

Appendix A – Literature Review

Coastal governance is a complex and challenging sphere, characterised by difficulties in engaging effectively with climate science and its implications, and a broader failure to capture the diverse voices, interests, values, and discourses of coastal users (Clarke et al., 2013). Local governments are required to make informed coastal planning and management decisions that need to consider often competing values in areas at current risk or projected to be at risk in the future. In order to effectively address current and future coastal hazards and risks, coastal planning in Western Australia, as prescribed by the State Planning Policy 2.6 - State Coastal Planning (SPP2.6), requires that a risk management methodology be adopted (Western Australian Planning Commission, 2013). An objective of this policy is to “protect, conserve and enhance coastal values, which include scenic, aesthetic and qualities; recreational opportunities; and social, indigenous, cultural and economic importance” (Western Australian Planning Commission, 2013). This range of values reflects the fact that SPP 2.6 is framed by the overall intent of the State Planning Strategy which is to provide “a strategic basis for coordinating and promoting land use, transport and land development in a sustainable manner throughout Western Australia” (Western Australian Planning Commission, 2013).

It has been noted in several local Western Australian adaptation plans (Damara WA, 2016); (GHD Pty Ltd, 2016) that the community as a key stakeholder has not been effectively engaged in coastal hazard risk management and adaptation planning. Furthermore, it has been identified in several coastal studies that there has been a focus on the vulnerability of the built environment but that social, cultural and environmental values have not been adequately addressed (Aurora Environmental, 2015; McGuire, 2013; O’Brien and Wolf as cited in Albizua and Zografos, 2014 p. 406; Leslie and McLeod as cited in Anthony et al., 2009 p. 17). There is thus an evident requirement to identify how the community values the coast and how the community views the potential impacts resulting from climate change on these values (Barnett et al., 2011; Western Australian Planning Commission, 2013). The aspects of the coast that the community value include: the natural environment with its intrinsic values; the built environment and associated infrastructure, which has not only economic value in itself, but can also provide economic benefits to individuals and groups in the community; social values including sense of community and belonging; and cultural values such as lifestyle, heritage and identity (Barnett et al., 2011; Kenchington, Stocker, & Wood, 2012). In order to determine what values should be maintained, all these values must be identified and assessed as part of the decision-making process (O’Brien as cited in Albizua and Zografos, 2014 p. 406). There is limited research investigating the assessment of all values (O’Brien and Wolf as cited in Albizua and Zografos, 2014 p. 406) and there is evidence that it is difficult to quantify environmental and social values (McGuire, 2013). The coastal zone is also an area where values can conflict, particularly between urban development and environmental and social values (Ware, 2017). Furthermore, there is research which indicates that the community appreciates areas deemed to have high environmental value (Ruiz-Frau, Edwards-Jones, & Kaiser, 2011). In order to understand these sometimes conflicting values, engagement and public participation is necessary.

Research of social values has been arranged into a typology of four broad categories that will vary according to the local community settings and cultural norms: pragmatic, scholarly, inspirational, and tacit (Anthony et al., 2009). The simplest values to identify and quantify and therefore the most frequently assessed are pragmatic values; they include revenue generated from recreation,

commercial and the tourism industry. Scholarly values are educational/learning activities and include scientific and historical studies (Anthony et al., 2009). Inspirational values include artistic activities such as photography, literature and painting (Anthony et al., 2009). Tacit values that include sense of place and enjoyment of scenery and landscape are often not a major factor considered in coastal decision-making as these values can be difficult to quantify (Anthony et al., 2009). However, it is important to note that tacit values are the most notable and emotive as they “derive from and shape individual experiences and beliefs” (Anthony et al., 2009, p. 17). The significance of identifying and including tacit values cannot be understated as it is the reason many people choose to live in coastal environments that possess aesthetic amenities and are often at risk of coastal erosion and inundation (Couzin as cited in Anthony et al., 2009 p. 4). Including tacit values in coastal planning and management is vital as these values underpin all social values and can be highly effective in engaging the community and stakeholders in coastal decision making (Anthony et al., 2009).

Local governments, being the closest level of government to the community, are regularly consulting with residents on a wide variety of matters. Some of these issues are complex or ‘wicked problems’. Climate change adaptation is an example of such an issue and is an area where local governments are becoming more involved (Smith, Leitch, & Thomsen, 2016). These ‘consultation’ activities are often undertaken with limited and ineffectual participation by relevant stakeholders and/or the general community (Preston, Danese, & Yuen, 2011; Smith et al., 2016). Furthermore, research suggests that in regard to coastal planning, the community are not very interested or engaged in this issue (Kenchington et al., 2012). As such, there is an obvious need to find alternative approaches to engage the community and have a focus on learning, in order to increase the level of understanding and involvement in the decision making process (Kenchington et al., 2012). This is supported by evidence which suggests that decisions are more likely to be accepted when the community and stakeholders are involved in the decision-making processes (Reed as cited in Smith et al. 2016 p. 9).

However, there are numerous factors including values beliefs, norms and worldviews that should be considered in order to effectively involve the community in the civic process around coastal hazard risk management and adaptation planning (Smith et al., 2016). However, these are difficult to incorporate into public policy (Adger, Jon, Katrina, Nadine, & Karen, 2012) and complex issues involving uncertainty such as climate change requires social learning, which is more than just consulting with the community (Susan et al., 2015). Social learning can occur in social settings such as workshop and involves people learning from each other and results in a change in thinking (Smith et al., 2016).

In a world that is rapidly evolving, social learning through participatory processes is being adopted around the world as a method to deal with such change (Soma & Vatn, 2010). For example, Participatory Google Earth Mapping Workshops have been developed to improve shared understanding regarding climate change impacts on the coast (Stocker, Burke, Kennedy, & Wood, 2012). This Project examined how the different ‘orders of learning’ as outlined by Kenchington, Stocker et al. (2012) can increase the understanding and knowledge uptake of coastal climate change in the community (Kenchington et al., 2012) with an objective to incorporate more sophisticated learning into a coastal hazard and risk management framework.

The concept of risk is based upon the likelihood of an event(s) occurring and the subsequent potential magnitude of consequences and is generally defined by multiplication of these factors. This concept assumes that communities do not differentiate between risks that are highly likely but have a low consequence and/or risks that have a low likelihood but have a high consequence (Kasperson et al., 1988). But, empirical studies suggest that the communities perception and actions to address risk are influenced by factors including their relationship to the hazard, understanding and apparent ability to address the risk and voluntariness (Kasperson et al., 1988). As such, it is argued by Kasperson et al. (1998) that when making decisions, the basic concept of risk is of minimal value (Kasperson et al., 1988). Other limitations of the risk approach in climate adaptation have also been identified (Kennedy et al 2010). This Project examined this issue by incorporating the communities' comprehensive understanding of risk and coastal values.

This Project adopted a variety of approaches including qualitative and quantitative research methods and participatory approaches to generate data for an inclusive coastal hazard risk management and adaptation planning framework.

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Appendix B – Community & Stakeholder Engagement Strategy

Community and Stakeholder Engagement Strategy - Involving Communities in Developing Coastal Risk Management Frameworks in Western Australia

This Community and Stakeholder Engagement Strategy provides guidance for the Project. This strategy will be a working document that can be updated to reflect any changes to the project that may occur to ensure that the project delivers the best possible results.

Short / long title of Project

short title: Coastal Values Project

long title: Involving Communities in Developing Coastal Risk Management Frameworks in Western Australia

Context

The Peron Naturaliste Partnership (PNP) is looking to address a current gap in knowledge and practices and go beyond the current and previously applied approaches being undertaken by local governments (and consultancies) in identifying and assessing community values in Coastal Hazard Risk Management and Adaptation Planning. The current Project will help ensure that Coastal Hazard Risk Management and Adaptation Planning includes and reflects how the community values the coast.

The PNP Communication Strategy 2016 - 2019 provides the overarching framework for the PNP for all internal and external communication. This Community and Stakeholder Engagement Strategy is consistent with the aim, objectives and methodology in the PNP Communication Strategy 2016 – 2019.

Aim

The aims of the Communication and Engagement **Plan** are to ensure consistency, clarity and effectiveness in communications processes; and to demonstrate the value, relevance and usefulness of the Project to all stakeholders so that Project outcomes are adopted and practically implemented.

Target audience

The target audience for the Plan itself is the Advisory Committee being the PNP, and the participating Local Government's (LG's), being the Cities of Busselton, Bunbury and Rockingham, which are the advisory committee.

The target audience for our communication and engagement **processes** include:

- communities in the participating LG areas
- key coastal decision-makers including LG (Elected Members and Officers) and state politicians, policy makers, planners and managers
- Indigenous traditional owners
- NRM organisations

- coastal researchers
- private sector, e.g., engineers, planners, developers
- other stakeholders involved in the management of the coast

Project Areas

The Project will focus on the coastal areas of:

Rockingham - Waikiki Foreshore (Donald Drive to Short Street)



Legend

Red Line - Erosion (high scenario) for 2100

Orange Line - Erosion (high scenario) for 2070

Blue Line - Erosion (high scenario) for 2050

White Line - Erosion (high scenario) for 2030

Yellow Line – Inundation (current 1-100 year level)

Red Line – Inundation (2100 1-100 year level)

Bunbury - Back Beach (from Wyalup-Rocky Point to Pental Street)



Busselton – Old Dunsborough Boat Ramp (Bay View Crescent to Curtis Bay)



Communication and engagement objectives

The following objectives outline the overall purpose and direction of this Strategy and its activities.

The communication objectives are to:

- raise awareness of the Project activities, highlights and outcomes
- build understanding of the Project outcomes (e.g., results/models)
- encourage participation in the Project
- generate pride and goodwill amongst partners and acknowledge their work
- build awareness about benefits achieved through action research

The engagement objectives are to:

- engage with community and stakeholders in order to build literacy about coastal adaptation
- improve PNP, LG and state government understanding of community coastal values in developing a CHRMAP
- enable community and stakeholders to inform future coastal planning and activities
- demonstrate the value of the Project research and outcomes
- generate support for the Project research and for implementation of the outcomes.

Key messages

- Scientific, community, Indigenous and managerial knowledge and values about the coast are important to coastal policy, planning and management
- Climate science should be embedded in coastal governance
- Not all coastal assets and uses can be protected under a climate changed future
- Adaptive learning plays an important role in linking community to governance

Communication approach

Launch

Launch to include media release provided to local newspapers including the Sound Telegraph, Bunbury Mail and Busselton-Dunsborough Mail and via LG newsletters, websites and relevant social media.

Branding

All branding for the Project across the three case study areas will be consistent and use the PNP brand. In addition, materials and presentations etc used in each of the three local governments will reflect the branding of the local government (such as local government logo) where the materials are used.

Project Media

The project (including all communications and activities) will be promoted via the PNP website. The website includes a “projects’ page (<http://www.peronnaturaliste.org.au/projects/values-project/>) dedicated to this Project that will be updated regularly to reflect current activities.

Project media and events and will be promoted on the news and events page of the PNP website (<http://www.peronnaturaliste.org.au/news/>)

The project will also be promoted via local newspapers including the Sound Telegraph, Bunbury Mail and Busselton-Dunsborough Mail and via LG newsletters, websites and relevant social media.

Any opportunities to promote on radio (interview) over the course of the Project will be sought.

Approval procedures

Materials, media releases and popular publications

Each partner organisation (LGs, PNP, PF) should discuss with other partners any materials (e.g. brochures, factsheets, banners, etc), media releases, research and popular publications in advance. PNP will manage this process.

Academic publications

Researchers should also first follow their institutional approval procedures for academic publications.

Academic publications

Publications derived from research that have received full or partial financial support from the Project should acknowledge this financial support with the wording:

“This research was undertaken for the “PNP: Involving Communities in Developing Coastal Risk Management Frameworks in Western Australia” project with funding from the WA Planning Commission”.

Academic authors will be those who have made a significant contribution to:

- Conception and design of the project
- Analysis and interpretation of the data
- Drafting significant parts of the work or critically revising it so as to contribute to the interpretation

Action plan

The Action Plan which includes the timeline and roles and responsibilities is included as Attachment 1. This will be updated as required.

Project results – communication

The results of the Project will be contained in a Report to be written by PF and the postgraduate researcher Craig Perry. Academic publications will also be produced.

Lay summaries will be made available for PNP and LG websites

Attachment 1 – Action Plan

Activities / Deliverables	Responsibility	Start Date	Finish Date	Target Audience	Methodology / Purpose and Comments
Prepare Community & Stakeholder Engagement Strategy	PF & RMS	April 17	June 17	PNP & LG's	The aims are to identify the most effective and cost effective community engagement methods; and to assist to create a sense of community 'ownership' of the coast and subsequent Local Government strategies and plans including CHRMAP's. The general approach of the strategy will be to engage community as early and fully as possible.
Media – preparation of draft materials	RMS & PF	May 17	June 18	PNP & LG's	Prepare media releases and material for newsletters, websites etc and social media before Info Sessions, Beach User Surveys, Workshops and at end of project
Media – distribution and promotion	PNP & LG's	May 17	June 18	All	Distribution and promotion of media release to newspapers, content in newsletters and websites. Radio interview arranged. PNP and LG website an other avenues such as LG newsletters etc to promote Information Sessions. To also promote via other groups such as WALGA, PHCC, SWCC, SONG Network and relevant LG Community Groups that will be included in Attachment 2.

Information Session(s) – preparation and pre and post survey	RMS, PF & PNP	April 17	October 17	PNP & LG’s	These sessions will include of one community information session at each site. It is important to inform the general community at the outset about the project. Community members will be encouraged to bring in historic photos etc of the beach (coastal area). Sessions to include a number of presentations from local and regional presenters from State & Local Government and other stakeholders. To be determined in consultation with each LG. Sessions to include displays where the community and stakeholders can ask questions and raise any concerns directly with Local Government Officers and experts in the area.
Information Session(s)– preparation and hosting	PNP & LG’s	October 17	October 17	Community & Stakeholders	
Information Session(s) – survey analysis	RMS	February 18	February 18	PNP & LG’s	
Design Community Beach User Surveys	RMS (& PF)	May 17	October 17	PNP & LG’s	Media releases and other promotional materials such as information for websites and newsletters will be developed by RMS (& PF) for the PNP and LG’s to promote and distribute. The surveys should be promoted during the survey period. Online survey (& in-person survey) to be promoted via community and stakeholder contacts database (Attachment 2) and via PNP, LG websites, newsletters etc. Current local events such as markets, fairs etc are other avenues to promote the surveys. Need to try to capture all demographics in the survey. The surveys will employ non-economic methods to measure values. It is expected that each of sites will be surveyed at different
Prepare media releases, other promotional material for Beach User Surveys	RMS (& PF)	July 17	April 18	PNP & LG’s	
Promote Beach User Surveys	PNP & LG’s	July 17	April 18	ALL	

Upload online survey (Survey Monkey)	RMS	September 17	October 17	PNP & LG's	times and days over Spring, Summer and Autumn. Additional interviews with Traditional Owners will be conducted.
Community Beach User Surveys - completed (in person and online)	PNP & LG's	October 17	April 18	Community & Stakeholders	
Organise and run Information Booths	RMS	February 18	March 18	Community & Stakeholders	
Interviews with Traditional Owners	RMS, PNP & PF	March 17	April 18	Traditional Owners	
Community Beach User Surveys - Analysis and Report	RMS (& PF)	March 18	April 18	PNP & LG's	
Prepare media releases, other promotional material for Workshops	RMS (& PF)	Feb 18	Feb 18	PNP & LG's	Media releases and other promotional materials such as information for websites and newsletters will be developed by RMS (& PF) for the PNP and LG's to promote and distribute. Those people who completed the survey and included contact details will be contacted. Could also be promoted via community and stakeholder contacts database (Attachment 2) and via PNP, LG websites, newsletters etc. Current local events such as markets, fairs etc are other avenues to promote the workshops. The number of attendees and identification of who 'needs' to be in attendance will be undertaken in consultation with
Promote Workshops	PNP & LG's	Feb 18	April 18	ALL	
Coastal Scenario Planning Workshops (1/2 day x 3) – Design & organise	PF, RMS & PNP	Dec 17	Mar 18	PNP & LG's	

Coastal Scenario Planning Workshops (1/2 day x 3) - completed	PF, RMS & PNP	Mar 18	April 18	All	each LG. Need to try to get representation from all demographics to attend the workshops. Direct mail out to key community members & stakeholders (i.e. those living on the coast or with significant interest in coast) is an option to be decided by each LG. These workshops will include spatially explicit scenario building and planning exercises that build on and expand existing Google Earth participatory mapping methods. The workshops will draw on non-economic methods to measure values. The workshop will complement and extend the analysis of the surveys and will identify and assess potential adaptation pathways at each of the three sites. The workshop will include pre and post workshop surveys. Analysis and review of workshop outcomes will be undertaken and reported.
Coastal Scenario Planning Workshops (1/2 day x 3) – Survey (pre & post) design & analysis	RMS (& PF)	Dec 18	April 18	PNP & LG's	The Scenario Workshops will be designed and delivered by Dr Gary Burke and Dr Laura Stocker t/a Production Function. It is assumed that local governments will provide venue, catering, physical A1 maps, A/V equipment & appropriate promotion. PNP and the LGs will provide facilitators and Google Earth Scribes who will also be released for a ½ day training prior to the workshops.
Draft Involving Communities in Developing Coastal Risk Management Frameworks Report	RMS (& PF)	April 18	May 18	PNP, LG's & stakeholders & community	The report will provide a better understanding of what communities currently value on the coast and how these values may be impacted as a result of climate change and will develop a framework for Community-Informed Coastal Risk Management. The information gathered in the surveys

					and workshops will be used to help generate a risk management and adaptation planning process to better plan and manage for coastal sustainability.
Final Involving Communities in Developing Coastal Risk Management Frameworks Report	RMS (& PF)	May 18	15 June 18	Community & Stakeholders	The final report will reflect a wide range of stakeholder and community values and knowledge. It will assist to create a sense of community 'ownership' of the coast and subsequent Local Government strategies and plans including CHRMAPs.

Appendix C – Beach User Survey



Coastal Values – Beach User Survey

The PNP is working on a community focused coastal climate change study - Involving Communities in Developing Coastal Risk Management Frameworks in Western Australia or 'Coastal Values Study'.

A key aim of this Project is to gain a better understanding of what communities currently value on the coast and how these values may be impacted as a result of climate change. The information gathered will then be used to inform the risk management and adaptation planning process to better plan and manage coastal risks.

The study is focussed on 3 sites, one of which is xxxxx, from xxxxx to around xxxxxx.

The project team want to hear from you so that the features of our coast that we love are maintained into the future.

1. What suburb do you live in?

2. What age group are you in?

- | | |
|----------------------------------|----------------------------------|
| <input type="checkbox"/> 18 - 20 | <input type="checkbox"/> 51 - 60 |
| <input type="checkbox"/> 21 - 30 | <input type="checkbox"/> 61 - 70 |
| <input type="checkbox"/> 31 - 40 | <input type="checkbox"/> 71 + |
| <input type="checkbox"/> 41 - 50 | |

3. Gender

- Female
- Male
- Prefer not to say

4. Do you have any personal cultural connections to this beach/foreshore or are you aware of any broader cultural heritage significance?

Yes

No

Any comments

5. Do you own or rent a residential property in the City of xxxxxx?

Own outright

Own with mortgage

Renting

6. How close to this beach/foreshore do you live?

Directly adjacent to the beach or foreshore – go to question 7

Between about 1km to 10km – go to question 9

A couple of streets away from the beach (about 200m to 500m away from the beach and/or foreshore) – go to question 7

Greater than 10km – go to question 9

More than a couple of streets away from the beach (more than about 500m away from the beach and/or foreshore to about 1km) – go to question 7

7. How much do you disagree or agree with the following statement. It is important to me that I live close to this beach

Strongly disagree

Strongly agree

Disagree

NA - I do not live close to the beach

Agree

8. Why is it important to you, what are the benefits?

9. Do you operate or work in a business that is associated with the use of this beach/foreshore?

Yes - go to question 10

No - go to question 13

10. What is this business and how does it relate to this beach/foreshore and the use of these areas?

11. What benefits, if any, does this beach/foreshore offer your business and /or employees?

12. Could you estimate what percentage of your trade is a direct result of your proximity to this beach/foreshore?

- 0 - 24% 75% - 100%
- 25% - 49% Cannot estimate
- 50% - 74%

13. Do you belong to a community or social group that use this beach/foreshore?

- Yes - go to question 14
- No - go to question 15

14. What benefits does this beach/foreshore offer your group?

15. How often do you visit this beach/foreshore for recreation?

- Daily Seasonally (e.g. Summer only)
- Weekly Rarely
- Monthly Depends upon the weather conditions
- Occasionally (when you feel like it)

16. How long on average do you normally stay?

- < 1 hour
- 1 - 2 hours
- > 2 hours

17. What time of the day do you normally visit this beach/foreshore?

- | | |
|--|---|
| <input type="checkbox"/> Early to mid-morning | <input type="checkbox"/> Mid-afternoon to evening |
| <input type="checkbox"/> Mid-morning to midday | <input type="checkbox"/> Evening |
| <input type="checkbox"/> Midday to mid-afternoon | <input type="checkbox"/> No set time |

18. How long have you been coming to this beach/foreshore?

- Less than 6 months
- 6 months to 1 year
- 1 to 5 years
- > 5 years

19. What are the main activities you do while you are at this beach/foreshore? (select all relevant)

- | | |
|---|---|
| <input type="checkbox"/> Time with family/friends | <input type="checkbox"/> Boating/jet skiing |
| <input type="checkbox"/> Fishing | <input type="checkbox"/> Walking dog |
| <input type="checkbox"/> Swimming | <input type="checkbox"/> Observing nature |
| <input type="checkbox"/> Snorkelling/Diving | <input type="checkbox"/> Photography |
| <input type="checkbox"/> Surfing/canoeing etc. | <input type="checkbox"/> Relaxing/spending time alone etc. |
| <input type="checkbox"/> Walking/running | <input type="checkbox"/> Visiting cafes, restaurants or shops |

Other (please specify)

20. In terms of benefits to your lifestyle, health and/or wellbeing, how important are your visits to this beach/foreshore?

	1 (not Important)	2	3	4	5	6	7	8	9	10 (Important)	No opinion
Physical fitness	<input type="checkbox"/>										
Mental/emotional health	<input type="checkbox"/>										
Spiritual/cultural	<input type="checkbox"/>										

21. In what ways, if any, do you feel a sense of belonging or attachment to this beach/foreshore?

22. How important are the following assets and qualities of this beach/foreshore to you?

	1 (not Important)	2	3	4	5	6	7	8	9	10 (Important)	No opinion
Environmental qualities such as clean water, vegetated dunes, native trees and animals	<input type="checkbox"/>										
Indigenous and other cultural heritage sites	<input type="checkbox"/>										
Public safety	<input type="checkbox"/>										
Public facilities such as BBQ's, toilets, playgrounds, disabled facilities and boat ramps	<input type="checkbox"/>										
Facilities for active recreation such as paths for walking, jogging and grassed areas for playing / exercising	<input type="checkbox"/>										
Private residences adjacent to beaches	<input type="checkbox"/>										
Restaurants, cafes, tourism venues on foreshore areas or adjacent to beach/foreshore	<input type="checkbox"/>										
Access infrastructure such as roads, car parks, walkways to beach	<input type="checkbox"/>										
Other assets and qualities (indicate below)	<input type="checkbox"/>										

Other (please specify)

23. Apart from changes you have seen as a result of building and development, what changes, if any, have you noticed at this beach/foreshore (select all relevant)?

- | | |
|---|---|
| <input type="checkbox"/> I have noticed that the beach/ sandy area has been eroding, with a narrower beach | <input type="checkbox"/> I have noticed occasional flooding of the foreshore area or in carparks etc. |
| <input type="checkbox"/> I have noticed dune vegetation becoming sparser, or more areas identified as 'dune under repair' etc. | <input type="checkbox"/> I have noticed significant changes to this beach/foreshore |
| <input type="checkbox"/> I have noticed that infrastructure such as jetty, boat ramp fences, footpaths etc. can be damaged and are affected by storm events | <input type="checkbox"/> Nothing seems to have changed |
| <input type="checkbox"/> Other - what changes you have noticed (please specify) | |

24. How much do you disagree or agree with the following statement. I am concerned about the impacts of climate change on coasts generally

- Strongly disagree
 Disagree
 Agree
 Strongly agree

Any comments

25. How aware are you about the general impacts of climate change on coasts, such as sea level rise, coastal erosion, flooding and increasing storminess?

- I do not accept climate change is occurring
 I have no or limited awareness of the general impacts of climate change
 I'm aware of general impacts of climate change on coasts such as sea level rise, coastal erosion, flooding and increasing storminess
 I'm very aware of general and local impacts of climate change on coasts such as sea level rise, coastal erosion, flooding, increasing storminess and other impacts

Other comments

26. In your opinion, is erosion at this beach/foreshore? (select all relevant)

- The result of normal coastal processes (including cyclical and/or seasonal processes)
- The result of climate change (changes are due to sea level rise / increasing storminess)
- A combination of normal coastal processes and climate change
- Likely to get worse in the future
- Nothing to worry about
- Something needing urgent attention by government (all levels)
- I'm not well informed enough / aware enough to comment
- Other (please specify)

27. How much do you disagree or agree with the following statement. I am concerned that the impacts of erosion, flooding and/or storms will impact my use of this beach/foreshore

- Strongly disagree
- Disagree
- Agree
- Strongly agree

28. When thinking about what should be preserved from potential future erosion, how important are the following assets and qualities of this beach/foreshore to you?

	1 (not Important)	2	3	4	5	6	7	8	9	10 (Important)	No opinion
Environmental qualities such as clean water, vegetated dunes, native trees and animals	<input type="checkbox"/>										
Indigenous and other cultural heritage sites	<input type="checkbox"/>										
Public safety	<input type="checkbox"/>										
Public facilities such as BBQ's, toilets, playgrounds, disabled facilities and boat ramps	<input type="checkbox"/>										
Facilities for active recreation such as footpaths for walking, jogging and grassed areas for playing / exercising	<input type="checkbox"/>										
Private residences adjacent to beaches	<input type="checkbox"/>										
Restaurants, cafes, tourism venues on foreshore areas or adjacent to beach/foreshore	<input type="checkbox"/>										
Access infrastructure such as roads, car parks and walkways to beach	<input type="checkbox"/>										
Other assets and qualities (Indicate below)	<input type="checkbox"/>										

Other (please specify)

29. Are you aware that installing coastal 'protection' structures such as rock walls and groynes can over time, result in increased rates of erosion on the coast and without sand replacement, can lead to loss of the beach in these areas?

Yes

No

30. There will probably be a number of different options needed to manage coastal hazards such as erosion and flooding into the future. Please rate your level of support for the following management options for this beach/foreshore

	1 (strongly against)	2	3	4	5	6	7	8	9	10 (strongly support)	No opinion
Prevent further development in areas vulnerable to coastal hazards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remove infrastructure such as car parking and buildings if erosion or flooding affects them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitor beach width and remove (retreat) all assets such as buildings and infrastructure that are likely to be at risk of erosion and/or flooding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase building floor levels of any buildings and infrastructure in foreshore areas or adjacent to the beach to accommodate occasional flooding events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Place notifications on property titles advising that asset (land and house) is likely to be affected by coastal erosion and / or flooding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fence off the dunes and / or revegetate dunes and blow outs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Source and replace sand on beaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Install coastal protection structures such as rock walls, buried rock walls, groynes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do nothing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please describe below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="text"/>										

31. Is there anything else you would like to add about the value / importance of this beach/foreshore to you, now and in the future?

32. If you would like to receive updates and/or be invited to upcoming workshop in your area, please provide contact details

Name

Address

Email

Appendix D – Waikiki Beach Survey Letter



Hello,

The Peron Naturaliste Partnership, which is a collaboration of nine local governments working together to better plan and manage our coastal areas, are working with the City of Rockingham on a community focused coastal values study at Waikiki Beach. We want to hear from as many people as possible to gain a better understanding of what communities currently value at this beach and how these values may be impacted by climate change.

To assist us we invite you to complete a survey at <https://www.surveymonkey.com/r/coastalvaluesrockingham>

Please contact me or visit our website if you would like further information and feel free to pass this information on to others who you feel may be interested.

Thanks and kindest regards

A handwritten signature in black ink, appearing to read "Craig Perry".

Craig Perry
Coastal Adaptation Coordinator
Peron Naturaliste Partnership
Email: craig.perry@mandurah.wa.gov.au
Tel: 0434 665 866
www.peronnaturaliste.org.au

This project has received funding from the Western Australian Planning Commission's Coastal Management Plan Assistance Program.



City of xxxxx
Coastal Values Project

Information Session – Survey One (before session)

	Environmental qualities such as clean water, vegetated dunes, native trees and animals	Indigenous and other cultural heritage sites	Public safety	Public facilities such as BBQ's, toilets, playgrounds, disabled facilities and boat ramps	Facilities for active recreation such as paths for walking, jogging and grassed areas for playing / exercising	Private residences adjacent to beaches	Restaurants, cafes, tourism venues on foreshore areas or adjacent to beach or foreshore area	Infrastructure such as roads, car parks and foot paths, access paths for everyone to use (walkways) to the beach
9. How do you rank from 1 being most important to 8 being least important, the assets and qualities you think should be maintained so that they continue to be enjoyed on the beach and foreshore area?								



City of xxxxx
Coastal Values Project

Information Session – Survey One (before session)

	Prevent further development in areas vulnerable to coastal hazards	Remove infrastructure such as car parking and buildings if erosion or flooding affects them	Monitor beach width and move back (retreat) all buildings, infrastructure and private residences if erosion affects beach and foreshore area	Increase building heights of any buildings and infrastructure in foreshore areas or adjacent to the beach to accommodate occasional flooding events	Place notifications on property titles advising that asset (land and house) is likely to be affected by coastal erosion and / or flooding	Fence off the dunes and / or revegetate dunes and blow outs	Replenish beaches with sand	Install coastal protection structures such as rock walls, groynes	Do nothing
10. How do you rank from 1 being most important to 9 being least important, what you think are the best options to adapt to coastal hazards (such as erosion and flooding) now and into the future?									

Information Session – Survey Two (after session)

We would greatly appreciate it if you could now complete this survey **after** the Information Session. Your involvement is critical in identifying what communities currently value on the coast and how these values may be impacted by climate change.

	Very Low	Low	Avg	High	Very High
1. How aware are you of the general impacts of climate change on coasts (including sea level rise, coastal erosion, flooding and changing severe events such as storms)?					
2. How concerned are you about the impacts of climate change on coasts generally?					
3. What is your understanding and appreciation of coastal values ((being the qualities, uses, assets & benefits that the coast provides)?					
4. If you did not participate in coastal activities such as planting days etc before are you more likely to now?			N/A	Yes	No

Information Session – Survey Two (after session)

	Prevent further development in areas vulnerable to coastal hazards	Remove infrastructure such as car parking and buildings if erosion or flooding affects them	Monitor beach width and move back (retreat) all buildings, infrastructure and private residences if erosion affects beach and foreshore area	Increase building heights of any buildings and infrastructure in foreshore areas or adjacent to the beach to accommodate occasional flooding events	Place notifications on property titles advising that asset (land and house) is likely to be affected by coastal erosion and / or flooding	Fence off the dunes and / or revegetate dunes and blow outs	Replenish beaches with sand	Install coastal protection structures such as rock walls, groynes	Do nothing
6. How do you rank from 1 being most important to 9 being least important, what you think are the best options to adapt to coastal hazards (such as erosion and flooding) now and into the future?									

Information Session – Survey Two (after session)

7. Would you like to participate in the other stages?	Yes	No
Beach Use Survey		
Workshop		

Please provide contact details if you would like to participate in other stages

Name	
Address	
Email	

Other comments	

For further detail about the project please visit www.peronnaturaliste.org.au

Or contact:

Joanne Ludbrook

Peron Naturaliste Partnership

Coastal Adaptation Coordinator

Email: joanne.ludbrook@mandurah.wa.gov.au

The project has received funding from the Western Australian Planning Commission's Coastal Management Plan Assistance Program.

Information Session – Survey Two (after session)

5. How do you rank from 1 being most important to 8 being least important, the assets and qualities you think should be maintained so that they continue to be enjoyed on the beach and foreshore area?	Environmental qualities such as clean water, vegetated dunes, native tress and animals	Indigenous and other cultural heritage sites	Public safety	Public facilities such as BBQ's, toilets, playgrounds, disabled facilities and boat ramps	Facilities for active recreation such as paths for walking, jogging and grassed areas for playing / exercising	Private residences adjacent to beaches	Restaurants, cafes, tourism venues on foreshore areas or adjacent to beach or foreshore area	Infrastructure such as roads, car parks and foot paths, access paths for everyone to use (walkways) to the beach

Appendix F – Workshop Survey



Coastal Values Project Workshop – Before and After Survey

Thank you for attending the workshop on the *Identifying and incorporating community coastal values in coastal hazard risk management and adaptation planning: A case study of the south west of Western Australia* research Project. We would greatly appreciate it if you could complete this survey **before** the workshop. Your involvement is critical in identifying what communities currently value on the coast and how these values may be impacted by climate change.

<input type="checkbox"/>	I have received information regarding this research and had an opportunity to ask questions. I believe I understand the purpose, extent and possible risks of my involvement in this project and I voluntarily consent to take part.
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1. Do you live in the City of xxxxxx?	Yes	No					
2. What suburb do you live in?							
3. Age	18-19	20-29	30-39	40-49	50-59	60-69	70+
4. Sex	M	F	T				
5. What do you hope to gain from today's workshop?							

Please respond by ticking a box.		1 (Not at all)	2	3	4 (Very)
1. How important to you are coastal values (i.e., the qualities, uses, assets & benefits that the coast provides)?					
2. How aware are you of the impacts of climate change on coasts generally (including sea level rise, coastal erosion, flooding and changing severe events such as storms)?					
3. Have you participated in coastal volunteer activities such as planting days etc before today?	Yes: please specify	No			



Coastal Values Project Workshop – Before and After Survey

Please complete this survey **after** the Workshop. We would like to see how well it went.

Please respond by ticking a box.

	1 (Not at all)	2	3	4 (Very)
1. How important to you are coastal values (i.e., the qualities, uses, assets & benefits that the coast provides), now? Are there specific coastal values that are now more important to you?.....				
2. How aware are you of the impacts of climate change on coasts generally (including sea level rise, coastal erosion, flooding and changing severe events such as storms), now? Are there specific impacts you are now more aware of?.....				
3. If you did not participate in coastal activities such as planting days etc before are you more likely to now?		N/A	Yes	No

4. What activities helped further develop a shared understanding of coastal impacts and adaptation (circle those relevant)?	Comments
Google Earth mapping	
Group discussions	
Speakers and panel	
5. What aspects of the workshop could be improved for next time?	



Coastal Values Project Workshop – Before and After Survey

6. The workshop was effective in terms of:	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Bringing together relevant stakeholders					
Enabling fairness in participation and conflict resolution					
Presenting information in an accessible form					
Co-producing worthwhile knowledge					

7. The best ways of resolving regional coastal impacts of climate change and enabling sustainability are:	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
For governments to take a strong leadership and coordination role					
To allow market forces to find the most efficient technological/innovative solutions					
To involve a wide range of stakeholders including the community					
To let nature take its course and minimise human interventions					
To integrate economic, social, cultural & environmental objectives					



Coastal Values Project Workshop – Before and After Survey

8. There will probably be a number of different options needed to manage coastal hazards such as erosion and flooding into the future. Please rate your level of support for the following options:

	1 (Not at all)	2	3	4 (Very)
Avoid putting development (either new or increasing density) in hazardous areas				
Planned or managed retreat				
Accommodate, for example by raising floor level of buildings				
Protect				

Other comments	

For further detail about the project please visit www.peronnaturaliste.org.au