coordinate the days and times most suitable for each location. The community groups located in Conway Beach, Hydeaway Bay and Dingo Beach were involved as co-hosts and assisted with the food (BBQ or morning tea) at each location. This meant these groups also advertised the workshops via their networks and encouraged attendance. At Conway Beach, the workshop was held at the beginning of the community Christmas celebration, which guaranteed a crowd in attendance.

The workshops were advertised in the local newspapers via the public notices and a banner advert in the Whitsunday Times, Whitsunday Coast Guardian and the Bowen Independent.



Join us for a Coastal Conversation!

Get involved and provide feedback on how you would like to see your coastline managed into the future.

Council officers and coastal management experts will be in your area to discuss the future management of our coastlines and how they may affect you.

Please join us to:

- Explore the coastal processes shaping our coastlines;
- See what coastal hazards are impacting us now and into the future;
- Provide feedback on coastal management and adaptation options for the future.

Come along and have your say!

Where: Queens Beach, Bowen. Meet outside the Surf Life Saving Club, Gideon Pott Park.
When: 5pm to 7pm, Tuesday 3 December 2019
What: Discussion & feedback session. Please note, a BBQ will be provided.
Info: To find out more about this project visit yoursay.whitsundayrc.qld.gov.au

Whitsunday Regional Council

Newspaper banner ad

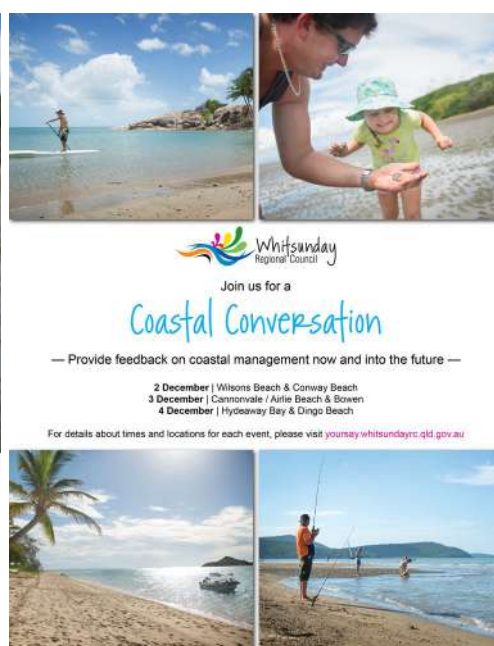
Sponsored Facebook advertising targeted each coastal community geographically, as well as a sponsored post to all residents within the Whitsunday region to capture those who do not set their location on their Facebook profile.

Posters and Facebook tiles were created for each workshop and distributed to the community groups prior to the activities (see examples below).

Council's corporate website and online engagement portal Your Say Whitsunday were updated with the details of the workshops and included further information about the project.



Facebook advertising – sponsored post



Poster

3.4 Workshops

The community consultation workshops took place over three days from Monday 2 December to Wednesday 4 December 2019, with two workshops per day:

- Monday 2 December –
 - 9am – 11am, Wilsons Beach
 - 5pm – 7pm, Conway Beach
- Tuesday 3 December –
 - 9am – 11am, Cannonvale Beach
 - 5pm – 7pm, Queens Beach in Bowen
- Wednesday 4 December -
 - 9am – 11am, Hydeaway Bay
 - 5pm – 7pm, Dingo Beach

Coastal experts with respected scientific backgrounds presented on storm surge and coastal erosion hazards (Katrina O'Malley-Jones from BTM), and insurance risk and adaptation challenges and opportunities (Donovan Burton from Climate Planning). The workshops were facilitated by WRC's Manager of Climate, Environment and Local Laws and attended by several other Council staff who work on the CHAS projects.

The workshops were structured with a clear agenda, however informal conversation and questions throughout the presentations were encouraged. It was marketed as a 'conversation' about coastal hazards to encourage participation and casual interaction. The facilitator and coastal experts were relaxed and informal in their presentation to emphasise this approach. As a result, there was genuine conversation about the issues and a range of opinions and feedback was expressed.



Queens Beach, Bowen



Cannonvale



Conway Beach



Dingo Beach



Hydeaway Bay



Wilsons Beach

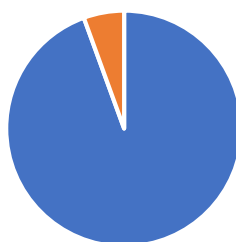
4. Overview of the Responses

There were 82 participants who attended the consultation sessions and a total of 54 surveys submitted from across each location. All survey feedback has been recorded in full in **Attachment A – Survey Responses**.

4.1 Demographics

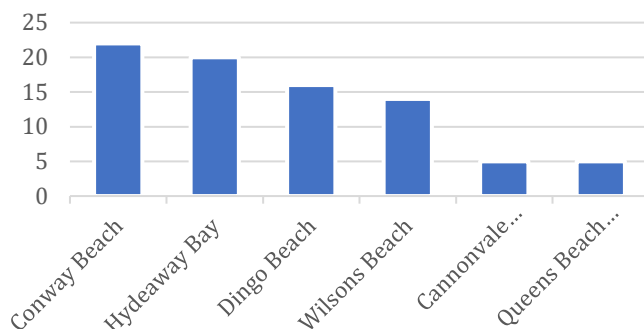
A clear majority of the participants are local residents of the location of the session they attended, as outlined in the below graph:

Are you a local resident?



■ Yes ■ No

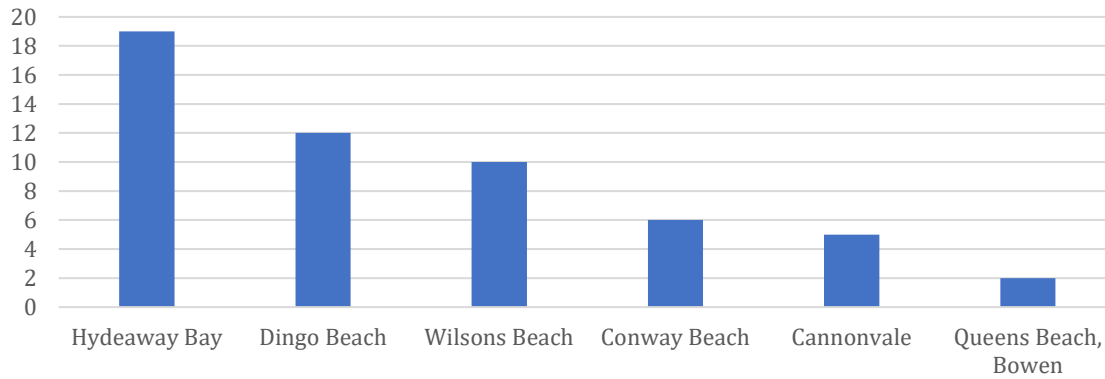
Number of Attendees



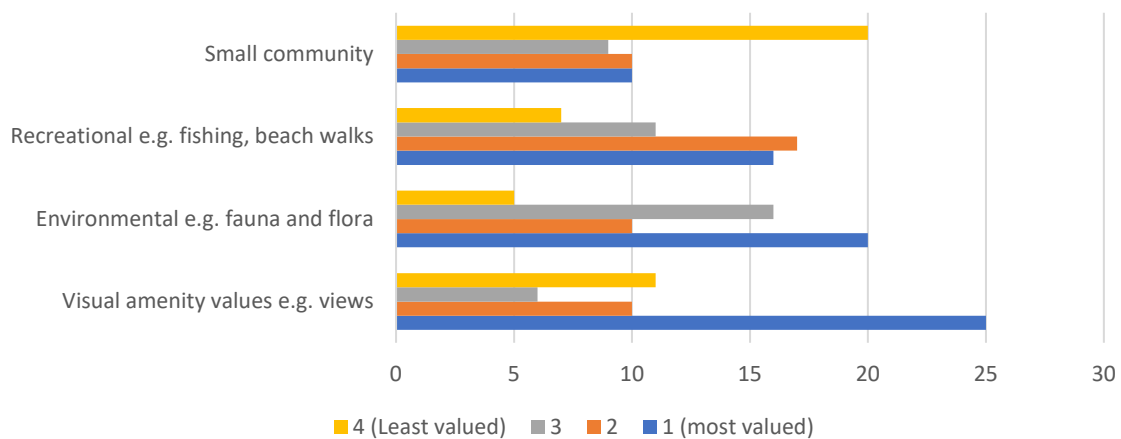
4.2 Analysis of responses

The following information was received via participant surveys during the consultation sessions. The data has been collated, recorded and analysed into graphs which are available in full in **Attachment B – Feedback Analysis**. The overall key results from this analysis are outlined below:

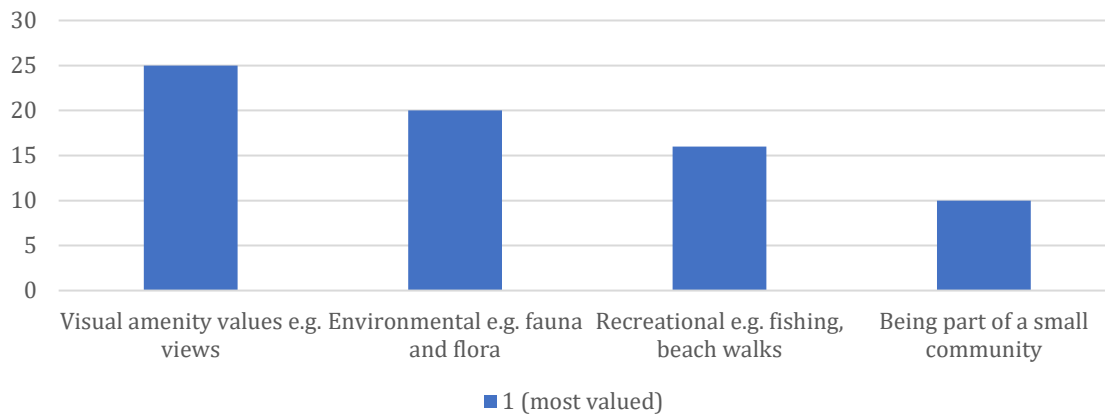
Number of surveys completed at each location



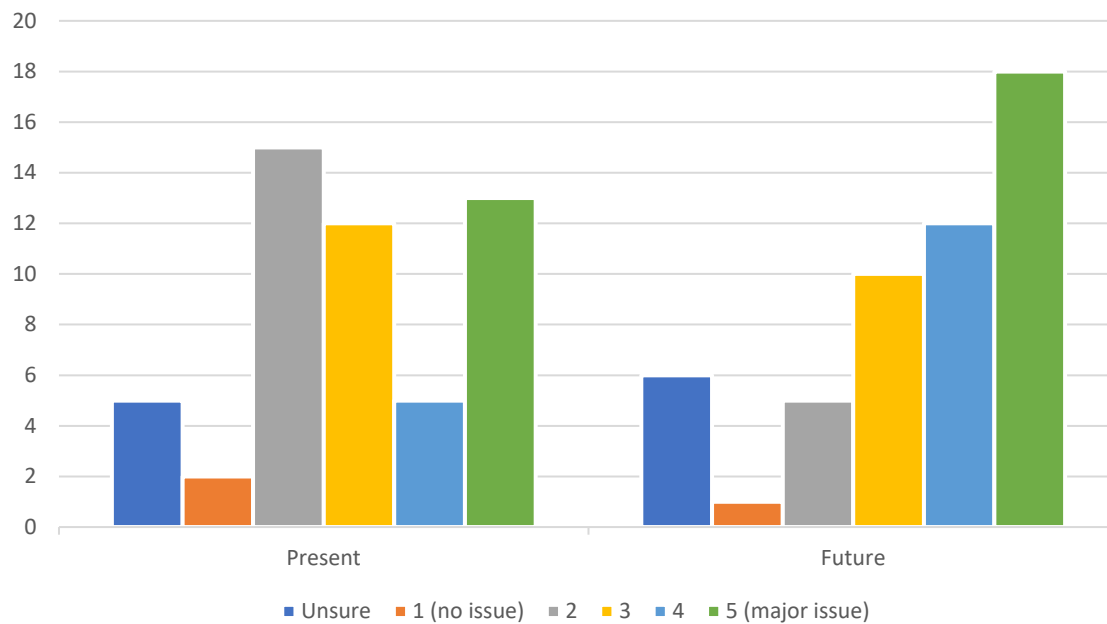
Q2 – What do you most value about the coastline in your area?



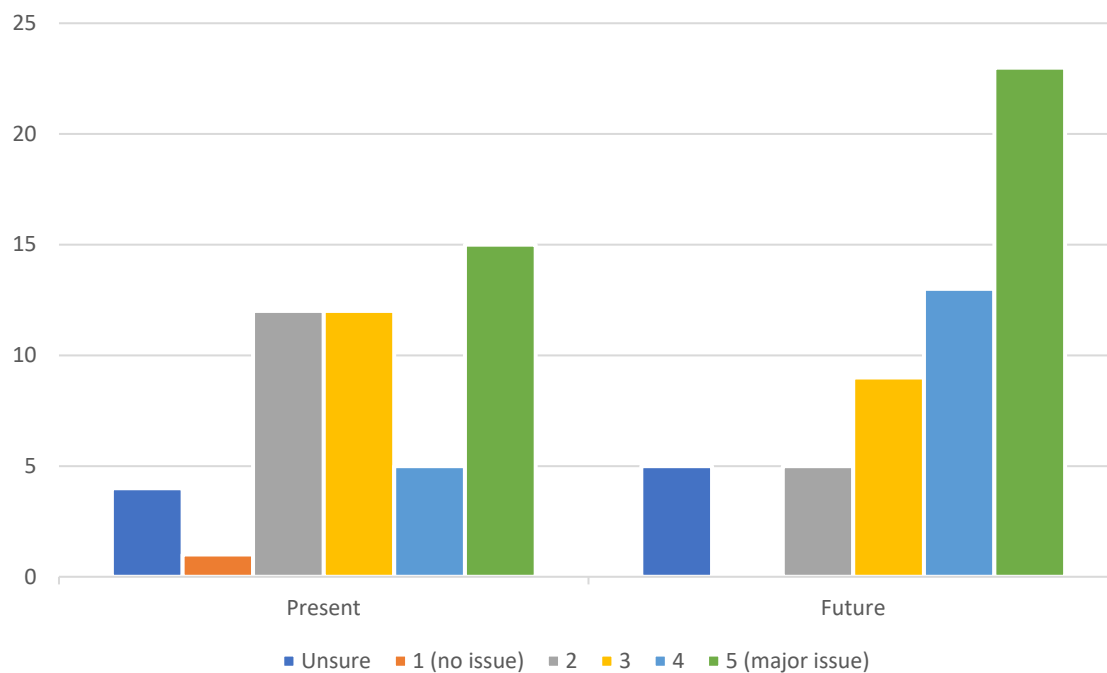
Most valued across all locations:



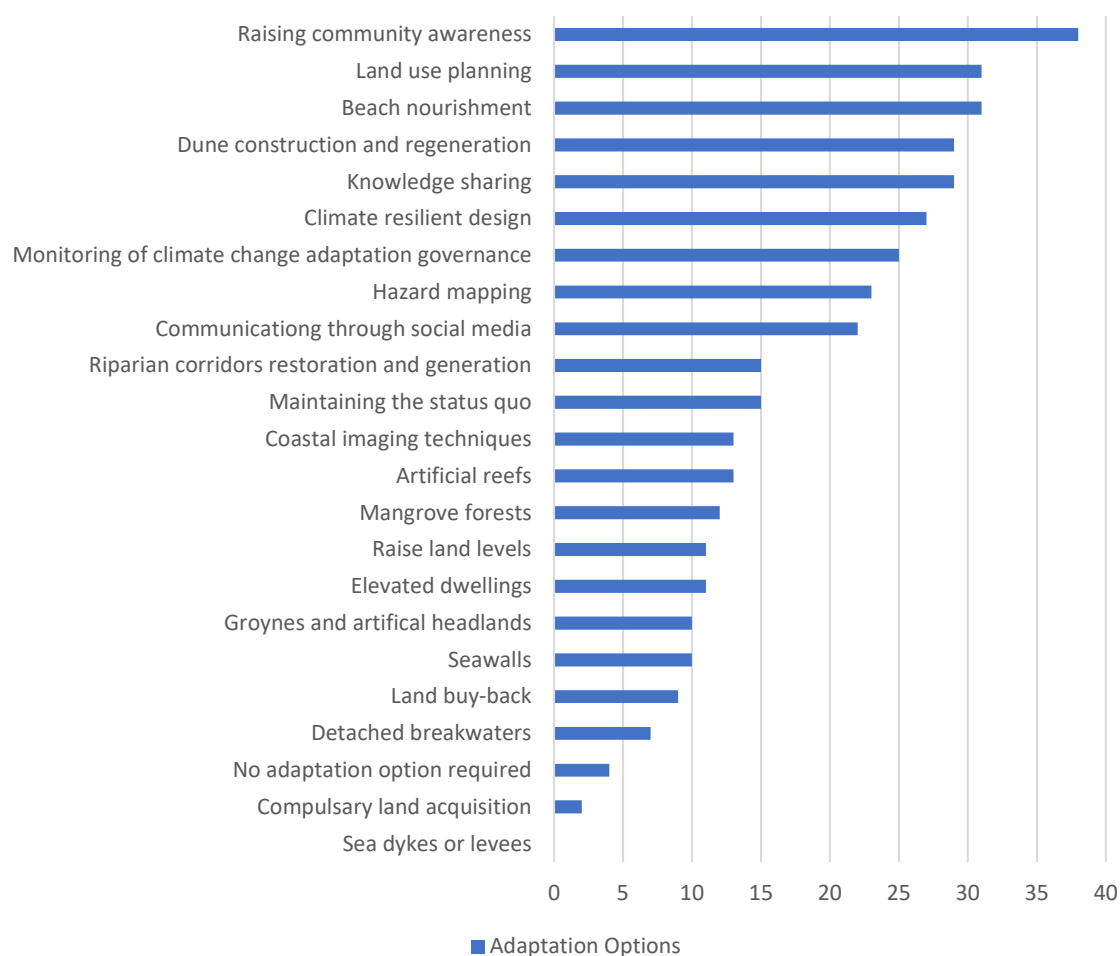
Q3 – How significant do you consider coastal erosion to be at your beach, now and in the future?



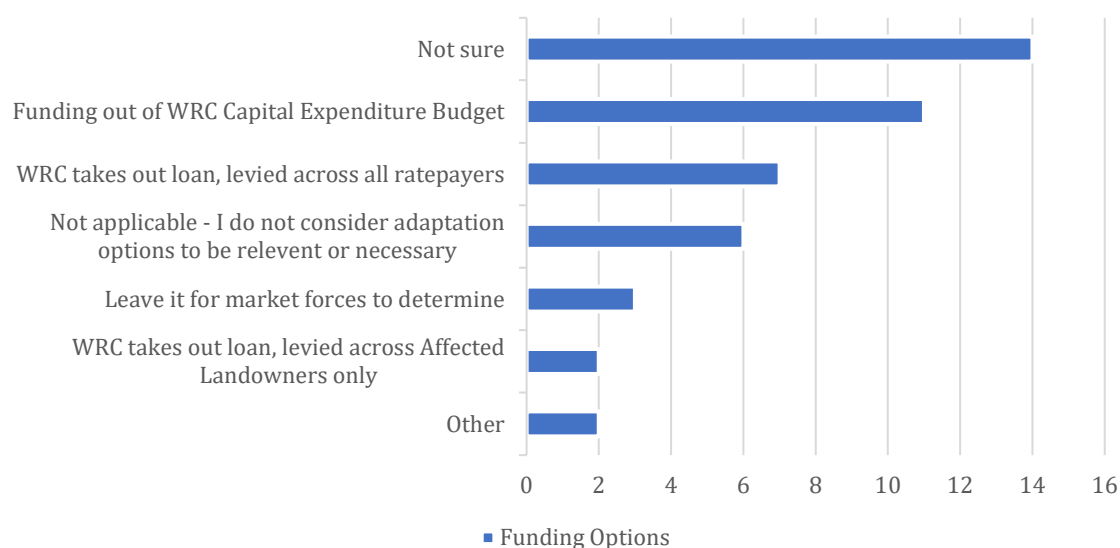
Q4 – How significant do you consider storm surge inundation to be for properties at your beach, now and in the future?



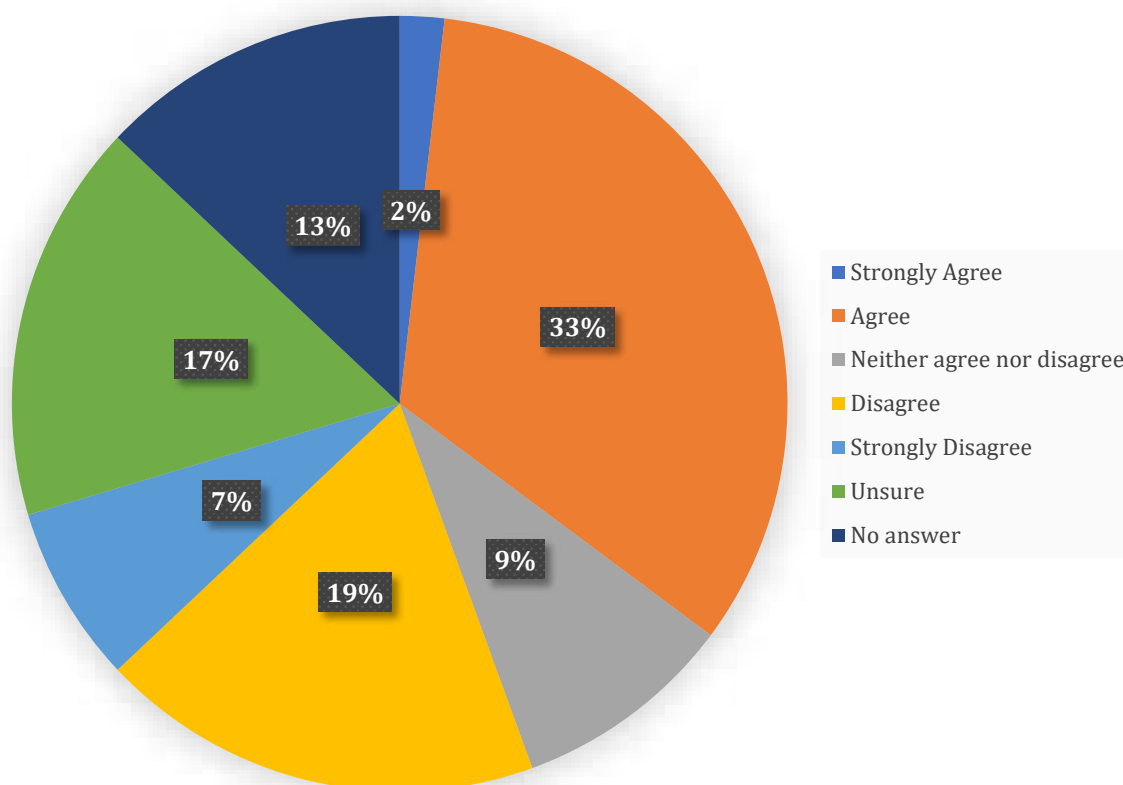
Q5 – What adaptation options would you like Council to consider?



Q6 – For the adaptation options selected above, what funding options do you think Council should consider?



Q7 – Should Council proceed with an adaptation option if the cost is greater than the value of the assets it protects?



5. Recommendations

The key results above show residents are concerned about the impacts of coastal erosion and storm surge, now and in the future. With regards to community values, visual amenity is the top value across all communities, however the location-specific results in **Attachment B** demonstrate there are differences between each location.

This is also true for the adaptation options in Question 5, as each location has different needs and therefore requires different adaptation options to address coastal hazards. 'Raising Community Awareness' was the most popular adaptation option overall, indicating that further information and education needs to take place prior to decision-making.

It is also recommended that further information and consultation around funding options is presented to affected residents, as there is a degree of uncertainty reflected in the results for Question 6.

The information in **Attachment B** shows key results based on each location and demonstrates the needs of each area are different. As a result, it is recommended that Council take a targeted approach to addressing coastal hazards across the region. To be most effective at addressing coastal hazard, Council needs to develop beach management plans which address the unique issues and strengths of each area.

It is recommended that further engagement and consultation take place with these residents to keep them updated on the status of the CHAS and any actions which result from the strategy, such as beach management plans. An ongoing engagement process through each stage of the CHAS development is recommended to keep residents aware and updated.

There were several comments made by consultation participants about how impressed they were with the consultation process and how they wanted more engagement with Council in general. Residents in small coastal towns would like more face-to-face meetings and information sessions, and more input into the decisions being made for their areas.

Further general education and awareness around coastal hazards and the impact of climate change is also recommended. This type of campaign could be marketed at all residents within the coastal areas of the Whitsunday region, encouraging residents to be informed about the potential impacts to their homes, businesses and public spaces in the future.

6. Next Steps

This report will be included in the CHAS reporting delivered to the Queensland Government and will be considered by Council during the future stages of the strategy.

The community insights recorded here will be an invaluable first step to developing coastal adaptation strategies which are both effective and supported by the affected residents.

It is important to close the loop with residents and show how their input has affected the outcome. A Consultation Summary infographic document will be prepared which will be released to the public and distributed via the website and social media. The Summary will show some of the key statistics and outcomes of the consultation process.

Council will continue to update the website and promote any further actions from the CHAS and will provide regular updates to the community. A contact database has now been created with the details of those who attended the consultation sessions in December 2019.

Attachment A: All Survey Responses

Workshop Location	Q1 Are you a local Cannonvale / Airlie resident?	Q2 What do you value most about Cannonvale Beach?	Q3 How significant do you consider coastal erosion to be for Cannonvale Beach? (out of 5)	Q4 How significant do you consider storm surge inundation to be for the residential properties in Cannonvale Beach? (out of 5)	Q5 Considering the potential coastal hazards identified at Cannonvale Beach, what adaptation option(s) would you like Council to consider further?	Q6 For the adaptation option(s) selected above, what funding options do you think Council should consider?	Q7 Should Council proceed with an adaptation option if the cost of the option is greater than the value of the assets it protects?	Q8 Do you have any other comments?
Cannonvale	Yes	1 - Environmental, 2 - Recreational values, 3 - Visual amenity, 4 - Small community	Present - 3, Future - 4	Present - 3, Future - 4	Beach nourishment, dune construction, riparian corridors, mangrove forests, artificial reefs, groynes, climate resilient design, monitoring climate change governance, land use planning, raising community awareness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through social media	Funding out of WRC Capital Expenditure Budget	Agree - Yes, because the cost benefit analysis does not equitably favour the environment (comment added)	Thank you for organising. Love to see these consultations set up as Facebook events and survey available online - just to reach more people if possible.
Cannonvale	Yes	1 - Environmental, 2 - Visual amenity, 3 - Small community, 4 - Recreational Values	Present - 2, Future - 5	Present - 3, Future - 5	Riparian corridors, mangrove forests, cliamte resilient design, monitoring climate change governance, land use planning, raising community awareness, hazard mapping Beach nourishment, riparian corridors, mangrove forests, cliamte resilient design, elevated dwellings, raise land levels, monitoring climate change governance, land use planning, land buy-back, compulsory land acquisition, raising community awareness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through social media	WRC to take out a loan to cover costs and this is levied across all ratepayers	Disagree - Do not proceed (comment added)	Priority 1 - maintain natural / environmental values and processes. Priority 2 - Any intervention should be accommodating over time as climate change impacts develop. No one silver bullet, will require a variety of interventions determined by the severity of impacts.
Cannonvale	Yes	3 - Environmental, 3 - Recreational values, 3 - small community, 4 - Visual amenity (did not rank correctly)	Present - 3, Future - 4	Present - 3, Future - 5	Riparian corridors, mangrove forests, artifical reefs, groynes, climate resilient design, elevated dwellings, raise land levels, monitoring climate change governance, maintaining status quo, land use planning, knowledge sharing, raising community awareness, hazard mapping, coastal imaging techniques, communicating through social media	Leave it to market forces to determine	Disagree	N/A
Cannonvale	Yes	1 - Environmental, 2 - Visual amenity, 3 - Small community, 4 - Recreational Values	Present - 3, Future - 4	Present - 3, Future - 5		N/A	Disagree	Plant more coast appropriate trees to help prevent minor erosion and give shade etc Properties next to the water already pay double the rates of those inland of the same size. Yet some will not raise in 50 - 80 years time regardless of action taken. Not fair to put levies on them. Cannonvale Beach is a recreational area for most of the community. Even cruise ship buses stop for a photo. Share costs. Powerlines along the affected areas should be re-routed and put underground too many outages already. Shade trees that have been removed over the years must be replanted ASAP so that their roots will help slow down the erosion. Part of Coral Esplanade will need to be re-routed to higher ground and Council should start to plan for this now. More shade trees for beauty and enjoyment.
Cannonvale	Yes	1 - Environmental, 2 - Visual amenity, 3 - Recreational Values, 4 - Small community	Present - 2, Future - 5	Present - 2, Future - 5	Beach nourishment, dune construction, riparian corridors, mangrove forests, artificial reefs, detached breakwaters, groynes, seawalls (comment - natural rock against sand/soil), climate resilient design, raise land levels (comment - for roads / access), monitoring climate change governance, land use planning, raising community awareness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through social media	WRC takes out a loan to cover the costs and this is levied across all ratepayers	Strongly disagree	

Conway Beach	Yes	1 - All items (not completed correctly)	Present - 5, Future - 5	Present - 5, Future - 5	Dune construction, groynes, seawalls, climate resilient design, monitoring of climate change governance, maintaining the status quo, land use planning, raising community awareness, knowledge sharing, do not consider any adaptation option to be a requirement	N/A	Unsure	N/A
Conway Beach	Yes	1 - All items (not completed correctly)	Present - 5, Future - 5	Present - 5, Future - 5	Beach nourishment, dune construction, seawalls, monitoring climate change governance, maintaining status quo, raising community awareness, knowledge sharing	Not sure	Agree	N/A
Conway Beach	Yes	1 - Recreational Values, 2 - Small community, 3 - Visual amenity, 4 - Environmental	Present - 3, Future - 3	Present - 5, Future - 5	Riparian corridors	Not sure	Agree	N/A
Conway Beach	Yes	3 - environmental, 3 - Recreational values, 4 - small community, 4 - Visual amenity (did not rank correctly)	Present - 2, Future - 2	Present - 2, Future - 3	Beach nourishment, seawalls, climate resilient design, maintaining the status quo, land use planning, knowledge sharing	Not applicable - I do not consider adaptation options to be relevant or necessary	Unsure	N/A
Conway Beach	Yes	1 - Environmental, 2 - Visual amenity, 3 - Recreational Values, 4 - Small community	Unsure	Unsure	N/A	WRC takes out a loan to cover the costs and this is levied to the land owners of the benefited area only	Agree	N/A
Conway Beach	Yes	4 - All items (did not rank correctly)	Present - 5, Future - 5	Present - 5, Future - 5	Beach nourishment, dune construction, seawalls, climate resilient design, monitoring climate change governance, maintaining status quo, raising community awareness, knowledge sharing, hazard mapping	Not sure	Unsure	Appreciate every and any steps taken to preserve our foreshore
Dingo Beach	Yes	1 - All items (not completed correctly)	Present - 5, Future - 5	Present - 5, Future - 5	Beach nourishment, dune construction, riparian corridors, mangrove forests, climate resilient design, raise land levels (comment - strengthen foreshores), monitoring climate change governance, land use planning, land buy-back, raising community awareness, knowledge sharing, hazard mapping, communication through social media	Funding out of WRC Capital Expenditure Budget (comment - Grants from State and Federal Government's this region is of national significance)	Strongly Agree (comment - The value of Dingo Beach region foreshore is priceless! The asset is beyond a \$ value!)	The most important issue is foreshore erosion throughout the region. We can minimise this by having a good and practical relationship with the WR Council and personnel. Regular meetings are encouraged between key WRC staff and local residents and ratepayers who know the region and its priorities. Eco education and strict maintenance of all WRC bylaws. We need more diligent Security and regular meetings with the security company. Our beaches and foreshore are unique and area is regional and national treasure! *WRC bylaws signs need to be discussed urgently. *More eco security should be provided by WRC. *Use the knowledge of the passionate locals. The general opinion of Elite Security's efforts is <u>very poor</u> . They are not giving our regions security enough time nor diligent patrolling. They need MARKED vehicles (sign written). I would like to discuss their contract values, times and routes with WRC ASAP. Murray Sandman, 0466 883 324, 13 Murex Street Nelly Bay, Dingo Beach 4800.
Dingo Beach	Yes	1 - Small community, 2 - recreational values, 3 - Environmental, 4 - Visual amenity	Present - 3, Future - 5	Present 3, Future - 5	Beach nourishment, dune construction, riparian corridors, mangrove forests, artificial reefs, detached breakwaters, raising community awareness, knowledge sharing, communicating through social media	N/A	Disagree	The WRC should look at other countries that have the same problem and see how they manage erosion e.g Samoa

Dingo Beach	Yes	1 - Environmental, 2 - Visual amenity, 3 - Recreational Values, 4 - Small community	Present - 5, Future - 5	Present - 5, Future - 5	Beach nourishment, climate resilient design, monitoring climate change governance, land use planning, raising community awareness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through social media	WRC takes out a loan to cover the costs and this is levied to the land owners of the benefited area only	Agree	Pathways. Plants indicative to this area. Trees. Restrict car access to foreshore. We used to have many turtles laying here at Dingo Beach but no more. It used to be a beautiful shady beach, now its (melanon?) beach. <u>Revegetate with endemic natives</u> . Restrict car access to our foreshore.
Dingo Beach	Yes	1 - Environmental, 2 - Small community, 3 - Recreational values, 4 - Visual amenity	Present - 2, Future - 4	Present - unsure, Future - 2	Dune construction, artifical reefs, climate resilient design, monitoring climate change governance, communicating through social media	WRC to take out a loan to cover costs and this is levied across all ratepayers	Agree	
Dingo Beach	Yes	1 - Visual amenity, 2 - Recreational Values, 3 - Environmental, 4 - Small community	Present - 3, Future - 4	Present - 2, Future - 3	Beach nourishment, dune construction, climate resilient design, maintaining status quo, land buy-back, raising community awareness	Funding out of WRC Capital Expenditure Budget	Neither agree nor disagree	Cape Gloucester area to Frog Rock needs bollards to prevent 4WE access and to allow us to revegetate beach dunes and foreshore
Dingo Beach	Yes	1 - Visual amenity, 2 - Environmental, 3 - Small community, 4 - Recreational values	Present - 3, Future - 5	Present - 3, Future - 5	Beach nourishment, climate resilient design, monitoring climate change governance, land use planning, land buy-back, raising community awareness, knowledge sharing, communicating through social media	Not sure	Neither agree nor disagree	More of these meetings
Dingo Beach	Yes	Yes to all (did not rank correctly)	Present - 5, Future - 4	Present - 3, Future - 4	Beach nourishment, dune construction, artifical reefs, detached breakwaters, raising awareness, knowledge sharing, hazard mapping, communication through social media	N/A	N/A	N/A
Dingo Beach	Yes	1 - Small community, 2 - recreational values, 3 - Environmental, 4 - Visual amenity	Present - 2, Future - 3	Present - 2, Future - 4	Beach nourishment, artificial reefs, climate resilient design, monitoring of climate change governance, land use planning, land buy-backs, compulsory land acquisition, raising community awareness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through social media	Not sure	Unsure	N/A
Dingo Beach	Yes	1 - Visual amenity (did not rank correctly)	Unsure	Present - 4, Future - 4	N/A	N/A	N/A	N/A
Dingo Beach	Yes	1 - Visual amenity, 2 - Recreational Values, 3 - Environmental, 4 - Small community	Unsure	Present - 3, Future - 4	Beach nourishment, dune construction, artifical reefs	Funding out of WRC Capital Expenditure Budget	Agree	N/A
Dingo Beach	No	1 - Environmental, 2 - Recreational values, 3 - Small community, 4 - Visual amenity	Present - 2, Future - 4	Present - 1, Future - 3	Dune construction, riparian corridors, mangrove forests, raising awareness, knowledge sharing, hazard mapping, coastal imaging techniques, communication through social media	WRC to take out a loan to cover costs and this is levied across all ratepayers	Agree	N/A
Dingo Beach	Yes	1 - Environmental, 2 - Recreational values, 3 - Small community, 4 - Visual amenity	Present - 3, Future - 4	Present - 2, Future - 4	Dune construction, riparian corridors, mangrove forests, climate resilient design, monitoring climate change governance, land use planning, raising awareness, knowledge sharing, hazard mapping, coastal imaging techniques, communication through social media	Funding out of WRC Capital Expenditure Budget	Agree	N/A
Hydeaway Bay	Yes	1 - Environmental, 2 - Recreational Values, 4 - Small community	Present - 2, Future - 2	Present - 4, Future - 4	Dune construction, raising community awareness	Other - get local residents to participate	Disagree	N/A
Hydeaway Bay	Yes	1 - All items (not completed correctly)	Unsure	Unsure	N/A	N/A	N/A	I would love to see a bike/walking track all the way around to Dingo Beach. & would like to see the crown land looked after better etc lawns mowed. Also there is a path from the road to beach that I would love to see made a little more accessible.

Hydeaway Bay	Yes	1 - Recreational values, 2 - visual amenity, 3 - Environmental, 4 - Small community	Present - 1, Future - 2	Present - 2, Future - 3	Beach nourishment, dune construction, climate resilient design, monitoring climate change governance, land use planning, raising community awareness, knowledge sharing Beach nourishment, climate resilient design, elevated dwellings, maintaining the status quo, raising community awareness, knowledge sharing, communication through social media	Not sure	Unsure	Section of foreshore has not been cleaned up and is a fire risk. Need another beach access track towards northern end of Gloucester.
Hydeaway Bay	Yes	1 - Visual amenity, 2 - Environmental, 3 - Small community, 4 - Recreational values 1 - Small community, 2 - recreational values, 3 - Environmental, 4 - Visual amenity	Present - 2, Future - 4	Present - 2, Future - 4		Funding out of WRC Capital Expenditure Budget	Neither agree nor disagree	N/A
Hydeaway Bay	Yes	1 - Visual amenity, 2 - Environmental, 3 - Small community, 4 - Recreational values	Present - 2, Future - 2	Present - 2, Future - 2	Beach nourishment, artificial reefs, raise land levels, hazard mapping Dune construction, artificial reefs, elevated dwellings, maintaining the status quo, land use planning, do not consider any adaptation options	N/A	Neither agree nor disagree	N/A
Hydeaway Bay	Yes	1 - Visual amenity, 2 - Environmental, 3 - Small community, 4 - Recreational values	Present - 1, Future - 1	Present - 2, Future - 2		Not applicable - I do not consider adaptation options to be relevant or necessary	Strongly disagree	N/A
Hydeaway Bay	Yes	1 - Visual amenity, 1 - Recreational values (did not complete correctly)	Present - 5, Future - 5	Present 5, Future - 5	Dune construction and revegetation	Not sure	Unsure	Would like a bike path from Dingo to Frog Rock
Hydeaway Bay	Yes	1 - Recreational values, 2 - visual amenity, 3 - Environmental, 4 - Small community 1 - Visual amenity, 1 - Recreational values, 1 - Environmental, 2 - Small community (did not complete correctly)	Unsure	Unsure	Beach nourishment, dune construction, land use planning, land buy-back, raising community awareness, communicating through social media	Not sure	Disagree	Bike track Hydeaway to Dingo, link two communities
Hydeaway Bay	Yes	1 - Visual amenity, 2 - Recreational Values, 3 - Environmental, 4 - Small community	Present - 3, Future - 4	Present - 3, Future - 4	Climate resilient design, monitoring climate change governance, land use planning, raising community awareness, knowledge sharing, hazard mapping, coastal imaging techniques	Not applicable - I do not consider adaptation options to be relevant or necessary	Strongly disagree	N/A
Hydeaway Bay	Yes		Present - 2, Future - 3	Present - 3, Future - 4	Dune construction, land use planning, raising community awareness	N/A	N/A	N/A
Hydeaway Bay	Yes	1 - visual amenity, 2 - environmental, 3 - Recreational values, 4 - Small community	N/A	N/A	Do not consider any adaptation option to be a requirement Climate resilient design, elevated dwellings, monitoring climate change governance, land use planning, raising community awareness	Not applicable - I do not consider adaptation options to be relevant or necessary	N/A	The main problem would be people driving on the beach which is happening - they do major damage and if we tell them it's against the law in Queensland we risk them trying to run over us, which happened quite recently. The here and now - erosion from vehicles on the beach - google map showing roads between A.B and Dingo Beach where tourists end up driving on the land end of the beach Council should consider a walkway / cycle path on Council sea frontage between Dingo to Gloucester with more public facilities - toilets / block access to motor vehicles entering the beach / BBQ's and shelters
Hydeaway Bay	Yes	1 - visual amenity, 2 - small community, 3 - recreational values, 4 - Environmental	Present - 5, Future - 5	Present 5, Future - 5		Not sure	Disagree	
Hydeaway Bay	Yes	1 - visual amenity, 2 - small community, 3 - recreational values, 4 - Environmental	No issue	No issue	Do not consider any adaptation option to be a requirement (comment added - beach is protected by the reef to a certain extent) Beach nourishment, dune construction, riparian corridors, elevated dwellings, monitoring climate change governance, land use planning, raising community awareness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through social media	Not applicable - I do not consider adaptation options to be relevant or necessary	Strongly disagree	
Hydeaway Bay	Yes	1 - Visual amenity, 2 - Recreational Values, 3 - Environmental, 4 - Small community	Present - 2, Future - 3	Present - 3, Future - 4	Climate resilient design, monitoring climate change governance, land use planning, raising community awareness	Funding out of WRC Capital Expenditure Budget	Disagree	N/A
Hydeaway Bay	Yes	1 - Visual amenity (not completed correctly)	Present - 5, Future - 5	Present 5, Future - 5	Climate resilient design, monitoring climate change governance, land use planning, raising community awareness	Other - State and Federal Grants	N/A	N/A

Hydeaway Bay	Yes	1 - Visual amenity, 2 - Recreational Values, 3 - Environmental, 4 - Small community	Present - 3, Future - 4	Present - 2, Future - 3	Beach nourishment, dune construction, maintaining the status quo, land use planning, raising community awareness, knowledge sharing, communicating through social media	Leave it to market forces to determine	Disagree	N/A
Hydeaway Bay	Yes	1 - Recreational, 2 - Environmental, 3 - Visual amenity, 4 - small community	Present - 2, Future - 3	Present - 2, Future - 3	Dune construction, artificial reefs, climate resilient design, monitoring climate change governance, land use planning, raising community awareness	Funding out of WRC Capital Expenditure Budget	Agree	N/A
Hydeaway Bay	Yes	1 - visual amenity, 2 - environmental, 3 - recreational, 4 - small community	Present - 2, Future - 2	Present - 2, Future - 4	Beach nourishment, climate resilient design, monitoring climate change governance, land use planning, raising community awareness	Not applicable - I do not consider adaptation options to be relevant or necessary	Disagree	Excellent presentation. We will never need a sea wall. We need more walking paths safe for the elderly. We need a boardwalk from Hydeaway Bay to Dingo Beach. (RE Q6 - Tough question - we don't have that many services to be reduced.) Thank you for the opportunity to gain knowledge of available adoptions to manage risks. Community consultation is essential in this process. I wish that all residents could hear the messages in our small community. Vehicles on the beach are an ongoing problem in keeping dunes and keeping existing vegetation. Also people with camps and fires on the foreshore/ beach. Restrict access to beach please.
Hydeaway Bay	No - Dingo Beach	1 - Recreational values, 2 - visual amenity, 3 - small community, 4 - environmental	Present - 2, Future - 3	Present - 3, Future - 4	Beach nourishment, artifical reefs, groynes, climate resilient design, monitoring climate change governance, land use planning, raising community awareness, knowledge sharing, hazard mapping	Funding out of WRC Capital Expenditure Budget	Agree	I would like to see the beach endure in it's current form for manuy years. I think it is important that any effortd to protect it are as low - key as possible. I would like to see the current ratios of trees to open areas maintained - not heavily planted.
Queens Beach, Bowen	Yes	1- Environmnetal values, 2- Recreational values, 3- Visual amenity values, 4- Small community	Present- 2, Future- 3	Present- 2, Future-3	Riparian corridors restoration and generation, mangrove forests, groynes and artificial headlands, climate resiliant design, monitoring of climate change adaptation governance, raising community awarness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through social media.	Not sure	N/A	
Queens Beach, Bowen	Yes	1 - Environmental 2- Recreational values	Present- 3, Future-5	Present-4. Future- Unsure	Beach nourishment, dune construction and regneration, detached breakwaters, seawalls, elevated dwellings, raise land levels, maintaining the status quo, limited development, raising community awarness, knowledge sharing, hazard mapping.	Not sure	Neither agree nor disagree	N/A
Wilsons Beach	Yes	1- Visual amenity. 1- Environmental value, 1- Rcreational values, 1- Small community	Present- 4, Future- 4	Present- 5, Future- 5	Beach nourishment, dune reconstruction and regneration, detached breakwaters, groynes and artificial headlands, seawalls, raise land levels, maintaing the status quo, land use planning, hazard mapping	Not sure	Agree	Reconstruct the enclosure for all residents as well as visitors. Provide swing options for children. Croc warning signs large not small. 2 near miss at wilsons.
Wilsons Beach	Yes	1- Visual amenity. 1- Environmental value, 1- Rcreational values, 1- Small community	Present- 4, Future- 3	Present- 4, Future- 5		WRC takes out a loan to cover the costs and this is levied across all ratepayers.	Agree	We have lots of visitors from the south. We have a top beach we must have a swimming place and a small boat ramp. Lots of fishing for visitors. Large croc signs at beaches and top boat ramp.
Wilsons Beach	Yes	2- Visual amenity values, 2- Environmental, 2- Recreational values, 2-Small community	Present- 4, Future- 5	Present- 4, Future- 5	Beach nourishment, dune reconstruction and regneration, detached breawaters, seawalls, elevated dwellings, raise land levels, maintaing the status quo, limited development, raising community awarness, knowledge sharing, hazard mapping	Not sure	Agree	Swimming enclosures for residents and visitors. Large croc sign at wilson beach and boat ramp plus on top of beach. Safety first. Not signs that you cant read. Plus safety first at proserpine river ramp. Kids in water, legs overside of edge of the pontoon. Whitsundays has sharks. next croc in prossy river will be bad for visitors. next will be croc at ramps. Large crocs stay at ramps.

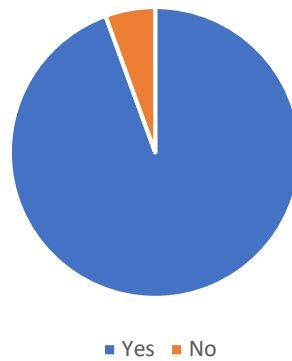
Wilsons Beach	Yes	1- Recreational values, 2- Small community, 3- Environmental values, 3- Visual amenity values.	Present- 5, Future- 5	Present- 5, Future- 5	Beach nourishment, dune reconstruction and regeneration, riparian corridors restoration and generation, mangrove forests, seawalls (low impact only), elevated dwellings, land swap, land buy-back, raising community awarness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through social media.	Funding out of WRC Vcapital Expenditure budget (this may reduce the services Council can provide, and all ratepayers contribute to cover the costs of coastal adaptation options)	Agree	WRC takes out a loan to cover the costs and this is levied across all ratepayers - only if neccessart depending on the cost. WRC chase grants to cover the costs. I believe the whole broader whitsunday community benefiets from the beach not just the ommunity.
Wilsons Beach	Yes	1- Recreational values, 2- Small community, 3- Environmental, 4- Visual amenity values.	Present- 5, Future- 5	Present- 5, Future- 5	Dune reconstruction, riparian corridors restoration and generation, mangrove forests, seawalls (low impact only), elevated dwellings, raise land levels, maintaing the status quo, land swap, land buy - back, raising community awarness, knowledge sharing, hazard mapping, communicating through social media	Funding out of WRC Capital Expenditure budget (this may reduce the services Council can provide, and all ratepayers contribute to cover the costs of coastal adaption options)	Unsure	WRC takes out loan to cover the costs and this is levied across al ratepayers.
Wilsons Beach	No	1- Recreational values, 1- Visual amenity values, 1- Environmental, 4- Small community	Present- 3, Future- 3/4	Present- 2, Future- 3	Beach nourishment, dune reconstruction and regneration, riparian corridors restoration and regneration, monitoring of climate change adaption governance, maintaing the status quo (with imporvemnets when needed and available), development setbacks, limited development, land buy - back, knowledge sharing (real surge info for other affected communities)	WRC takes out a loan to cover the costs and this is levied across all ratepayers	Agree	Family - Weekend visits (Ratepayer 1989 - now) Own blocks now. Lived and raised children here born - late teens. Commercial fisherman
Wilsons Beach	Yes	1- Recreational values, 2- Small community, 3- Visual amenity values, 4- Environmental	Present- 4, Future- 4	Present- 5, Future- 5	Beach nourishment, Dune construction and regeneration, groynes and artifical headlands, climiate resilient design, elevated dwellings, raise lad levels, land use planning, raising community awarness, knowledge sharing, hazard mapping, coastal imaging techniques, communicating through socail media.	WRC takes out a loan to cover the costs and this is levied across all ratepayers	Agree	N/A
Wilsons Beach	Yes	1- Small community, 2- Recreational value, 3- Environmental, 4- Visual amenity values	Present- 5, Future- 5	Present- 5, Future- 5	Beach nourishment, groynes and artifical headlands, climiate resilient design, monitoring of climate change adaption governance, limited developing, raisingcommunity awarness, knowledge sharing	Not sure	Unsure	Many thanks for this meeting. Would have been larger attendance if late PM rather than AM as most residents have work commitments.
Wilsons Beach	Yes	1- Visual amenity, 2- Environmental, 2- Recreational values, 2- Small community	Present- 5, Future- 5	Present- 5, Future- 5	Dune construction and regeneration, raise land levels, maintaing the status quo, limited development, knowledge sharing	Leave it for market forces to determine	Agree	
Wilsons Beach	Yes	1- Visual amenity values, 2- Small community, 3- Environmental, 4- Recreational values	Prsent- 3, Future- Unsure	Present- 3, Future- Unsure	N/A	Not sure	Unsure	

Attachment B - Feedback Analysis

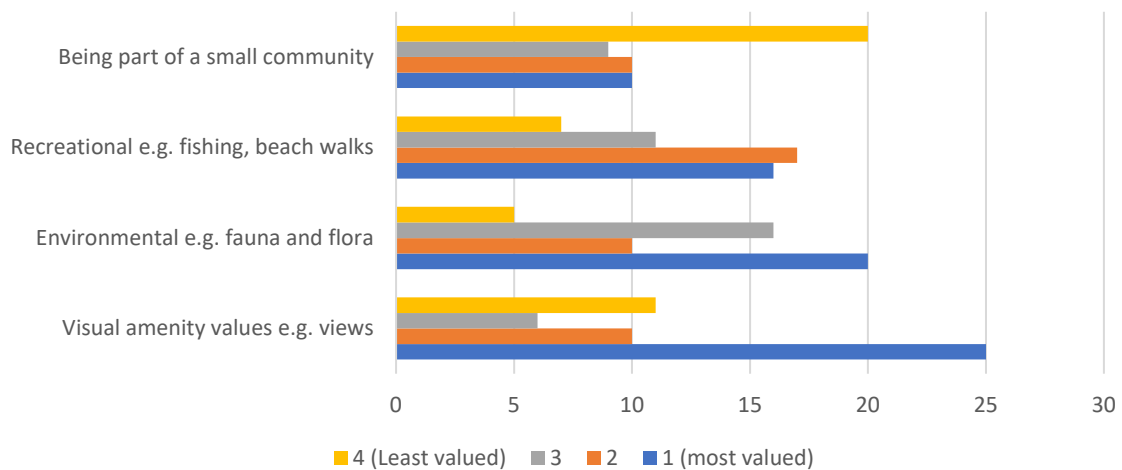
OVERALL RESULTS

Q1 – Are you a local resident?

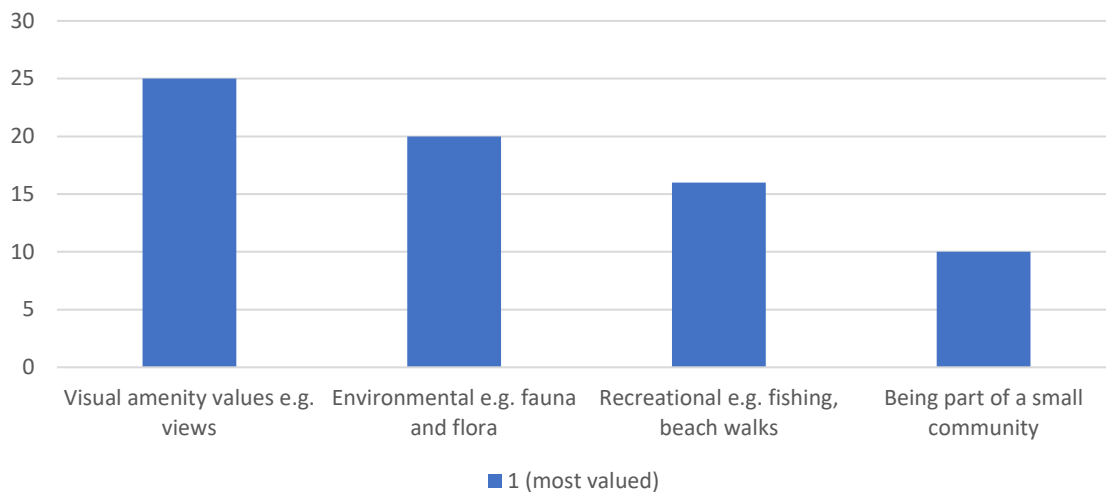
Are you a local resident?



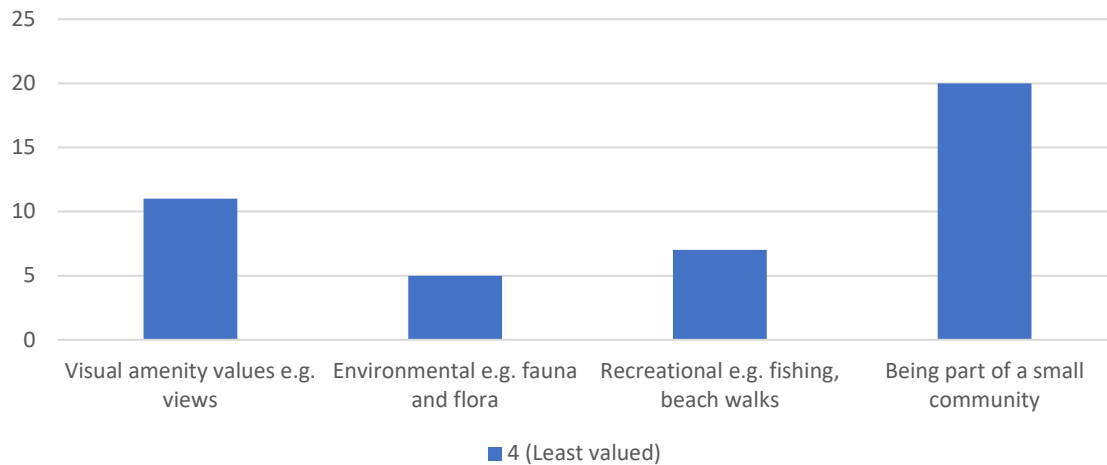
Q2 – What do you most value about the coastline in your area?



Most valued overall in all locations:

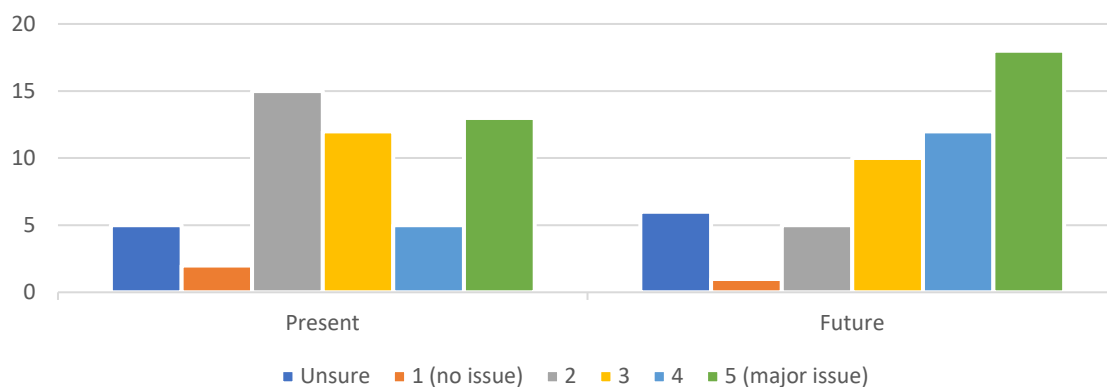


Least valued overall in all locations:



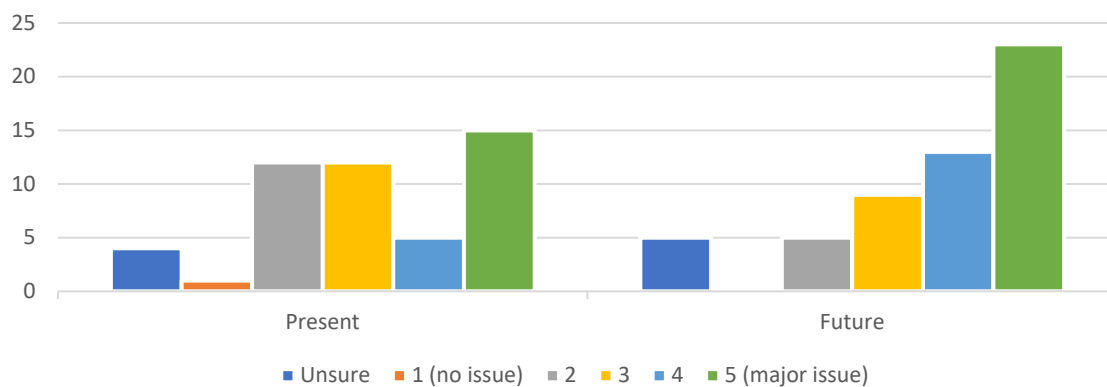
Q3 - How significant do you consider coastal erosion to be at your beach, now and in the future?

How significant is coastal erosion for your beach?

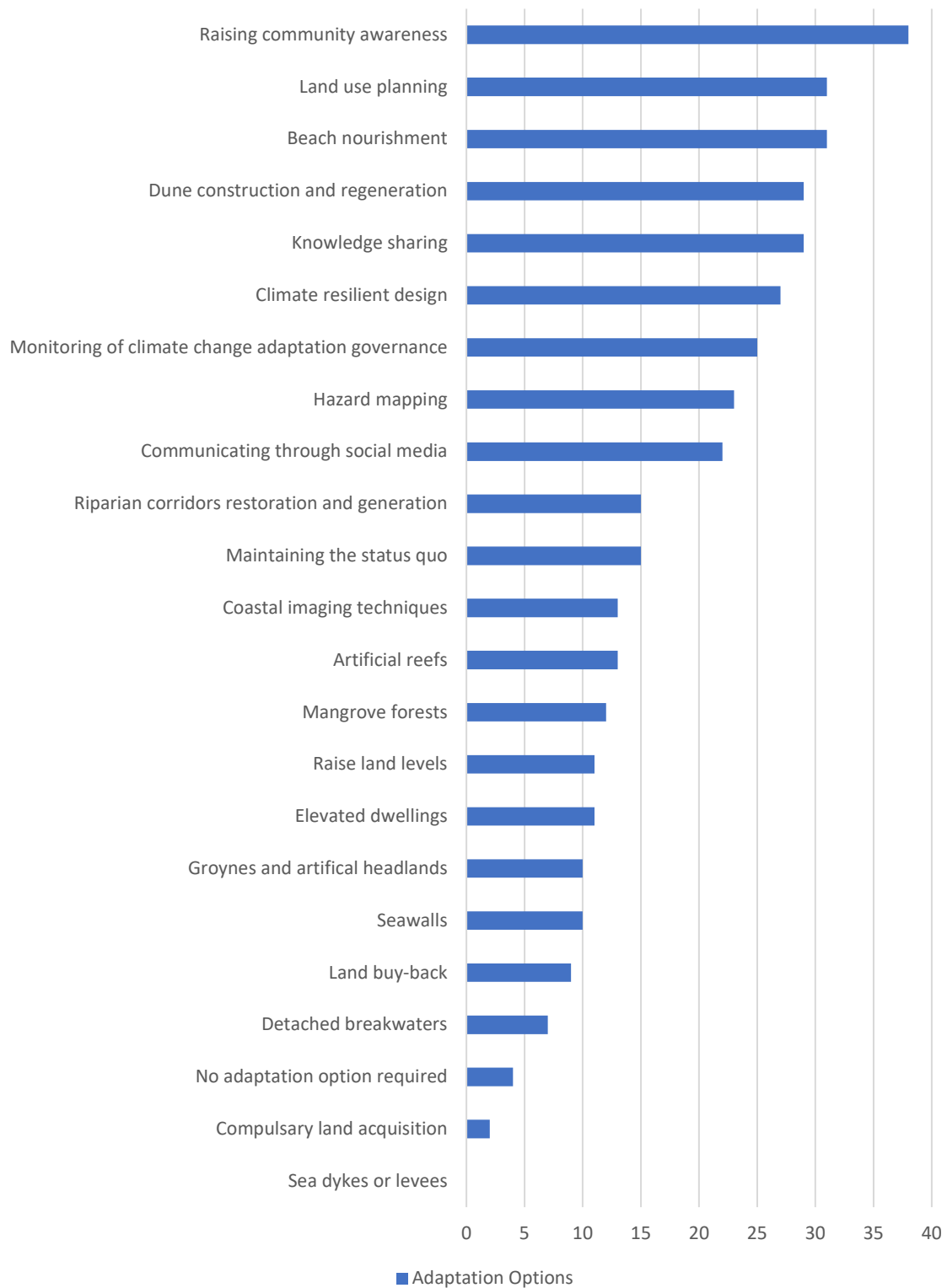


Q4 – How significant do you consider storm surge inundation to be for properties at your beach, now and in the future?

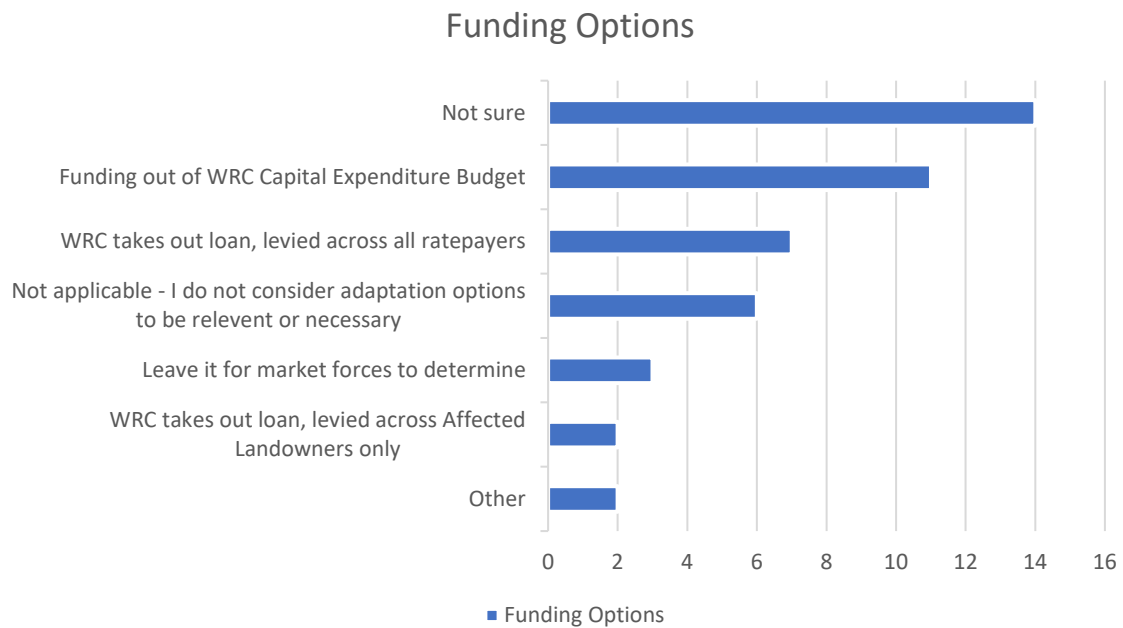
How significant is storm surge for your beach?



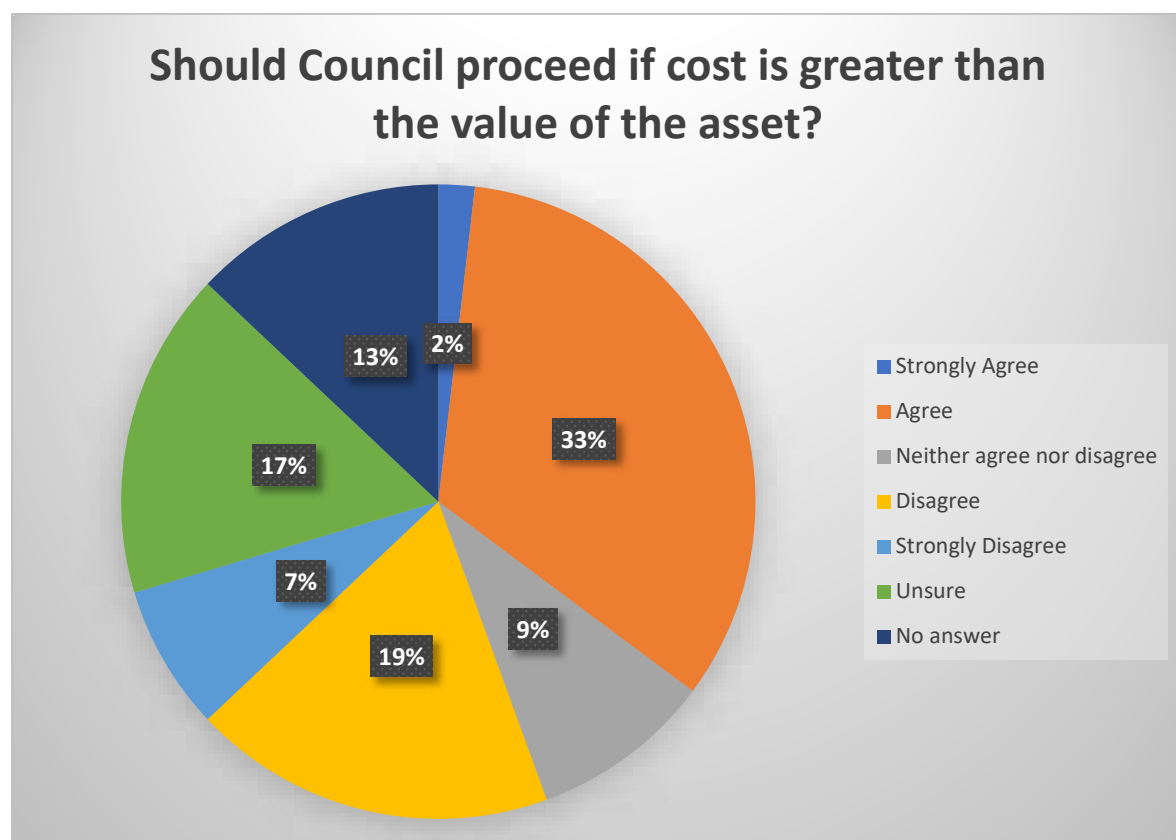
Q5 – What adaptation options would you like Council to consider?



Q6 – For the adaptation options selected above, what funding options do you think Council should consider?

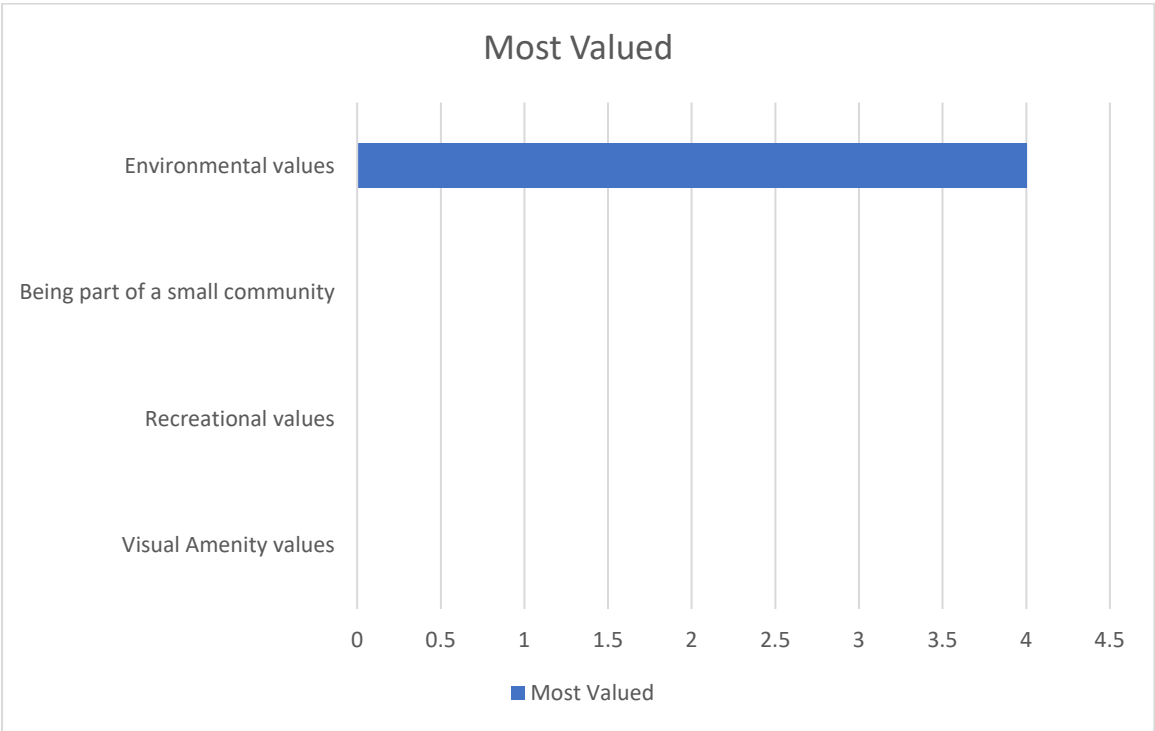
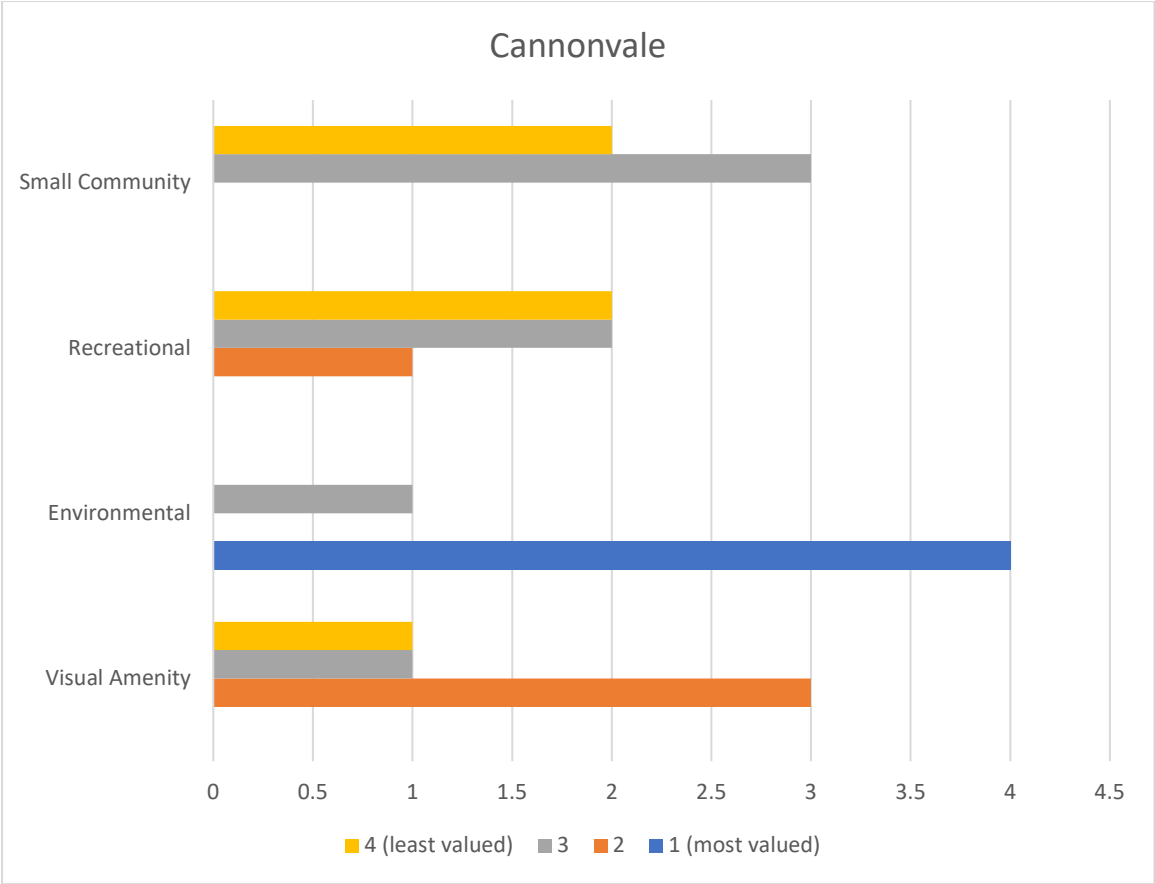


Q7 – Should Council proceed with an adaptation option if the cost is greater than the value of the assets it protects?

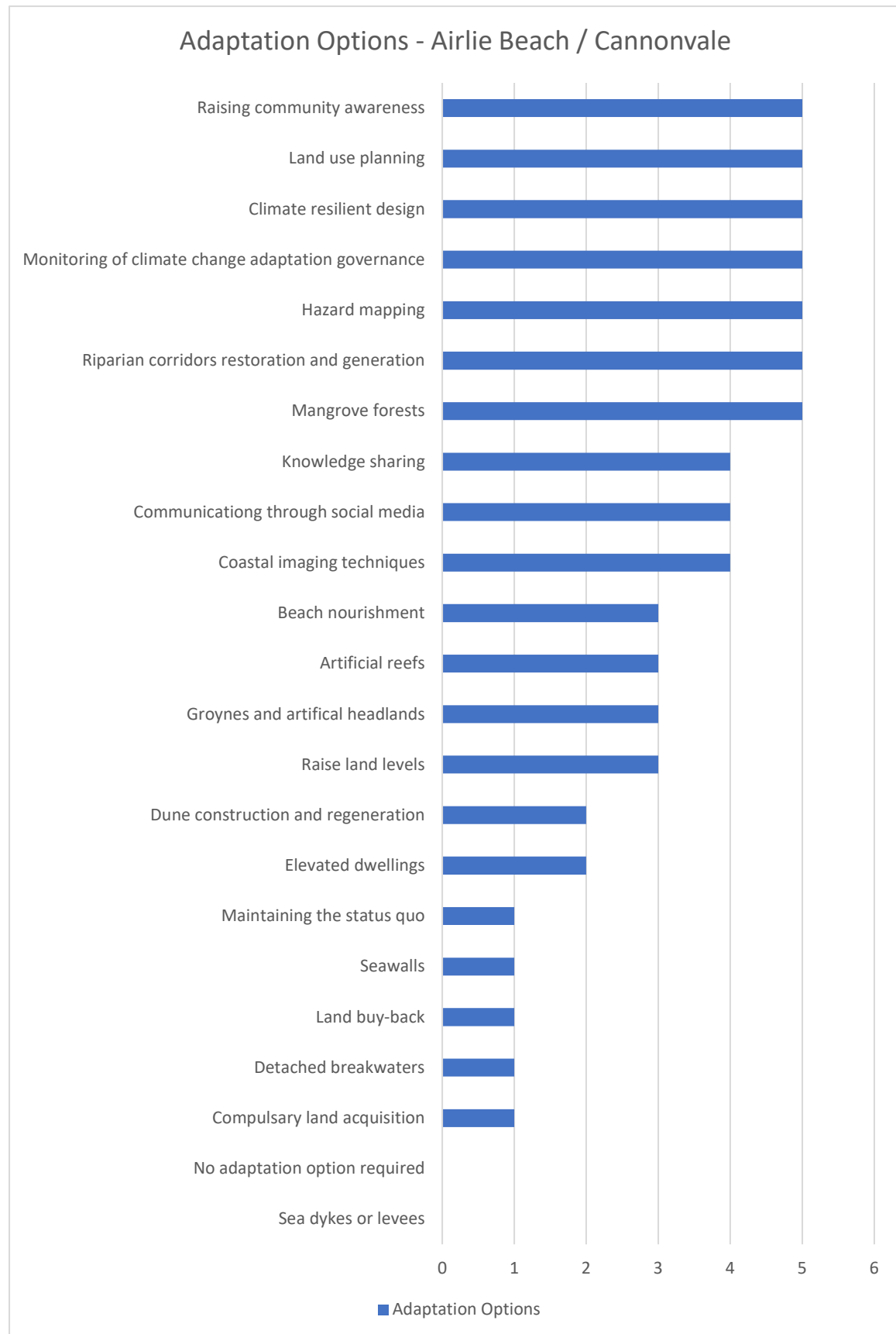


CANNONVALE

Q2 – What do you value most about Cannonvale Beach?

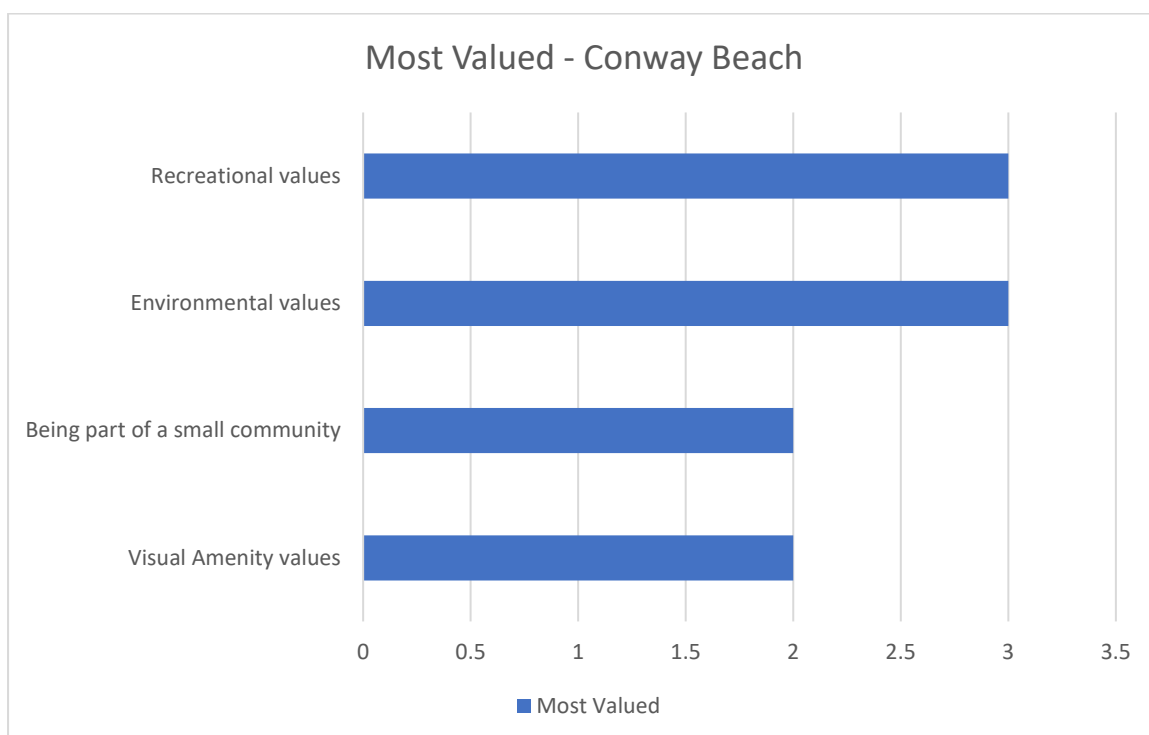
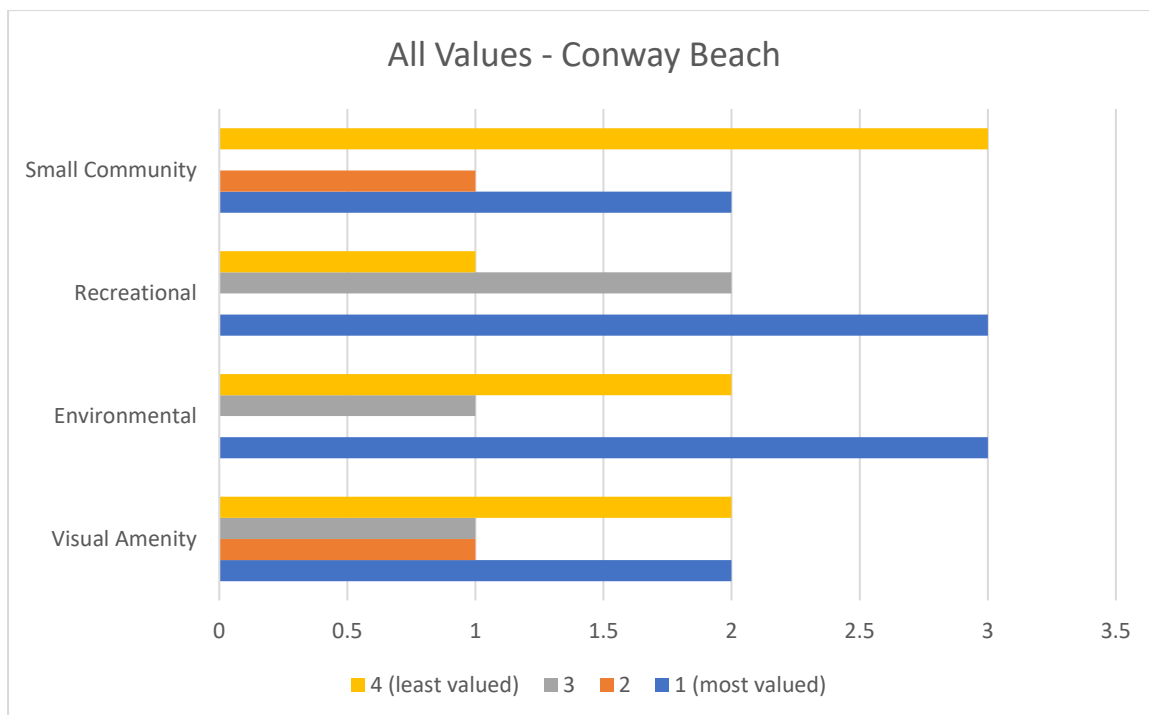


Q5 – What adaptation options would you like Council to consider (for Airlie Beach / Cannonvale)?

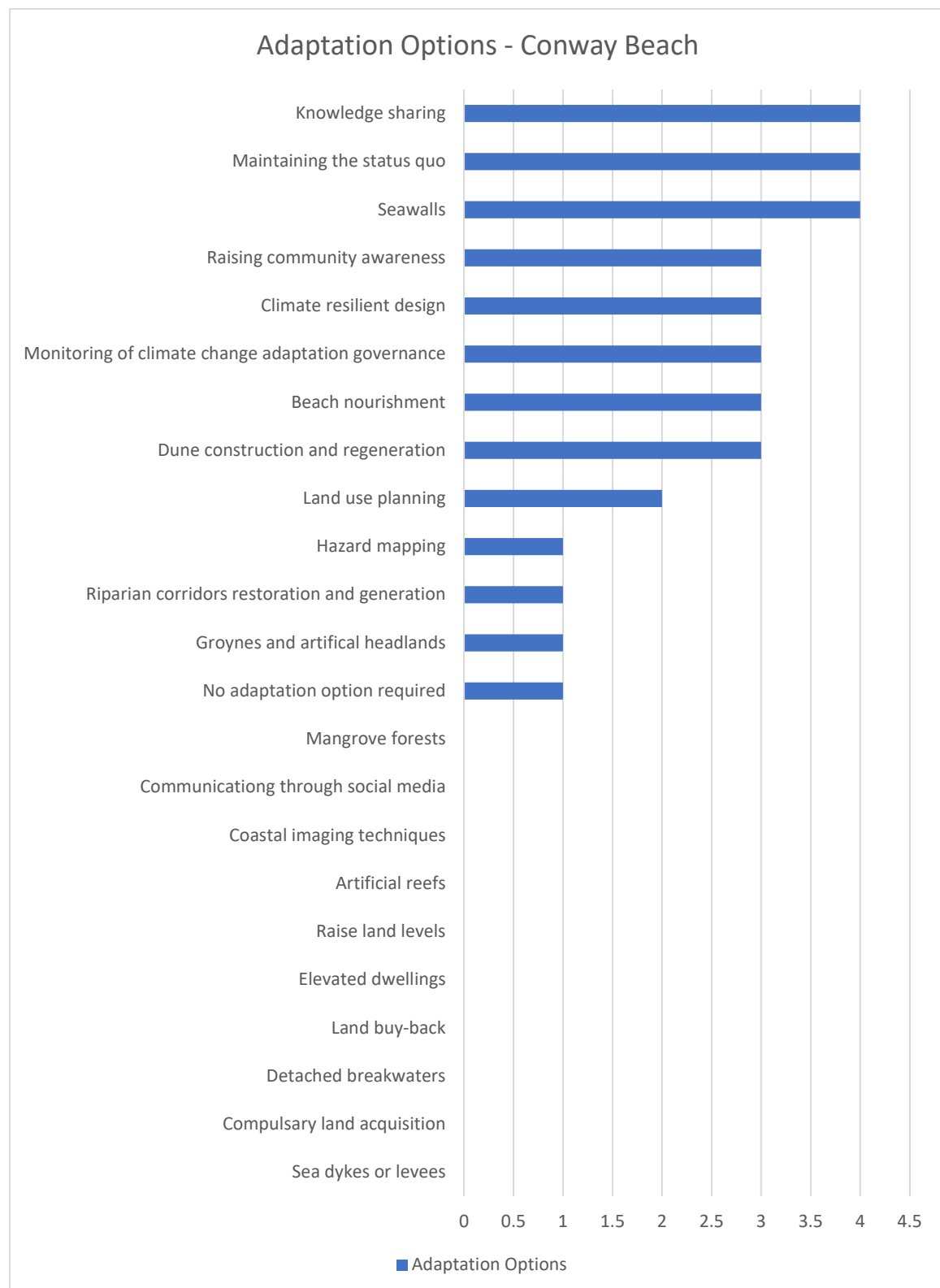


CONWAY BEACH

Q2 – What do you value most about Conway Beach?

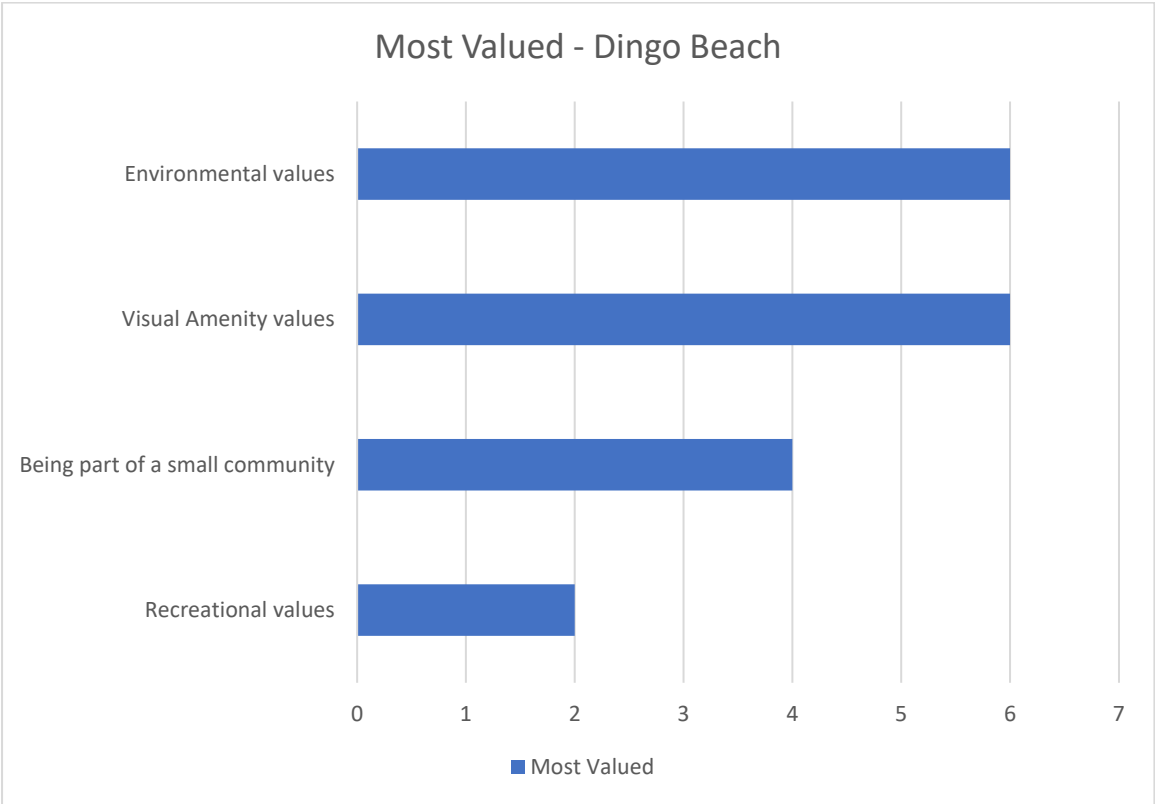
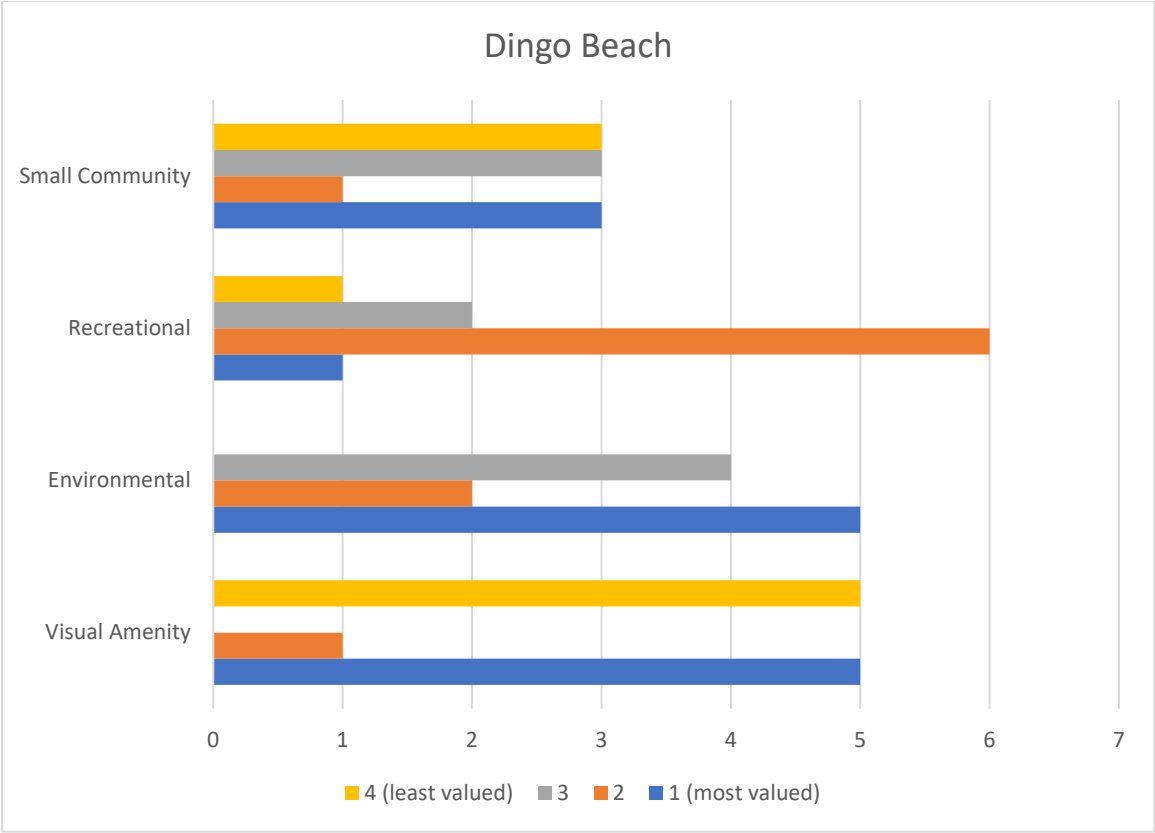


Q5 – What adaptation options would you like Council to consider (for Conway Beach)?

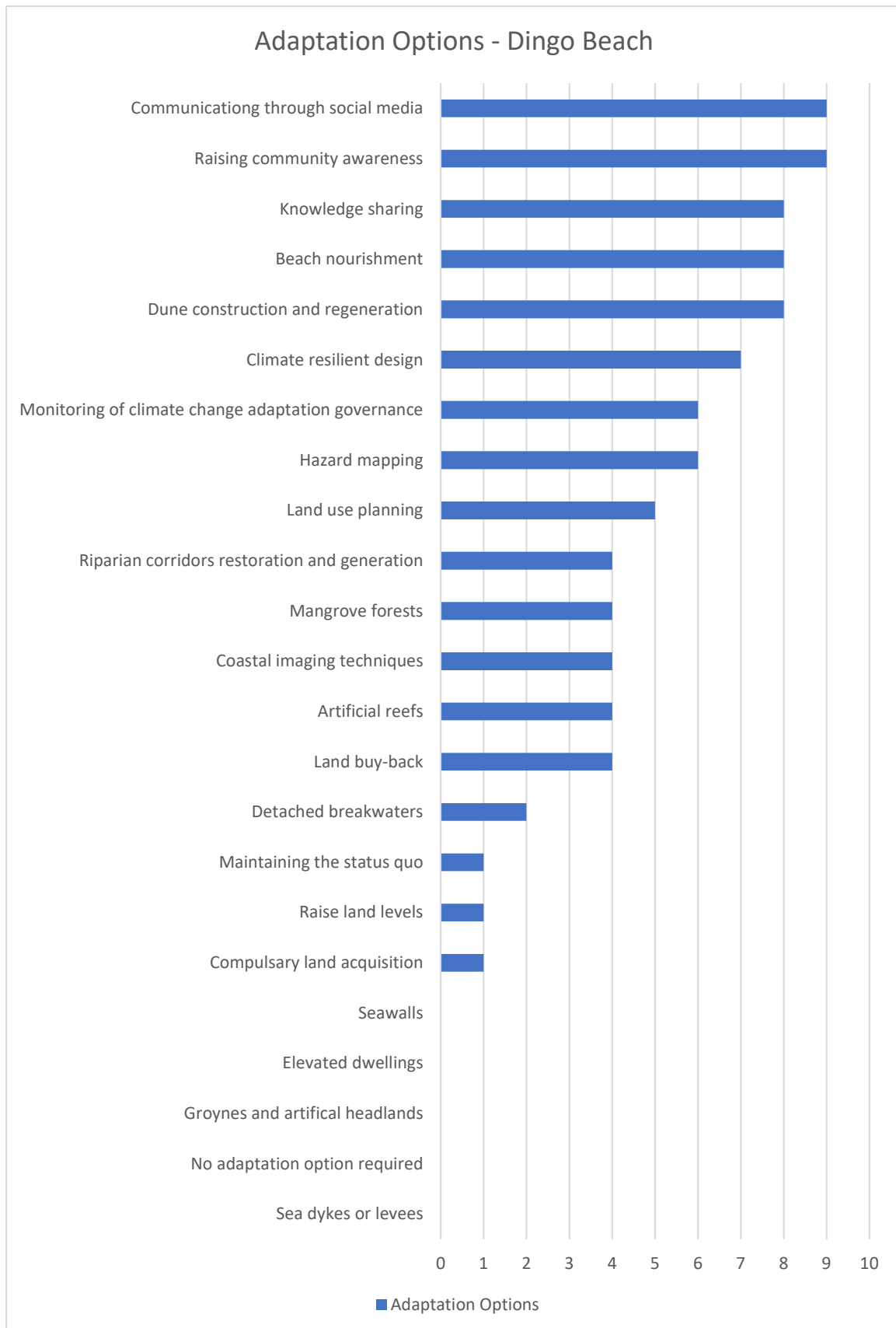


DINGO BEACH

Q2 – What do you value most about Dingo Beach?

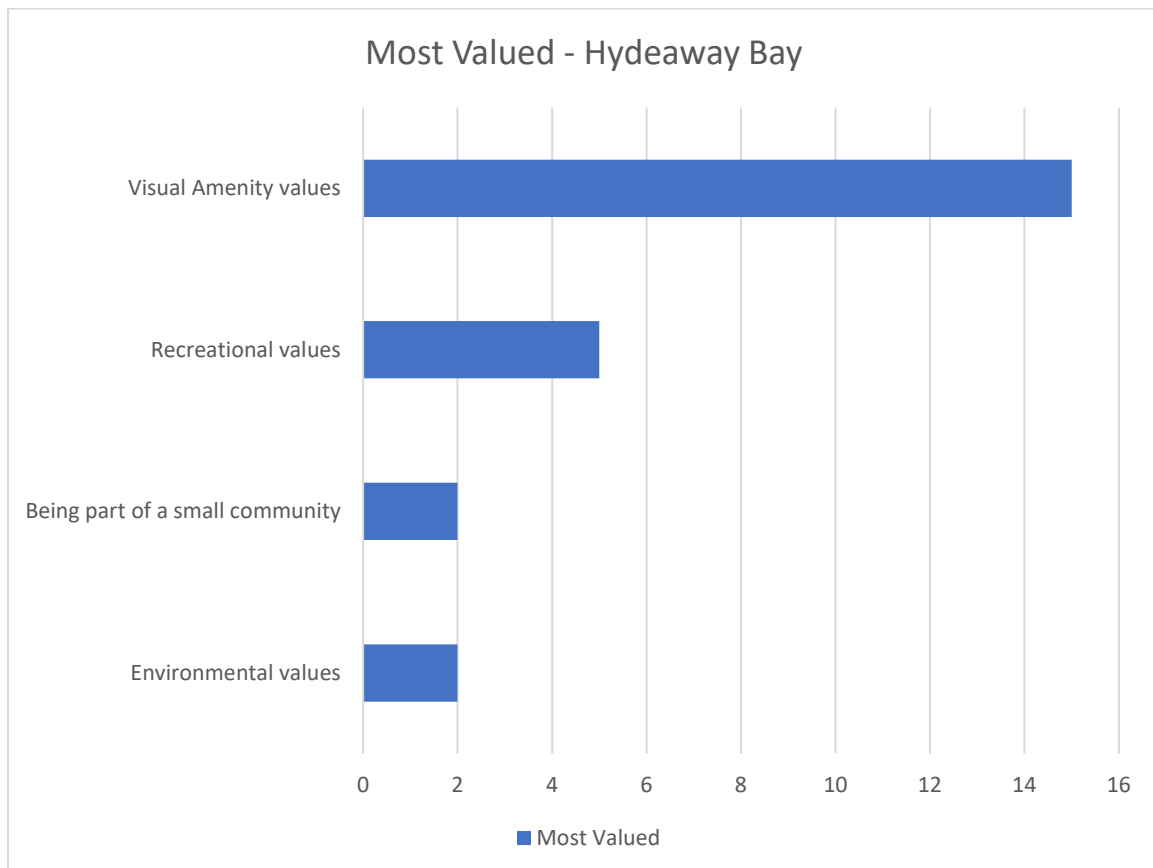
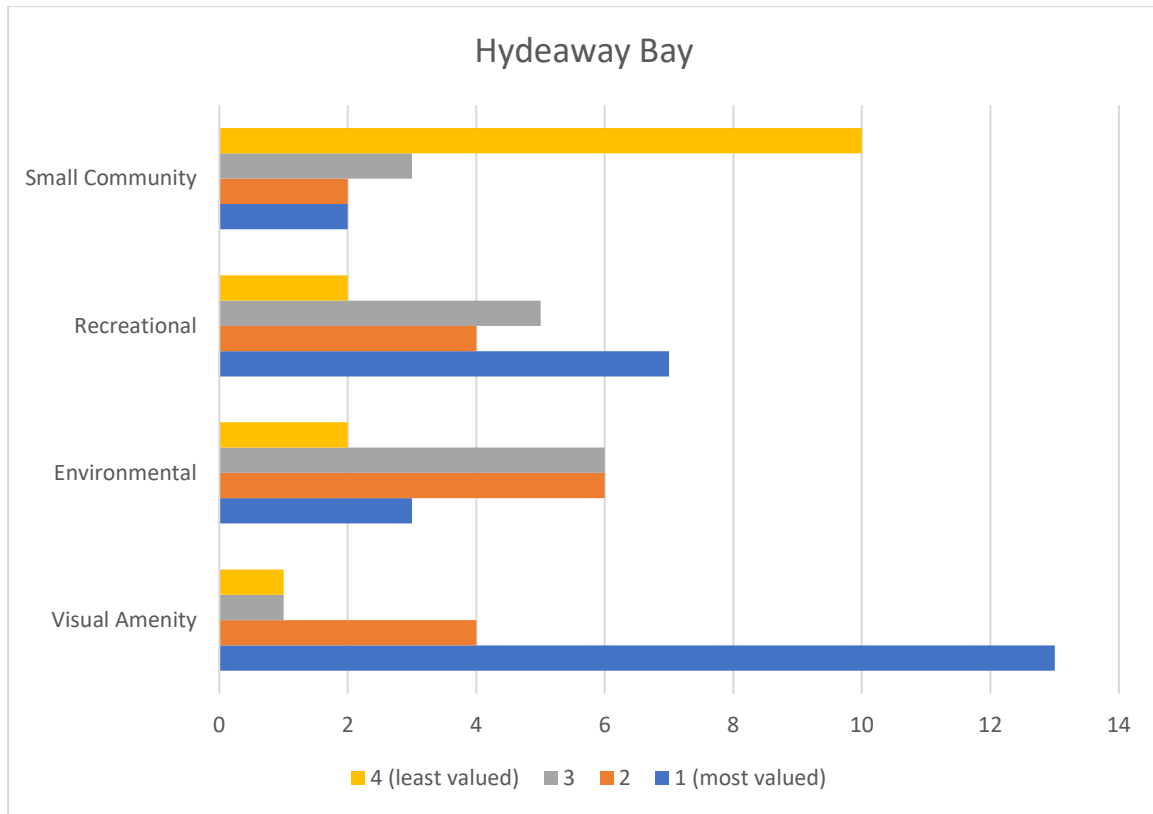


Q5 – What adaptation options would you like Council to consider (for Dingo Beach)?

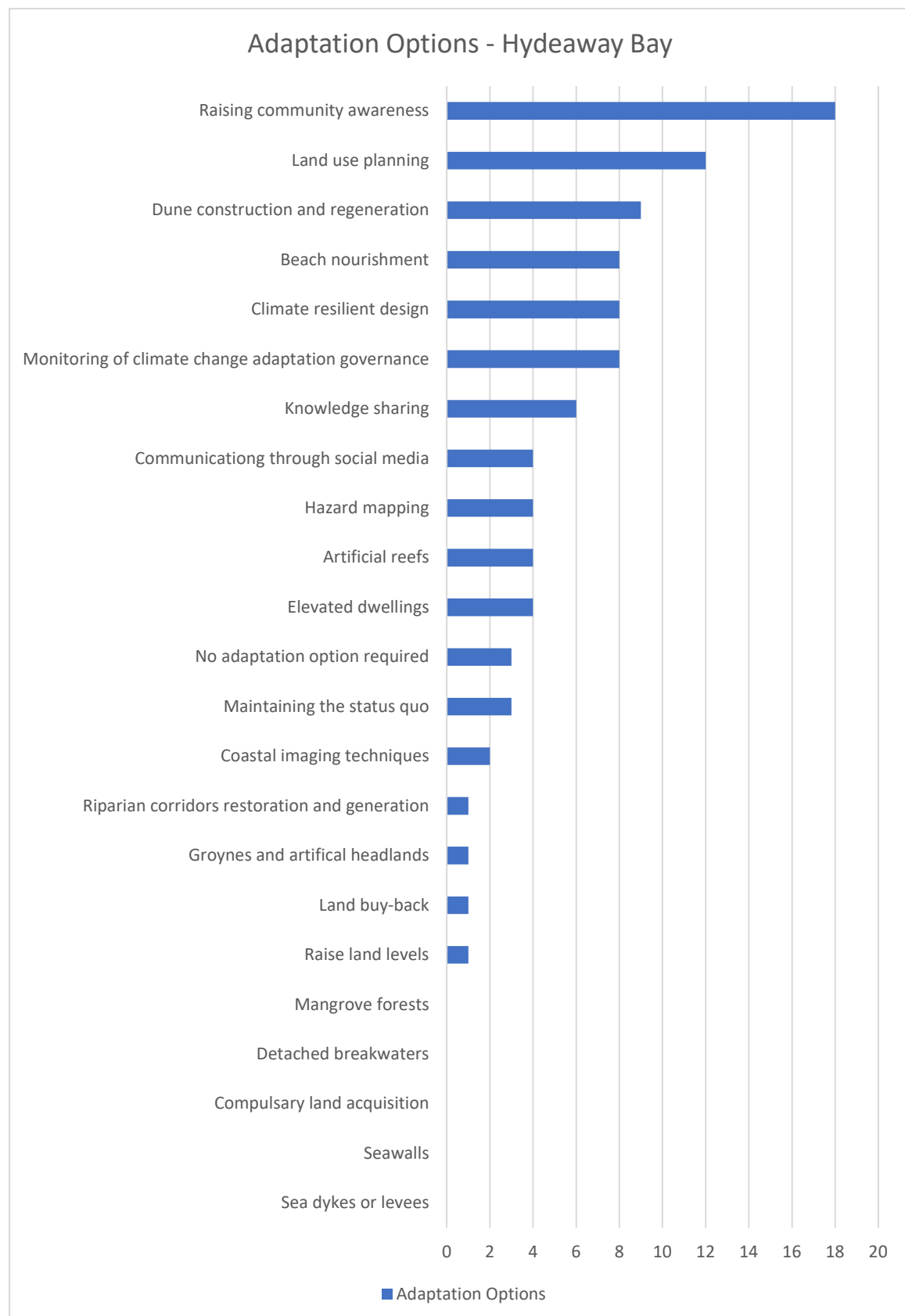


HYDEAWAY BAY

Q2 - What do you value most about Hydeaway Bay?

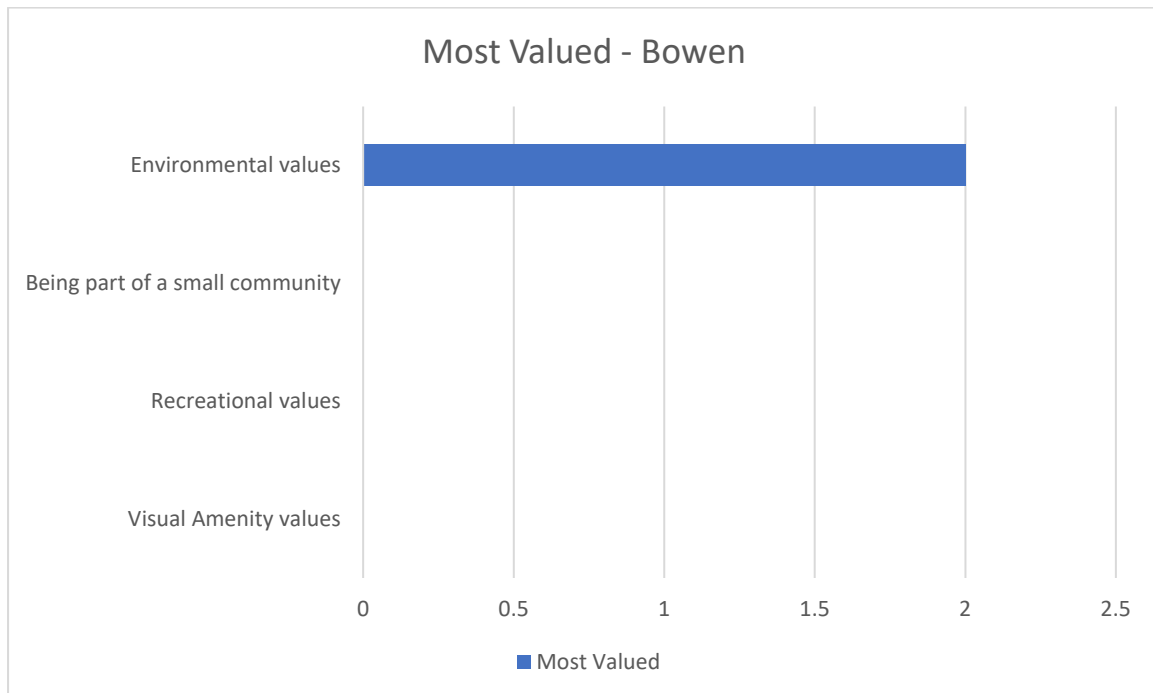
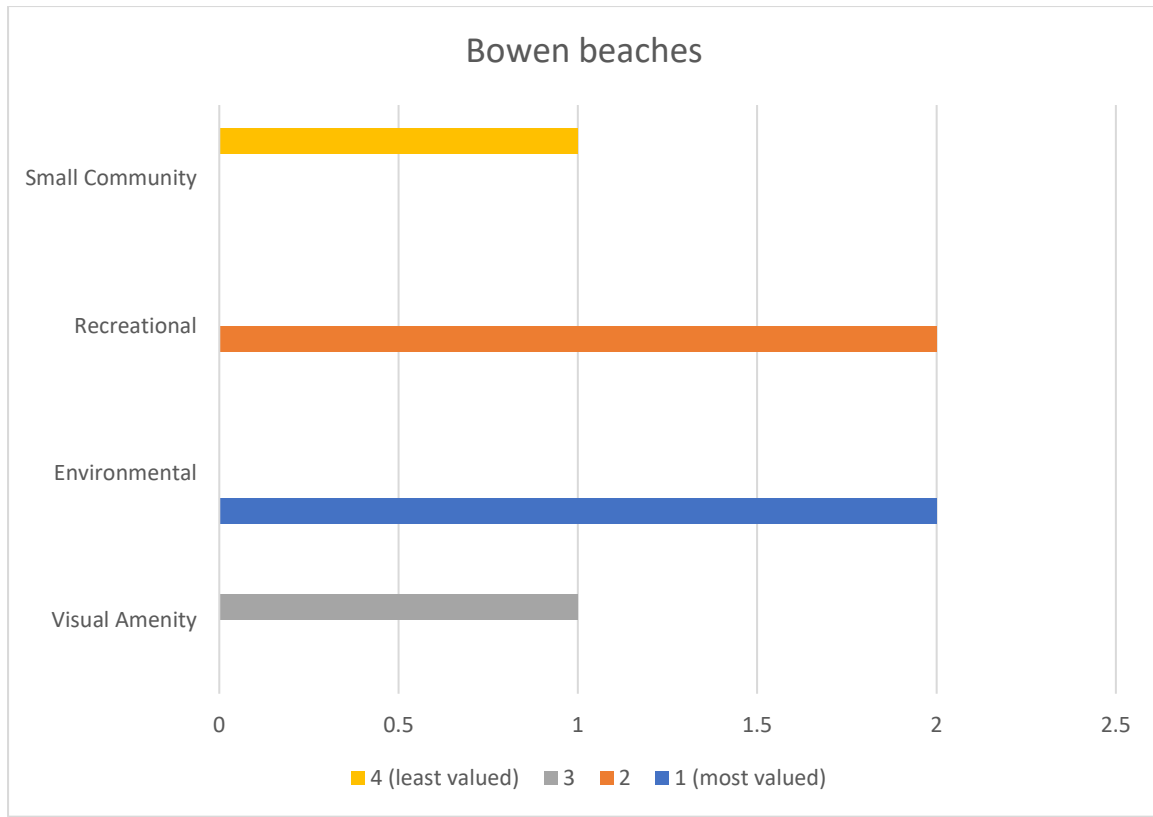


Q5 – What adaptation options would you like Council to consider (for Hydeaway Bay)?

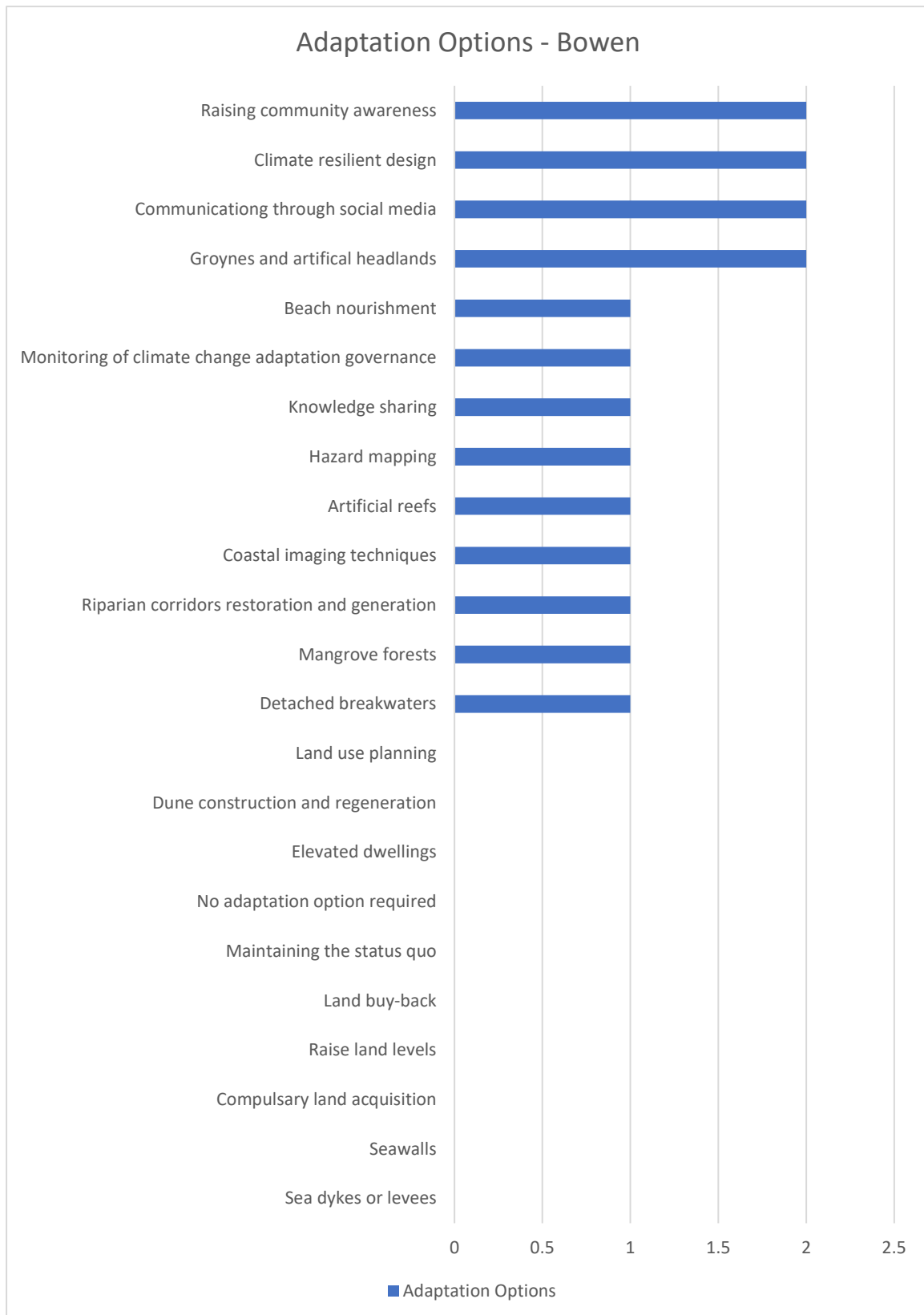


BOWEN

Q2 - What do you value most about Bowen's beaches?

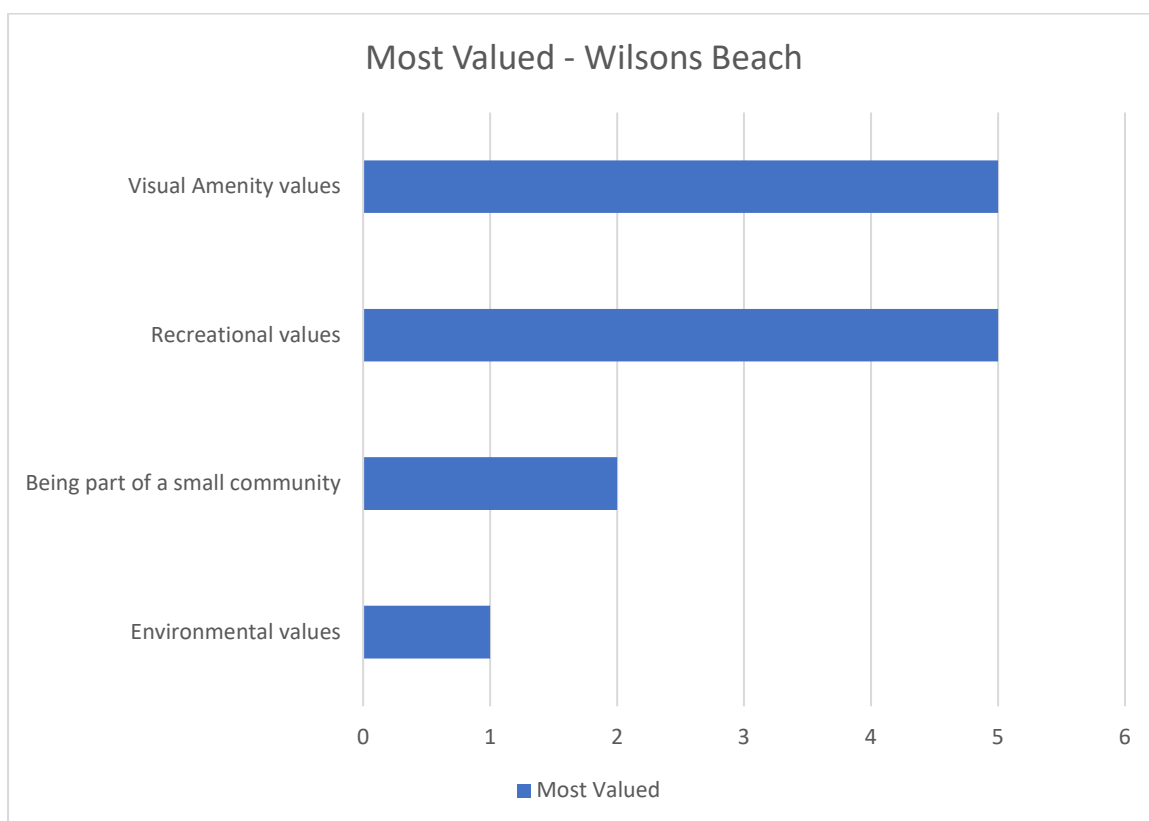
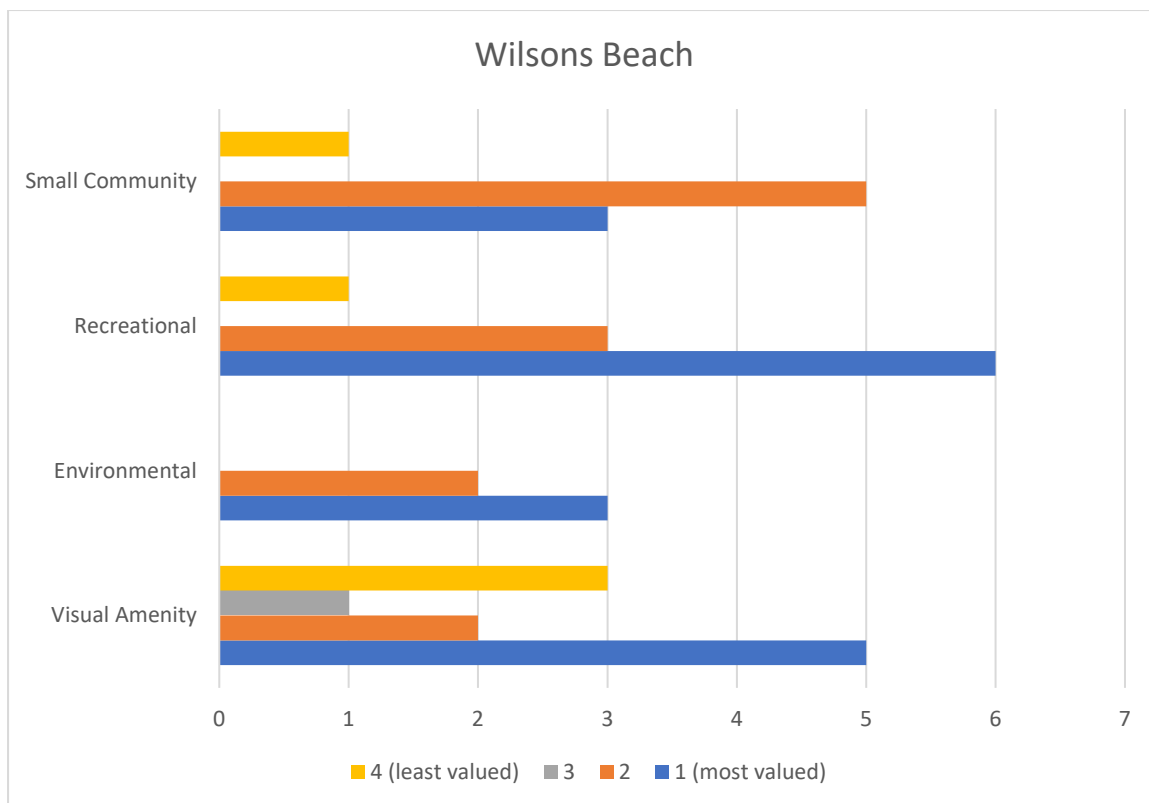


Q5 – What adaptation options would you like Council to consider (for Bowen)?

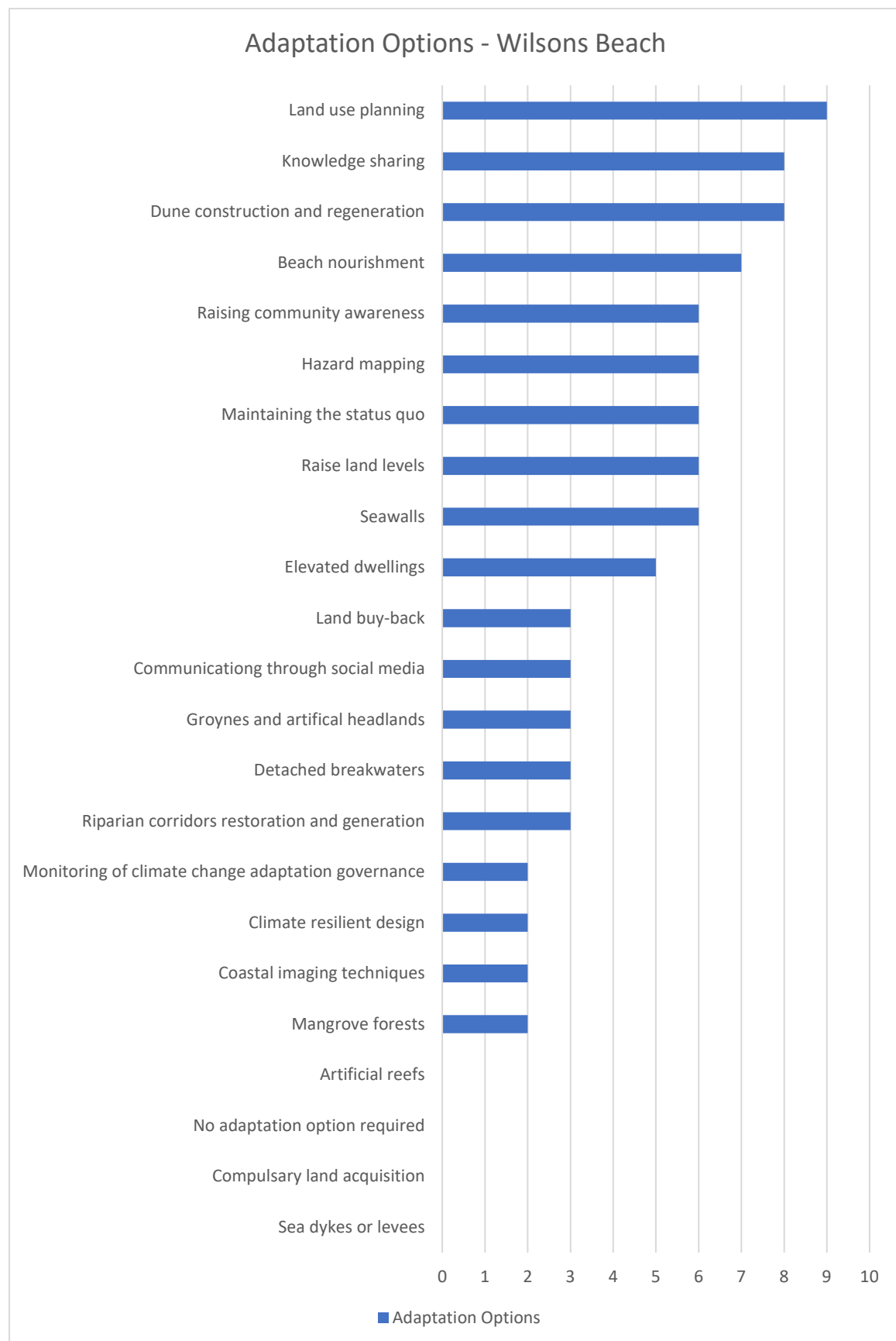


WILSONS BEACH

Q2 - What do you value most about Wilsons Beach?



Q5 – What adaptation options would you like Council to consider (for Wilsons Beach)?



15. Community Services

15.7 COMMUNITY SERVICES - MONTHLY REPORT - OCTOBER 2020

AUTHOR: Julie Wright - Director Community Services

RESPONSIBLE OFFICER: Julie Wright - Director Community Services

OFFICER'S RECOMMENDATION

That Council receive the Community Services Monthly Report for October 2020.

The following report has been submitted for inclusion into Council's Ordinary Meeting to be held on 10 November 2020.

SUMMARY

To provide an overview of the Community Services Directorate for the month of October 2020.

PURPOSE

The purpose of the report is to set out an account of statistics pertaining to the functions of each branch within Community Services.

BACKGROUND

The Community Services Directorate has a departmental vision of a prosperous, liveable and sustainable Whitsundays. The directorate's purpose is to lead the delivery of economic, social, environmental and recreational outcomes for the Whitsundays through services in partnership with stakeholders.

The directorate's vision is delivered by bringing together the functions of Community Development & Libraries, Aquatic Facilities & Caravan Parks, Environmental Health & Local Laws, Natural Resource Management & Climate, Customer Service, Cultural Heritage & Collinsville Independent Living Facility.

STATUTORY/COMPLIANCE MATTERS

N/A

ANALYSIS

This report provides an overview of Whitsunday Regional Council's Community Services Directorate for the 2020/2021 financial year with particular focus on the month of October 2020.

Option 1 - Receive the Community Services Monthly Report.

Option 2 - Decline the Community Services Monthly Report.

STRATEGIC IMPACTS

Corporate Plan

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

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

Operational Plan - N/A

Financial Implications - N/A

Risk Management Implications - Regular reporting on the Directorate's progress and achievements ensures accountability and fosters a positive culture.

CONSULTATION

Rod Cousins - Manager Community Development & Libraries

Shane Douglas - Manager Customer Service

Scott Hardy - Coordinator Natural Resource Management & Climate

Milton Morsch - Coordinator Environmental Health & Local Laws

Monique Stevens - Administration Coordinator Community 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

It is recommended that Council receive the Community Services Monthly Report for October 2020.

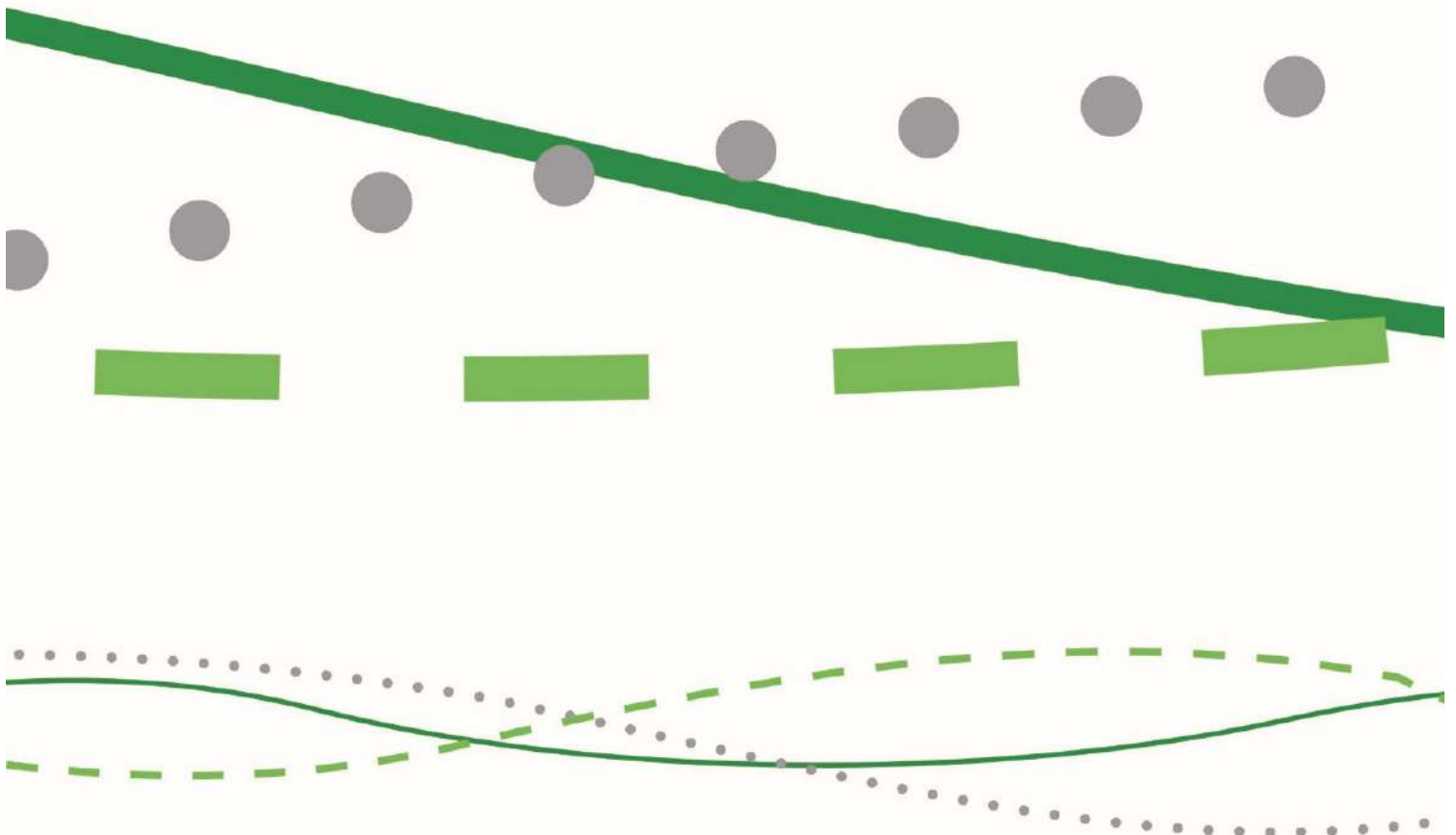
ATTACHMENTS

Attachment 1 - Community Services Monthly Report - October 2020

Community Services

Community Development & Libraries
Aquatic Facilities & Caravan Parks
Environmental Health & Local Laws
Natural Resource Management & Climate
Customer Service
Cultural Heritage
Collinsville Independent Living Facility

Monthly Report | October 2020



Director's Report

The Community Services team were involved in a number of projects, activities and events across the Region in October 2020.

On Friday 9 October, the Proserpine Administration Building opened the doors to the Community with 30 members of the public taking advantage of the tours on offer. The tours led by Council Officers showcased the main office, generator plant room, disaster management in an established coordination scenario and the Council Chambers which was finished off with a presentation of the Climate Change Innovation Hub and afternoon tea.

The following are the average monthly occupancy rates at each of Council's Caravan Parks:

- Proserpine Tourist Park – 45.6% a 0.8% increase from October 2019.
- Wangaratta Caravan Park – 49.6% a 15.6% increase from October 2019.

Proserpine RV Park & Proserpine Lake saw a total of 1,607 vehicles set up for camping.

- Proserpine RV Park – 432 – decrease from previous month of 22%.
- Lake Proserpine – 1175 – decrease from previous month of 1.3%.

The Community Services Administration Officers' statistics for October 2020 include the following:

- Correspondence Generated – 978 items
- Civica & ECM Registrations – 2,293 tasks
- 1,052 Telephone Calls (internal and external)

Council's Off-Street Carparks generated \$91,944.00 for the month with 12,567 Pay & Display tickets purchased, an increase of 21% from October 2019.

The Airlie Lagoon Precinct Carparks generated the highest number of P & D tickets at 7,606 for the month with an average spend of \$4.18.

October saw the NRM Branch continue with the Feral Animal Aerial Control Project with three flights resulting in 202 feral pigs, 7 wild dogs and one feral cat destroyed.

The flight over the Goorganga Flood Plains revealed no feral pig sightings or very little disturbance to vegetation and soil. The edges around most of the lagoons were undamaged from feral pigs and the water quality looked good from the air.

430kgs of baits were also processed and laid throughout the region with 58 property inspections in relation to pest weeds conducted.



Photo 1: Aerial Photo - Goorganga Flood Plains

The Community Services Team received 334 CRM's for October with the Health, Environment & Local Laws investigating and completing 233 complaints/requests for the month.

The Local Law and Environmental Health Officers also conducted 952 COVID-19 inspections including restaurants, pubs/hotels, hairdressers, nail technicians and tattooists.

Aquatic Facility user statistics for October 2020 in comparison to September 2020 are listed below:

- Airlie Beach Lagoon increase by 29.6% 14,759
- Bowen Pool increase by 164.8% to 7,464
- Proserpine Pool increase by 56.6% to 6,436
- Collinsville Pool increase by 240% to 3,241.

Airlie Lagoon Offences including smoking and/or illegal drinking in the lagoon precinct, persons swimming after hours plus dogs, skateboards and bikes in the lagoon totalled 419 for October 2020 (after hours).

Customer Service saw 1,709 visitors through the service centres, a decrease of 44.8% from September 2020. The main enquiries were Rates Receipting, Water Charges, Infringements and Rates Searches.

Telephone calls received decreased by 20.9% from the previous month to 4,483 calls, with 80.4% resolved at the first point of contact. The After Hours Call Centre fielded 317 calls for the month of October, an increase of 10.8% from the previous month.

Customer Requests submitted for October totalled 1,015 across the organisation with 95.1% completed, an increase of 88 CRM's (9.4%) from the previous month.

The Region's Libraries monthly attendance have decreased however, borrowings have increased from October 2019.

- Attendance 8133 – 42.7%
- Borrowings 17,459 – 5%

October saw a steady rise in the First 5 Forever session attendance figures across most branches. The Early Literacy Champions program took to the streets of Airlie Beach, Cannonvale and Proserpine in a big way with the Whitsundays PCYC and First 5 Forever "Early Literacy is Everybody's Business" Program being promoted on the back of a Whitsunday Transit bus, further strengthening the Whitsunday Regional Libraries community partnerships.

COVID-19 restrictions within the libraries have eased with the cessation of the 3-day quarantining and compulsory sanitising of returned items in line with the practice of other major Queensland libraries. The Libraries have also reintroduced automatic reservations and interlibrary loans.



Photo 2: First 5 Forever & Whitsunday PCYC Promotion - Whitsunday Transit Bus

Julie Wright
Director Community Services

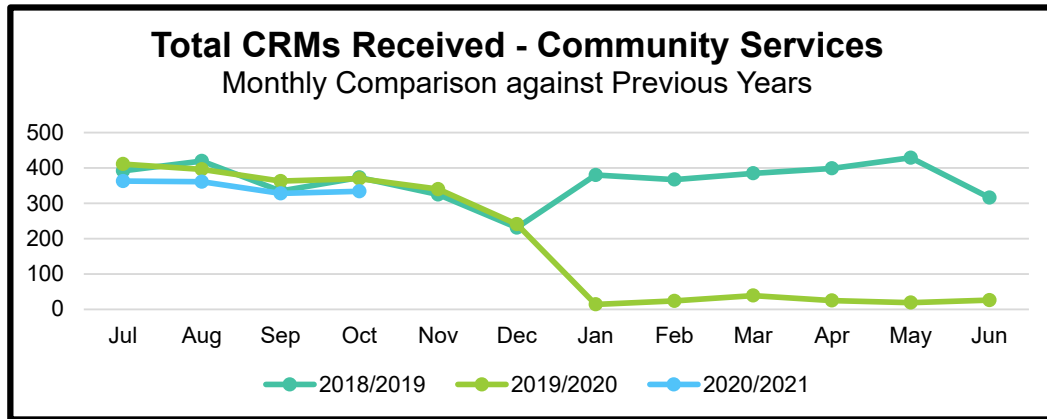
General

The Community Services Directorate has a departmental vision of a prosperous, liveable, and sustainable Whitsundays. The directorate's purpose is to lead the delivery of economic, social, environmental, and recreational outcomes for the Whitsundays through services in partnership with stakeholders.

The directorate's vision is delivered by bringing together the functions of Community Development & Libraries, Aquatic Facilities & Caravan Parks, Environmental Health & Local Laws, Natural Resource Management & Climate, Customer Service, Cultural Heritage & Collinsville Independent Living Facility.

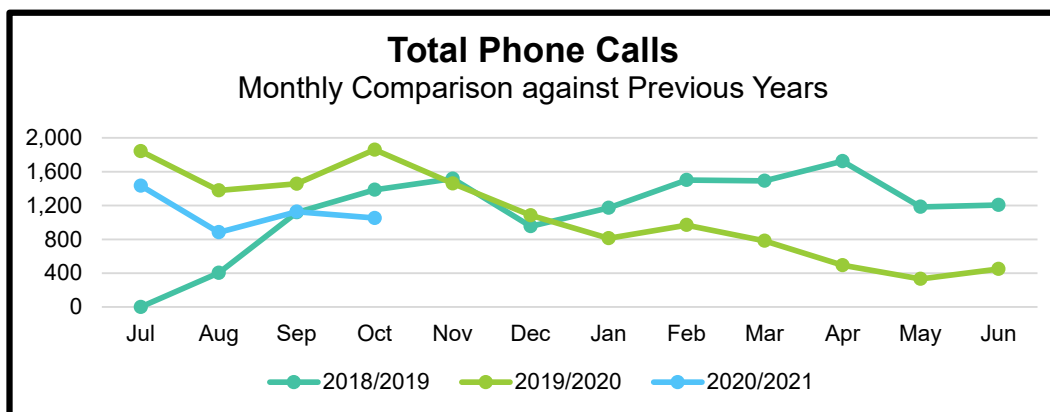
Customer Request Management (CRM)

Service	YTD	Aug	Sep	Oct	Monthly Trend
Community Development					
CRM Received	34	1	7	8	↑
CRM Completed	27	0	6	7	↑
Library Services					
CRM Received	1	0	0	0	–
CRM Completed	1	0	0	0	–
Aquatic Facilities					
CRM Received	12	1	3	7	↑
CRM Completed	7	1	1	5	↑
Caravan Parks					
CRM Received	6	3	1	1	–
CRM Completed	4	2	0	1	↑
Environmental Health & Local Laws					
CRM Received	1,174	303	291	261	↓
CRM Completed	977	248	236	233	↓
Parking					
CRM Received	13	3	2	8	↑
CRM Completed	8	3	1	4	↑
NRM & Climate					
CRM Received	76	20	12	28	↑
CRM Completed	31	9	5	7	↑
Customer Service / E-Services					
CRM Received	70	21	12	21	↑
CRM Completed	61	18	11	20	↑
Total CRMs for Community Services					
CRM Received	1,386	361	328	334	↑
CRM Completed	1,116	288	260	277	↑



Administration Officers

Service	YTD	Aug	Sep	Oct	Monthly Trend
Correspondence Generated	3,614	726	1,242	978	↓
ECM Task List	3,153	675	693	858	↑
Civica Registers	4,911	1,166	1,116	1,435	↑
Data Input	2,111	417	444	786	↑
CRMs Generated	231	52	67	73	↑
CRMs Closed	203	56	45	50	↑
Phone Calls - Internal	3,194	640	769	660	↓
Phone Calls - External	1,302	243	358	392	↑
Phone Calls - Total	4,496	883	1,127	1,052	↓
ECM Registering	2,642	712	715	660	↓
Purchase Orders	155	27	35	27	↓
Receipt Invoices	230	48	66	51	↓
Reports	188	62	46	39	↓



Community Development

The Community Development branch is responsible for assessing and acquitting community grants, developing and maintaining various community development related policies and registers, developing, and implementing various community programs such as cultural and recreational programs as well as maintaining various community facilities.

Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Grant Applications					
Facility Management - Approved	0	0	0	0	–
Facility Management - Approved (\$)	0	0	0	0	–
Junior Elite Athlete - Approved	0	0	0	0	–
Junior Elite Athlete - Approved (\$)	0	0	0	0	–
RADF - Received	0	0	0	0	–
RADF - Approved	0	0	0	0	–
RADF - Approved (\$)	0	0	0	0	–
RADF - Acquittals	3	1	0	1	↑
Special Projects - Received	5	0	1	2	↑
Special Projects - Approved	0	0	0	0	–
Special Projects - Approved (\$)	0	0	0	0	–
Special Projects - Acquittals	0	0	0	0	–
Sport & Rec Club - Received	24	6	4	7	↑
Sport & Rec Club - Approved	20	8	6	4	↓
Sport & Rec Club - Approved (\$)	58,000	16,000	23,000	13,000	↓
Donation & Sponsorship Requests					
Donation Requests - Received	13	5	4	0	↓
Donation Requests - Approved	8	2	2	0	↓
Donation Requests - Approved (\$)	44,030	4,000	17,330	0	↓
Fee Waivers - Approved	4	4	0	0	–
Fee Waivers - Approved (\$)	1,598	1,598	0	0	–
Sponsorships - Received	1	0	0	0	–
Sponsorships - Approved	1	0	0	0	–
Sponsorships - Approved (\$)	7,500	0	0	0	–
Sponsorships - Approved (in kind)	10,000	0	0	0	–
Sponsorships - Acquittals	1	0	1	0	↓
Events					
Council Events - External - Completed	5	0	1	1	–
Council Events - External - Participants	116	0	30	30	–
Council Events - Internal - Completed	2	2	0	0	–
Council Events - Internal - Participants	59	59	0	0	–

Competition Results for Junior Elite Athlete Recipients:

- No competitions held this month.

Events:

External:

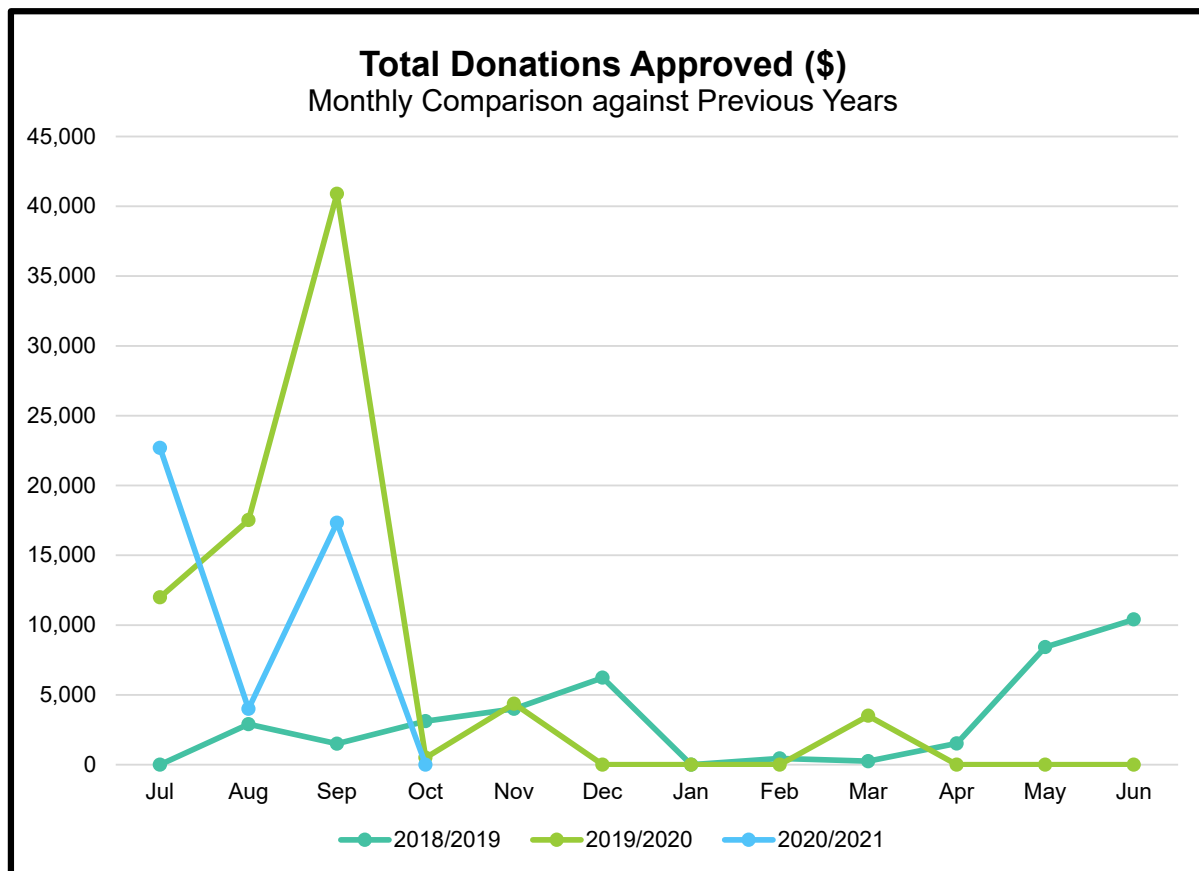
- Proserpine Administration Building – Opening to Public

Internal:

- Nil

Special Project Grants Successful Recipients:

- Round 1 closed 16 October 2020 with five applications received. To be considered at the 11 November Council Meeting.

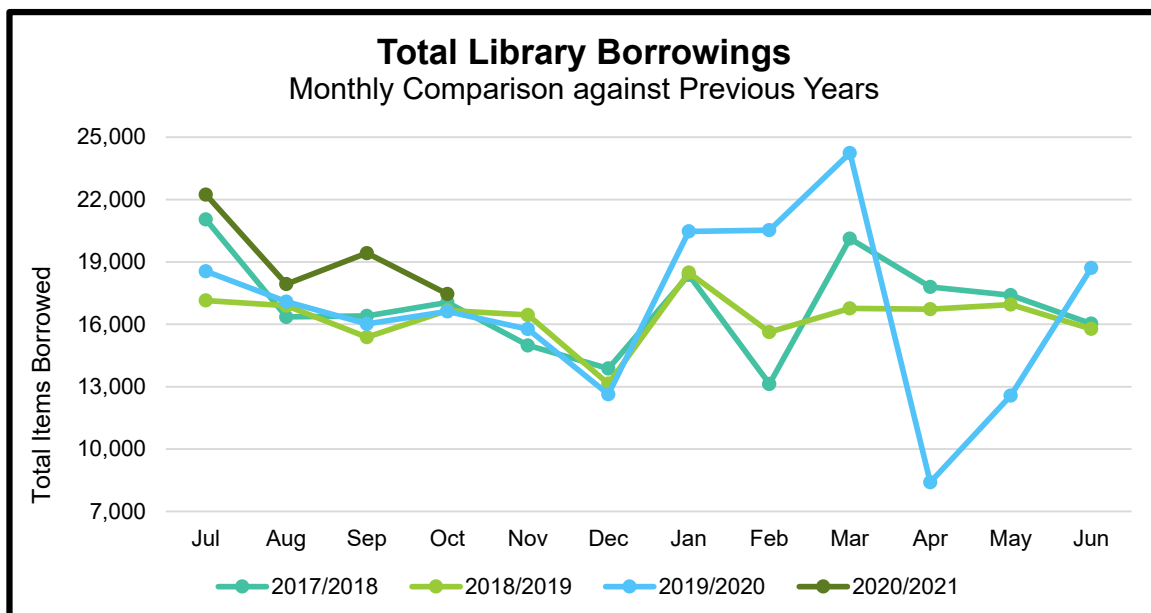


Library Services

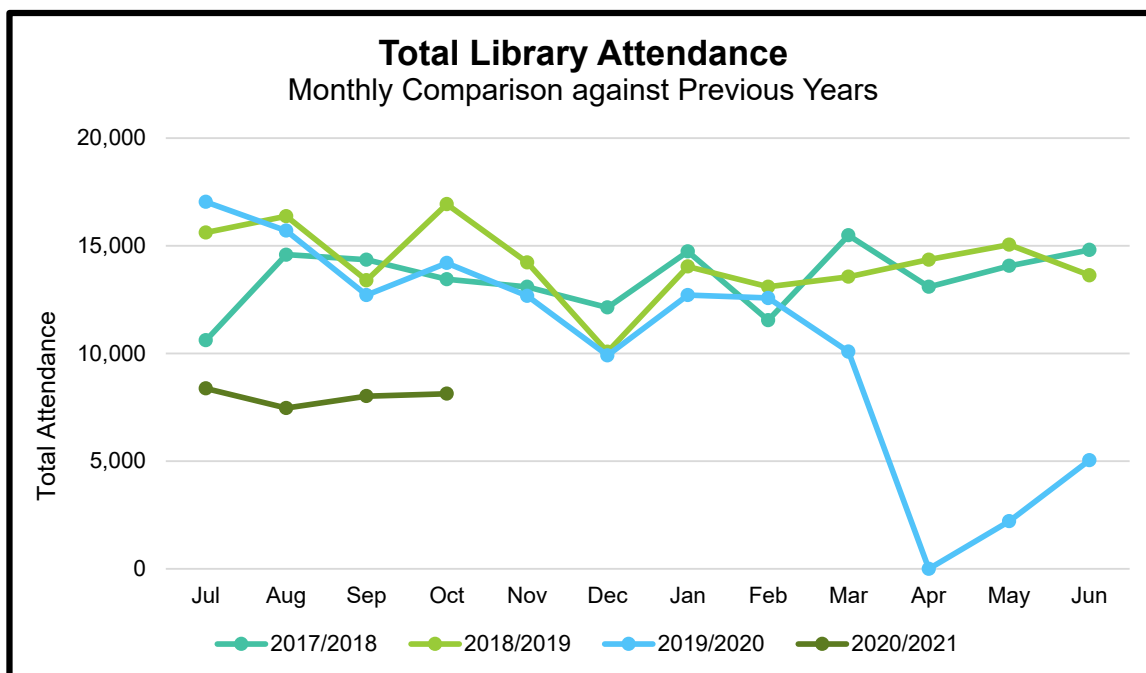
The Library Services branch is responsible for the provision of customer-centric services and resources to meet the information, recreation, cultural and lifelong learning needs of individuals and groups within the Whitsundays. The branch responsibilities include the design and delivery of library programs, promotion and marketing, collection development and maintenance, information/digital literacy opportunities, outreach, and service extension.

Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Library Resources Acquired					
Bowen & Collinsville Libraries	922	265	210	235	↑
Cannonvale Library	1,794	504	395	408	↑
Proserpine Library	873	190	203	204	↑
e-Library	178	34	55	49	↓
Library Resources Borrowed					
Bowen Library	13,445	3,097	3,289	3,157	↓
Cannonvale Library	25,665	6,058	6,112	5,977	↓
Collinsville Library	1,445	301	378	424	↑
Proserpine Library	16,367	4,066	3,870	4,097	↑
e-Library	20,139	4,415	5,774	3,804	↓
Mobile Library	0	0	0	0	–
Library Attendance					
Bowen Library	8,767	2,061	2,165	2,198	↑
Cannonvale Library	13,344	3,150	3,429	3,360	↓
Collinsville Library	2,878	610	643	649	↑
Proserpine Library	7,003	1,643	1,783	1,926	↑



Service	YTD	Aug	Sep	Oct	Monthly Trend
First 5 Forever (F5F)					
Resources - Acquired	327	3	21	0	↓
Resources - Borrowed by Branches	64	11	5	36	↑
Community Partnership Interactions	112	54	16	32	↑
Toolkits Distributed	26	6	1	11	↑
F5F In Library - Activities Held					
Bowen Library	30	8	6	8	↑
Cannonvale Library	41	12	9	12	↑
Collinsville Library	16	4	3	6	↑
Proserpine Library	22	4	3	12	↑
F5F In Library - Activities Attendance					
Bowen Library	135	23	25	62	↑
Cannonvale Library	504	124	102	188	↑
Collinsville Library	89	20	34	20	↓
Proserpine Library	157	34	30	67	↑
F5F Community Outreach - Events Held					
Bowen Library	3	1	0	1	↑
Cannonvale Library	4	1	1	1	–
Collinsville Library	0	0	0	0	–
Proserpine Library	13	4	3	5	↑
F5F Community Outreach - Events Attendance					
Bowen Library	87	23	0	18	↑
Cannonvale Library	132	11	11	98	↑
Collinsville Library	0	0	0	0	–
Proserpine Library	167	42	46	71	↑



Service	YTD	Aug	Sep	Oct	Monthly Trend
In Library Programs - Events Held					
Bowen Library - Adults	0	0	0	0	–
Bowen Library - Children	0	0	0	0	–
Cannonvale Library - Adults	8	2	2	2	–
Cannonvale Library - Children	0	0	0	0	–
Collinsville Library - Adults	0	0	0	0	–
Collinsville Library - Children	0	0	0	0	–
Proserpine Library - Adults	14	5	4	3	↓
Proserpine Library - Children	4	0	0	4	–
In Library Programs - Events Attendance					
Bowen Library - Adults	0	0	0	0	–
Bowen Library - Children	0	0	0	0	–
Cannonvale Library - Adults	46	11	12	12	–
Cannonvale Library - Children	0	0	0	0	–
Collinsville Library - Adults	0	0	0	0	–
Collinsville Library - Children	0	0	0	0	–
Proserpine Library - Adults	52	17	13	14	↑
Proserpine Library - Children	87	0	4	83	↑
Community Outreach - Events Held					
Bowen Library - Adults	16	4	4	4	–
Bowen Library - Children	0	0	0	0	–
Cannonvale Library - Adults	17	4	5	4	↓
Cannonvale Library - Children	0	0	0	0	–
Collinsville Library - Adults	0	0	0	0	–
Collinsville Library - Children	0	0	0	0	–
Proserpine Library - Adults	18	4	5	4	↓
Proserpine Library - Children	80	0	80	0	–
Community Outreach - Events Attendance					
Bowen Library - Adults	88	24	22	22	–
Bowen Library - Children	0	0	0	0	–
Cannonvale Library - Adults	115	32	31	26	↓
Cannonvale Library - Children	0	0	0	0	–
Collinsville Library - Adults	0	0	0	0	–
Collinsville Library - Children	0	0	0	0	–
Proserpine Library - Adults	216	51	55	53	↓
Proserpine Library - Children	0	0	0	0	–
Public Computer Usage					
Bowen Library	1,692	411	413	406	↓
Cannonvale Library	2,372	585	659	573	↓
Collinsville Library	42	8	13	11	↓
Proserpine Library	1,213	279	325	297	↓

Bowen Work Camp

Council partners with Queensland Corrective Services to provide beneficial works projects for the community and rehabilitate offenders with their return to society. They perform a multitude of tasks including maintenance of fences, cemeteries, sportsgrounds and showgrounds, propagation of plants and they also participate in many restoration and general maintenance projects.

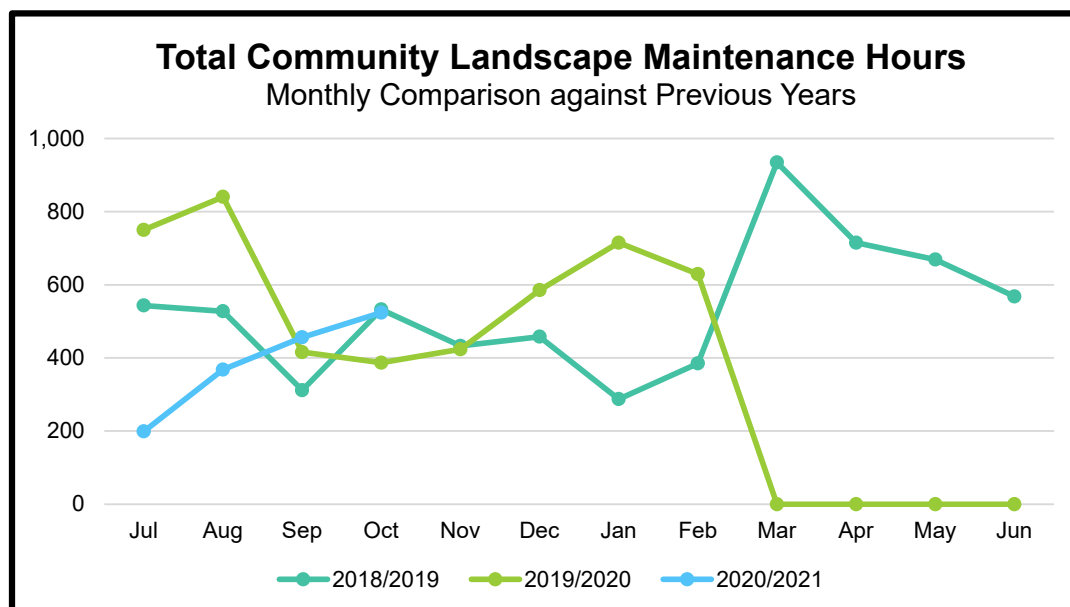
Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Community Landscape Maintenance Hours	1,547	368	456	524	↑
Community Indoor Tasks Hours	246	26	90	109	↑
New Project Assessment Hours	9	0	4	0	↓
WRC Landscape Maintenance Hours	191	48	45	85	↑
WRC Nursery Maintenance/Propagation Hours	138	19	80	24	↓
WRC Indoor Tasks Hours	52	11	21	20	↓
QCS Compound Duties Hours	618	207	202	148	↓

Projects

Project	Status	% Complete	Budget
Echo Park Speedway – Clearing of Site/Assistance with Fence Erection*	In Progress	90%	✓
Bowen River Rodeo – Site Maintenance	Scheduled	50%	✓
Bowen Childcare and Early Education – Fencing, painting, and Chicken Coop construction	Complete	100%	✓
Bowen Mudcrabs Rugby Union – Temporary fence removal	Complete	100%	✓

*Community Group to organise resources before tasks can be completed.



Aquatic Facilities & Caravan Parks

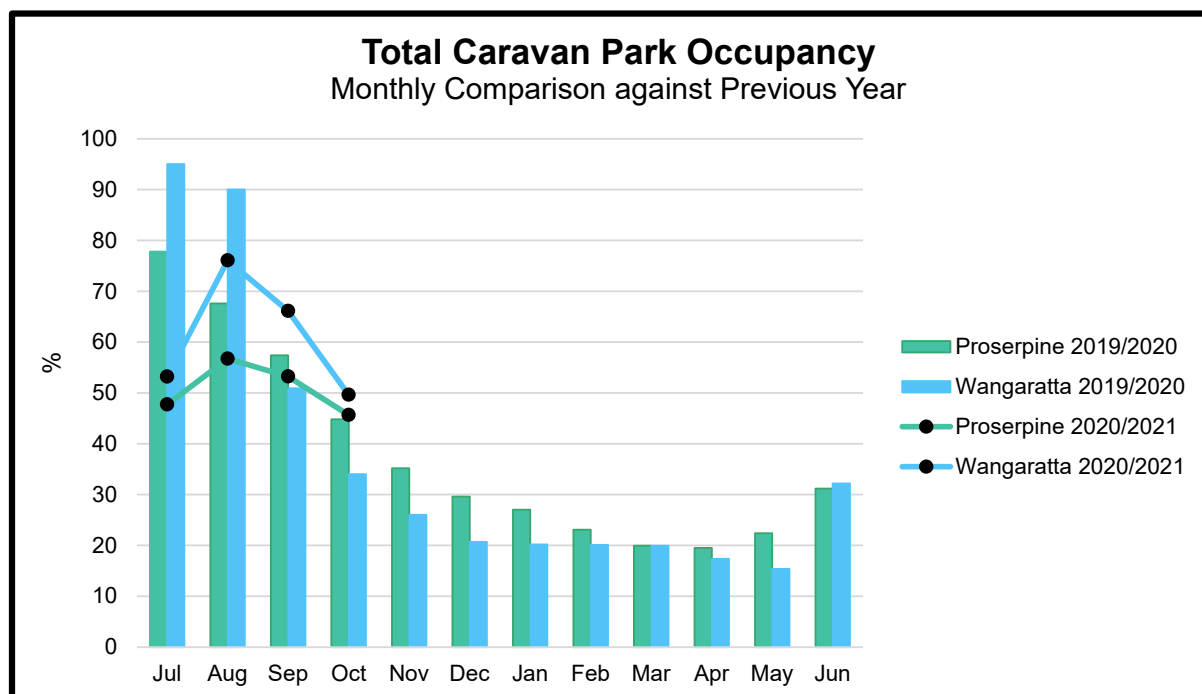
The Recreation Services branch is responsible for delivering recreation and youth programs that activate our public and open spaces, supporting recreation groups to secure funding for projects, maintaining Council's caravan parks and aquatic facilities, and master planning for future sport and recreation assets.

Aquatic Facilities – Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Airlie Beach Lagoon – Total Users	38,002	7,259	11,383	14,759	↑
Airlie Beach Lagoon – Total Offences	2,730	1,074	226	419	↑
Pool Attendance – Bowen	11,639	816	2818	7,464	↑
Pool Attendance – Collinsville	4,192	0	951	3,241	↑
Pool Attendance – Proserpine	12,720	1,412	4,108	6,436	↑

Caravan Parks – Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Proserpine Tourist Park					
Occupancy (%)	50.8	56.7	53.2	45.6	↓
Revenue (\$)	125,309	32,587	29,102	30,718	↑
Accumulated Revenue - Laundry Service (\$)	1,677	745	128	259	↑
Wangaratta Caravan Park					
Occupancy (%)	61.2	76.1	66.1	49.6	↓
Revenue (\$)	241,577	72,962	58,954	48,289	↓
Accumulated Revenue - Laundry Service (\$)	2,654	1,112	727	473	↓

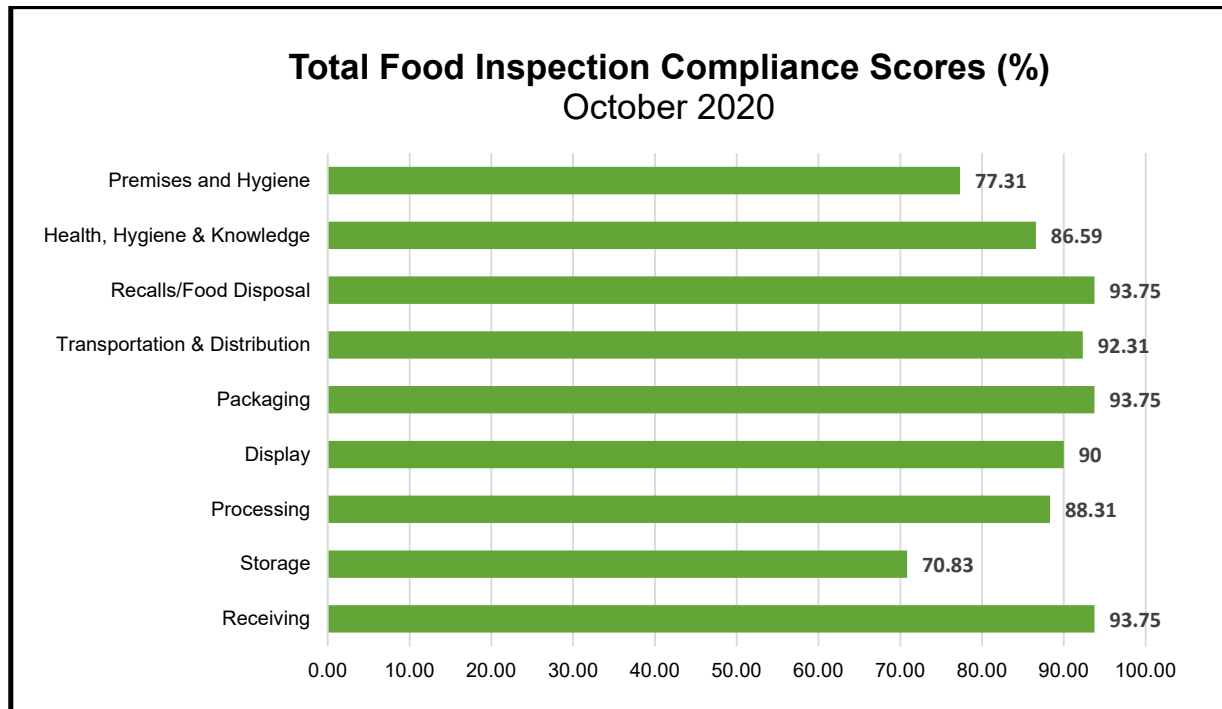


Environmental Health & Local Laws

The Environmental Health & Local Laws branch is responsible for assessing food and local law applications, developing and maintaining various related policies and registers, including the Local Laws, reviewing referrals for liquor licences, and regulating various activities with compliance action and approvals. The branch is also responsible for maintaining the animal impoundment facility, on/off-street car parking compliance and commercial parking operations.

Environmental Health – Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Environmental Health					
Environmental Health – Plan Approval Applications Received	12	3	5	0	↓
Environmental Health Applications Received	12	4	3	0	↓
Food Safety Programs Received	0	0	0	0	–
Liquor Licence Referrals Received	5	1	2	2	–
Food Business - Inspections	93	18	33	6	↓
Food Business - Re-Inspections	26	8	5	2	↓
Food Safety Programs Audit Reports Reviewed	4	1	2	0	↓
Personal Appearance Services - Inspections	1	0	1	0	↓
ERAs - Inspections	1	0	0	0	–
Development Applications Referrals Received	3	1	1	0	↓
Accommodation - Inspections	30	9	0	20	↑
Accommodation - Re-inspections	23	0	23	0	↓
Erosion Sediment Control - Inspections	0	0	0	0	–
Complaints Received - Asbestos	4	2	1	1	–
Complaints Received - Litter & Dumping	0	0	0	0	–
Complaints Received - EH General	47	16	1	18	↑
Event Application Assessment	2	1	0	0	–
Food Inspection Compliance Categories					
Receiving (%)	95.86	-	97.96	93.75	↓
Storage (%)	81.29	-	91.75	70.83	↓
Processing (%)	91.82	-	95.33	88.31	↓
Display (%)	85.74	-	81.48	90.00	↑
Packaging (%)	93.31	-	92.86	93.75	↑
Transportation & Distribution (%)	96.16	-	100.00	92.31	↓
Recalls/Food Disposal (%)	93.85	-	93.94	93.75	↑
Health, Hygiene & Knowledge (%)	89.64	-	92.68	86.59	↓
Premises and Hygiene (%)	80.97	-	84.62	77.31	↓



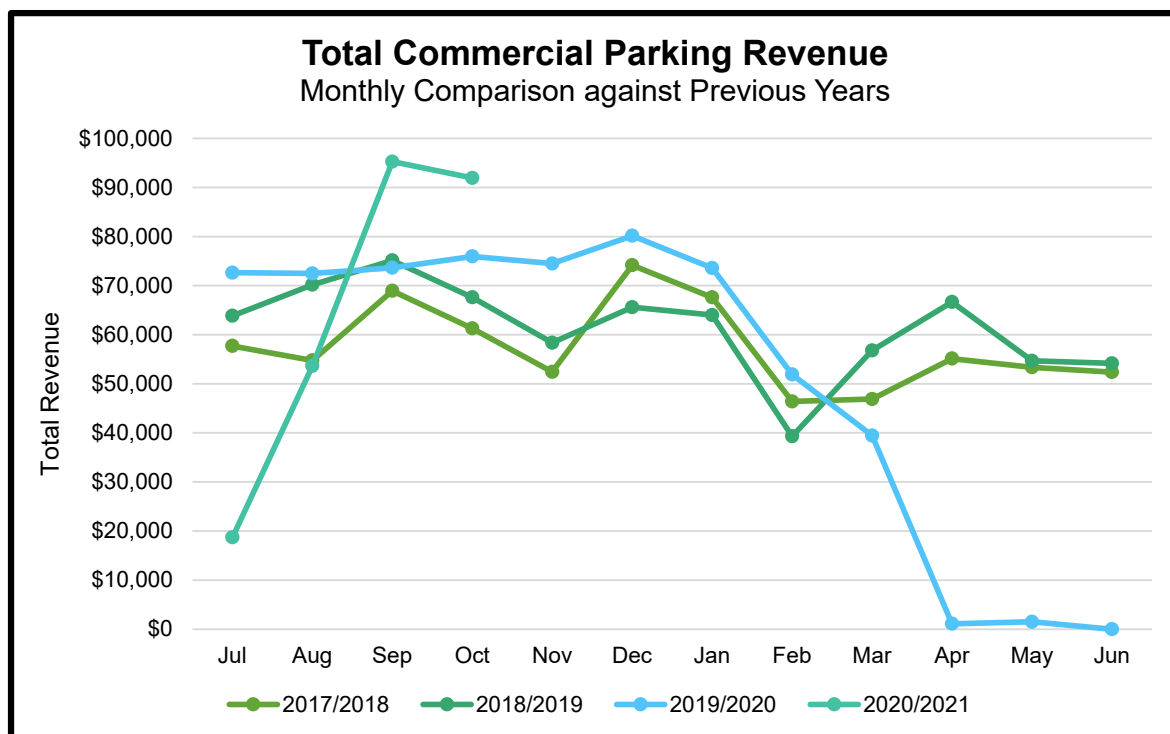
Local Laws – Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Local Laws					
Local Law Applications Received	18	4	3	2	↓
Complaints Received - Animal Management	423	107	103	94	↓
Complaints Received - Other Local Law	501	121	130	116	↓
Compliance Notices Issued	81	21	30	17	↓
Renewal/Reminder/Final Notices	290	41	193	41	↓
Infringement Responses	729	120	119	165	↑
Dog Registrations	4,274	577	141	80	↓
Cat Registrations	529	77	14	9	↓
Parking Infringements - Issued	907	227	260	242	↓
Parking Infringements - Waived	132	51	26	38	↑
Other Infringements - Issued	478	149	101	81	↓
Other Infringements - Waived	47	19	14	9	↓
Infringement Reminder Notices Sent	325	78	0	167	↑
COVID-19 Inspections	4,479	660	1,746	952	↓
Lake Proserpine & RV Park Inspections	6,090	2,929	939	1,607	↑

Commercial Parking – Operations

Car Parks	YTD	Aug	Sep	Oct	Monthly Trend
Heart of the Reef Transit Facility					
Occupancy (no.)	0	0	0	0	–
Revenue (\$)	0	0	0	0	–
Port of Airlie					
Average Spend (\$)	12.29	12.47	13.30	13.02	↓
Tariff (most selected)	24hr (\$10)	24hr (\$10)	24hr (\$10)	24hr (\$10)	–
No. of tickets purchased	9,158	2,573	2,816	2,850	↑
Revenue (\$)	118,165	32,098	37,454	39,100	↑
Airlie Lagoon Precinct					
Average Spend (\$)	3.09	3.98	4.21	4.18	↓
Tariff (most selected)	0-2hr (\$3)	0-2hr (\$3)	0-2hr (\$3)	0-2hr (\$3)	–
No. of tickets purchased	16,434	566	8,262	7,606	↓
Revenue (\$)	68,860	2,252	34,788	31,820	↓
Abell Point Marina					
Average Spend (\$)	9.34	9.02	10.06	9.96	↓
Tariff (most selected)	0-2hr (\$3)	0-2hr (\$3)	0-2hr (\$3)	0-2hr (\$3)	–
No. of tickets purchased	7,645	2,140	2,287	2,111	↓
Revenue (\$)	72,524	19,294	23,012	21,024	↓

Parking Machines	YTD	Aug	Sep	Oct	Monthly Trend
Parking Machine Availability (%)	79.2%	91.7%	75%	91.7%	↑



Natural Resource Management & Climate

The Natural Resource Management & Climate branch is responsible for developing and implementing various environmental and community health and safety programs such as pest, weed and water quality programs as well as maintaining stock routes and implementing the Biosecurity Plan.

Natural Resource Management – Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Complaints Received - Pest & Weed	46	13	8	12	↑
Complaints Received - Environmental	31	8	5	15	↑
Property Pest Management Plan (PPMP) Implemented/Reviewed	14	3	5	1	↓
PPMP Annual Reviews Completed	19	4	2	6	↑
Notices Issued - Biosecurity	9	2	0	0	–
Notices Issued - Penalty Infringement	0	0	0	0	–
Landholder Access - Herbicide Rebate	17	6	6	0	↓
Landholder Access - Mechanical Rebate	1	0	0	0	–
Letters/Emails to Landholders - Weeds	171	34	44	30	↓
Property Visit/Inspections - Weeds	258	49	64	58	↓
Property Visit/Inspections - Feral Animals	3	3	0	0	–
Feral Animals - Traps Set	2	1	1	0	↓
Feral Animals - Trapped	0	0	0	0	–
Aerial Shooting - Flights	9	6	2	1	↓
Aerial Shooting - Feral Animals Shot	1,169	766	308	95	↓
Properties Baited	17	1	14	2	↓
Baits Laid (kg)	2,916	210	2,276	430	↓
Length of Road Reserve Sprayed (km)	129.7	12.68	0	0	–
No. of Council Lots Sprayed/Inspected	87	13	24	32	↑
Mixed Chemicals Used (L)	3,760	900	1,450	1,010	↓
Pest Workshops	0	0	0	0	–
Field Days Run/Involved	0	0	0	0	–
Landholder Contacts	9	0	4	5	↑
Project Reports - not to Council	30	10	9	6	↓
Briefing / Council Reports	6	3	0	3	↑
Bushfire Hazard Reduction Burns	2	0	2	0	↓
Environmental Planning Projects Completed	7	3	1	0	↓
DA's Assessed (including RFI & Conditions & Advice) Completed	46	9	10	17	↑

Projects

Project	Status	% Complete	Budget	Time
Bushfire Management Program	In Progress	30%	✓	✓
Reef Guardian Council Action Plan	Complete	100%	✓	✓

Climate Hub – Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Media Releases	2	-	0	-	–
Facebook Post Reach	1,522	-	1,493	-	–
Facebook Followers	13	-	6	-	–
Website Unique Visitors	68	-	36	-	–
Projects Underway	24	-	7	9	↑
Projects in Developments	29	-	10	8	↓

Update:

- **Pest Management Projects:**
 - Whitsunday Yellow Crazy Ant Project
 - Population monitoring activity conducted – ground and aerial baiting has reduced population numbers. The next round is mid to late November.
 - Feral Animal Aerial Shooting – 12 aerial shooting flights have been completed out of a total of 18 for the financial year.
 - Regional Pest Group meeting attended – Burdekin Pest group.
 - Project Plan – Biocontrol for Chinese Apple
- **Other Natural Resource Management Projects:**
 - Working with Council's Roads & Drainage team on a rural roads stormwater improvement project.
 - Coastal Hazard Adaption Strategy (CHAS)
 - Three internal Working Group meetings held in October.
 - Phase 8 of the CHAS, the adaption Strategy Report and Implementation Plan is currently being developed by Climate Planning.
 - Draft Frog Rock Foreshore Reserve Management Plan developed.
 - Community Bushfire Management Plan on-line meetings. There have now been five on-line community meetings for the proposed Community Bushfire Management Plans for; Shute Harbour, Dittmer-Pauls Pocket, Mango Tree Estate, Woodwark and Conway.
- **Environment Projects:**
 - Drafted ELT report for the Review of Carbon Offset Programs
- **Climate Hub Projects:**
 - Whitsunday Industry Resilience Project
 - Funding and Financing Adaptation – A Case Study
 - Proserpine Heat Reduction Plan (Stage 2 & 3 underway)
 - Enabling mitigation to reduce losses from disasters
 - Whitsunday Water treatment and pumping optimisation (seeking Uni student)
 - Tassal project – Optimising Algae in Aquaculture Treatment Ponds (rethinking delivery after Tassal contact changed and student not found)
 - Development of program for touch screen – climate communication, education and engagement
 - Regional biodiversity assessment for prioritised conservation investment under climate change – PhD student writing this into study.

Customer Service

The Customer Service branch is responsible for providing excellence to Council's customers and stakeholders in their interactions with Council.

Call Centre – Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Business Hours Call Centre					
Calls Received – Total	20,990	5,617	5,670	4,483	↓
Calls Received – 1300 WRC QLD	14,177	3,787	3,602	3,247	↓
Calls Answered	12,737	3,418	3,248	2,926	↓
Calls Overflowed	831	249	187	200	↑
Calls Abandoned	362	91	89	85	↓
Calls Abandoned (%)	2.55%	2.40%	2.47%	2.62%	↑
Untracked Calls	247	29	78	36	↓
*ASL - Average Service Level (%)	79.9%	80.7%	78.6%	81.5%	↑
*ASA - Average Speed of Answer	21	22	22	20	↓
*AHT - Average Handle Time/Secs	181	178	183	186	↑
After Hours Call Centre					
Calls Received– Total	1,184	329	286	317	↑
Calls Answered– (Charged)	1,046(513)	289(154)	246(108)	283(149)	↑
Calls Abandoned (%)	11.16%	9.97%	13.99%	10.73%	↓
*ASL - Average Service Level (%)	82.9%	80.7%	81.6%	85.2%	↑
*ASA - Average Speed of Answer	-	19	16	11	↓
*AHT - Average Handle Time/Secs	-	117	117	101	↓

Customer Transactions

Service	YTD	Aug	Sep	Oct	Monthly Trend
Receipts	59,645	9,708	24,863	13,764	↑
eServices Receipts	1,472	144	859	279	↓
eServices Receipts (%)	2.47%	1.48%	3.46%	2.02%	↓
CRMs	4,032	985	918	1,015	↑
eServices CRMs	40	9	9	13	↑
eServices CRMs (%)	0.99%	0.91%	0.98%	1.28%	↑

Payments:

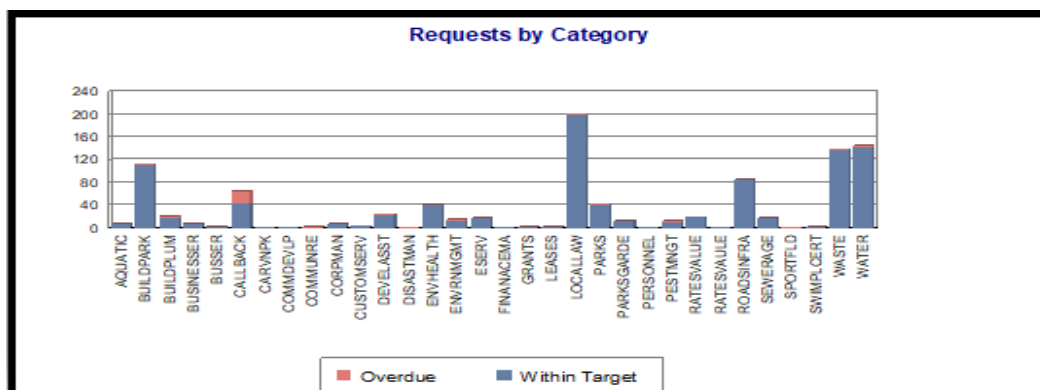
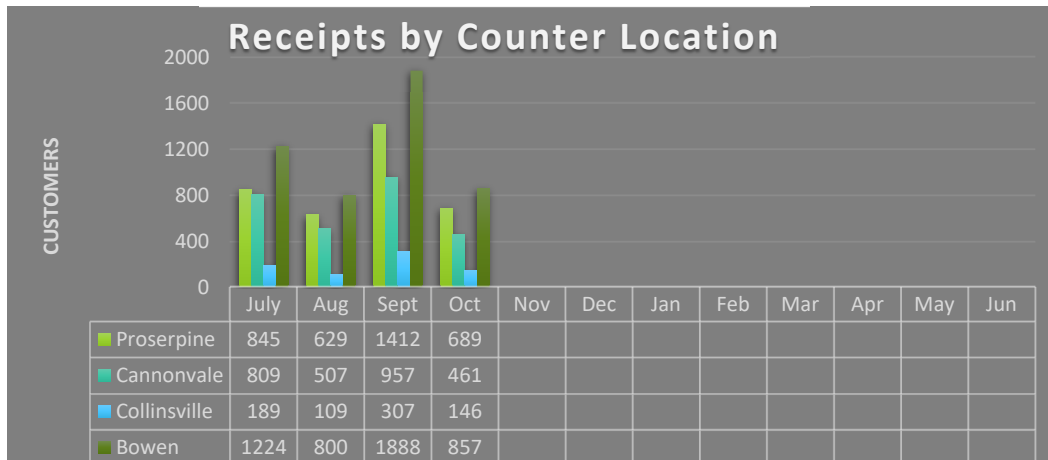
- Total bPay, Austpost, Direct Deposits & eServices payments at **59.92%** of total payments.

Incoming Calls & Requests:

- CRM completion was **97.1%** (**95.1%** including call backs).
- Total of **1,709** visitors through the service centres.
- WRC Call Statistics at **81.5%** of calls answered in 25 seconds.
- First Point of Contact (FPOC) resolution was at **80.4%** for **October**.

Top Issues

Service	YTD	Aug	Sep	Oct	Monthly Trend
Counter					
Water Charges	1,365	35	967	333	↓
Rates Receipt	2,744	459	1,841	256	↓
Rates Search	509	118	121	161	↑
Infringements	473	141	116	147	↑
Private Certifiers	222	42	40	85	↑
Telephone (First Point of Contact)					
Rates/Water Billing	1,371	569	445	272	↓
Local Laws/Compliance and Environment	743	295	247	212	↓
Payments	474	120	71	147	↑
General Information	722	212	179	119	↓
Water/Sewerage/Trade Waste	204	48	39	75	↑
After Hours					
Water Supply Issue	65	28	19	39	↑
Wandering Animals	34	10	8	10	↑
Security	23	1	7	9	↑
Infringements	13	0	1	7	↑
Dirty Water	7	-	-	7	↑



Cultural Heritage

Our Cultural Heritage includes all the elements of our cultural way of life which have gone before us, and which exist now. Cultural Heritage is an expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions, and values.

Cultural Heritage includes the Reconciliation Act Plan (RAP) for increased recognition of the Indigenous People in the Whitsunday Region and the Indigenous Land Use Agreement (ILUA) sets out activities and communications with all Traditional Owners in the region. The ILUA will ensure Council is compliant and provide the community with knowledge on the Traditional Owners within our region.

Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Meetings with Traditional Owners	1	1	0	0	–

Projects

Project	Status	% Complete	Budget	Time
Reconciliation Action Plan (RAP)	In Progress	85%	✓	✓
Indigenous Land Use Agreements (ILUA)	In Progress	80%	✓	✓

Collinsville Independent Living Facility

The Collinsville Independent Living Facility consists of 12 individual, furnished one-bedroom units for short-term and long-term occupancy for retired persons over 55 years or self-managed disabled and residents; along with executive members who require accommodation in Collinsville.

Operations

Service	YTD	Aug	Sep	Oct	Monthly Trend
Permanent Tenants	3	1	1	0	↓
Short-Term Room Bookings	51	13	13	12	↓

16. Infrastructure Services

No agenda items for this section.

17. Matters of Importance

No agenda items for this section.