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29 November 2019

Climate Change Consultation
Department of Water and Environmental Regulation
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Joondalup DC, WA, 6919

Peron Naturaliste Partnership Submission – Climate Change in Western Australia – Issues Paper

Climate change is affecting air temperature, rainfall, humidity, sea levels, ocean temperatures, and intensities and frequency of storm events. These changes will exacerbate existing hazards and risks in the coastal zone and has the potential to have serious detrimental impacts on our communities. These impacts are likely to include loss of cultural, economic, environmental and social values; including but not limited to; critical built and natural infrastructure, changes in spread of air, soil and water diseases, personal injury and loss of life.

Climate change will also have impacts associated with loss of industries, which rely on our waterways and coast, such as tourism, commercial and accommodation businesses and commercial fishing. This will have subsequent impacts on the health and wellbeing of our communities.

The coastal zone is highly dynamic and has very high environmental, social and economic significance and value to Western Australia. The Peron Naturaliste region (from Point Peron in Rockingham to Cape Naturaliste in Busselton) has been identified as vulnerable to the impacts of coastal climate change in numerous studies, including the; Developing Flexible Adaptation Pathways for the Peron Naturaliste Region of Western Australia¹ and Australian Government's First Pass National Assessment². The region has low lying sandy coastal and shallow estuarine environments and has high residential, commercial, recreational and social values.

The Peron Naturaliste Partnership (PNP) is a collaboration of nine local governments; being Bunbury, Busselton, Capel, Dardanup, Harvey, Mandurah, Murray, Rockingham and Waroona. The PNP's vision is to build resilience in our coastal communities and reduce risks posed by climate change. In 2011, the PNP received Federal Government funding under the Coastal Adaptation Decision Pathways (CAPS) Project for the Developing Flexible Adaptation Options for the Peron Naturaliste Coastal Region project. The project produced hazard maps for the region and developed adaptation planning options. These outputs then informed two specific project outcomes:

¹ Damara WA. (2012). Coastal Hazard Mapping for Economic Analysis of Climate Change Adaptation in the Peron-Naturaliste Region (169-01)

² Department of Climate Change. (2009) Climate change risks to Australia's coast: a first pass national assessment. Australia Government, Canberra

1. An economic-based regional analysis of adaptation options to treat identified impacts of coastal climate change.
2. Detailed demonstration of several coastal adaptation pathways and options in local area case study sites.

The project identified that from now until 2100:

- Erosion is a far more pervasive issue than flooding.
- 800 hectares of residential land would be subject to an increase in flooding risk.
- Approximately 200 metre wide strip is at risk from erosion along the whole extent of the coastline.
- The value at risk of the affected assets along this section of coastline is approximately \$1.2 billion.
- Approximately \$1.1 billion of assets can be saved, at a cost of around \$120 million.

In order to monitor long term changes to the coastline, the PNP initiated a standardised, coastal monitoring program in 2014. It has since been providing region-wide data to inform decisions regarding ongoing coastal management and adaptation³.

The PNP, in collaboration with The University of Western Australia (UWA), employs a variety of tools and techniques to collect standardised data across the region, including:

- monthly beach width measurements
- photographic surveys
- dune migration rates
- oblique aerial surveys
- flood frequency records
- inundation extent.

This monitoring allows PNP members to understand the behaviour of the coast and the ways in which it is changing. This informs both current coastal management and future planning by providing baseline and longitudinal data.

The PNP commends the Department of Water and Environmental Regulation for developing and releasing the Climate Change in Western Australia Issues Paper (the Issues Paper), which as noted above is a significant concern and issue that requires action from all levels of government. The following comments that are relevant to the PNP's mandate and expertise are provided for your consideration.

6. Safe and healthy communities

Climate Health

As the PNP and others have identified that vulnerable communities in low lying sandy coastal areas are increasingly at risk from coastal hazards. This submission is focused on the importance of building resilience in coastal communities. In the future there needs to be a strong focus on preparedness and strengthening adaptive capacity, including; restoring biodiversity, water security, and working together

³ Damara WA Pty Ltd 2015, *Peron Naturaliste Partnership Region Coastal Monitoring Program - Coastal Monitoring Action Plan*. http://www.peronnaturaliste.org.au/wp-content/uploads/2017/01/245-02-PNP-Coastal-Monitoring-Action-Plan-Rev-0_lores_part1.pdf

with First Nations people. Outside of the coastal zone, it must be noted that there will also need to be a stronger focus on communities in transition to more sustainable industries, particularly primary industries and sustainable agriculture.

The PNP provided a submission to the Climate Health Inquiry and is presenting at the public hearing. The PNP recommends that this submission (that is included below) and the findings and recommendations of the Climate Health Inquiry should inform the development of the State Government Climate Change Policy.

All levels of government have a responsibility to address the risks (including health risks) associated with coastal climate change. For example, local governments are required to identify coastal hazards and risks and prepare adaption plans⁴ that includes a requirement to capture and include community values.

In 2013, the PNP and the City of Busselton developed and implemented the Coastal Adaptation Community Awareness project to engage with the local community in a discussion to raise awareness of coastal climate change⁵. The key reason for undertaking this pilot project was to build resilience in the City of Busselton community so that they are better prepared to identify and respond to the impacts and risks associated with climate change in the coastal zone. The Plan acted as a pilot for the other PNP member Councils to better communicate the findings of the Developing Flexible Adaptation Options for the Peron Naturaliste Region of Western Australia project. A range of workshops, coastal surveys, and participatory scenario planning and cultural mapping workshops were held to determine values. The project was successful in:

- establishing a community engagement process 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;
- supporting relevant Local and State Government policies, strategies and plans and to assist the City of Busselton, PNP member councils and State Government to make more well-informed decisions;
- supporting relevant Local and State Government policies, strategies and plans and to assist the City of Busselton and State Government to make more well-informed decisions; and
- PNP following best practice standards informing, consulting, involving, collaborating, and empowering their communities⁶.

In order 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, in 2015/16, the PNP developed and implemented a community research project⁷ with Production Function, Dr. Laura Stocker and Curtin University. The research identified that coastal communities place a high importance on visiting beaches and foreshores in terms of providing physical fitness and mental/emotional health benefits. Coastal erosion and

⁴ Western Australian Planning Commission. (2013). SPP 2.6 - State Coastal Planning Policy.

⁵ Booth, P and Cox, R. Australian Climate Change Adaptation Research Network for Settlements and Infrastructure. (2013). Development of a Pilot Coastal Community Adaptation Awareness Plan

⁶ International Association for Participation 2014, IAP2's Public Participation Spectrum.
https://www.iap2.org.au/Tenant/C0000004/00000001/files/IAP2_Public_Participation_Spectrum.pdf

⁷ Report for Peron Naturaliste Partnership. (2018). Involving Communities in Developing Coastal Risk Management Frameworks in Western Australia

inundation mapping indicates that there will be significant loss of these coastal foreshores and reserves from now until 2110⁸.

Consequently there will be substantial impacts on the physical and mental/emotional health and well-being for many in the community. The PNP projects and other research findings suggest that coastal communities will be increasingly affected by coastal hazards. Local governments and their local communities are at the forefront of facing increasing risk from coastal climate change factors. There are many ways that these increasing risks can have an impact on the health service and human health in general.

Another impact of climate change and health is salt water intrusion into fresh water aquifers along the coastal zone. These aquifers are used to irrigate active reserves and public open space and any loss of this resource will impact sporting and recreational space. This in turn will have an effect on our communities' well-being and human health.

In summary:

- There are existing critical services that may be affected in an extreme weather event or under future sea level rise scenarios.
- When planning for placing critical services (i.e. emergency services, affordable housing and hospitals), coastal hazards and climate change factors need to be considered.
- It is important to work with the community to build community resilience to these increasing risks and involve communities in decision making.
- Decisions need to be made with consideration to the potential likely risks
- Human health is dependent on a healthy environment⁹.
- Vulnerable communities will be first and in many cases most affected.
- Climate change impacts have no boundaries – ignores local and state government boundaries.
- Community resilience must be built.
- Regional scale partnerships are ideally placed to address risks, optimize opportunities and benefit all involved.
- Communities' place an extremely high value on the coast as it provides physical, mental and spiritual health benefits.
- People have cultural connections to the coast, particularly Cultural Heritage.

Recommendations

- **Whole of government approach needed to seek opportunities and reduce risks posed by climate change.**
- **All levels of government need to work together to build resilience in coastal communities and be prepared.**
- **Trilateral governance agreements and appropriate and sustainable funding and resourcing is required.**
- **Need to plan for coastal hazards and extreme events (particularly for emergency and health services).**
- **State Government to develop Adaptation and Mitigation Plans for Health Services**

⁸ Department of Climate Change. (2009) Climate change risks to Australia's coast: a first pass national assessment. Australia Government, Canberra

⁹ Sainsbury, P, Charlesworth, K, Madden, L, Capon, A, Stewart, G. and Pencheon, D. (2019), Climate change is a health issue: what can doctors do? Intern Med J, 49: 1044-1048. doi:10.1111/imj.14380

- Undertake research to increase our knowledge and understanding of how coastal hazards will impact community coastal values and the associated health benefits and plan to minimize these impacts.
- Undertake research to increase our knowledge and understanding of how coastal hazards will impact vulnerable communities.
- Undertake research to increase our knowledge and understanding of how coastal hazards will impact critical health infrastructure.
- Further studies into how climate factors will increase risks to our cultural heritage

Emergency Management

Since 2011, the PNP has been working to improve our understanding and capacity to respond to risks associated with erosion and inundation hazards in the coastal zone. It must be noted that the information and data we have gathered, will also be useful to the State Government in identifying and planning for critical infrastructure and vulnerable communities at risk.

Coastal hazard data is important to use and include in scenario planning for priority areas of emergency management and human health services. Currently, the PNP are working with Department of Fire and Emergency Services to develop a 'deep dive' article in the 2019 WA Preparedness Report where the PNP will feature.

The PNP has also raised with the Mandurah Local Emergency Management Committee, the importance of climate risk scenarios being included in emergency scenario planning workshops to ensure that future risks are considered and planned for in coastal hazards.

Disaster Recovery Funding Arrangements

The Issues Paper (page 18) notes that "while initiatives to enhance preparedness are considered more efficient than rebuilding after a natural disaster, only 3 per cent of national disaster funding is spent on disaster management and preparedness."

The Disaster Recovery Funding Arrangements Western Australia (DRFAWA) provides funding assistance to local governments, with essential public assets that have been damaged in an eligible disaster. As it currently stands, 'betterment' is allowed whilst undergoing repairs of a disaster if the local government funds this component. DRFAWA will only fund the cost of reinstating the asset to its original form.

Climate change will exacerbate and increase the incidence and likelihood of natural disasters and as such infrastructure needs to be upgraded to increase its resiliency.

It is recommended that disaster recovery funding allows for 'betterment' of assets so that the damaged or destroyed asset is designed to a more disaster resilient standard.

9. Resilient infrastructure and businesses

The Productivity Commission inquiry into Barriers to Effective Climate Change Adaptation (2013) included a recommendation that: "Local governments' uncertainty about their legal liability is a barrier to effective climate change adaptation. State governments should clarify the legal liability of councils with respect to climate change adaptation matters and the processes required to manage that liability."

The Australian Government response¹⁰ agreed in principle with this recommendation and acknowledged that local governments' current uncertainty about their legal liability is a potential barrier to effective climate change adaptation. As this is primarily a matter for state and territory governments it was referred to those governments for consideration.

Furthermore, it was highlighted that consistency of approach and measures across jurisdictions would help entities operating across Local government boundaries to "cost-effectively maintain a coherent approach and reduce the potential for conflicting or incompatible obligations deriving from federal, state/territory and local government legislation and regulations."

It should be noted that the Local Government Coastal Hazard Risk Management and Adaptation Planning (CHRMAP) Forum and WALGA are working to address coastal hazard planning issues by preparing an Issues Paper. The paper has identified issues that Local Governments are experiencing in meeting their coastal hazard planning responsibilities. Further work will include the identification and development of options to resolve these issues. This could include seeking legal advice on specific matters.

Additionally, it is noted that the WA Coastal Zone Strategy (2017) and the CHRMAP Guidelines 2019 have addressed some uncertainty around private and public party responsibilities and the CHRMAP guidelines do clarify the required process. But further clarification around the legal liability of councils with respect to climate change adaptation matters and the processes required to manage that liability is required.

The Western Australian legislature does not provide local government with an indemnity if it acts 'in good faith' when considering developments in coastal areas. The New South Wales legislature has taken action to protect local government with Section 733 of the *Local Government Act 1993 (NSW)* 'Exemption from liability—flood liable land, land subject to risk of bush fire and land in coastal zone' limiting the liability of local governments in respect of damage caused by bush fire, flooding, or damage to land in coastal zones.

It is recommended that Part 9, Division 4 of the Local Government Act 1995 (Protection from liability) be amended to limit the liability of local governments with regard to flooding, erosion and other related consequences of climate change in coastal areas.

The impact of climate change on Western Australia's coasts

The effects of climate change are already being felt along the PNP coastline and page 24 of the Issues paper specifically refers to Mandurah, Bunbury, Busselton and Rockingham (page 24) as being at particularly vulnerable to climate change.

Furthermore, the State Governments' Coastal Assessment of Coastal Erosion Hotspots in Western Australia Report¹¹ identified that fourteen of the listed 55 'hotspots' in WA are in the PNP region, including; Waikiki Beach, Mandurah northern beaches, Binningup, Koombana Beach and a number of

¹⁰ Australian Government response to the Productivity Commission inquiry into Barriers to Effective Climate Change Adaptation | climatechange.gov.au. (2014, August, 03). https://webarchive.nla.gov.au/awa/20140802225714/http://www.climatechange.gov.au/sites/climatechange/files/documents/03_2013/ag-inquiry-response.pdf

¹¹ Seashore Engineering Pty Ltd. (2019). Assessment of Coastal Erosion Hotspots in Western Australia. Prepared for the Department of Transport and Department of Planning, Lands and Heritage

beaches in Busselton. Additional locations on the 'watch list' in the PNP region include sites in Mandurah, Bunbury, Capel and Busselton;

Local governments are already devoting significant resources to coastal hazard mapping and adaptation planning, such as through the development and implementation of CHRMAP's. CHRMAPs seek to put in place long term planning around risk management and adaptation, that includes adopting an 'adaptation hierarchy' of avoidance, planned or managed retreat, accommodation and protection of assets. Most PNP member Councils are in the process of developing or have completed CHRMAP's.

The PNP appreciates the State Government funding received to date to develop CHRMAP's, but there is currently not sufficient funding available to local governments to address coastal hazards (including erosion and inundation). The WA Government's level of investment in coastal management and protection is significantly less than other States and is not commensurate with the risks being faced along our coastline. The existing Coastal Adaptation and Protection grants (Department of Transport), Coastal Management Plan Assistance Program and CoastWest grants (Western Australian Planning Commission), which had funding totalling \$1.6 million in 2019, has been oversubscribed for a number of years.

To ensure adequate and ongoing resourcing and funding programs are available for local governments to develop and implement CHRMAP's, the PNP recommends that the State Government implement a program similar to the Queensland Government's QCoast 2100. This program provides funding, tools and technical support to enable all Queensland coastal Local Governments to progress the preparation of plans and strategies to address climate change related coastal hazard risks over the long-term. A WA program would incorporate the existing grants programs into one, with increased funding to adequately address coastal hazards. This would also address the issues identified in the Hotspots Report that included identifying and addressing areas at risk of inundation (including estuarine areas).

The Issues Paper notes that there is no specific statute for coastal hazard management in WA, however, the State Government provides statutory guidance through SPP2.6. Unlike other states such as New South Wales, South Australia, Victoria and Queensland there is currently no coastal management legislation in Western Australia. A Coastal Management Act would establish a strategic framework and define and establish the principles, objectives and actions, including roles and responsibilities for integrated coastal zone management. The adoption of such legislation would support a consistent and coordinated approach to the development and implementation of CHRMAPs, which has been (and continues to be) an issue in Western Australia.

It is recommended that the State Government:

- **Undertake a comprehensive review of coastal management legislation, policy, regulatory frameworks and authorities in other states (and other relevant jurisdictions effectively addressing coastal hazard management) to determine if similar statute and approaches would benefit coastal management and planning in WA. Note - The review should include an analysis of land resumption powers to facilitate coordinated retreat from private land.**
- **Consider establishment of a Western Australian Coastal Council (similar to the NSW Coastal Council) to provide independent and expert advice in regards to coastal policy and practice. This group that would include representatives with specialist coastal expertise would provide advice to the Minister(s) on matters related to the functions under relevant Acts and policies and on the development and implementation of WA Coastal Strategy and CHRMAP's by Local Governments.**

- Support amending the WA Local government Act to include specific provision, similar to Section 733 of the NSW Local government Act, to limit liabilities associated with coastal hazards if Local Governments act in “good faith”.
- Develop a program similar to QCoast 2100 in Queensland. QCoast 2100 provides the funding, tools and technical support to enable all Queensland coastal local governments to progress the preparation of plans and strategies to address climate change related coastal hazard risks over the long-term. A WA program with sufficient funding will assist coastal decision makers to identify and address coastal hazards including those ‘hotspots’ identified in the *Assessment of Coastal Erosion Hotspots in WA* report. The program would in addition to promoting a collaborative approach, provide tools and technical assistance to all coastal decision makers.
- Undertake assessment of estuarine locations subject to erosion hazards that includes locations in the PNP region such as Peel-Harvey and Vasse-Wonnerup.
- Undertake assessment of locations subject to future inundation hazards. Initially based on the locations noted in the Hotspot Report, including; Mandurah, Harvey Australind, Bunbury, Bunbury CBD, Busselton and Marybrook (Smith St).
- Acknowledge that State Government should provide ongoing commitment to coastal community stewardship effort including regional coastal facilitators and updating coastal management manual.

11. Strengthening adaptive capacity

To better understand and prepare for coastal hazards the State Government should be the hub for knowledge and data management. The PNP regional coastal monitoring program that monitors coastal erosion and marine inundation could be a model for the State Government to develop a dedicated state wide Coastal Monitoring Program (with built in evaluation and reporting).

The Issues Paper includes numerous references to local government partnerships and adaptive capacity, including;

“Building strong and local government partnerships and supporting the adaptive capacity of local governments will be key to WA’s future resiliency.”

“Provision of up to date, accessible climate science and climate related information can build the adaptive capacity across the community. Ensuring climate science is highly relevant and translated to local, regional or sectoral impacts will support the adaptive capacity of key sectors.”

“Local Governments are on the frontline of climate change adaptation. They are actively engaged in managing climate risks, assessing coastal hazards and coastal erosion, managing the implications of climate change for emergency services and considering how adaptation costs may be equitably shared. Local governments are best placed to identify the adaption needs of local communities and will typically be the first to respond to local impacts.”

The PNP is a unique partnership in Western Australia and is ideally placed to support adaptive capacity and has demonstrated this in the development and implementation of numerous research projects, tools and guidance.

It is recommended that the State Government support the PNP to build the capacity of local governments and their communities. For example the PNP can assist in addressing a number of recommendations in the State Government hotspot report, such as;

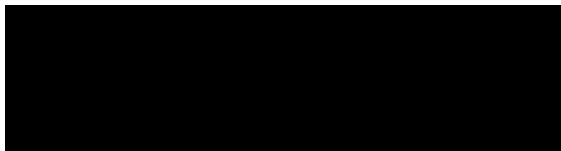
- developing and implementing a community education program to raise awareness about coastal processes and adaptation options. The PNP region could assist in developing the program and act a pilot location to trial the delivery of the program before being rolled out across the State;
- supporting the PNP regional coastal monitoring program by assisting with data analysis. Furthermore, the PNP monitoring program is implementing the 'CoastSnap' community monitoring program, which will be the first of its kind in WA; and
- preparing guidance that demonstrates managed retreat case studies that has previously occurred in WA, including in Mandurah and Busselton.

Furthermore the State Government should;

- adopt the PNP Regional Coastal Monitoring techniques and program to undertake ongoing state wide coastal monitoring, including rolling out the CoastSnap Program state wide and build on the PNP and UWA managed wacoastlines.com website; and
- continue to manage the WALIS Marine Group and database;

As stated in our submission the PNP believes that regional collaborations such as the Peron Naturaliste Partnership are ideally placed to deal with coastal climate change. We hope that the above comments will assist the WA Government in the development and adoption of a Climate Change Policy and we look forward to continuing to work with the State Government on this matter.

Yours faithfully



Cr Mark Jones, City of Rockingham
Chairperson
Peron Naturaliste Partnership