MINUTES OF MEETING

Bundaberg Coastal Hazard Adaptation Strategy
Community Reference Group (CRG)

Held At: Function Room, Bundaberg Regional Council Administration Centre
190 Bourbong Street, Bundaberg

Date & Time: Thursday, 5 March 2020 – 6.00 pm to 7.30 pm

Present:

CRG Members – Chris McLoughlin, Heath Greville, Josephine Ferris, Jennifer Parry, George Martin, Robert Bell, Terry Kelly

Council – Cr Bill Trevor (Chair), Cr Jason Bartels, Dwayne Honor (Project Manager), Evan Fritz (Strategic Planning), Sally Obst (Natural Areas), Natalie McDonald (Administration)

Apologies

CRG Members – Russell Stewart, Ian Graham, Lloyd Blake, Collin Turner, Tony Ricciardi, Shanelle Pekin, Sharon Jackson, Joe Russo, Julie Fauser

Council – Cr Wayne Honor, Cr Greg Barnes, Cr Scott Rowleson, Beth Whitworth (Disaster Management)

BUSINESS OF MEETING

1. Introductions and Welcome (Dwayne Honor)

Cr Trevor thanked all for attending the meeting and hoped they had a good Christmas. He advised we are now approaching the finish line and it is exciting to be progressing towards the implementation plan and possibly the opportunity to progress some of the outcomes in this year’s budget, dependent on the local government elections in March.

The Project Manager, Dwayne Honor welcomed all, noting it has been some time since the last meeting, but expressed the ethos to only get the group together when there was something of value to work through. The minutes of the previous meeting were accepted and are to be published on the Our Coast website.

The session tonight will work through validating the multi-criteria analysis weightings and gaining some insight into the final implementation plan. Dwayne Honor presented a PowerPoint to the group (refer Annexure A).

Our CHAS project is aligned with the types of projects (Slide 1) and thinking to address and adapt to climate change, with Bill Gates being one of the prominent leaders in this area in current times. This is not a new challenge across the globe and our Council is not the only one trying to work through the complexity of issues.
The group worked through a scenario planning tool on-line game by the LA Times in the USA, titled "The Ocean Game - The Sea is Rising – Can you Save your Town", to conceptualize some of the challenges faced with storm tide inundation and sea level rise, etc. and public decision making processes.

Website Link: https://www.latimes.com/projects/la-me-climate-change-ocean-game/

The following discussions/comments are noted from working through the scenarios of the game:

➢ The CHAS process helps us put a plan in place for the future and acting when the time eventuates – Building of groyne and pathways at Hervey Bay is an example.
➢ Compulsory acquisition of land for roads etc. – The process through the land courts for agreement can be a very expensive option.
➢ Council where lived previously did not build on erosion-prone sites.
➢ There is devaluation of property caused by storm tide inundation and erosion, increasing insurance costs and decreasing demand for these properties.
➢ Council should look at adopting an active approach of responsibility to inform potential buyers that it may be beautiful today but may not stay this way forever.
➢ The reality of proposing a plan to buy out property owners and move homes away from the coast would be a measure of last resort. Different people have different attitudes and lifestyle considerations which affects decision making which can outweigh monetary incentives at differing times. Incentives can provide options and insurance can also be a major factor to decision making.
➢ There are already some areas of the Bundaberg coastline that have effectively become uninsurable due to coastal hazards.

The game highlighted to the group the complexities of the issues and that not one size fits all scenarios. “Our CHAS process enables best practice decision-making informed by science, so we are not just ‘taking a guess’ like in the game.”

2. Overview of CHAS Progress (Dwayne Honor)

Dwayne Honor recapped on progress of the CHAS to date (refer Powerpoint Presentation):

• Phase 3 – Identification of Erosion Prone Areas - Miara, Moore Park Beach, Bargara, Innes Park, Coonarr, and Woodgate Beach (April – December 2018);
• Phase 4 – Identification of Assets – BRC, TMR, Telstra, Energy Qld, Sunwater etc. (December 2018 – April 2019);
• Phase 5 – Assessment of Risk – Triggers for Intolerable Risk – 0.2 m, 0.4 m & 0.8 m sea level rise (March – September 2019);

3. Adaptation Option Screening (Dwayne Honor)

• Phase 6 – Identify and Screen Options – Maintain/Modify/Transform (August – December 2019).

The Technical Project Team screened the long list of options by a high-level analysis of the following criteria: Cost, Benefits, Adverse Impacts/Challenges, Alignment to Principles, Effectiveness.

The Moore Park Surf Life Saving Club beach erosion and land swap of State land was discussed.

Dwayne Honor advised Council is now at Phase 7 of the project and determining the multi-criteria analysis as summarised below:

1. Cost – Putting the Measure in Place.
2. Impacts on Access - Beach Accessibility and Amenity.
4. Adaptability – To Unexpected Climate Trends.
5. Effectiveness – In reducing Risks from Coastal Hazards.
6. Approvals – Difficulty in Obtaining Approval to Construct.

The MCA criteria has been aligned to the results of the community values survey which identified the top ways that the community likes to use the coast and are concerned about.

There is no right or wrong answer with the MCA evaluation. The Technical Project team workshopped the process in January 2020 which was also reviewed with the Project Control Group (PCG) to come up with a proposed weighting result which we wish to validate with the CRG member tonight. The Technical Project Team worked through the decision-making framework, Analytic Hierarchy Process (AHP), by comparing and focusing on two of the criteria, e.g. Cost vs Effectiveness, Impacts vs Technical Viability. This process provides a more accurate weighting when undertaken as a group.

The group moved to undertaking the weighting criteria ranking exercise. The 7 criteria as noted above were printed on A3 Sheets and placed on the wall, and the group were given 10 stickers each to place on the criteria which they ranked as important to themselves and the Bundaberg Community (Refer Annexure B noting that red text equals Ranked Priority 1-7; and green is the sticker count). The CRG ranking results compared to the Technical Group are as follows:

<table>
<thead>
<tr>
<th>CRG MEMBERS</th>
<th>TECHNICAL PROJECT TEAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Effectiveness</td>
<td>1. Effectiveness</td>
</tr>
<tr>
<td>2. Impact on Environment</td>
<td>2. Adaptability</td>
</tr>
<tr>
<td>3. Adaptability</td>
<td>3. Impact on Access</td>
</tr>
<tr>
<td>5. Cost</td>
<td>5. Impact on Environment</td>
</tr>
<tr>
<td>7. Approvals</td>
<td>7. Cost</td>
</tr>
</tbody>
</table>

The following points were raised by the group for discussion and consideration:

- How costs are to be met? - For example, if each ratepayer were to be levied an amount each year, this could have an influence on the rank (i.e. Funding availability can change).
- If ‘cost’ was ranked at the top - this could eliminate many potential adaptation options and negate future funding sources for climate adaptation. Funding streams from government can change into the future and may enable adaptation options to be implemented.
Cost is considered an item that the Council as elected officials are best to determine based on funding availability at the time (including any external sources). The MCA and subsequent Cost Benefit Analysis will be used to further screen options and provide Council a "pool" of projects to decide from.

Reaching trigger point targets was raised, including availability of funding, agreement on options and the likelihood of reaching predicted sea level rise over a predicted period i.e 10 years from now.

It is likely that the whole coastline would be impacted at the same time. From observations, the further the community live away from the area of concern, the less their consideration is to impacts and adaptation options because they do not feel the consequence directly.

On any adaptation option, e.g. cost vs impact on beach access, all competing interests would be weighed up. The cheaper alternatives would not be considered if they did not address the issue.

Whole of Life Costs (WOLC) on preferred options will be undertaken based on trigger levels. The intent is to optimise when "X" amount of funding would be required to deliver the required outcome prior to intolerable impacts being reached.

Consideration should be given to new development approvals and ensuring they are placed in safer areas. There should be clear understanding that present conditions will not reflect future.

Brisbane River has large floodplains that are developed and while heavily impacted by floods, they are now some of the most vibrant places for people to live – need to balance the provision of community value and development opportunity, while ensuring future climate measures are considered and put in place.

Coastal areas have always been dynamic and consideration to settlements being kept away from these zones is important. Coastal creeks tend to transition, and Coonarr Beach was discussed as an example.

Protecting the environment with flora and fauna to provide a buffer zone within all areas while being flexible to specific settlement need was considered important.

It was observed that sometimes the community is willing to sacrifice the environment to improve drainage and public health concerns i.e. mosquitoes and low-lying water bodies. Group discussion highlighted that may have been a historical position and way of thinking, but clearly emphasized the community has now moved on towards preservation of our environment as a key value.

The following observations were made with regard to the weightings between the CRG members and the Technical Project Team, noting the below differences:

- Impact on environment – rated quite a bit lower by the Technical Project Team;
- Technical Viability – rated quite a bit higher by the Technical Project Team; and
- CRG looking from community viewpoint with Project Team looking from technical viewpoint.

Group discussion followed with consensus that the rankings were similar excepting the middle ranks and recommending that the Technical Project Team should consider adjusting Technical Viability down and Impact on Environment up.

5. CHAS Implementation Plan

The proposed design of the strategy document was presented to the group (refer Slide 27 - Annexure A) and how it will come together with settlement action plans.
6. Where to from here

Consideration will now be given to the final MCA in consultation with the Project Consultant and Council as the decision maker.

Tonight is the last CRG workshop on subject matter, with the final meeting to be held to preview the draft CHAS strategy document before public consultation.

The Strategy document will initially be presented to the new Council work completed to date and the consultative process with the CRG members. Following Council endorsement, the draft will be released for public feedback. After the public consultation period, all submissions will be reviewed and a final version of the strategy will be presented to Council for adoption.

QCoast 2100 funding requires the strategy to be finalised by October 2020. Douglas Shire Council has completed their strategy and Bundaberg Regional Council is the next most advanced. It is not known whether all Councils will be able to complete the strategy in time.

Dwayne conveyed his appreciation in everyone’s involvement to date, particularly as the project duration had extended considerably. A certificate of appreciation will be provided to each member.

A CRG Member wished to commend Council for sticking with the project which was expressed as a good thing. The trigger-based approach was considered an excellent outcome with a fair bit of wisdom built into the minimum standards and guidelines document. Members looked forward to seeing some of the outcomes implemented at Woodgate Beach and Moore Park Beach.

It was queried whether the CHAS would interact with other types of disaster management – e.g. fires last year. Dwayne Honor advised that as part of the technical work, Council determined that the risk consequence table in the QCoast 2100 minimum standards and guideline could not be applied to the Bundaberg coastline. Following consultation with the QCoast 2100 program, the Queensland Emergency Risk Management Framework (QERMF) was instead applied. This brings horizontal alignment to the CHAS and means the outputs can be neatly integrated to the next version of Council’s disaster management plan. The QERMF must be used as the basis for all future updates to disaster management plans in Queensland.

7. Closing

The Chair thanked all for attending, including the presenters, Dwayne Honor and staff, and also fellow Councillor, Jason Bartels. The minutes from this meeting will be circulated via email. Should CRG members have any further comments, please email through to ourcoast@bundaberg.qld.gov.au.

Cr Trevor thanked all the CRG members for their efforts in attending the project workshops and knows that a lot of people in the broader community are looking towards the outcomes of the CHAS strategy.

This concluded the business of the CRG Workshop at 7.43 pm.

Cr Bill Trevor, Chairperson
OUR COAST Community Reference Group
Welcome!
Bundaberg Region
Coastal Hazard Adaptation Strategy

Community Reference Group Workshop #8
6.00 to 7.30pm
5 March 2020
<table>
<thead>
<tr>
<th>ITEM</th>
<th>Lead</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductions</td>
<td>Dwayne Honor</td>
<td>5 mins</td>
</tr>
<tr>
<td>Overview of CHAS Progress</td>
<td>Project Team</td>
<td>10 mins</td>
</tr>
<tr>
<td>Adaptation Option Screening</td>
<td>Project Team</td>
<td>20 mins</td>
</tr>
<tr>
<td>CHAS Implementation Plan</td>
<td>Project Team</td>
<td>10 mins</td>
</tr>
<tr>
<td>Where we are headed</td>
<td>Dwayne Honor</td>
<td>10 mins</td>
</tr>
</tbody>
</table>
Climate-Adaptation Year of Action

- Global Commission on Adaptation (GCA)
- Year of Action to Accelerate Climate Adaptation
  - Target for Resilient Cities
  - Climate-Smart Land Use Planning
  - Nature based solutions
  - Locally-led action
  - Resilient Infrastructure
  - Prevent disasters by investing in early warning systems
Protecting Our Coast “A Wicked Problem”

- Difficult or impossible to solve
- Incomplete or contradictory knowledge
- Many opinions
- Large economic burden
Coastal CC adaptation - Game

This game demonstrates the complexity of adaptation solutions for coastal hazards.

The CHAS process enables best practice decision-making, so we are not just ‘taking a guess’ like in this game.
Phase 3 – identify areas
April – December 2018
Phase 3
Data considered in the asset counts were obtained from the following organisations:

- Bundaberg Regional Council
- Department of Transport and Main Roads, Queensland Government
- Telstra
- Energy Queensland (formerly Ergon)
- Sunwater
- Queensland Herbarium (regional ecosystems and habitat types).
Phase 5 – Assess Risk
March – September 2019

<table>
<thead>
<tr>
<th>Priority Asset</th>
<th>Storm Tide Inundation (&gt;0.8m SLR)</th>
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</thead>
<tbody>
<tr>
<td>Residential Buildings</td>
<td>278</td>
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<tr>
<td>Roads</td>
<td>15,767 m</td>
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<tr>
<td>Road Bridges</td>
<td>2</td>
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<tr>
<td>Water Supply</td>
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<tr>
<td>Electricity Transformer</td>
<td>54</td>
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<tr>
<td>Stormwater</td>
<td>6,300 m</td>
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<tr>
<td>Culverts</td>
<td>46</td>
</tr>
</tbody>
</table>

Why is this location subject to intolerable risk under this sea level scenario?

The risk rating given is driven by the economic consequences reflecting the estimated level of damage categorised as catastrophic.
Phase 5 – Assess risk
Phase 5 – Assess Risk

The settlements identified as being subject to intolerable risks are considered priority locations, the sea level rise scenarios which ‘trigger’ the risk to become intolerable are:

- **0.2m slr**
  - Coonarr

- **0.4m slr**
  - Woodgate Beach & Walkers Point
  - Moore Park Beach

- **0.8**
  - Bargara
  - Innes Park & Coral Cove
  - Burnett Heads
Phase 6 – Identify and Screen Options

August – December 2019
Phase 6 - Screening Process

In Phase 6 the project team screened the long-list of options by a high-level analysis of the following criteria:

- COSTS
- BENEFITS
- ADVERSE IMPACTS / CHALLENGES
- ALIGNMENT TO PRINCIPLES
  - Resilient Society, Economy, Settlements and Environment
- EFFECTIVENESS
  - Against inundation, erosion and SLR
Phase 6 – Maintain

<table>
<thead>
<tr>
<th>All Possible Options</th>
<th>Miara W'ield</th>
<th>Moore Park Beach</th>
<th>Burnett Heads</th>
<th>Bargara</th>
<th>Innes Pk &amp; Coral Cove</th>
<th>Elliott Heads</th>
<th>Coonarr</th>
<th>Woodgate Beach</th>
<th>Burston</th>
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<td><strong>Maintain</strong></td>
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<td>Disaster Management</td>
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<td>Education and Awareness</td>
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<tr>
<td>Building Retrofitting</td>
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<td>×</td>
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<td>Land Use Planning</td>
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<tr>
<td>Resilient Infrastructure</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Roads and Access</td>
<td>✓</td>
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<tr>
<td>Erosion Monitoring</td>
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Key: [ ] Not Applicable  [✓] Considered and Shortlisted  [✓] Considered and not preferred  [×] Considered and Ruled Out

* Multiple options considered / partially shortlisted
Phase 6 – Modify

<table>
<thead>
<tr>
<th>All Possible Options</th>
<th>Miara Wilfield</th>
<th>Moore Park Beach</th>
<th>Burnett Heads</th>
<th>Bargara</th>
<th>Innes Pk &amp; Coral Cove</th>
<th>Elliott Heads</th>
<th>Coonarr</th>
<th>Woodgate Beach</th>
<th>Buxton</th>
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<td><strong>Modify</strong></td>
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<td>Beach Nourishment</td>
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<td>✓</td>
<td>✗</td>
<td>✗</td>
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<tr>
<td>Wetland Restoration</td>
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<tr>
<td>Artificial Reefs</td>
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<td>Breakwaters</td>
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<td>Seawalls</td>
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<td>Groynes</td>
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<td>Dykes</td>
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<tr>
<td>Storm Surge Barriers</td>
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</tbody>
</table>

Key: 
- Not Applicable
- Considered and Shortlisted
- Considered and not preferred
- Considered and Ruled Out

Multiple options considered / partially shortlisted
Phase 6 - Transform

All Possible Options

Best practice, Land Use Planning, Design Options, Engineering Options
Miara W'Field
Moore Park Beach
Burnett Heads
Bargara
Innes Pk & Coral Cove
Elliott Heads
Coorparoo
Woodgate Beach
Burton

Transform

Land Swap

Land Buy-Back

Key:
- Not Applicable
✓ Considered and Shortlisted
* Multiple options considered / partially shortlisted
○ Considered and not preferred
× Considered and Ruled Out
Multi Criteria Analysis: Weighting the Evaluation Criteria
MCA Criteria Explained

1. **COST**
   Capital and Maintenance Costs over the life of the project

2. **IMPACTS on beach accessibility and amenity**
   The level of impact upon the community’s ability to access to the beach and attractiveness of the beach

3. **IMPACTS on environment and culture**
   Specifically on environmental features, ecosystems, habitats and cultural heritage
MCA Criteria Explained

4. ADAPTABILITY
Ability for the option to be reversible / adaptable in the future, which is particularly relevant where there is considerable uncertainty unexpected climate trends (example: sea level rise faster than predicted)

5. EFFECTIVENESS in reducing coastal hazard risks
Whether an option presents a long or short term solution that would require additional management action or upgrades in the future

6. APPROVALS
highlight the legislative and approval requirements (or impediments) to implementing an option within the current legal framework

7. TECHNICAL VIABILITY
highlight where certain options may or may not be technically feasible or would require significant engineering (or other) investigations and construction/implemention capabilities
### Alignment to Community Survey

<table>
<thead>
<tr>
<th>Community Values Survey</th>
<th>Alignment to MCA Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top ways people use the coast:</strong></td>
<td></td>
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<tr>
<td>• enjoying view/ coastal scenery</td>
<td></td>
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<tr>
<td>• recreational activities (incl. water-based, water’s edge)</td>
<td></td>
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<tr>
<td>• social activities</td>
<td></td>
</tr>
<tr>
<td>• visiting cafes, restaurants etc</td>
<td>Beach access and amenity</td>
</tr>
<tr>
<td><strong>Top qualities and characteristics of the coast:</strong></td>
<td></td>
</tr>
<tr>
<td>• presence of native animals</td>
<td>Environment and culture</td>
</tr>
<tr>
<td>• relaxed lifestyle</td>
<td>Environment and culture, Beach access and amenity</td>
</tr>
<tr>
<td>• sandy beaches</td>
<td></td>
</tr>
<tr>
<td>• functioning infrastructure</td>
<td>Effectiveness, Adaptability, Technical viability</td>
</tr>
<tr>
<td>• regulation of development</td>
<td>Environment and culture, Approvals, Technical viability</td>
</tr>
<tr>
<td><strong>Top concerns about the coast:</strong></td>
<td></td>
</tr>
<tr>
<td>• dune erosion</td>
<td>Environment and culture, Beach access and amenity</td>
</tr>
<tr>
<td>• water quality</td>
<td></td>
</tr>
<tr>
<td>• loss of vegetation</td>
<td></td>
</tr>
<tr>
<td>• safe beach access</td>
<td>Beach access and amenity</td>
</tr>
</tbody>
</table>
MCA Criteria Weighting

Evaluation criteria are not equally important in defining the preferred options. This is addressed by providing a weight for each criterion.

Weighting can be done simplistically by ranking the criteria in order of importance. For instance:
1. COST
2. EFFECTIVENESS
3. IMPACTS
4. TECHNICAL VIABILITY
5. ....

However this approach assumes that the difference in importance between two subsequent criteria is the same, which is a substantial simplification.

As per the QCoast2100 Minimum Standards and Guidelines, the workshop approach has been the preferred method to avoid introducing bias into the process.
MCA Criteria Weighting

A more accurate weighting can be achieved by undertaking pairwise comparisons between criteria, such as:

- COST vs EFFECTIVENESS
- COST vs IMPACTS
- COST vs TECHNICAL VIABILITY
- EFFECTIVENESS vs IMPACTS
- EFFECTIVENESS vs TECHNICAL VIABILITY
- IMPACTS vs TECHNICAL VIABILITY

This method is commonly used for decision-making, called Analytic Hierarchy Process (AHP).
CRG Criteria Ranking Exercise
10 Stickers!
### Comparison: TWG Ranking

<table>
<thead>
<tr>
<th>Category</th>
<th>Weighting</th>
<th>Ranking</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>34.1%</td>
<td>1</td>
<td>In reducing risks from coastal hazards</td>
</tr>
<tr>
<td>Adaptability</td>
<td>22.5%</td>
<td>2</td>
<td>Ability to adapt to unexpected climate trends</td>
</tr>
<tr>
<td>Impact on access</td>
<td>15.9%</td>
<td>3</td>
<td>Impacts on beach accessibility and amenity</td>
</tr>
<tr>
<td>Technical Viability</td>
<td>11.0%</td>
<td>4</td>
<td>Difficulty in achieving construction of the option</td>
</tr>
<tr>
<td>Impact on environment</td>
<td>9.3%</td>
<td>5</td>
<td>Impacts on the environment and culture</td>
</tr>
<tr>
<td>Approvals</td>
<td>3.7%</td>
<td>6</td>
<td>Difficulty in obtaining approval to construct</td>
</tr>
<tr>
<td>Cost</td>
<td>3.5%</td>
<td>7</td>
<td>Cost of putting the measure in place</td>
</tr>
</tbody>
</table>

The top three criteria to consider the adaptation options are:

- Effectiveness
- Adaptability
- Impact on Beach accessibility
Next step - MCA Process

• Apply the MCA to all options identified in Phase 6

• The weighted score of the MCA will allow identifying those options that will be assessed in detail with CBA

• Each Adaptation Option will be first evaluated, or scored, against each criterion

• Weighting applied to each score

• The aim is to prioritise the structural options, from 1 (most important or desirable) to 15 (least important)
CHAS Implementation Plan:

‘Sneak Peak’ of the final CHAS document
Concept Document – Design ideas

Things we have learnt listening to the community

A strong love of the coast is almost universal. It leads to a deep connection to place – whatever that place may be along the coast, and the creation of tight-knit communities – likely of community held views on the value of the coastal places. This in turn appears to drive a strong desire for self-determination – expressed as a desire for self-organisation and self-reliance. All of this is for the express purpose of leaving a lasting legacy – being able to hand over the coast to subsequent generations in a manner that retains the values currently held.

OUR VALUES/ PRINCIPLES

FIRST PRINCIPLES DISCUSSION

During phase 1 and 2 of the project the community and stakeholders were consulted on core values and principles for an adaptive strategy. What are some of the essential outcomes? What are some of the core values which must be included in the strategy?

BUNDABERG COASTAL HAZARD ADAPTATION STRATEGY

THE ASSOCIATION OF RURAL ANDremote communities joined forces to launch the Bundaberg Coastal Hazard Adaptation Project in 2012. The project was designed to address the need for an effective adaptation strategy for the region, focusing on coastal hazards and climate change impacts.
Concept Document - Design Ideas

Moore Park Beach

Moore Park Beach is a coastal township which will cater for modest growth reflecting and preserving character, identity and history of the relaxed coastal settlement. It supports facilities and services for local residents and visitors drawing its character and lifestyle from surrounding natural features.

Storm tide and permanent inundation at 0.8m sea level rise scenarios places almost the entire community at intolerable risk and an awareness of medium risk. Where individual properties are not specifically impacted the surrounding infrastructure and access issues define the community.

Moore Park Beach has the highest value of all settlements at risk (3.33 million) and has been identified as a priority area for adaptation to future coastal hazards. Areas specifically at risk include areas on the foreshore, the Moore Park Beach Surf Club and Holiday Park.

Overgrowing of dunes due to already occurring and the risk to the settlement becomes insurable under 0.8m sea level rise. Access routes to the settlement of Moore Park Beach are likely to be permanently inundated in the 0.8m sea level rise scenario. The social consequence analysis has considered this to be catastrophic due to the likely isolation of the community.

The options to raise and maintain roads are complex. In addition, any proposal to provide physical separation from storms risk on the beaches from will not address the erosion and permanent inundation running parallel to the coast at the rear of the settlement which is characteristic of both Moore Park Beach and Woodgrove Beach.

BUILDING LOCAL ACTION PLANS

A broad action plan can be developed for each locality using the universal model above and may take the look of Figure seven below which has been developed for Miura, Winfield and Nunnai park pathways to adaptation.

This model takes the objectives reflected in the pathway which this include to maintain and transform only. There are no new solutions for this location. Under each objective are bodies and actions in play. These provide insights into how this might be measured and monitored. They also seek to review the role of the pathway and the efficient of the tools chosen and the results of the monitoring.
EXAMPLE: Moore Park Beach

• Range of measures and trigger points
• MCA and CBA will refine the preferred pathway (highlighted)
  • E.g. causeway at Moore Park Rd then maybe a buried seawall and raising key access road
Where to from here?

We have incorporated your feedback and ideas into consideration for the design and content and will come back and present prior to the launch.

CHAS Implementation Strategy document and associated ‘launch’ later in 2020

**Phase 8** – Present to CRG the Strategy and Implementation Plan followed by public consultation period. | April / May 2020
---|---
**Phase 8** – Finalised Strategy and Implementation Plan Launch | September 2020
Coastal CC adaptation - Game

This game demonstrates the complexity of adaptation solutions for coastal hazards.

The CHAS process enables best practice decision-making, so we are not just ‘taking a guess’ like in this game.
What we learn

How the game applies to Our Coast?

Click here
Questions?
ANNEXURE B
EFFECTIVENESS

In Reducing Risks from Coastal Hazards

1/2
IMPACT ON ENVIRONMENT

Impacts on the Environment and Culture
ADAPTABILITY

Ability to Adapt to Unexpected Climate Trends
IMPACT ON ACCESS

Impacts on Beach Accessibility and Amenity
COST

Cost of Putting the Measure in Place
TECHNICAL VIABILITY

Difficulty in Achieving Construction of the Option
APPROVALS

Difficulty in Obtaining Approval to Construct