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COUNCILS LEADING COASTAL ADAPTATION

COASTAL FUTURES
Planning Our Changing Coastline

Coastal Futures: Planning our changing coastline

Fraser Coast Regional Council Coastal Hazard Adaptation Strategy (CHAS)

Phase 5 - 6 Engagement Summary

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Fraser Coast Regional Council — Building better communities.
ETHOS URBAN
LGAQ
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Contents

Appendices

1. Introduction

Fraser Coast Regional Council commenced preparation of the Coastal Hazard Adaptation Strategy (CHAS) '*Coastal Futures – Planning our changing coastline*' project in 2018. Funded through the QCoast2100 program, the project will develop a long-term plan for Council to respond, manage and mitigate to coastal hazards on its highly valued coastline to 2100. The CHAS is being developed across eight phases (refer to Figure 1) and community and stakeholder engagement forms a critical part of the project.

This report documents the engagement approach and activities undertaken as part of broad community engagement for Phases 5 and 6 of the project. Consultation was undertaken between 31 July and 23 August 2020 and involved the circulation of locality factsheets and an online survey. There were 587 responses to the survey from across the Fraser Coast community

The overarching objectives of this round of engagement were to:

- Build local capacity and understanding of climate change and coastal hazard risk;
- Share findings from technical work and consultation to date;
- Gain feedback on adaptation options for the Fraser Coast coastline; and
- Identify opportunities for the community and key stakeholders to be involved in the ongoing implementation of the Fraser Coast CHAS.

The findings from all engagement activities will be considered in the finalisation of the Phase 6 Adaptation Options Report and will ultimately input into the Fraser Coast CHAS.

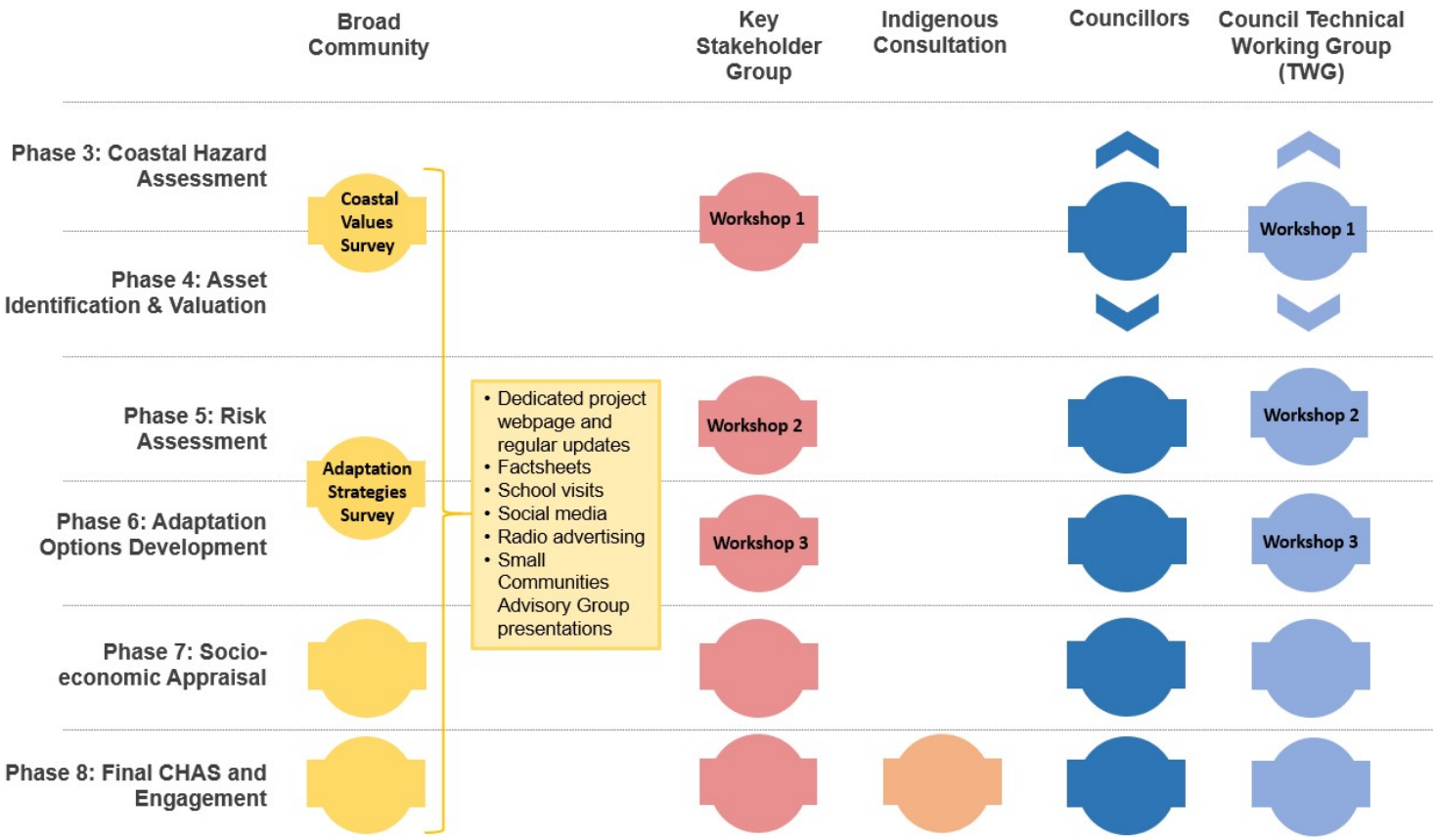

Figure 1: Coastal Futures – Summary of the engagement process

How we communicated

Locality factsheets

Locality-based fact sheets were prepared to present technical information and consultation findings to the community. Each fact sheet contained an overview of the six guiding strategies for coastal adaptation which are intended to underpin the development of actions in the CHAS. The factsheets also provided an overview of the values, vulnerabilities and opportunities identified for each locality (**Figure 2**). Factsheets were created for the following localities:

- Burrum Heads
- Toogoom
- Dundowran and Craignish
- Great Sandy Straight Townships
- Hervey Bay
- Mary River
- River Heads and Booral

A complete copy of the locality factsheets is provided at **Appendix A**.

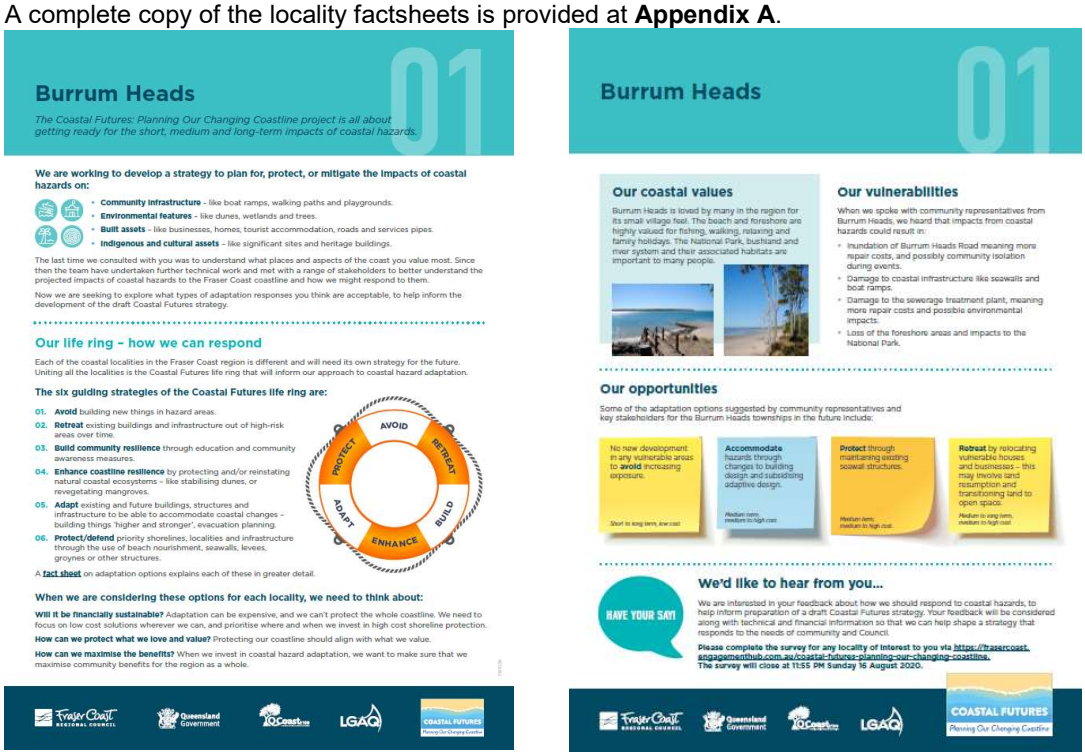

Figure 2: Example of Locality Factsheets

Survey

The survey was available on Fraser Coast Regional Council's Engagement Hub between 31 July 2020 and 23 August 2020. Hardcopy surveys were available at Council's Customer Service Centres in Hervey Bay and Maryborough and were distributed throughout the region at various locations and meetings by Councillors. There were 587 responses to the survey. The survey was promoted by:

- Media release and Council website links from multiple pages (including "Latest News", "have Your Say", "Major Projects", "Beaches and Coastlines")
- Sending direct links to the Key Stakeholder Group, community panel nominees, and various contact databases such as project followers, small communities advisory group and indigenous contacts.
- Inclusion in the Fraser Coast Weekly e-newsletters during the consultation period
- Multiple Facebook posts
- Ad in community newsletter – Toogoom Chatter
- Promoted at the Maryborough and Hervey Bay School Captains Network meetings
- Promoted internally to staff to share with their social media networks

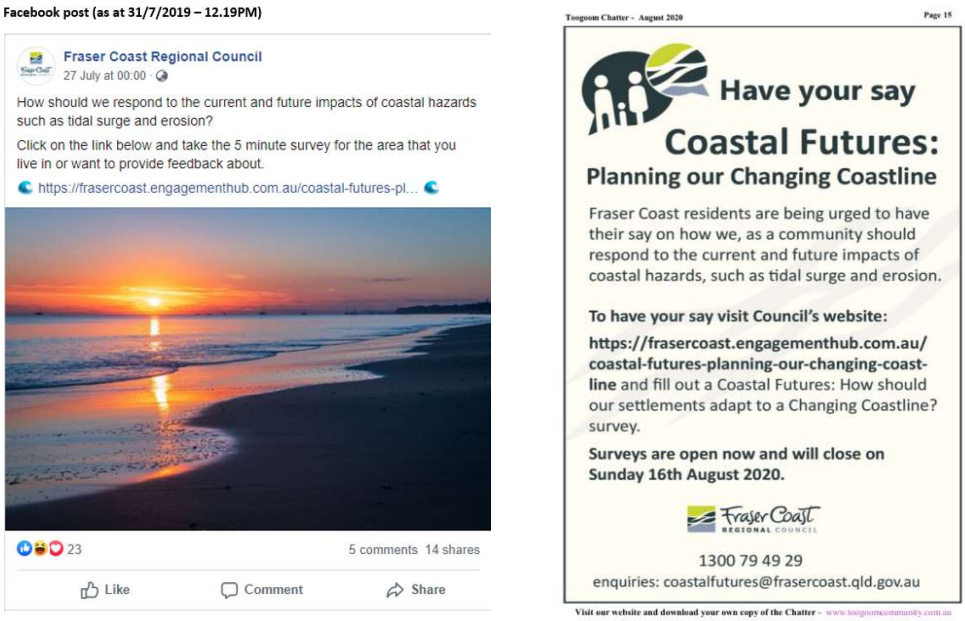

Figure 3: Survey promotion

The survey was based on seven (7) key localities within the region (as listed above). Respondents were able to select the most relevant survey based on the locality, or localities, of most interest. The survey comprised open- and closed- questions to understand:

- Levels of support for the guiding strategies for responding to coastal hazards which will underpin the Fraser Coast CHAS. This includes:
  - Strategy 1: Avoid building new things in hazard areas
  - Strategy 2: Retreat existing buildings, structures, and infrastructure out of high risk areas, over time
  - Strategy 3: Build community resilience through education and community awareness measures
  - Strategy 4: Enhance coastline resilience by protecting and/or reinstating natural coastal ecosystems – like stabilising the foreshore, revegetating mangroves.
  - Strategy 5: Adapt existing and future development, infrastructure and assets to be able to accommodate coastal changes – building things 'higher or stronger,' evacuation planning.
  - Strategy 6: Protect / defend the shoreline and assets/infrastructure through the construction of seawalls, levy, groynes or other structures.
- Feedback on how each strategy should be applied within the locality
- How the respondent would like to be involved in the ongoing implementation of the Fraser Coast CHAS.

Additional questions were also asked regarding the respondent's demographic information. A complete copy of the survey is provided at **Appendix B**.

Respondents were provided with links to coastal hazard mapping and the Locality Bulletins described above, to ensure community members were informed as part of taking the survey.

Survey Analysis

Responses to closed survey questions have been analysed quantitatively. Open-ended questions have been analysed thematically. The thematic approach used in this report is necessarily subjective and required the exercise of professional judgement as to how comments are summarised and categorised. The advantage of this approach is that it provides a useful means of identifying significant themes and priorities within highly variable and detailed responses.

Although the survey was designed to obtain community feedback regarding specific adaption strategies, most open-ended feedback received was more general and not always nuanced to relate to a specific adaptation approach. Therefore, analysis of responses has focussed on identifying key overarching themes and messages as opposed to reporting detailed findings by adaptation strategy. This has provided useful insights into preferred adaptation approaches and actions as well as an understanding of key assets, locations and values to be protected.

2. Snapshot of findings

587 SURVEY RESPONSES

KEY CHARACTERISTICS

Most respondents were residents living in the region **71%**

11% of respondents were business owners in the region

10% of respondents worked in the region

Most respondents who live in the region lived in Hervey Bay (**34%**) Toogoom (**15%**) and Poona (**12%**)

40% of respondents live on a coastal Esplanade

NUMBER OF RESPONSES BY LOCATION

Hervey Bay	197
Great Sandy Straight Townships	131
Toogoom	88
Dundowran and Craignish	61
Burrum Heads	46
River Heads and Booral	34
Mary River	30

What we heard:

Enhancing coastline resilience using ecosystem-based approaches was the most supported adaptation response overall

Use **planning controls** to avoid development or reduce the intensity of uses, within coastal hazard risk areas.

Prioritise natural and 'soft' solutions over hard infrastructure responses (in the shorter term)

Build community understanding and resilience through signage, events, newsletters and social media

The community are interested in in **monitoring coastal changes** and issues over time

Protect/defend and **retreat strategies** were less supported approaches and were seen as a longer-term response

Key Findings:

At a high level, the overarching findings from engagement are:

- There were generally high levels of community support for all the adaptation strategies
- The 'enhance' strategy was consistently identified as the most preferred adaptation response amongst respondents for each locality.
- Protect/defend and retreat responses had comparatively lower levels of support, however, over half of respondents generally supported these options.
- There was support for the use planning controls to avoid the development of sensitive uses (e.g. schools, hospitals, emergency services, residential) or increasing the intensity of existing uses within coastal hazard areas and ensuring buildings are designed and constructed to respond to coastal hazard risk.
- Protect areas of environmental value such as dunes, foreshore areas, mangrove habitat and creeks and prioritising natural and 'soft' solutions over hard infrastructure. The latter were generally identified and accepted as a longer term response
- A high proportion of respondents expressed their interest in being involved in monitoring coastal changes and issues
- Respondents were generally more accepting of a rate increase than paying a levy to fund coastal adaptation works
- Improved community knowledge of evacuation plans and the importance and management of coastal hazard processes and foreshore vegetation was expressed as key response to build community resilience in all localities. Stronger penalties for removing vegetation and the importance of pre-warning on coastal hazard events was also recognised in several responses.

3. Burrum Heads

Respondent characteristics:

46 responses

About half of respondents are Burrum Heads residents (**53%**)

Over one-third live on a coastal Esplanade (**37%**)

Only **1** respondent was a business owner

Only **1** respondent was part of a community group

Guiding strategy preferences for Burrum Heads:

All adaptation strategies received high levels of support from respondents. Build, enhance and avoid responses had the highest levels of community support. Protect/defend and retreat responses had comparatively lower levels of support.

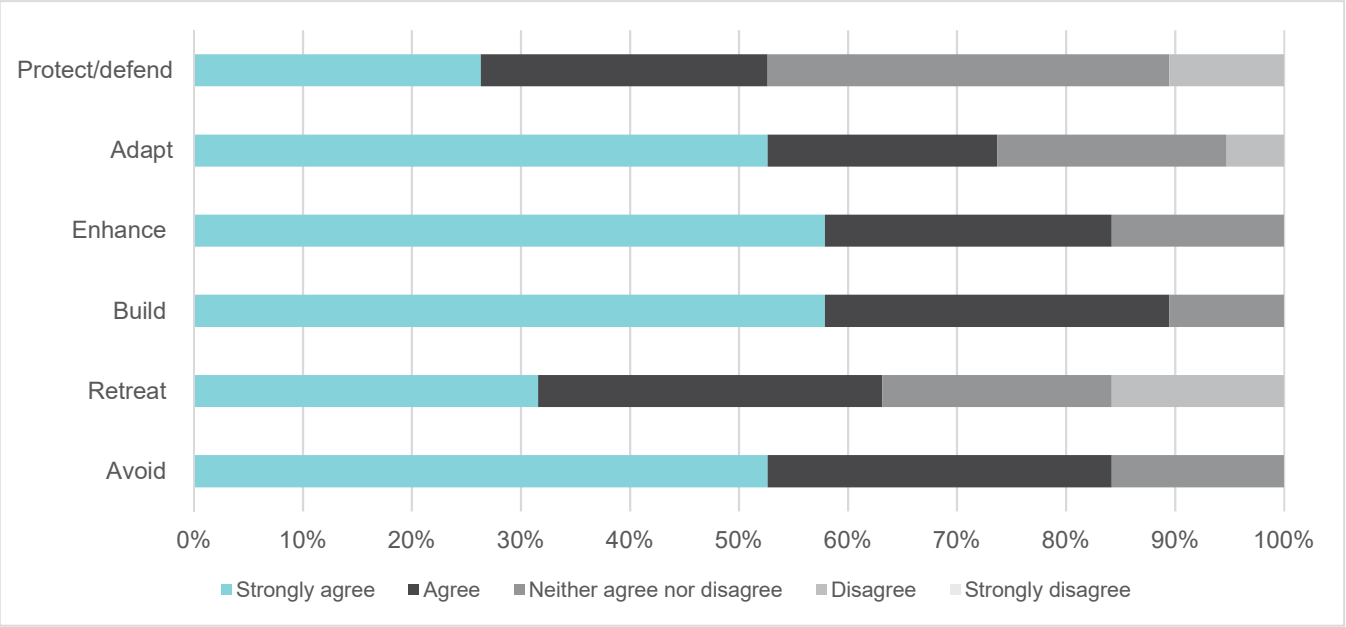

Figure 3: Preferred response strategies for Burrum Heads

Key feedback

1. Stabilise and protect foreshore areas by re-establishing native vegetation buffers. Sirenia Beach and Beach Drive are key locations to implement natural protection measures.
2. Stop unlawful vegetation clearing over private properties in foreshore areas to enhance coastline resilience - there is support for stronger regulation and punishment of unlawful clearing in these areas.
3. Prevent new development in areas at-risk through planning scheme responses (e.g. zoning). The Open Space and Sport and Recreation zone could be used to discourage inappropriate development and land uses in vulnerable areas.
4. New development, in areas of current and future risk, should be designed and constructed using resilient and adaptable construction methods (e.g. 'pier and pole' construction). There is concern with 'slab on ground' construction methods in these areas, due to the difficulty in relocating buildings constructed using this method. Some respondents emphasised the need to protect new development in foreshore areas, referencing the 'On the Beach' and 'Dolphin Waters' estates.
5. The upgrade of Burrum Heads Road is important to ensure it remains 'inundation proof' into the future and allows evacuation and access during a hazard event.

6. Key public infrastructure and community services such as the Rural Fire Service, SES and Community Hall, should be re-located or protected.
7. Access to information can assist in building community resilience. Community education should be achieved through circulating collateral (fridge magnets etc.), partnerships with community organisations (schools, fishing club, outrigger clubs etc.) and development of a community evacuation plan for Burrum Heads. Education on coastal hazards and evacuation should prioritise for residents in at-risk locations, such as Sirenia Beach, and vulnerable people (e.g. older people; people with a disability).
8. Hard engineering measures, such as sea walls, should only be used where necessary. There is concern about their potential impacts on scenic amenity. If implemented, they should be combined with walking paths and protect marine habitat in important areas like Beelbi Creek.

How people would like to be involved

The majority of respondents are willing to volunteer to monitor coastal changes and issues in their locality, accept an increase in rates or undertake works to their property or building to protect against coastal hazards. There were lower levels of support for having no involvement (in time or funds) or paying a levy to fund adaptation works.

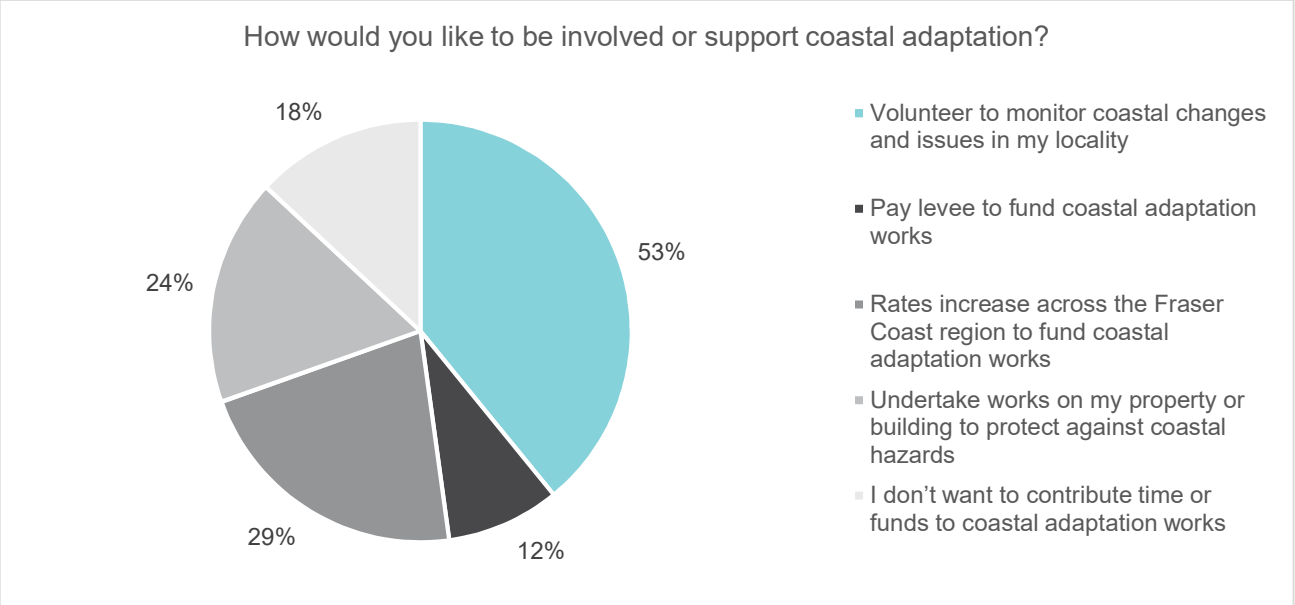

Figure 4: Preferred involvement in coastal adaption in Burrum Heads

4. Toogoom

Respondent characteristics:

88 responses	Most respondents are Toogoom residents (**92%**)	Almost half live on a coastal Esplanade (**45%**)	**6%** of respondents were a business owner	**6%** of respondents were part of a community group

Guiding strategy preferences for Toogoom:

All adaptation strategies received high levels of support from respondents. Enhance responses have significantly higher levels of community support. Adapt, avoid and build responses has similar levels of support as secondary preferences. Retreat had comparatively lower levels of support for this locality.

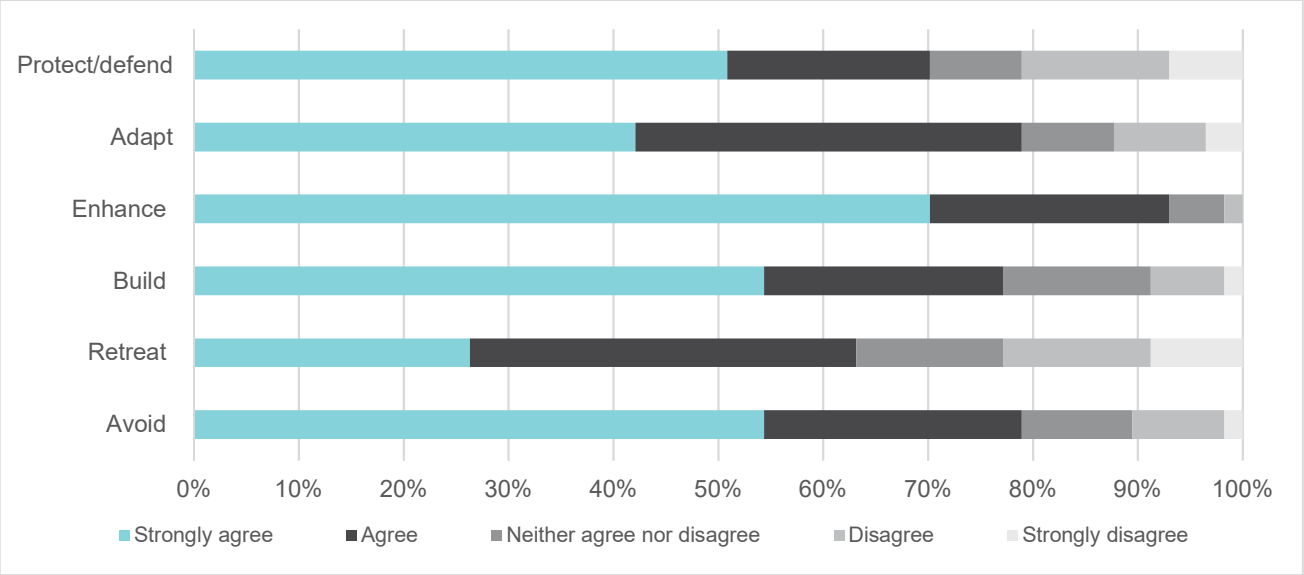

Figure 5: Preferred response strategies for Toogoom

Key feedback:

1. Planning controls and Council decisions should avoid new development in areas subject to coastal hazard risk. Development should be minimised near creeks/beaches and within 200mm of high tide and low-lying areas. New buildings should also avoid reliance upon earthworks and slab-on-ground construction, this is a perceived issue in new housing estates.
2. Enhance shoreline resilience through natural measures such as mangrove and foreshore revegetation. This provides fewer environmental impacts and better amenity outcomes in comparison to man-made interventions.
3. Beelbi Creek and O'Regans Creek are key locations to enhance and protect through natural measures. It was acknowledged that this type of response may not provide long-term protection and hard infrastructure interventions (e.g. groynes or sea walls) may be necessary at these locations.
4. Fixter Park is a key asset to protect and enhance through revegetation (from both Council and community). The extension of sea wall/rock wall along Kingfisher Parade, was identified as a potential protection measure for Fixter Park and the surrounding foreshore.
5. The relocation of existing public assets from at risk areas, with the exception of the Toogoom Boat Ramp, should be a last-resort strategy due to cost prohibitions.

6. Identify and deliver an alternative to Pialba Burrum Heads Road as an emergency evacuation route for Toogoom.
7. Build community resilience through educating the public on the value and management of foreshore vegetation and by introducing stronger penalties for removing vegetation. It is also important to provide pre-warning to the community on coastal hazard events.

How people would like to be involved

Most respondents would like to support coastal hazard adaptation by participating in volunteering programs that monitor coastal changes and issues in their locality. There were similar proportions of people who indicated that they would be willing to undertake works to protect their property or accept a rate increase to support coastal adaptation. There was only a small proportion of respondents who indicated that they would not be willing to support time or funds to coastal adaptation.

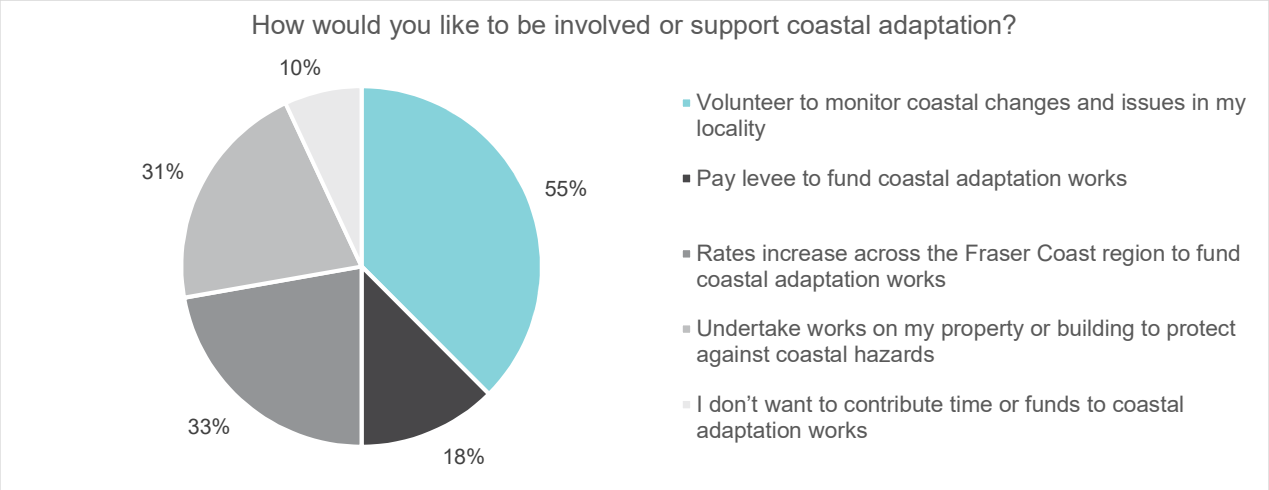

Figure 6: Preferred involvement in coastal adaption in Toogoom

5. Dundowran and Craignish

Respondent characteristics

61 responses

Almost all respondents are Dundowran and Craignish residents (**91%**)

Around 26% of respondents live on a coastal Esplanade

4 respondents were business owners

Only **1** respondent identified their interest as a worker in the region

3 respondents were a part of a community group

Guiding strategy preferences for Dundowran and Craignish

All adaptation strategies received high levels of support from respondents. The enhance and avoid strategies had the greatest support while retreat and protect / defend had comparatively lower levels of support than other responses.

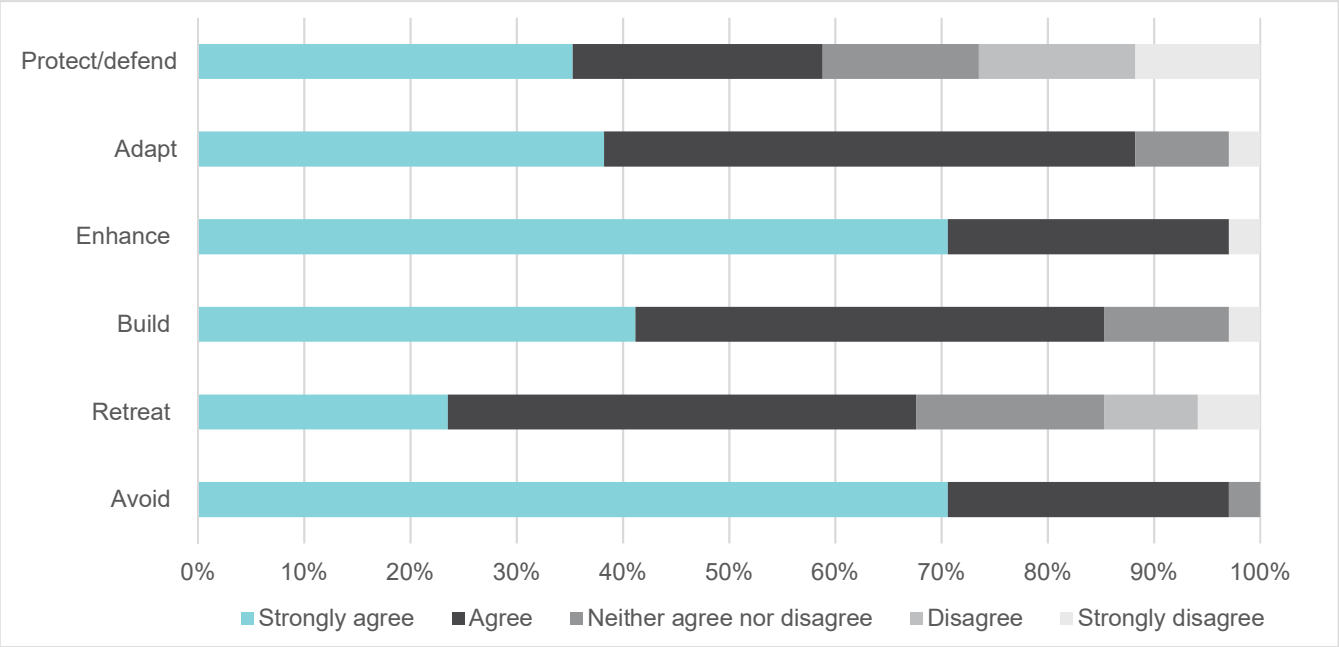

Figure 7: Preferred response strategies for Dundowran and Craignish

Key feedback:

1. Avoid new development in high risk areas, particularly in proximity to the foreshore and Eli Creek and O'Regan Creek. It was suggested that land at Ansons Road could be resumed and revegetated, rather than developed for residential use.
2. Planning scheme responses such as zoning amendments, increasing development setbacks, and preventing clearing within 100 metres of the high tide mark are potential ways to manage development in vulnerable areas.
3. Preference for natural responses to enhance the resilience of at-risk areas such as foreshore and mangrove revegetation, dune stabilisation and the creation of natural buffer areas. These options were generally preferred over man-made interventions as they have fewer environmental impacts. The Mungomery's Vine Forest, foreshore areas between Ansons Road and Petersons Road, and vegetation at creek mouths are key locations for protection and enhancement through revegetation.

4. Increase community awareness and knowledge of coastal hazards, evacuation plans and the importance of dune protection and rehabilitation are key strategies for building community resilience. This could be achieved through social media, letter drops and community information sessions.
5. Develop a stronger evacuation plan which details evacuation routes to identified safe assembly centres such as Dundowran Hall.
6. Public infrastructure (toilet blocks and picnic areas) and residential development are key assets requiring relocation to out of at-risk areas or protection through flood mitigation barriers. There were divergent views as to whether Council or the landowner should fund land acquisition and re-location costs.

How people would like to be involved

More than two-thirds (68%) of respondents indicated that they would like to support coastal hazard adaptation through involvement in volunteering programs that monitor coastal changes and issues in their locality. The next most popular response was in support of a rate increase to support coastal hazard adaptation. There were similar proportions of people who indicated that they would be willing to undertake works to protect their property and who said that they did not want to contribute time or funds to coastal hazard adaptation works. Only a small proportion of respondents said they would pay a levy to fund coastal hazard adaptation works.

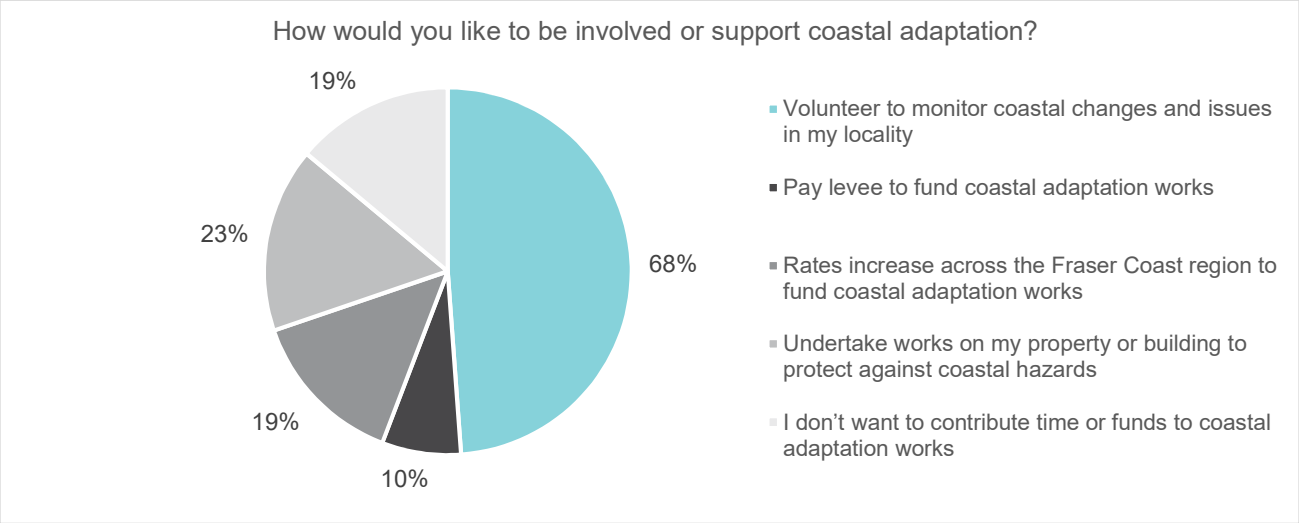

Figure 8: Preferred involvement in coastal adaption in Dundowran and Craignish

6. Hervey Bay

Respondent characteristics

197 responses

Almost all respondents were Hervey Bay residents (**97%**)

About one-third of live on a coastal Esplanade (**32%**)

13% of respondents were business owners

10% of respondents identified themselves as workers

8% of respondents were a part of a community group

Guiding strategy preferences for Hervey Bay

There were high levels of support for all the adaptation strategies. The enhance and avoid responses had the highest levels of community support. The protect/defend and retreat approaches had comparatively lower levels of support.

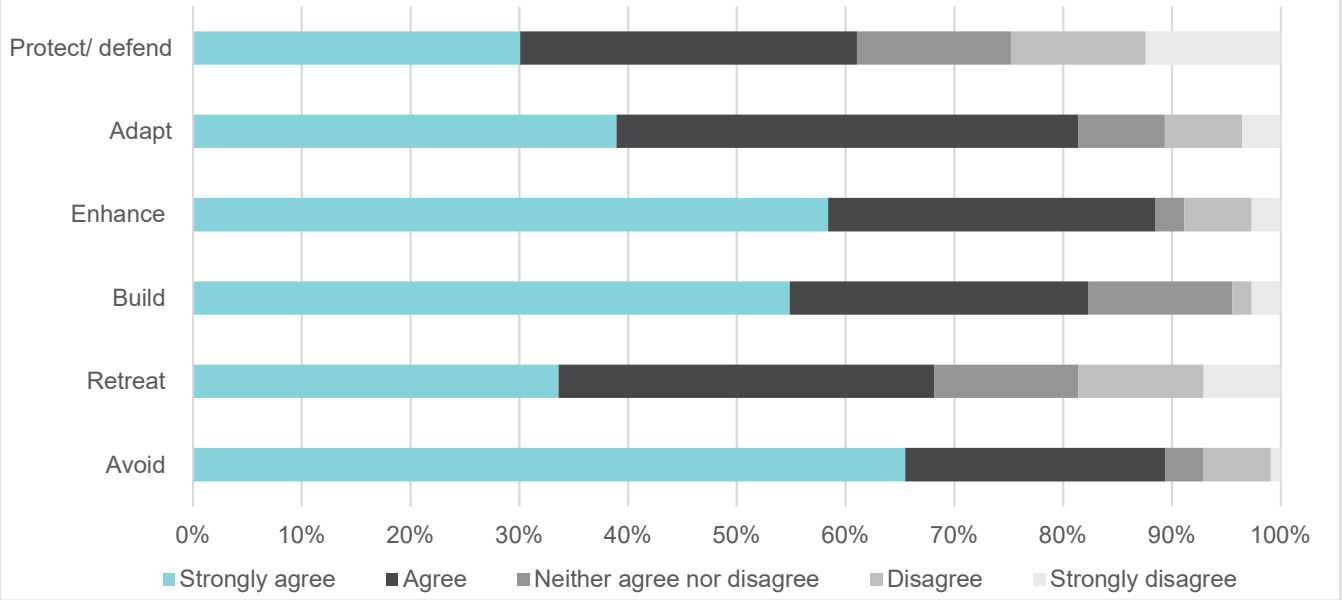

Figure 9: Preferred response strategies for Hervey Bay

Key feedback:

1. Enhance coastline resilience through ecosystem-based responses, such as dune stabilisation, protection and restoration of native vegetation, and increasing natural buffers. Point Vernon and Eli Creek were key areas identified for foreshore protection.
2. Amend planning scheme zones and implement a long-term land buy back strategy to minimise risk and prevent new development in coastal hazards risk areas. High-risk areas could be rezoned to Open space and Sport and recreation zones to ensure only risk-appropriate uses such as natural vegetation reserves, parks, sporting fields, camping grounds or dog parks occur. Prohibit further development around the foreshore and The Esplanade and lower lying areas of Eli Creek/Point Vernon.
3. Develop a staged relocation plan for development affected by coastal hazards. Buildings, infrastructure, and services should be moved further inland as they become redundant or exposed to high hazard risk.
4. The development of rock walls can be considered where proven to not cause detrimental impacts on the natural environment or scenic amenity. Other hard engineering responses suggested for Hervey Bay include the use of artificial reefs, tidal barrage and floating barriers.
5. Planning controls should be implemented to ensure existing coastal dependent development, such as the Urangan Boat Harbour and Pier, are upgraded and enhanced to increase resilience. Planning controls

should also ensure that new development subject to current and future coastal hazard risk is designed and constructed using stronger, more adaptable materials.

6. The highest priority public infrastructure and community services that should be protected from coastal hazards impacts through their re-location out of at-risk areas are emergency services, schools, road transport, WetSide Water Park, Point Vernon Sewage Pump and Seafront Oval.
7. Increased community education and awareness through better access to information and warning systems are integral in building community resilience. School programs, open forums, online education tools and fixed displays at beachside locations (i.e. Urangan Pier, Enzos and Aquavue) are key tools to increase community awareness and education of coastal hazards. Council should also notify property and business owners located in at-risk areas.
8. There are divergent views on who should be responsible for the costs associated with relocating properties and infrastructure out of coastal hazard extents – some believe it should be funded by Council and others think that it should be at the cost of the landowner. The costs associated with implementing adaptation options must be managed effectively to ensure transparency around land acquisition decisions.

How people would like to be involved

Most respondents would like to be involved in coastal hazard adaptation through volunteering to monitor coastal changes and issues. There were similar proportions of people who indicated that they would be willing to undertake works on their property or support a rate increase to protect against coastal hazards. However, about the same number of people also said that they did not want to contribute time or funds to coastal hazard adaptation works. Paying a levy to fund coastal hazard adaptation works had the lowest level of support from respondents.

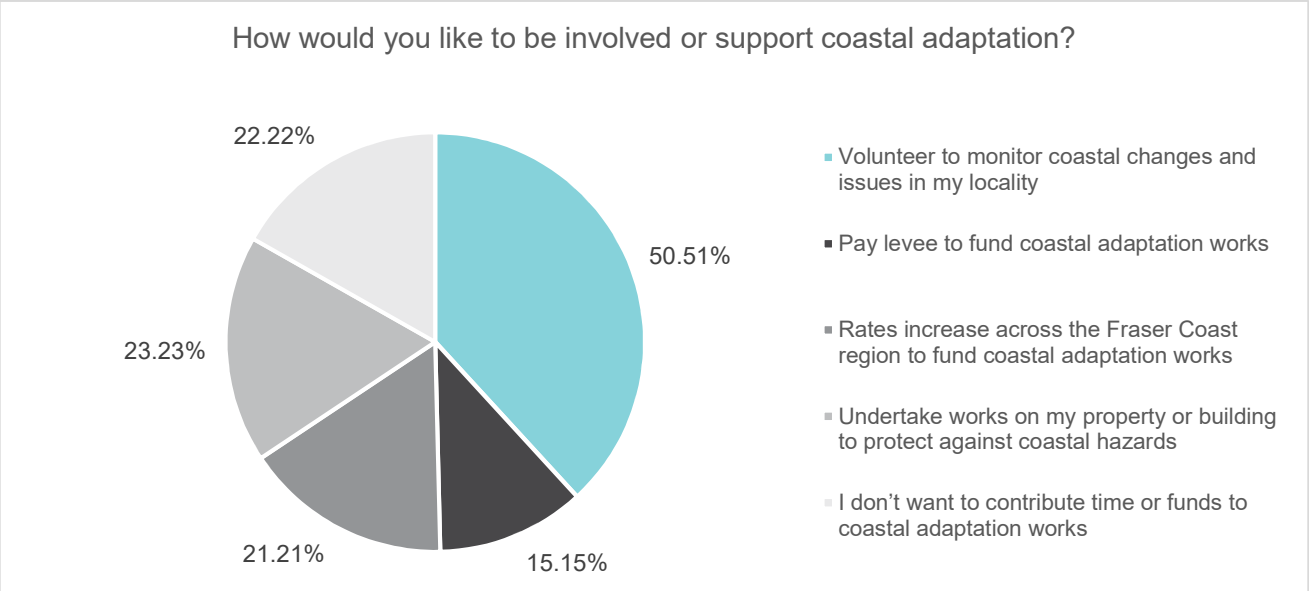

Figure 10: Preferred involvement in coastal adaption in Hervey Bay

7. River Heads and Booral

Respondent characteristics:

34 responses	**94%** of respondents are residents of River Heads and Booral	A third live on a coastal Esplanade **(31%)**	**1** respondent was a worker	**0** respondents identified as a business owner or community group

Guiding strategy preferences for River Heads and Booral:

All adaptation strategies received high levels of support from respondents. Protect/defend had lowest levels of support. Enhance, avoid and adapt were the preferred adaptation strategies.

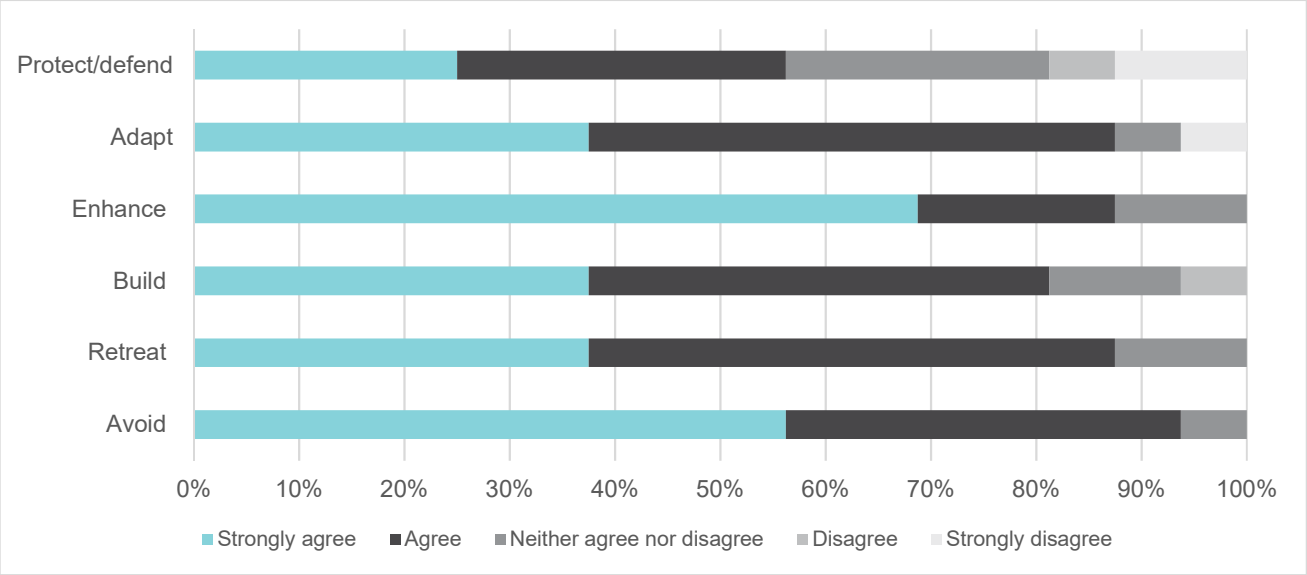

Figure 11: Preferred response strategies for River Heads and Booral

Key feedback

1. Protection and enhancement of foreshore areas and mangrove habitat is strongly supported by the community, particularly in Turtle Cove. The community are keen to be involved in revegetation activities. Littering and vegetation clearing in foreshore areas should be penalised.
2. The strong preference is for natural adaptation interventions which protect the Great Sandy Strait townships for future generations and tourists. It is acknowledged that there may be a need for man-made structures, like sea walls to protect at risk areas, over time.
3. Avoid residential development in proximity to the foreshore and other at-risk areas, particularly in Turtle Cove and adjacent to Waterman's Way. At-risk land could be zoned Open Space zone or similar, some suggested these areas should be acquired by government for education or tourism purposes.
4. Buildings that are coastal dependent (e.g. boat storage) should be designed to allow for removal or relocation where possible, to respond to coastal hazard risk.
5. Land at 2-4 Ariadne Street, River Heads should be resumed by Council and revegetated, rather than being developed for a car park.
6. Hard infrastructure protection should be combined with a new walking track and boardwalk from River Heads Boat Ramp to Urangan Harbour, to build community resilience and support local adaptation.

How would you like to be involved or support coastal adaptation?

Volunteering to monitor coastal changes and issues was the most common response. There were a similar number of respondents who indicated they would be willing to undertake works on their property or building to protect against coastal hazards as those who did not want to contribute time or funds to adaptation works. There were low levels of support for paying a levy or supporting a rates increase to fund coastal adaption works in this area.

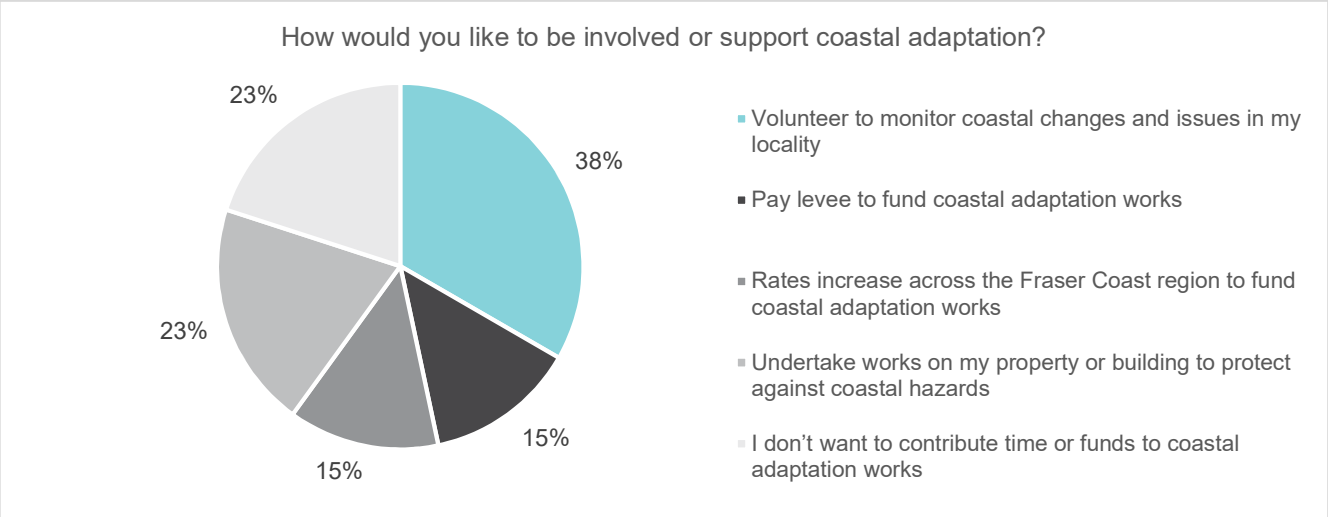

Figure 12: Preferred involvement in coastal adaption in River Heads and Booral

8. Mary River

Respondent characteristics:

30 responses

75% of respondents are residents of Maryborough/ Mary River/ Susan River

One quarter (**25%**) of respondents live on a coastal Esplanade

19% of respondents were either a business owner or worker

19% of respondents were part of a community group

Guiding strategy preferences for Mary River:

Enhance, build, avoid and adapt responses were the most supported adaptation strategies. Protect/defend and retreat responses, were less preferred strategies. Although the enhance strategy also had the highest number strongly agree responses, it also had the highest number of strongly disagree responses.

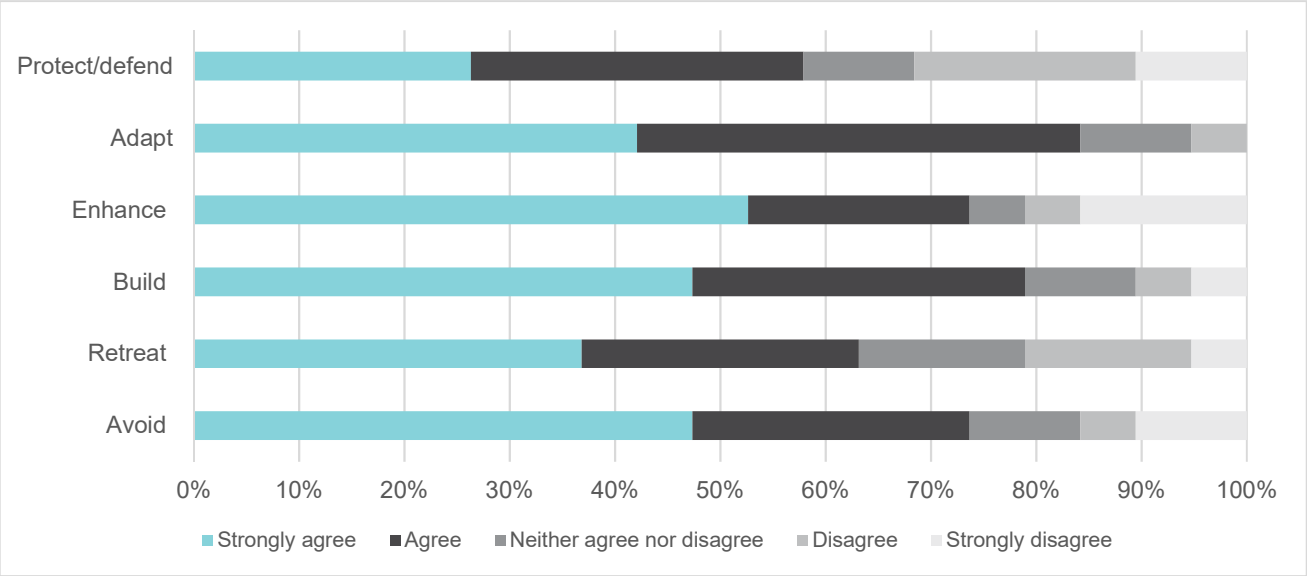

Figure 13: Preferred response strategies for Mary River

Key feedback:

1. Preference for natural responses such as the protection of existing vegetation and revegetation of foreshore areas. The protection of natural assets should be prioritised over built assets, man-made interventions should only be implemented where risk and impact cannot be avoided.
2. Need for better education on the modelling undertaken through the Coastal Futures project, in addition to the sustainability principles of the Great Sandy Biosphere, to build community resilience and buy-in.
3. Avoid new development through planning controls in areas at-risk areas.
4. Man-made and hard infrastructure interventions should be implemented to prioritise protection of key community facilities, public assets and places of cultural significance, given their community importance and cost of relocation.
5. Convert CBD areas subject to inundation to lower intensity and risk-tolerant land uses, such as car parking.

How would you like to be involved or support coastal adaptation?

Most respondents indicated that they did not want to contribute time or funds to coastal adaptation works. Only 15 people answered this question.

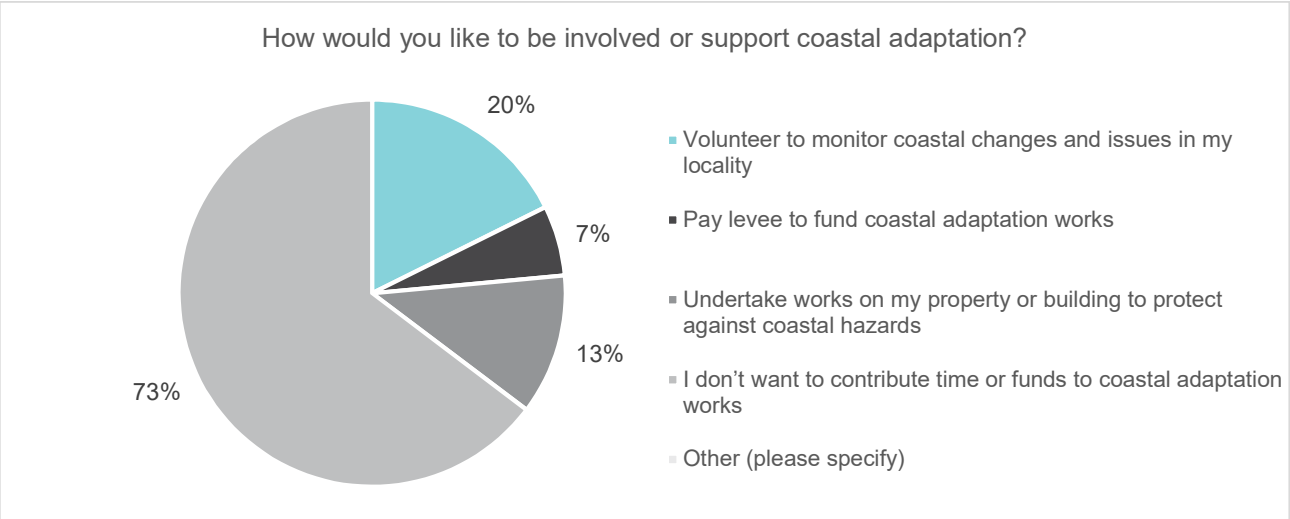

Figure 14: Preferred involvement in coastal adaption in Mary River

9. Great Sandy Strait Townships

Respondent characteristics:

131 responses	**53%** of respondents are residents of Poona, with a further **15%** each from Tuan & Tinnanbar	Over half (**59%**) of respondents live on a coastal Esplanade	**12%** of respondents were either a business owner or worker	**12%** of respondents were part of a community group

Guiding strategy preferences for the Great Sandy Strait townships:
Enhance strategies received the strongest support, followed by build, protect/defend and avoid responses. Retreat received the lowest level of support from respondents.

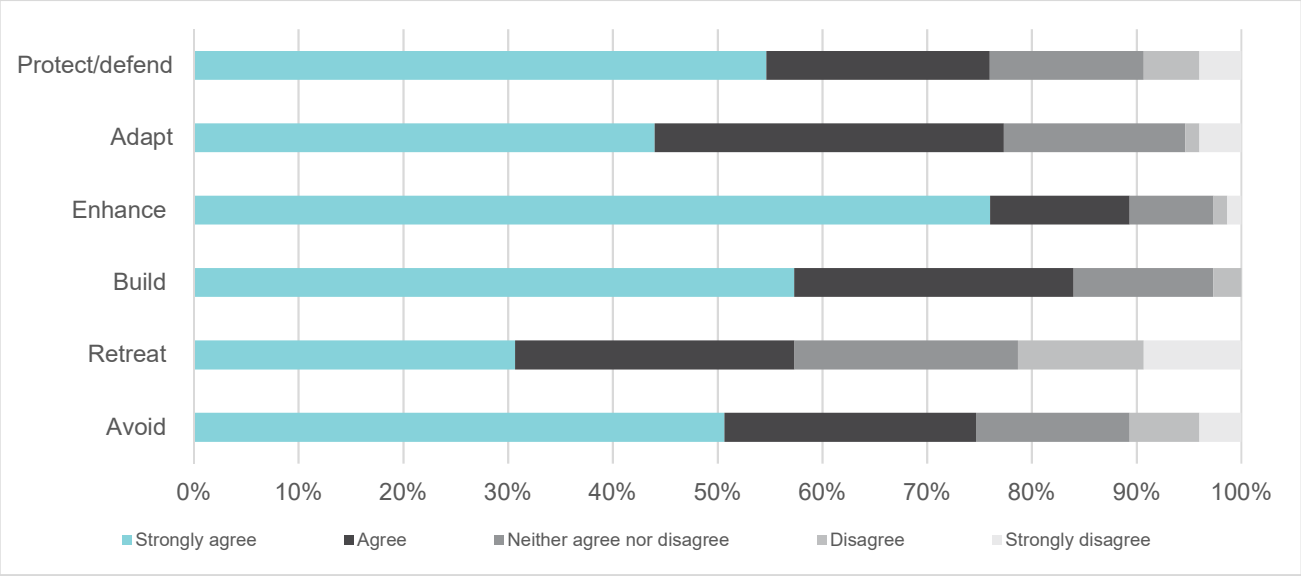

Figure 15: Preferred response strategies for the Great Sandy Strait townships

Key feedback:

1. Use planning controls and policy to reduce development in high risk areas. To offset this, it may be appropriate to increase densities in lower risk areas. Specific policy responses of this nature should be incorporated into foreshore master plans.
2. Retain areas subject to coastal hazards as green and open space, with limited infrastructure and development (e.g. only low cost public amenities). Where located within the at-risk areas, development should incorporate resilient building design approaches, specified in building codes and design standards.
3. Protect and maintain existing buildings and infrastructure in at-risk areas and make best use of the coastline today, rather than risk over-expenditure on relocating and retreating assets that would limit their use in the short to medium term.
4. The new toilet block at the Poona boat ramp is a key asset. Some expressed that it should be located outside of the hazard area, while others stated that there is no point siting it far away from the boat ramp as it will be underutilised.
5. Divergent views on the Poona boat ramp –most recognised that it is important to relocate or enhance the boat ramp to ensure it is protected, others believe it should be abandoned.
6. The Poona foreshore is a key community asset and should be stabilised and protected through a hard infrastructure response (e.g. rock wall).

7. The Tinnanbar and Tuan foreshores are key assets to be protected and enhanced in the future. Re-establishing mangrove vegetation in key areas (e.g. between Tinnanbar boat ramp & Mosquito beach) is the preferred strategy to achieve this. It is acknowledged that a hard infrastructure (e.g. sea walls) response may be needed in the long term.
8. Build community resilience through education and awareness raising of coastal hazards. The community should be educated about appropriate and responsive construction methods, benefits of mangrove trees and impacts of removing trees etc. This is important to instil commitment and change behavioural patterns across both young and old.

How would you like to be involved or support coastal adaptation?

Most respondents indicated that they would be willing to volunteer to monitor coastal changes and issues in their locality to support adaptation. The other options, with the exception of paying a levy, had a similar number of responses.

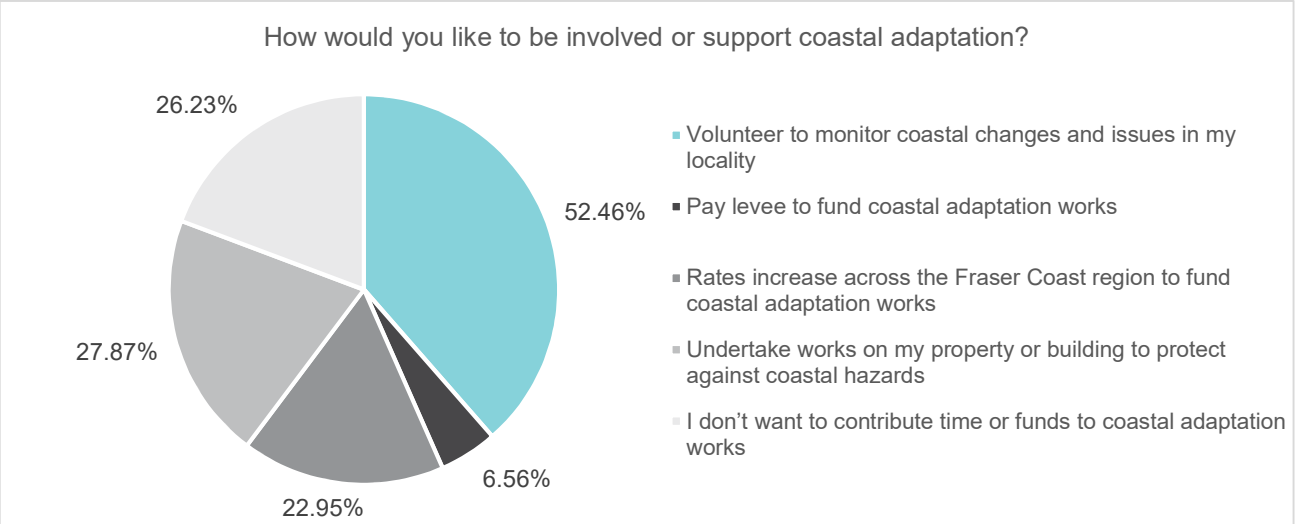

Figure 16: Preferred involvement in coastal adaption in the Great Sandy Strait townships