



Minutes:

Additional CAP Meeting – Northern Adaptation Area: MCDA Scoring of Shortlisted Pathways Continued

Date: Thursday, 15 June 2023

Location: Robin's Nest, Ngā Manu Nature Reserve, 74 Ngā Manu Reserve Road, Waikanae, (MS teams-link in

invite)

Time: 2.00 pm – 5.00 pm

Attendees:

Jim Bolger (Chair), Jerry Mateparae, Donald Day, Moira Poutama, Martin Manning, Susie Mills, John Barrett, Melanie McCormick, Olivia Bird, Mark Taratoa, Te Rangimārie Williams, Dr Aroha Spinks, Stephen Daysh, Kris Pervan, Jason Holland, Sandhira Naidoo, Ashlyn Gallagher, Yvonna Chrzanowska, Kate MacDonald, Damian Debski, Aastha Shrestha and Abbey Morris

Observers: Cam Butler and Tim Sutton

Apologies: Elspeth McIntyre, Deanna Rudd, Jain Dawe, and Sophie Handford

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Agenda Item	Comments						
Opening &	Welcome by Jim Bolger, Chair						
Introductions	Opening Karakia by John						
	Roundtable introduction from attendees						
Confirmation of the	Confirmation of the Minutes						
Minutes	 Jerry motioned to move the minutes with minor changes. John seconded the minutes following the changes. 						
Project Update	Abbey provided an update that:						
	 Jim attended the Strategy, Operations and Finance Council meeting (last Thursday-8th June) and gave an update about Takutai Kāpiti. The video recording will be available on Council's YouTube Channel soon. 						
	Note video recording is now available on YouTube - https://www.youtube.com/watch?v=jlxTo9UBhrE&list=PLMkbFqbC0LfDEQBz1kskKA4xAE6SWWhsG&index=6&pp=iAQB						
	 Jerry suggested that it'd be helpful to receive a list of the questions asked by Elected Members. 						
Multiple Criteria	Stephen Daysh (TAG)						
Decision Analysis (MCDA)	 Stephen gave a quick refresher of the work done in the previous meeting and shared the focus of this meeting will be to incorporate the te ao Māori values criteria for all pathways and score the Rural settlement pathways. Abbey clarified that 'avoid' as a pathway option is not shown on the PowerPoint presentation slides – this needs to be in the future. However, as mentioned at previous CAP meetings, the 'avoid' pathway will be considered for all timeframes as an adaptation pathway option. Further work for the 'avoid' pathway options will be looked at a later CAP workshop towards the end of the project. Jim noted that it's an important point to note. Stephen reminded that another step in the decision-making process will be the signals and triggers. This is something that the CAP will look at during the April 2024 CAP meeting and all adaptation areas will be covered then for this. 						





New pieces of information prepared based on discussion from last CAP meeting:

- NAA High-level Menu of Pathway Options was updated to include 'Wetland' within Enhance Item 3 title and commentary.
- A 'Examples of Soft Engineering Erosion Protection on the Kāpiti Coast' pamphlet have been created. This gives an overview of six soft engineering options and what they are.
- A new pathway has been introduced for erosion for Ōtaki Beach, Te Horo and Peka Peka that does not include Soft Engineering as a pathway option. This new pathway is Enhance, Enhance, Retreat.

Discussion:

- Aroha led a discussion about the scoring of the te ao Māori values criteria.
 Further details are captured within Appendix 2 of these minutes.
- Jim asked how often the community are out gathering mahinga kai. Aroha and Mark shared that this often in the summertime you can see people out daily.
- Abbey clarified that it would be the signals and triggers that determine when the
 next pathway is moved to. There is the potential if a short term or medium-term
 pathway does well at adapting to coastal hazards, it could delay the need for a
 long-term pathway. This may include Retreat.
- Jim mentioned if Retreat becomes required, Council will need to determine / be prepared for where people can retreat/relocate to. Jim noted that there is not a lot of suitable, unused land in the district left.
- It was noted that in the event of Retreat, it would be a time where direct door to door consultation would be required for those potentially impacted. However, this is not something that is required yet.
- Aroha shared that infrastructure would need to be looked at in advance before it is impacted by coastal hazards.
- Martin noted the importance of groundwater monitor regarding sea level rise.
 Jason asked if it was the level or quality monitoring that Martin was interested in.
 Martin confirmed that it was the water level monitoring. CAP requested further information about what is currently monitored.

TEA BREAK

MCDA Assessment of Shortlisted Pathways for NAA (contd...)

Discussion continued:

- Mark and Jerry noted that the whole coast is continuous you cannot carve it up
 when implementing pathways. This would need to be considered at the time of
 planning to execute the pathways to prevent negative results.
- Aroha commented that from a mana whenua perspective, the coast is also considered as continuous.
- Stephen suggested that for the Enhance option, that different types of Enhance tailored to each area could still work though.
- Damien commented that as majority of the properties within the Rural settlement, Retreat could be a viable option instead of putting protection in place long term.

The CAP, with all agreeing, locked in the MCDA scoring of the pathways. This resulted in the pathways be ranked from highest scoring (most desirable) to lowest (least favourable).

Full results of the CAP's decisions for the MCDA scoring for the NAA is captured within Appendix 1 of these minutes.





Next Steps	Abbey Morris (KCDC)							
	 Abbey shared that at the next CAP meeting on 29th June the CAP will start working on the Central Adaptation Area. CAP is hosting a community feedback session on 1 July at Ōtaki Baptist Church where the CAP will present their draft pathways (as landed in this meeting) to the community for feedback. Jason will be attending the Ōtaki Community Board Meeting on Tuesday 20 June to create awareness about the NAA Community Feedback Session. 							
	Discussion							
	 Stephen thanked Cam for joining for the NAA – he added he has provided valuable, local knowledge at these CAP meetings. Jim suggested that all of the CAP raise awareness of the upcoming NAA Community Feedback Session. 							
	 Jerry acknowledged and thanked Aroha for asking for another pathway for adapting to erosion in the NAA that did not include Soft Engineering Protection. This resulted in the most desirable pathway by a significant amount. All attendees gave Aroha a round of applause for this. 							
	Meeting closed at 4.55pm							
Closing Karakia	By John							

ATTACHMENTS
Updated NAA Adaptation Pathways PowerPoint Presentation – CAP Workshop 24 May 2023
Updated NAA High-level Menu of Pathway Options
Examples of Soft Engineering Erosion Protection on the Kapiti Coast pamphlet

ACTIONS	
Coastal Team to circulate a list of the Elected Member's questions from Strategy, Operation and Finance Council meeting to CAP.	
Coastal Team to provide CAP with information on what is currently monitored regarding water within the district.	





Appendix 1: CAP's MCDA Scoring of NAA Pathways

								MCDA Criteria/Weighting				
				CAP Weighting	Ecology 3	Landscape 2	Te ao Māori values 3	Community Social and Economic Wellbeing 3	Public Access and Recreation 3	Regulatory consenting and policy risk 1	Effectively manages the risks of coastal erosion	Effectively manages the risks of coastal inundation 3
Pathways Manag	for Otaki E	Beach						MCDA Scoring				
ement Pa	athways	Short term	Pathway Descr Medium term	Long term	Ecology Score Notes - Enhancement of existing native populations would likely promote ecology and provide greater habitat and resources for from and fauna. - Soft engineering may disrupt birt habitats and shellfish populations but can modify and enhance habitats in the form of enhanced dunes for beach fore and fauna.	Score Notes - Enhancement of dames with native dune vegetation - In the score of t	Te ao Máori values Score Notes Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	Community Social and Economic Wellbeing Score * The option to increase dura resilience over short and medium term aligns with stated community values. * If community is actively included in implementation of dura resilience, it could promote social and economic wellbeing, as well as enhance social cohesion & health outcomes. * It is uncertain if insurability of personal assets will be maintained.	Public Access and Recreation Score - This option will maintain the natural appeal of the maintain appeal of the property of	Regulatory consenting and policy risk *As this option presents the least amount of impact on the existing environment (e.g., no hard engineering structures), there is untilitiely to be significant consenting hurdles under the existing system in the short to medium term. *Enhancement not likely to require consent or will be easy to obtain and is in line with current regulatory framework. *Depending on scale, soft engineering protection may increase risk which elevates risk profile.	Effectively manages the risks of coastal erosion Score Notes - If designed properly it is likely to effectively manage impacts when erosion risks are lower. Effectiveness is likely to reduce over time trying to hold the shoreline in the same location as present day and thus will require additional space to allow the beach to adjust inland to maintain the dune Appress he proportionate to nature and scale of risk, and would avoid excendation of risk in other	Effectively manages the risks of coastal inundation Score Option is not chosen to address inundation hazard. Option is not chosen to address inundation hazard. Option is not chosen to address inundation hazard. By raising the dune crest elevation by planting and dune reconstruction, the risk of overtopping decreases and can be added to responsively as a result of storm encision. However does not address inundation hazard from pathways up river and riefs. Unlikely to be proportionate to the nature and scale of risk of inundation.
	E	Enhance	Enhance	Soft Engineering Protection	Enhancement of existing native populations will labely initially promote ecology and provide greater habitat and resources for fora and faunt.	hillsal enhancement of dunes with native dune vegetation may reatore natural character. Soft engineering may distral cross of coastal	2 Refer to: NAA MCDA Pre-sooring Te Ao Máori Values additional document	The option is increase dure realizance over short term aligns with stated community values. To ensure succord for this colon over medium-lone term, the	This cotion will maintain the natural amonthy and landscape values of the coastal environment and ecoastam environment	Consenting risk increased as a result of additional soft engineering protection. Consents required in the short term, will leak not be a difficult consents.	If designed properly it is likely to effectively manage impacts when excellent risks are lower. If designed properly it is likely to effectively manage impacts when excellent risks are lower. If the property is the likely to effect over the principle of the property of the principle over the principle of the principle of the principle over the principle of the principle over the principle of the principle over the principle of the principle	Option is not chosen to address inundation hazard. Option is not chosen to address inundation hazard. Option is not chosen to address inundation hazard.
2	: E	Enhance	Soft Engineering Protection	Soft Engineering Protection	Soft enginering - beach renourishment equally good and had alsa 3050-0 Ashlym - Soft engineering may disrupt bird habitats and shellfish populations but can modify and enhance habitats in the form of enhanced dunes for beach flora and fauna. 3	environment but otherwise maintain an open dynamic coastline influenced by existing settlement.	1 Selfer In NAA MCDA Pre-accision Te An Milent	community may need assurance (evidence, information & engagement) on suitable soft engineering responses. * If community is actively included in implementation, it could promote social and economic wellbeing, as well as enhance social ochesion & health outcomes. * It is uncertain if insurability of personal assets will be maintained.	values and toste nature appreciation. - Public access to the coastal environment will be maintained, however recreation that damages dunes may need to be restricted to protect ecosystems & encourage dune stability.	pathway. As there are additional soft engineering works proposed in this option there may be a few additional consenting requirements in comparison to the above. Soft engineering protection presents less consenting hurdies as opposed to hard engineering protection but still may face challenges. *Hard engineered hazard missalion methods are	hold the shresline in the same location as present day and thus will probabbly require increasing soft-engineering intervention or additional space to allow the beach to adjust inland. * Approach is proportionate to nature and scale of risk, and would avoid exacerbation of risk in other areas. * Design would be informed by best practise.	decreases and can be modified responsively as a result of storm ension. - However does not address inundation hazard from parthways up river and inlets. - Unlikely to be proportionals to the nature and scale of risk of inundation. 3 62
Otaki Unit 1A s	E	Enhance	Soft Engineering Protection	Hard Engineering Protection	Enhancement of existing native populations will likely initially encourage positive ecological benefits. Origoing engineering protection however has the potential in reduce ecology by dramaging beach, or control of the potential of the potential in the potential peach of the potential	Initial enhancement may resider enhant character. Ongoing engineering and introduction of hard structures and potential reduction in natural beach profile may further reduce neutral character and of the structures and potential reduction in stratural beach profile. Structures may remove some existing areas of high natural character encompassing parts of Otaki Dunes.	Prefer to NAN MULIA Pre-scoring te Ao Mach Values additional document	In opport in increase durin resistance over smort stem aligns with stated community values. In the state of	In short-madium term this option will maintain the natural appeal of the coasts environment and allow public access. Over time, this leavy that access to foreshore could be common the coasts of the	**sara engineters nazara megadent memosa ser discouraged under existing statutory frameworks service and the service serv	- Likely be effectively immange shoreline retreat at the time of implementation, but will require copying maintenance especially as sea level continues to risa in the long term. The proposition of the control of the control of the nature and scale of the risk, but it may cause end effects seroisn and will enhance foreshore socur at its toe. Design would be informed by best practise to reduce these effects but there will be environmental impacts and changes to the beach associated with this option over the longer term (i.e. beach narrowing and loss of volume).	Oppon is not crocent to accress mundation nazard. A designed crest elevation of an eventual hard and accretion of a control hard and covertopping hazard, but would not effectively manage the wider inundation risks up river and inlet pathways.
	4 E	Enhance	Soft Engineering Protection	Retreat	Initial enhancement of existing native populations would likely improve existing ecology and promote greater habitat and resources for flora and fauna Refreet flavours ecological restoration by providing habitats for species to recoloniae neighbouring areas that may become destroyed. 4 5	Initial enhancement may restore natural character. Soft engineering may disrupt natural character and result in more limited adverse landscape effects in the context of existing settlement. Petreat provides opportunities to restore dune planting in the absence of hard engineering and offers opportunity to restore natural character in longer term.	Refer to: NAA MCDA Pre-scoring Te Ao Miliori Values additional document	The option to increase dune resilience over short term aigns with stated community values. To ensure support for soft engineering over medium term, the community may need assurance (evidence, information & engagement) on suitable soft engineering! hybrid responses. In the long term, the community is more likely to consider retreat if are involved in the decision, and have assurance that suitable land is available to discuss the substance of the suitable land of the suitable to the substance of the suitable land of the suitable to the suitable land of the suitable to the suitable land of the suitable land of the suitable to the suitable land of the su	This option will maintain the natural amenity and landdiscape of the coastal environment. Public access to the coastal environment will be maintained in the short term, and is likely to continue in the medium and long lem. Over all time periods, recreation that damages dunes may need to be restricted to protect exceytems & encourage dune stability. As managed reheat gets underway consenting management of the protect exception of the stability	Option of retreat has limited effects on the environment in comparison to hard protection structures. Currently limited national direction on how to undertake managed retreat, however, this expected to be addressed within the Climate Change Adaptation Act. May be difficult to justify soft engineering approaches if the plan is to retreat in the longer term, but you have been supported to be addressed within the Climate Change approaches if the plan is to retreat in the longer term, but you have been supported to be addressed to be add	Effectively manages the risks of coastal erosion over time, and takes actions in the short-medium term to reduce risks over that period. Refreat would resulf in total removal of risk to individuals from erosion. It would be proportionate to the nature and scale of the risk to those impacted to retreat.	Over the short-medium term the actions will not effectively manage the inundation hazard; however long term reteat will remove the risk to individuals impacted in the area. However, the properties retreated due to the encision hazard in Otaki Beach are not the same properties that are at risk from erosion; and therefore both hazards need to be considered for retreat to be effective in reducing risk to both hazards.
	5 E	Enhance	Enhance	Retreat	- Enhancement may improve estating native populations and likely ell-encourage positive ecological benefits when performed long term and coupled with pest managemeent. - Refrest favours ecological restoration by providing habitats for species to recoloniae neighouring areas that may become destroyed.	Enhancement of dune vegetation and habitats provides opportunities to restore natural character Retreat provides further opportunities to restore natural character in the longer term	Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	The option to increase dure resilience over short and medium term aligns with stated community values. If community is actively included in implementation of dure resilience, it could promote social and economic wellbeing, as well as enhance social ochesion. A health outcomes. The longer term option to retest allows for time for local government and communities to plan and it is uncertain if insurability of personal assets will be maintained.	- This option will maintain the natural appeal of the coastal environment and ecosystem protection could enhance both community and environmental values and toster nature appreciation. - Public access to the coastal environment will be maintained, however recreation that damages dunes imay need to be restricted to protect acceystems & encourage dama stability. - The long term option for research coale and developed and maintained print of the actual relocation of the community.	From a consenting perspective, enhancement across the short and medium term is preferred due to enhancement of existing environment aligning with statutory framework. *Option of retreat has limited effects on the environment in comparison to other options such as hard engineering structures. *Currenty limited national direction on how to undertake managed retreat, housever, this is undertake managed retreat. Housever, this is Adaptation Act. *Retreat may also create additional consenting issues dependent on relocation plan (e.g., subdivision of new land amd where to find this new land). While retreat may be a future option, planning should commence now to plan for that eventuality.	implemented earlier than pathway 4. Retreat would result in load removed of risk to individuals from erosion. It would be proportionate to the nature and scale of the risk to those impacted to retreat.	
1	E	Enhance	Accommodate	Additional Hard Protection	- Enhancement may improve existing native populations likely encouraging positive ecological benefits The introduction of hard protection however may have long term negative adverse effects on ecological sites and species associated with vesterveys i.e. Oracli River and Wastohu Stream.	Initial enhancement may residre natural character and provide landscape herefits. Eventual introduction of hard structures would reduce natural character and may result in adverse landscape effects over longer term. Structures may remove existing areas of high natural character at mouth of Waltohu Stream.	Refer to: NAA MCDA Pre-scoring Te Ao Milori Values additional document	Initial short term enhancement option aligns with community values and maintains social cohesion. Those in higher inundation risk areas may need support to understand options! costs to procarcively protect their dwellings from moisture and mould (floodpoording, relocations be buildings, elevate floors, "Continue community education re-protecting & hazard, and emergency management to foster resilience. It is uncertain if insurability of personal assets will be maintained. CAP commentary: Insurance companies may continue providing insurance if hard protection is done - as it minimises risk.	In short-medium term, this option will maintain the natural appeal of the coasts environment and coopystem protection could further enhance community values. Public access to the costall environment will be maintained, however recreation that diamages durins continued to prevent destruction of during stability. Where possible, additional hard protection, should allow for public access and recreation and provide other or-benefits.	*Accommodation and additional hard protection on a larger scale will trigger more stringent consenting requirements compared to enhancement and softengineering methods. *Hard-engineering approaches are discouraged under the NEOPS and RPTS becasse of the adverse of the NEOPS and RPTS becasse of the adverse of the NEOPS and RPTS becasse of the adverse of the NEOPS and RPTS becasse of the adverse of the NEOPS and RPTS becasse of the adverse of the NEOPS and RPTS because of the adverse of the NEOPS and RPTS because of the adverse of the NEOPS and the Additional transportation of the Additional transportation of the NEOPS and the NEOP	Pathway is not created to address the erosion hazard. Pathway will not effectively manage the erosion hazard. 1	- Effectively reduces the risk to individual properties by raising houses above agreed flood levels but the risk remains to roading, access and services Also, a residual risk to housing will remain in the short to medium term until this can be reduced by the engineered missission options in the longer term.

2	Enhance	Additional Hard Protection	Retreat	- Enhancement of existing native populations will likely initially encourage positive ecological benefits, the property of th	Initial enhancement may restore natural character and provide landscape benefits. An enhancer and result in adverse landscape effects. Retreat provides opportunities to restore natural character, however this would occur in the context of increased modification. 4	Refer to NAA MCDA Pre-scoring Te Ao Milori Values additional document	hittiel short term enhancement option aligns with community values and maintains social cohesion. The community values and maintains social cohesion. The community of the considered disorgative cost associated with retreat in long term (floodproding, relocatable buildings, elevate floors, etc.) * Clear communication & support for those in higher inundation risk areas so they understand costs of options to protect their devellings & fields to health visions of eventual retreat. Continue community costs of eventual retreat. Continue community costs of eventual retreat. Continue community among permet to foster realisence. * It is uncertain if insurability of personal assets will be maintained.	This option will initially maintain the natural appeal of the coastid environment. Ecosystem protection access to the coastid environment, and public access to the coastid environment, and the coastid protection and other co-benefits. I cong term retead may offer opportunities for recreation.	Coastal restoration and enhancement is encouraged under the present egulatory framework and will not face any major consenting hurdes. However, the hard protection components of this pathway will face consenting hurdles as there are significant states in the area scheduled in the GWNC Natural Resources Plan and will require buy-in from GWNC to along the Otable River and Waldhouth Steam. With a longer term aim to remark heave wrote may be harder to justify. As the control of the control of the properties of the properties of the work may be harder to justify. As the properties of the properties of allow some greenfelds subdivision. Retreat may also create additional consenting issues dependent on relocation plan (e.g., subdivision of new land and where to find this new land).	Pathway over the short-medium term will not address ension risks. Properties being retreated from the inundation hazard will be different to the properties being retreated from resion; and therefore retreating properties due to inundation hazards will only effectively manage he ension risk for a small amount of properties.	Short-medium form will help reduce the increasing risk until retreat is undertaken, which is highly likely to effectively manage the risks by removing individuals from the area. As an incremental approach, it is likely to be proportionate to the nature and scale of the risk over time.
1) NEIO	Enhance	Accommodate	Retreat	hillial enhancement would likely improve existing ecology and promote greater habitat and resources for fior and fauna. Referet fearure scological restoration by providing habitats for species to recolonise neighbouring areas that may become destroyed.	- Initial enhancement would likely resirce natural character and provise landscape benefits Response avoids introduction of built structures within areas contributing to natural character in the context of the existing settlement Referred fores opportunity to expand areas of restored natural character. 5	Refer to: NAA MCDA Pre-scoring Te Ao Milori Values additional document	- Initial short term enhancement option aligns with community values and mismitine social cohereion. - Those in higher inundation risk areas may need support to understand options / costs to proactively protect their dwellings from moister and mould (floodproding, relocatable buildings, elewate floors, etc.) in light of future re-location retreet. - Confinue community decidation re: protecting & hazard, and emergency management to foster resilience and assist transition to retreat. - It is uncortain if insurability of personal assets will be maintained.	This option will initially maintain the natural appeal of the coastal environment and ecosystem protection could enhance community values and public access to the coastal environment. • In the medium term, the public may need assurance (governance) planning) that public access and opportunities for recreation and other ecology cobeneties will not be negatively impacted. • Long term retreat may offer opportunities for recreation.	Coastal restruction and enhancement is encouraged under the present regulatory framework, and will not face any major consenting hurdles. If managed refreet is done well it should have limited effects on the environment as opposed to hard protection structures. Currently there is limited national direction on how to understake managed retreat however, this is expected to be addressed within the Climate Change Adaptation Act at a global underway consenting may. As managed retreat working the subdivision of Retreat may also create additional consenting issues dependent on relocation plan (e.g., subdivision of new land and where to find this new land).		- Effectively reduces the risk to individual properties by raining froutes above spreaf food levels but the risk remains to roading, access and services. - Retreat from the hazard over the long term will reduce risk to those effected. - As an incremental approach, it is likely to be proportionate to the nature and scale of the risk over time.
4	Accommoda	ate Additional Hard Protection	Retreat	- Hard engineering protection may reduce ecology by damagning beach, due, and estuary ecology, and overall may support lower biodiversity and prevent the natural migration of habitats. - Reteat provides opportunity for ecological restoration, however this would occur in an already modified environment.	Additional hard protection is likely to reduce natural character and may result in deverse landscape effects. Refrest provides opportunities to restore natural character, however this occurs in the context of increased modification.	Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	- Initial short term focus is to identify dwellings at risk and educate on optionistoss of indodprooting, relocatable buildings, elevate floors, etc. The community may need support to understand and implement these mitigation efforts Providing the community with information on the costs of additional hard protection (alongside costs such additional hard protection (alongside costs and additional hard protection (alongside costs services of the protection of the protection and congress of the protection of t	In the short term, public access to the coastline is likely to be emitratized. In the medium term, with the consideration of any additional hard protection, the public may need assurance (governance)staming) that public access and opportunisties for recreation and other ecology or benefits will not be negatively impacted. I consider the public decidence of the public access & explore further opportunities for recreation. 1 septime further opportunities for recreation.	The hard protection components of this pathway will face consenting hurdles as there are significant sites in the area scheduled in the GWRC Natural Resources Plan and will require buy-in from GWRC to approve and undertake flood protection works along the Could River and Watchub Stream. With a longer term aim to retreat, these works may be required to a longer the comparison to enhancement. Accommodation also creates additional consenting requirements in comparison to enhancement. As managard entered ages underway consenting may be required to allow some greenfields subdivision. Retreat may also create additional consenting issues dependent on relocation plan (e.g., subdivision of new land and where to find this new land).	Pathway over the short-medium term will not address evision risks. Properties being retreated from the inundation hazard will be different to the proptients being retreated from the proptients being retreated from recision; and therefore retreating propentes due to inundation hazards will only effectively manage the erosion risk for a small amount of properties.	Effectively manages the risks to properties only over the short term, and potentially the broader settlement over the medium term. Effectively manages the risks to individuals over a long timertame.
Manage Path	Te Horo Beach	Pathway Desc	riptions n Long term	Ecology Score Notes S	Landscape Score Notes S	Te ao Mãori values core Notes	Community Social and Economic Wellbeing Score Notes S	Public Access and Recreation core ! Notes S	Regulatory consenting and policy risk	Effectively manages the risks of coastal erosion Score Notes	Effectively manages the risks of coastal inundation Score Notes Notes MCDA Total Score:
1	Enhance	Enhance	Soft Engineering Protection	Enhancement of existing native populations would likely promote ecology and provide greater habitat and resources for flora and flauna. - Soft engineering may disrupt bird habitats and shelffish populations but can modify and enhance habitats in the form of enhanced duries for beach flora and flauna.	Enhancement of native drane vegetation would kely restore natural character. Soft engineering may disrupt areas, but otherwise maintain an open dynamic coastline influenced by existing settlement.	Refer to NAA MCDA Pre-scoring Te Ao Máori Values additional document	The option is increase dure realismos over short and medium term aligns with stated community values. If community is actively included in implementation of dure realismo, it could promote social and economic wellbeing, as well as enhance social cohesion & health outcomes. It is uncertain if insurability of personal assets will be maintained.	This option will maintain the natural appeal (amenity). & Inindecapil of the coastal environment. • Ecosystem protection could enhance community values and foster nature appreciation. • Public access to the coastal environment will be maintained, however recreasion that diamages dunes may need to be restricted to protect acceptates & encourage dune stability.	 As this option presents the least amount of impact on the existing environment (e.g., no hard engineering structures), there is untillely to be significant consenting hurdles under the existing system in the short to medium stem. Enhancement not likely to require consent or will be easy to obtain and is in line with current regulatory transacts. Department of the engineering protection may increase risk which elevates risk profile. 	If designed properly it is tikely to effectively manage impacts when encotion risks are lower. Effectiveness is likely to slowly reduce over time trying to hold the shreetine in the same location as present day and thus will require additional space to allow the beach to adjust intend to maintain the dune. Approach is proportionate to nature and scale of reduced wood encode ascerbation of this in other areas. Design would be informed by best practise.	Option is not choses to address inundation hazard. Py raising the cross television by planting and dune reconstruction, the risk of overtopping decreases; however does not address inundation hazard from pathways up the stream. Unlikely to be proportionate to the nature and scale of risk of inundation.
2	Enhance	Soft Engineering Protection	Soft Engineering Protection	- Enhancement of existing native populations will likely initially promote ecology and provide greater habitat and resources for flora and fauna Soft engineering may disrupt bird habitats and shelfish populations but can modify and enhance habitats in the form of enhanced dunes for beach flora and fauna.	Initial enhancement of dunes with native dune vegetation may restore natural character. Soft engineering may disrupt areas of coastal environment but otherwise maintain an open dynamic coastline influenced by existing settlement.	Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	The option to increase dune resilience over short term aligns with stated community values. To ensure support for this option over medium-long term, the community may need assurance (evidence, information & engagement) on suitable soft engineering responses. If community is actively included in implementation, it could promote social and economic wellbeing, as well as enhance social cohesion & health outcomes. It is uncertain if insurability of personal assets will be maintained. The contract of the con	This option will maintain the natural amenity and landscape values of the coastal environment. Ecosystem protection could further enhance community values and foster nature appreciation. Public access to the coastal environment will be maintained, however recreation that damages dunes may need to be restricted to protect ecosystems & encourage dune stability.	*Consenting risk increased as a result of additional soft engineering protection. *Consents required in the short term, will likely not have a difficult consenting pathway. *As there are additional soft engineering works proposed in this option there may be a few additional consenting requirements in comparison to the above. Soft engineering protection presents less consenting hurdles as opposed to hard engineering protection but still may face challenges.	If designed properly it is likely to effectively manage impacts when enrotion risks are lower. Natural processes are likely to roll back the gravel storm berm, but the shoreline would benefit from beach scraping to build crest height. Effectiveness is likely to slowly reduce over time trying to hold the shoreline in the same location as present day and thus will require additional space to allow the beach to adjust infand to maintain the dune. Approach is proportionate to nature and scale of risk, and would avoid exaceheation of risk in other areas. Design would be informed by best practise.	Option is not chosen to address inundation hazard. By raising the crest elevation by planting and dune reconstruction, the risk of overpoping decreases; however does not address inundation hazard from pathways un
Te Horo Unit 2A c	Enhance	Soft Engineering Protection	Hard Engineering Protection	Enhancement of existing native populations will likely initially encourage positive ecological benefits. Ongoing engineering protection however has the potential to reduce ecology by damaging beach, dune, and estuary ecology, and overall may support lower biodiversity and prevent the natural migration of habitats.	hillial enhancement of native dune vegetation would restore natural character. Progressive introduction of ball structures along an otherwise open coastline is likely to have adverse landscape and natural character impacts in context of existing settlement. Structures may remove some existing areas of high natural character encompassing parts of Te Horo Dunes. 2	Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	The option to increase dans resilience over short term aligns with stated community values. To ensure support for engineering options over medium-hong term, the community may need assurance (evidence, information 8 engagement) on suitable soft / hybrid/ hard engineering responses. F community is actively included in implementation, a could promote social and economic wellbeing, as well as enhance social cohesion 8 health outcomes. 8 to uncertain if insurability of personal assets will be maintained.	In ahort-modium term this option will maintain the natural appeal of the coastal environment and allow public across. Over time, it is likely that access to foreshore could be lost at this plus day and the lost and the lost at this plus day and the lost and the l	Hard engineered hazard miligation methods are discouraged under existing statutory frameworks because of the adverse effects they can have on the environment. Polity discretions in the NZCPS and the Regional Policy Statement state that hard engineering options should only be used as a later sear and the GWRC Natural Resources Plan contains some scheduled sites in the Managanes Stream Mouth. *Therefore, this pathway may face significant consenting hurdes in its later stages.	May manage the risks of coastal erosion in the long strm. however the pathway is not likely to be proportion to the nature and scale of the risks over time. End effects and to secour may may cause localised exacerbation of erosion. Design would be informed by best practise.	Option is not chosen to address inundation hazard. A designed creat elevation of an eventual hard structure would result in a reduction of the overtopping hazard, but would not effectively manage the wider inundation risks up Mangaone stream pathway.
4	Enhance	Soft Engineering Protection	Retreat	Initial enhancement of existing native populations would likely improve existing ecology and promote would likely improve existing ecology and promote a series of the provided of the pr	Initial enhancement may restore natural character. Soft engineering may disrupt natural character and stress of the property of the context of existing settlement. Returned provides opportunities to restore dune planting in the absence of hard engineering and offers opportunity to restore natural character in longer term. 2	Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	The option to increase dune resilience over short term aligns with stated community values. The state of the	This option will maintain the natural amenity and landscape of the coastal environment. The coastal and the coastal environment is will be related to the coastal and the coastal environment. The coastal environment is selected to the coastal environment in the medium and long term. Over all time periods, recreation that damages dunes may need to be restricted to protect ecosystems & encourage dune stability. Retreat may provide further opportunities for recreation.	Coastal restoration and enhancement is encouraged under the present regulatory framework are couraged under the present regulatory framework are considered in the present regulatory framework in the present significant feets on the environment as opposed to hard protection structures. Currently there is limited national direction on how to undertake managed retreat however, this may be addressed within the climate change adaption act. The scale of the soft engineering works will need to be commensurate with the plan to tretten in the medium to long term. Managed retreat may require consenting to allow create additional consenting issues dependent on relocation pain (e.g., subdivision of new land and where to find this new land).	Effectively manages the risks of coastal erosion over time, and takes actions in the short to medium over time, and takes actions in the short to medium "Retreat would result in that removal of risk to individuals from erosion. In would be proportionate to the nature and scale of the risk to those impacted to retreat. 5	By raising the creet elevation by planting and dune reconstruction, the risk of overtopping decreases, but over the shorts on medium term the sudions do not be a consideration of the sudions of the su

S Enhance Enhance Retreat 5	Enhancement may improve existing native populations and likely will encourage positive ecological benefits when performed long term and coupled with pest management side to by providing habitats for species to recolonise neighbouring areas that may become destroyed. 5	Enhancement of dune vegetation and habitats provides opportunities to restore natural character Retreat provides further opportunities to restore natural character in the longer term	Refer to: NAA MCDA Pre-scoring Te Ao Māori Values additional document	The option to increase dune resilience over short and medium term aligns with stated community values. If community is actively included in implementation of communities and could promote social and of communities of the could be considered. The longer term option to retreat allows for time for local government and communities to plan and prepare for the costs for relocation. It is uncertain if insurability of personal assets will be maintained.	This option will maintain the natural appeal of the coastal environment and ecosystem protection could enhance both community and environmental values and foster nature appreciation, windownest will be maintained, however recreation that damages dunes may need to be restricted to protect ecosystems & encourage dune stability. The long term option for refreat could enable recreation and public access to be planned for, developed and maintained prior to the actual election of the community.	From a consenting perspective, enhancement across the short and medium term is preferred due to enhancement of existing environment aligning with statisticity samework. **Given of reference the entire of the ent	- Effectively manages the risks of coastal erosion over time, and takes actions in the short-medium term to reduce risks over that period. -Enaborement will be proportismate to the scale of risks and the scale of risks to individuals from erosion. It would be proportionate to the nature and scale of the risk to those impacted to retreat. 3	By raising the crest elevation by planting and dune reconstruction, the risk of overtopping decreases, but over the short to medium term the actions do not effectively manage the inundation hazard posed by the Mangsons steam. Nowever long larm einest will see the state of the second of the
1 Enhance Accommodate Additional Hard Protection 3	Enhancement may improve existing native populations likely encouraging positive ecological benefits. The introduction of hard protection however may have long term negative adverse effects on ecological sites and species associated with waterways i.e. Managane Stream.	Initial enhancement may restore natural character and provide landscape benefits. Eventual introduction of hard structures may reduce natural character and have adverse landscape effects in content of existing settlement and modification.	Refer to: NAA MCDA Pre-scoring Te Ao Māori Values additional document	Initial short term enhancement option aligns with community values and maintains social cohesion. Those is higher inundation risk areas may need support to undestand optional costs to proactively protect their dealings from moisture and mould (thodproofing, relocatable buildings, elevate focus, of the continue community education re-protecting & hazard, and emergency management to foster resilience. It is uncertain if insurability of personal assets will be maintained.	In short-medium term, this option will maintain the natural appeal of the coastal environment and ecosystem protection could enhance community values. Public access to the coastal environment will be maintained, however eccession that diamages during the maintained, however eccession that diamages during the maintained, however eccession that diamage during the maintained of the coastal resolution of our set station of during the maintained of the coastal and the coastal and with public access and recreasion and provide other co-benefits. 2	- Accommodation and additional hard protection on a larger scale will trigger more stringent consenting requirements compared to enhancement and soft-engineering methods Hard-engineering approaches are discouraged under the NZDFS and RFS because of the adverse -Furthermore, the GWRC Natural Resources Flan has some scheduled sites over the Mangaone Mouth with associated consenting rules Therefore, this pathway may face regulatory hurdles in its later stages especially as it will require buy-in from GWRC to approve and undertake flood protection works along the Stream.	This pathway is not specifically designed to address the enrison hazard but the engineered stream works may offer some limited costal enrison protection on the southern side of the Mangianne Stream. Will not effectively manage the erosion hazard.	Effectively reduces the risk to individual properties by raising houses above agreed flood levels but the risk remains for roading, access and services. Also, a residual risk to housing will remain in the short to medium term until this can be neduced by the engineered mitigation options in the longer term.
2 Enhance Additional Hard Retreat 3 Protection Retreat 3	- Enhancement of existing native populations will skely initially encourage positive exposition benefits Mart engine properties and an exposition of the properties of the	Initial enhancement may restore natural character and provide landscape benefits, returned and provide landscape benefits, returned and the second character and result in observes landscape effects. Retreat provides opportunities to restore natural character, however this would occur in the context of increased modification. 4	Refer to: NAA MCDA Pre-scoring Te Ao Măori Values additional document	Initial short term enhancement option aligns with community values and maintains social cohesion. A community values and maintains social cohesion. The considered allongials cont associated with retreat in long term (floodprording, relocatable buildings, elevate floors, etc.). Clear communication & support for those in higher inundation risk areas so they understand costs of options to protect their dwellings. A risks to health vs costs of eventual referent. Confinue community education re-protecting & hazard, and emergency amangement to footer resilience. 27 is uncertain if insurability of personal assets will be maintained.	This option will initially maintain the natural appeal of the coastal environment and ecosystem protection. On the coastal environment and ecosystem protection codes of the coastal environment of the throughout the coastal environment of the throughout the coastal environment of the coasta	Coastal restoration and enhancement is encouraged under the present regulatory framework are commanded under the present regulatory framework. In he hard protection components of this pathway will face consenting hurdles as there are significant sites in the Mangsone Mount schould sin the GWRC Natural Resources Plan and will require buyin from GWRC to approve and undertake flood protection works along the Stream. With a longer term aim to retreat, these works may be had to justify. Managed retreat may require consenting to allow some greenfields subdivision. Retreat may also create additional conventing issues dependent on relocation plan (e.g., subdivision of new land and where to find this new land).	This pathway is not specifically designed to address the endoin hazard in the short to medium the thing the endoined of the special properties affected by multiple hazards around the mouth of the Mangaone Stream.	This pathway will help reduce the increasing inundation risk in the short to medium herm and state of the st
3 Enhance Accommodate Retreat 5	 Initial enhancement would likely improve existing scology and promote greater habits and resources for fora and fauna. Retreat farours ecological restoration by providing habitats for species to recolonise neighbouring areas that may become destroyed. 	Initial enhancement would likely restore natural character and provide landscape benefits. Response evoids introduction of built structures within areas contributing to natural character in the context of the existing settlement. Retreat offers opportunity to expand areas of restored natural character. Set and the settlement of the settle	Refer to: NAA MCDA Pre-scoring Te Ao Mâori Values additional document	hitisal short term enhancement option aligne with community values and maintains social cohesion. Those in higher inundation risk rease may need support to understand options / costs to proactively protect their deellings from moisture and mould (floodproding, relocatable buildings, elevate floors, etc.) in light of huture re-location /retreat. Confine community deducation re: protecting & hazard, and emergency management to foster resilience and assist transition to retreat. It is uncertain if insurability of personal assets will a be maintained.	This option will initially maintain the natural appeal of the coastal environment and ecosystem protection could enhance community values and public access to the coastal environment. In the medium term, the public may need assurance (governance) termining) that public access and opportunities for recreation and other ecology cobenefits will not be negatively impacted. Long term refreat may offer opportunities for recreation.	Ocasial restoration and enhancement is encouraged under the present regulatory framework, and will not face any major consenting hurdles in the short term. Accommodation in the medium term will carry some building consent requirements. If managed retreat is sone well it should have limited effects on the environment as opposed to hard protection structures. Outernity there is limited endicated encouraged and expected to be expected to be decreased with the Climate Change Adaptation Act. As managed retreat gets underway consenting may be required to allow some greenfields subdivision.	This pathway is not specifically designed to address the erosion hazard in the short to medium term. There will be more extensive retreat required due to the inundation hazard compared to the erosion hazard, however this option will manage the risks for some properties affected by multiple hazards around the mouth of the Mangaone Stream.	This pathway will help reduce the increasing inundation risk in the abort to medium term and allow time to effect a managed retreat. Retirent from hazard prone areas will manage the risk by removing people, properly and infrastructure from the area. As an incremental approach, it is likely to be proportionate to the nature and scale of the risk over time. 83
4 Accommodate Additional Hard Retreat 2 Protection	Hard engineering protection may reduce ecology by demaging beach, dune, and estitiany ecology, and overall may support lover block-entry and prevent and an extra support lover block-entry and prevent. Retired provides apportunity for ecological restoration, however this would occur in an already modified environment.	Additional hard protection is likely to reduce natural character and may result in adverse landscape for the control of increased modification. 2	Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	Initial short term floous is to identify dwellings at risk and educate on options/cost of floodproofing, relocated by all fine desease floors, etc. The process of the control of additional hard protection (alongside costs of reterail may ensure greater acceptance and smoother transition to nest pathway. Continue community education re-protecting & hazard, and emergency management to foster resilience. 2 to control of the control of	- In the short term, public access to the coastline is likely to be maintained with the consideration of any last the second of	The hard protection components of this pathway will face consenting hurdles as there are significant will form the pathway of the protection where the protection works along the Street. GWRC Natural Resources Plea and will require buy-in from GWRC to approve and undertake food protection works along the Street. - With a longer term aim to retreat, these works may be harder to justify. - Accommodation also creates additional consenting requirements in comparison to enhancement. - As managed retreat gets underway consenting may be required to allow some greenfield subdivision. Retreat may also create additional consenting issues dependent on relication plant (a.g., subdivision of new land and where to find this new land).	This pathway is not specifically designed to address the endors hazard in the short to medium term the endorse considered the specific property of the specific property o	This pathway will help reduce the increasing inundation risk in the short to medium term and such a control of the state
Pathways for Peka Peka Manage Pathways Pathway Descriptions Short term Medium term Long term St 1 Enhance Enhance Soft Engineering Protection 4	Ecology core Notes S Echancement of existing native populations would likely promote ecology and provide greater habitat and resources for flora and flauna. Soft engineering may disrupt thabitats and shellfish populations but can modify and enhance habitats in the form of enhanced drunes for beach flora and flauna.	Landscape core Notes Sc Enhancement of native dune vegetation would likely restore natural chanacter. • Soft engineering may disrupt areas, but offherwise maintain an open dynamic coastline influenced by existing settlement.	Te ao Máori values Notes Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	Community Social and Economic Wellbeing Score Notes *The option to increase dune resilience over short and medium term aligns with stated community values. *If community is actively included in implementation of dune resilience, it could promote social and economic wellbeing, as well as enhance social cohesion & health outcomes. *It is uncertain if insurability of personal assets will be maintained.	Public Access and Recreation Score Notes - This option will maintain the natural appeal of the coastal environment and ecosystem protection. - Public access to the coastal environment will be maintained, however enceration that damages dunes may need to be restricted to protect ecosystems & encourage dune stability.	Regulatory consenting and policy risk * A this cption presents he least amount of impact on the existing environment (e.g., no hard engineering structures), there is unlikely to be significant consensing hurdles under the existing system in the short to medium term. - Enhancement of likely for require consent or will be easy to obtain and is in line with current regulatory transvork. - Depending on scale, soft engineering protection may increase risk which elevates risk profile.		### Actively manages the risks of coastal inundation Score Score
2 Enhance Soft Engineering Soft Engineering Protection Protection 3	Enhancement of existing native populations will likely initially protect ecology and provide greater habitat and resources for filors and fauna. Soft engineering may disrupt bird habitats and shelfish populations but can modify and enhance habitats in the form of enhanced duries for beach flora and fauna.	Initial enhancement of dunes with native dune vegetation may restore natural character. Soft engineering may further disrupt areas of coastal environment influenced by existing settlement.	Refer to: NAA MCDA Pre-scoring Te Ao Mācri Values additional document	The option to increase dune resilience over short term aligns with stated community values. To ensure support for this option over medium-long term, the community may need assurance (evidence, information & engagement) on suitable soft engineering responses. In the state of t	This option will maintain the natural amenity and landscape value of the coastal environment. Ecosystem protection could further enhance community values and foster nature appreciation. Public access to the coastal environment will be maintained, however recreation that damages clures may need to be restricted to protect ecosystems & encourage dune stability.	Consenting risk increased as a result of additional soft engineering protection. Consents required in the short term, will likely not have a difficult consenting pathway. As there are additional soft engineering works proposed in this option there may be a few additional soft engineering to the additional soft engineering to the additional soft engineering protection presents less consenting burdles as opposed to hard engineering protection but still may face challenges.	If designed properly it is likely to effectively manage impacts when erosion risks are lower. Effectiveness is likely to reduce over time trying to hold the shoreline in the same location as present day and thus may require additional space to sollow the beach to adjust inland. In adjust inland. In adjust inland. In adjust inland is a sold in the same location of risk, and would avoid searchastion of risk in other areas. Design would be informed by best practise.	Option is not chosen to address inundation hazard. By raising the dune creat elevation by planting and dune reconstruction, the risk of evertoping decreases; however does not address inundation hazard from patterways up the stream. Unlikely to be proportionale to the nature and scale of risk of inundation.

T Protection Soft Engineering Hard Engineering 2 Protection Protection 2	- Enhancement of existing native populations will likely initially encourage positive ecological benefits Ongoing engineering protection however has the potential to reduce ecology by damaging beach, dune, and estuary ecology, and overall may support lover biodiversity and prevent the natural migration of habitats.	Initial enhancement may restore natural character. Ongoing engineering and introduction of hard structures and potential reduction in natural beach profile may further reduce natural character and result in adverse landscape effects. Structures may remove some existing areas of high natural character encompassing parts of Peka Peka. Dunes.	Refer to: NAA MCDA Pre-coring Te Ao Milori Values additional document	The option to increase dune resilience over short term aligns with stated community values. To ensure support for this option over mediuminon term, the community may need assurance (evidence, information & engagement) on suitable soft / hybrich drat engineering responses. If community is actively included in implementation, it could promote social and economic wellbeing, as well as enhance social chesion & health outcomes. It is uncertain if insurability of personal assets will be maintained.	In short-medium term this option will maintain the natural amenity and landscape of the coastal environment and allow public access. Over time, it is likely that access to fireshore could be lost at high tide, and eventually lost completely. Maintaining public access to the coastal environment would need to be integrated into the design of the engineering solution to ensure cobenefits for people and the environment. If adaptation options also includes ongoing dune maintainaince, then recreation that damages dunes amen need to be restricted to protect ecosystems & encourage dune stability.	Hard engineered hazard mitigation methods are discouraged under existing statutory frameworks because of the adverse effects they can have on the environment. Policy directions in the NZOPS and the Regional Policy Statement state that hard engineering options should only be used as a last resort and the GWRC Natural Resources Plan contains some scheduled sites in the Kowhai Stream Mouth. Therefore, this pathway may face some consenting hurdles in its later stages.	Will manage risk of coastal erosion in the long term, however the pathway in not likely to be proportionate to the nature and scale of the risks over time. End effects and toe scour may may cause localised execerteation of erosion. Design would be informed by best practise.	Option is not chosen to address inundation hazard. A designed crest elevation of an eventual hard structure would result in a reduction of the overtopping hazard, but degree of reduction would depend on design height. Would not effectively manage the wider inundation risks up stream pathways and stormwater networks.
4 Enhance Soft Engineering Retreat 4	Initial enhancement of existing native populations would likely improve existing ecology and promote greater habitat and recourse for fiora and fauna Retreat favours ecological restoration by providing habitats for species to recolorise neighbouring areas that may become destroyed.	Initial enhancement may restore natural character. Soft engineering may disrupt natural character and result in more limited adverse landscape effects in the context of existing settlement. Reteate provides opportunities to restore dune planting in the absence of hard engineering and offers opportunity to restore natural character in longer term.	Refer to: NAA MCDA Pre-scoring Te Ao Măori Values additional document	The option to increase dune resilience over short term aligns with stated community values. To ensure support for soil regineering over medium term, the community may need assurance (evidence, incrimation & engagement) on suitable soft engineering / hybrid responses. In this regineering / hybrid responses. In this regineering / hybrid responses. In this regineering / hybrid responses. In this regineering / hybrid responses. In this regineering / hybrid responses. In this regineering / hybrid responses. In this regineering / hybrid responses. In this regineering / hybrid responses / hybrid resp	This option will maintain the natural appeal of the coastal environment. Public access to the coastal environment will be maintained in short term, and is likely to continue in the medium and long term. Over all time periods, recreation that damages dones may need to the entire shalling continues to the state of t	Coastal restoration and enhancement is encouraged under the present regulatory framework and will not be any major consenting hundles in the short term. Soft-engineering in the medium term will have some consent requirements. Soft-engineering will be abouted have some consent requirements will all should have limited effects on the environment as opposed to hard protection structures. Currently there is limited national direction on how to undertake managed retreat however, this is expected to be addressed within the Climate Change Adaptation Act. As managed retreat gets underway consenting may be required to allow some greenfields subdivision. Retreat may also create additional consenting issues dependent on relocation plan (e.g., subdivision of new land and where to find this new land).	Effectively manages the risks of coastal erosion over time, and takes actions in the short-medium term to reduce risks over that period. Retreat would result in total removal of risk to inclinduals from erosion. It would be proportionate to the nature and scale of the risk to those impacted to retreat.	Over the short-medium term the actions will not effectively manage the inundation hazard as it does not address the inundation by the streams and stormwater pathways: however long term retreat will remove the risk to individuals impacted in the area. Some of the properties that would be retreated due to the control of the properties that would be retreated due to the control of the medium of the properties that would be retreated out the retreated to the control of the properties that would be retreated out the retreated to the properties that the properties that the properties are the properties that the properties are the properties.
5 Enhance Enhance Retreat 5	Enhancement may improve existing native populations and likely will encourage positive ecological benefits when performed long term and coupled with pest managemeent. Refreat Revurse ecological restoration by providing habitats for species to recolonise neighbouring areas that may become destroyed.	Enhancement of dune vegetation and habitats provides opportunities to restore natural character + Retreat provides further opportunities to restore natural character in the longer term	Refer to: NAA MCDA Pre-scoring Te Ao Măori Values additional document	The option to increase dune resilience over short and medium term aligns with stated community values. If community is actively included in implementation of dune resilience, it could journout social and economic wellbeing, as well as enhance social ochesion 8 health outcomes. The longer term option to retirval allows for time for local government and communities to plan and prepare for the costs for relocation. It is uncertain if insurability of personal assets will be maintained.	This option will maintain the natural appeal of the coastal environment and ecosystem protection could enhance both community and environmental values and foster nature appreciation. Public access to the coastal environment will be maintained, however recreation that damages dunes many need to be restricted to protect acceystems & encourage dune stability. The lung learn option for retireat could enable recreation and public access to be planned for, developed and maintained prior to the actual relocation of the community.	From a consenting perspective, enhancement across the short and medium term is preferred due to enhancement of existing environment aligning with statutory framework. Option of retreat has limited effects on the environment in comparison to other options such as hard engineering structures. Currently limited national direction on how to undertake managed reteat, however, this is especiated to be addressed within the Climate Change Adjusted and the control of the co	Effectively manages the risks of coastal erosion over time, and takes actions in the short-medium term to reduce risks over that period. Enabcenemit will be proportionate to the scale of risk under the lower SIR scenarios, but under higher SIR scenarios could result in retreat being implemented earlier than pathway 4. Retreat would result in total removal of risk to individuals from erosion. If would be proportionate to the nature and scale of the risk to those impacted to referent.	Over the short-medium term the actions will not effectively manage the inundation hazard as it does not address the inundation up the streams and stormwater pathways: however long term retreat will remove the risk to individuals impacted in the area. Some of the properties that would be retreated due to erosion would also be impacted by erosion, and therefore long term, retreat could manage some of the risk within the settlement at beachtront properties.
1 Enhance Accommodate Additional Hard Protection	- Enhancement may improve existing native populations likely encouraging positive ecological positive. - The introduction of hard protection however may have long term negative adverse effects on ecological sites and species associated with waterways i.e. Te Kowhai stream.	hillied enhancement may improve natural character in short term. short term. short desires of built structures may result in adverse landscape and natural character impacts in the longer term. Structures may remove some existing areas of high natural character.	Refer to: NAA MCDA Pre-scoring Te Ao Māori Values additional document	Initial short term enhancement option signs with community values and maintains social orbesion. Those in higher imadiation tils ereas may need support to understand optional costs to preactively protect their dwellings from moduste and mould (floodproofing, relocatable buildings, elevate floors, etc.). Confinue community education re: protecting & hazard, and emergency management to foster resilience. It is uncertain if insurability of personal assets will be maintained.	In short-medium term, this option will maintain the natural appeal of the coastal environment and coastal environment and coastal environment and coastal environment will be coastal environment will be maintained, however recreation that damages dunes may need to be restricted to prevent destruction of dune stability. Where possible, additional hard protection, should allow for public access and recreation and provide other co-benefits.	Accommodation and additional hard protection on a larger scale will trigger more stringent consenting an all larger scale will sugger more stringent consenting enterprises of the stringent of	This pathway is not specifically designed to address the erosion hazard but, the ergineered pathway and the ergon of the ergon of the ergon protection on the southern side of the Te Kowhai Stream. Will not effectively manage the erosion hazard.	- Effectively reduces the risk to individual properties by reising bourses above agreed flood levels but the tip the risk of the reduced by the engineered mitigation options in the longer term.
2 Enhance Additional Hard Retreat 3 Protection Retreat 3	- Enhancement of existing native populations will likely initially encourage positive ecological benefits Hard engineering protection may reduce ecology by damaging beach, dune, and estuary ecology, and overall may support lower biodiversity and prevent the natural migration of habitats Referral provides opportunity for ecological restoration, however this would occur in an already modified environment.	Initial enhancement may improve natural character in short term. Introduction of built shructures may result in adverse landscape and natural character impacts in the longer term. Structures may remove some existing areas of high natural character. 4	Refer to: NAA MCDA Pre-acoring Te Ao Máori Values additional document	Initial short term enhancement option aligns with community values and maintains social cohesion. The costs of medium term hard protection should be considered alongside cost associated with retreat in long term	This option will initially maintain the natural appeal of the coastal environment and ecosystem protection could enhance community values and public access to the coastal environment. In the medium term, additional hard protection may need to be designed to incorporate public access and opportunities for recreasion, nature appreciation and other co-benefits. Long term entert may offer opportunities for recreasion.	Coastal restoration and enhancement is encouraged under the present regulatory framework and will not face any major consenting hurdles. The hard protection components of this pathway will face consenting hurdles as there are significant sites in the Kowhai Stream Mouth scheduled in the GWRC Natural Resources Plan. With a longer term aim to retreat, these works may be hard of putsfly. Managed retreat may require consenting to allow some greenfields subdivision. Retreat may also create additional consenting results dependent on relecation plan (e.g., standards) and the service of the	This pathway is not specifically designed to address the erosion hazard in the short to medium term but, the engineered stream works may offer some limited coastal erosion protection on the southern side of Te Kondusi Stream. Properties at risk of erosion hazards in Peka Peka are mostly impacted (more so) by i inundation hazards. Therefore, refreat from inundation would generally also lower the risk to properties impacted by erosion risks.	This pathway will help reduce the increasing inundation risk in the short to medium term and allow time to effect amangad retreat. Retreat from hazard prone areas will manage the risk by removing people, properly and infrastructure from the area. As an incremental approach, it is likely to be proportionate to the nature and scale of the risk over time.
3 Enhance Accommodate Retreat 6	Itidial enhancement would likely improve exisiting ecology and promote greater habitat and resources for flora and fauna. Refreat favours ecological restoration by providing habitats for species to recolonies neighbouring areas that may become destroyed.	Initial enhancement would likely restore natural character and provide landscape benefits. Response avoids introducion of built structures within areas contributing to natural character in the context of the existing settlement. Retreat offers opportunity to expand areas of restored natural character.	Refer to: NAA MCDA Pre-acorting Te Ao Millori Values additional document	Initial short term enhancement option aligns with community values and maintains social cohesion. Those in higher imunidation risk areas may need support to understand options? costs to preactively protect their dwellings from modust and mould (floodproofing, relocatable buildings, elevate floors, etc.) in jetyl of sturre re-location retreat. *Continue community education net protecting & hazard, and emergency management to toster *It is uncertain if insurability of personal assets will be maintained.	This option will initially maintain the natural appeal of the coastal environment and acceptatem protection could enhance community values and public access to the coastal environment. In the medium term, the public may need assurance (governance)planning that public access and opportunities for recreation and other accology cobenetias will not be negatively impacted. Long term netext may offer opportunities for recreation.	- Coastal restoration and enhancement is encouraged under the present regulatory framework and will not face any major consenting hurdles in the short term. - Accommodation in the medium term will carry some building consent requirements. - If managed retreat is done well it should have limited effects on the environment as opposed to half grotection situatures. - If managed retreat is done sicilend direction on how to undertake managed retreat however, this is expected to be addressed within the Climate Change Adaptation Act. - As managed retreat gets underway consenting may be required to allow some greenfields subdivision. - Retreat may also create additional consenting issues dependent on relocation plan (e.g., subdivision of new land and where to find this new land).	This pathway is not specifically designed to address the erosion hazard in the short to medium term. Properties at risk of erosion hazards in Peka Peka are mostly impacted (more so) by inundation hazards. Therefore, retreat from inundation would generally also lower the risk to properties impacted by erosion risks in the long term.	This pathway will help reduce the increasing inundation risk in the short to medium term and allow time to effect amangad retreat. Retreat from hazard prone areas will manage the risk by removing people, property and infrastructure from the area. As an incremental approach, it is likely to be proportionate to the nature and scale of the risk over time. Removed of only some properties could exceeduate the hazard for other properties. 85
4 Accommodate Additional Hard Retreat 2	Hard engineering protection may reduce ecology by damaging beach, dune, and estuary ecology, and overall may support lower biodiversity and prevent the natural migration of habitats. Reteat provides opportunity for ecological estimation, however this would occur in an already modified environment.	Additional hard protection in the will reduce natural character and may result in adverse landscape effects. Retreat provides opportunities to restore natural character, however this occurs in the context of increased modification.	Refer to: NAA MCDA Pre-scoring Te Ao Máori Values additional document	* Initial short term focus is to identify dwellings at risk and educate on options/costs of floodproofing, relocatable building, elevate floor, etc. The community may need support to understand and implement these integration efforts, audin on the costs of additional hard protection (idengated costs of reteral) may ensure greater acceptance and smoother transition to nest pathway. Continue community deuction re-protecting 6 hazard, and emergency management to foster resilience. * It is uncertain if insurability of personal assets will be maintained.	In the short term, public access to the coastline is likely to be maintained. In the medium term, with the consideration of any additional hard protection, the public may need assurance (governance)staming that public access some consideration of the public access some protection of the public access will not be negatively impacted. Design of additional hard protection and retreat (long term) should consider continued public access & explore further opportunities for recreation.	The hard protection components of this pathway will face consenting hurdles as there are significant sites in the Kowhat Stream Mouth scheduled in the GWRC Natural Resources Plan. With a longer term aim to retreat, these works may be required to the composition of the compositi	This pathway is not specifically designed to address the erosion hazard in the short to medium term. Properties at risk of erosion hazards in Peka Peka are mostly impacted (more so) by imundation of the properties impacted (more so) by impacted (more so) by impacted (more so) by impacted (more so) by impacted (more so). Stream works may offer some limited erosion mitigation to properties on the southern side of Te Kowhai Stream in the medium term.	This pathway will help reduce the increasing inundation risk in the short to medium term and allow time to effect annanged retreat. Retreat from hazard prone areas will manage the risk by removing people, properly and infrastructure As an incremental approach, it is likely to be proportionate to the nature and scale of the risk over time.
Pathways for Rural NAA Manage Pathways Pathway Descriptions	Ecology	Landscape Score Notes S	Te ao Mãori values core Notes S	Community Social and Economic Wellbeing	Public Access and Recreation Score Notes	Regulatory consenting and policy risk Score Notes 5		MCDA Effectively manages the risks of coastal inundation Total Score Score:

1	Status Quo Enhance Enhance	The enhancement of existing native populations provides many co-benefits to ecology in addition to costal protection and can provide overall benefits to costal communities at all times. 4	Eventual enhancement of dunes with native dune vegetation would likely restore natural character with wholly beneficial landscape outcomes.	Refer to: NAA MCDA Pre-scoring Te Ao Māori Values additional document	The option to increase dune resilience over medium term aligns with stated community values. Involvement with landowners is important for buyin and for ongoing access to dune areas to supportant expensions of the control of the co	This option begins in next in 30-50 years, and will maintain and protect the coastal environment from a significant of the coastal environment from a significant of the coastal environment is coastal environment is accessed by less people, the remote field of the coastal environment is accessed by less people, the remote field of the coastiline will be maintained. Recreation that damages dunes may need to be restricted to protect ecosystems & encourage dune stability.	Status quo will require no additional resource concerning so from a consenting perspective is the most desireable option. As this option presents the least amount of impact on the estising environment (e.g., no hard estising environment), and estimated to significant consenting hurdes under the estising system. Enhancement not likely to require consent or will be easy to obtain and is in line with current regulatory framework. 4	Likely to manage the erosion hazard over the short-medium term, however long term erosion is still likely to occur. However puthway is proportionate to the nature and scale of risk over time in the rural eras, and would avoid the exocertation of risk to other areas.	Option is not chosen to address inundation hazard, however by raising the crest elevation by planting, the risk of overtopping decreases. however does not address inundation hazard from pathways up the stream/ti
Rural NAA Unit 4A	Status Quo Enhance Soft Engineering Protection	The enhancement of existing native populations can promote ecology and provide greater habita and resources for flora and fauna when this occurs. The introduction of soft engineering may then disrupt habitats and shellfish populations but can modify and eshance habitats in the form of enhanced duries for beach flora and fauna.	Eventual enhancement of dunes with native dune vegetation may restore natural character in some areas. Soft engineering may have some temporary change which remains in context of open coastal environment.	Refer to NAA MCDA Pre-scoring Te Ao Māori Values additional document	Over the medium term, efforts to increase dune resilience align with stated community values. Involvement with landowners is important for buy-in and for ongoing access to dune areas to support dune resilience efforts. Landuse may need to be modified to ensure ongoing protection to safeguard benefits from dune restrustion. This could impact acconnoir wetlibering. In longer term any costar benefits of soft support protection will need to be understood in advanced to the protection will need to be understood in a support of the protection will need to be understood in a support of the protection will need to be understood in a support of the protection will need to be understood in a support of the protection will need to be understood in a support of the protection will need to be understood in a support of the protection will be understood in a support of the protection of the protection will need to be understood in a support of the protection of t	*This option begins in med in 30-50 years, and will maintain and protect the coastal environment from that time forward. It aligns with community values and ecosystem protection could enhance appreciation of nature. As this part of the coastal environment is accessed by less people, the renote feel of the coastine will be maintained. *In the longer term, the impact & public apetite for soft engineering options in relation to public access / the public access of the	Status quo will require no additional resource consenting so from a consenting perspective is the most desirable option. As this option presents the limited impact on the existing environment (e.g., no hard engineering structures, birer is unlikely to be significant to consenting hurdles under the existing system in the short to medium term. • Enhancement not likely to require consent or will be a substance of the status of the s	- Likely to manage the erosion hazard over the short-medium term, and extend the period of time that enhancement and restoration is effective for Long term pathway will need to be propotionate to the nature and scale of the risk in these rural areas This pathway would avoid the exacerbation of risk to other areas.	Option is not chosen to address inundation hazard, however by raising the creat elevation by planing, the risk of overtoping decreases; however does not address inundation hazard from pathways up the stream/rivers and stormwater network.
3	Enhance Enhance Soft Engineering Protection	Enhancement of existing native populations would likely promote ecology and provide greater habitat and resources for flora and fauna. Soft engineering may dimurpl bird habitats and shellish populations but can modify and enhance business and an form of enhanced duries for beach flora and fauna. 3 3	Enhancement of dunes with native dune vegetation may likely restore natural character. Soft engineering may disrupt areas, but otherwise maintain an open dynamic coastline influenced by existing settlement. 2	Refer to: NAA MCDA Pre-scoring Te Ao Māori Values additional document	In the short term dune resilience is likely to support other adaptation efforts along the entire NAA coastine. Involvement with landowners is important for buyin and for ongoing access to dune areas to support in and for ongoing access to dune areas to support in a common or involvement of the original common or involvement ongoing protection to safeguard benefits from dune restoration. This could impact economic wellbeing. In longer term any costs / benefits of soft engineering protection will need to be understood in advance. It is uncortain if insurability of personal assets will be maintained.	Commencing dune resilience in the short term is likely to support other adaptation efforts along the NAA coastline. It slights with community values and ecosystem pretection could enhance appreciation of the coastline and the state of the coastline and temperature and the state of the coastline and temperature and the state of the coastline and temperature and the coastline and the coastline will be maintained. In the longer term, the impact & public apetite for soft engineering options (& coastl) in relation to public access / recreation will need to be understood prior to being implemented.	As this option presents the limited impact on the existing environment (e.g., no hard engineering structures), there is unlikely to be significant concenting hurdies under the existing system in the stort to medium term. I will be easy to obtain and is in line with current regulatory framework. Depending on scale, soft engineering protection may increase risk which elevates risk profile. 4	- Likely to manage the erosion hazard over the short-medium term, and extend the period of time that enhancement and restoration is effective for. - Long term pathway will need to be propositionate to the nature and scale of the rink in these rurial areas. To other areas and is more prescrive in the short term.	Option is not chosen to address inundation hazard, however by raising the crest elevation by planting, the risk of overtoping decreases; however does not address unundation hazard from pathways up the streamtivers and stormwater network.
1	Status Quo Enhance Accommodate	The enhancement of existing native populations can promote ecology and provide greater habitat and resources for the and fauna when this course. The introduction of accommodating for hazards is likely to neither positively or negatively impact flora and fauna if best practice is followed which can allow for natural migration of existing species.	Eventual expansion of coastal wellands and rigation vegetation would likely restore natural character with beneficial indexcape outcomes. The identified coastal environment would likely extend inland.	Refer to: NAA MCDA Pre-acoring Te Ao Māori Values additional document	In the short and medium term, maintaining current, structures and strengthening existing stopbanks is proportionate to a lower populated rural area. Landowners may need to be supported to identify dwellings at risk from inundation and to undertake proactive efforts on dwellings to accomodate risks to health and safely. Like to be made on a case-by-case basis. It is uncertain if insurability of personal assets will be maintained. 3	In the short term, public access to stophank areas are likely to be maintained. However, if strengthening work is required public access may need to be restricted for safety reasons while work is ongoing. To maintain goodwill and support for adaptation options, the community will need to be informed on changes to public access and why.	As this option presents the least amount of impact on the existing environment (e.g., no hard engineering structures), there is unlikely to be significant consenting hurdles under the existing system. Any consents required in the short to needium term will likely not have a difficult consenting pathway. Accommodation in the long term will carry some building consent requirements.	Pathway is not specifically created to address or manage the encision hazard, and is unlikely to over the long term innertame. However, due to the risks being low this is proportionate to the nature of the encision risks in these areas and enhancement will offer some resilience in the medium term.	Over the short-medium term, the risks from inrundation will only be minimally addressed, however the risks to dwellings is low over this time. Accomodating the hazard over the long term on a case-by-case basis is a proprioriteal response to the risk and isolated dwellings at risks in these areas.
Rusinaau	Accommodate Accommodate Retreat	*Accommodating through floodgroofing, adaptable, or relocatable buildings is likely to have no positive or negative influence on surrounding ecological values when done to best practice. *Retreat would likely allow for migration of species by providing habitats for coastal species to recolonise areas than yah war already been destroyed, but in an already modified rural environment which may slow natural recovery. 3	*Accomodating adpatation would have little change on the existing natural character or landscape values. *Retreat would have little anticipated change in the context of the more modified rural environment. *The identified coastal environment would likely extend inland.	Refer to: NAA MCDA Pre-acoring Te Ao Māori Values additional document	In the short term, landowners may need to be supported to identify dreellings at risk from irundation and undertake proactive efforts to accommodate or retreat. These decisions are likely to be made on a case-by-case basis due to the lower population and land owenership in the rural areas. Over time, landowners may need to consider landuse changes in response to ongoing inundation events. Continued community education re: protecting & hazard, and emergency management to foster resilience. It is uncertain if insurability of personal assets will be maintained.	In the short term, public access to the coastline is likely to be maintained. This part of the coastal environment is accessed by less people, and the remote field of the coastline is likely to be maintained. However in the medium term, recreation that damages dunes or flood protection efforts may need to be restricted to protect coasystems, encourage dune stability, etc. In the long term, the public may need assurance (governance)planning) that public access and opportunities for recreation and other ecology cobenetits will be maintained. Retreat may provide an opportunity for further recreational and ecological co-benetits.	Option of retreat has limited effects on the environment in comparison to hard protection structures. Ourrently limited national direction no how to undertake managed retreat, however, this is expected to be addressed within the Climate Change Adaptation Act. Accommodation likely to require consent. Retreat may also create additional consenting issues dependent on relocation plan (e.g., subdivision of new land and where to find this new land). Retreat may face slightly less barriers in rural zones due to the decrease in people moving.	Pathway is not specifically created to address or manage the excision hazard, and is unlikely to over the long term fininfaram. However, due to the risks being low this is proportionate to the nature of the erosion inside in these areas. Properties retreated from the inundation hazard are inland and unlikely to also by impacted by erosion hazards.	Effectively manages the impact on individual dwellings directly impacted over the short-medium term, does not reduce the risks of access or damage to farmland over this imeritance. Retreat on an as required basis is a proportionate response to the nature and scale of risk over time. This would avoid exacerbation of risks on other areas.





Appendix 2: NAA MCDA Pre-scoring Te Ao Māori Values

Management Unit	Pathway	Pa Short	thway Descri Medium	ption Long term	Score	Te ao Māori values Notes
		term	term			
Otaki Unit			Fula a 3.4	C-th	2	
	1	Enhance 3,4	Enhance ^{3,4}	Soft Engineering Protection ⁹	2	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai and mauri, as well as a contamination risk. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish.
Otaki Unit 1A						 Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination, our coastline is too shallow for vessel approach and the dumping could cause suffocation of shellfish – inshore species such as pipi, tuatua, cockle and tohemanga (toheroa), as well as surf clam species in the deeper shellfish beds.
Otak						 This whole beach area has significant shellfish beds that move constantly and has sustained mana whenua for centuries— it is seen as really important mahinga kai. Kai sources are a source of identity, they are also important for manaakitanga as the local hapu when hosting events, they desire to serve the best of the best mahinga kai - flounder, inanga (whitebait), eel, pipi, tohemanga (toheroa), and snapper.
						 Tohemanga spawn amongst the pingau and spinifex roots (at base of foreshore dunes) and the babies and adults travel just underneath the sand. They are severely threatened and are nearly all gone on our coastline therefore we need to protect this habitat – refer to
						 Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki of our region too.
			C - C	C - C	4	Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area.
	2	Enhance 3,4	Soft Engineering Protection 9	Soft Engineering Protection ⁹	1	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai and mauri, as well as a contamination risk. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish.
						 Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination, our coastline is too shallow for vesse approach and the dumping could cause suffocation of shellfish – inshore species such as pipi, tuatua, cockle and tohemanga (toheroa), as well as surf clam species in the deeper shellfish beds.
						 This whole beach area has significant shellfish beds that move constantly and has sustained mana whenua for centuries— it is seen as really important mahinga kai. Kai sources are a source of identity, they are also important for manaakitanga as the local hapu when hosting events, they desire to serve the best of the best mahinga kai - flounder, inanga (whitebait), eel, pipi, tohemanga (toheroa), and snapper.
						 Tohemanga spawn amongst the pingau and spinifex roots (at base of foreshore dunes) and the babies and adults travel just underneath the sand. They are severely threatened and are nearly all gone on our coastline therefore we need to protect this habitat – refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaking the same content of the same content
						of our region too.
	3	Enhance	Soft	Hard	2	 Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area. Rated low because of Soft Engineering Protection pathway.
		3,4	Engineering Protection ⁹	Engineering Protection		 Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai and mauri, as well as a contamination risk. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish.
						 Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination, our coastline is too shallow for vessel approach and the dumping could cause suffocation of shellfish – inshore species such as pipi, tuatua, cockle and tohemanga (toheroa), as well as surf clam species in the deeper shellfish beds.
						 This whole beach area has significant shellfish beds that move constantly and has sustained mana whenua for centuries— it is seen as really important mahinga kai. Kai sources are a source of identity, they are also important for manaakitanga as the local hapu when hosting events, they desire to serve the best of the best mahinga kai - flounder, inanga (whitebait), eel, pipi, tohemanga (toheroa), and snapper.
						 Tohemanga spawn amongst the pingau and spinifex roots (at base of foreshore dunes) and the babies and adults travel just underneath the sand. They are severely threatened and are nearly all gone on our coastline therefore we need to protect this habitat – refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report.
						 Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki of our region too. Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area.
						 Boulders for Hard Engineering Protection would be preferred over wooden seawalls. The potential of developing an offshore reed as a Hard Engineering Protection action would be desirable.

Managmt Unit		Short Term	Medium Term	Long Term	Score	Te ao Māori values
Otaki Unit 1A	4	Enhance 3,4	Soft Engineering Protection ⁹	Retreat ⁸	2	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai and mauri, as well as a contamination risk. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination, our coastline is too shallow for vessel approach and the dumping could cause suffocation of shellfish – inshore species such as pipi, tuatua, cockle and tohemanga (toheroa), as well as surf clam species in the deeper shellfish beds. This whole beach area has significant shellfish beds that move constantly and has sustained mana whenua for centuries – it is seen as really important mahinga kai. Kai sources are a source of identity, they are also important for manaakitanga as the local hapu when hosting events, they desire to serve the best of the best mahinga kai - flounder, inanga (whitebait), eel, pipi, tohemanga (toheroa), and snapper. Tohemanga spawn amongst the pingau and spinifex roots (at base of foreshore dunes) and the babies and adults travel just underneath the sand. They are severely threatened and are nearly all gone on our coastline therefore we need to protect this habitat – refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki of our region too. Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area.
Otaki Unit	5 (new)	Enhance 3,4	Enhance ^{3,4}	Retreat ⁸	5	 Rated high as there is no Soft Engineering Protection option – would be the best for mahinga kai. Retreat as self-determined by the residents to be affected or hapū members (in the case of marae) was desired for long-term options. Not necessarily popular – but preference for last resort as follows traditional practices. Building up the sand dunes using native plants between the beach and the road slowly over time is a desirable adaptation option. There has been proven results in the Hawkes Bay where the dunes have been enhanced. In parts there are now houses, sand dune, flat area, another sand dune, and then the beach. Twenty years ago that action started thus urgent action is recommended for this coastline. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. The sand redistributed back up again, however questions were raised if the NAA could withstand further storm surge events. Therefore retreat seems like a reality that the community needs to consider.
Otaki Unit	1 B (Inundati	Enhance	Accommod	Additional	Δ	The opportunity to use Enhance has previously shown positive results when working with
Otaki Unit 1B	-	2,3	ate ⁷	Hard Protection 12, 13, 15		 The opportunity to use Enhance has previously shown positive results when working with nature. This has been demonstrated with the work within part of the Porirua Trust Board land. Dairying was ceased in 2021 and the farm is still operational. This land however was made available for a restoration wetland project back in 2021 – initiated mainly by GWRC along with Caleb Royal from NHoŌ. This allows for an area for excess water to safely gather and be soaked up by wetlands and native plants. Accommodate gives people the option to stay and creates safety. Already there are houses in low lying land that are being established on poles. This is demonstrating that an accommodate option is working as the water is going under the homes during rain events yet not impacting the homes. Additional Hard Protection options are favourable options for adaptation –building on structures that already exist. Reinforce what is already in situ.
0	2	Enhance 2,3	Additional Hard Protection 12, 13, 15	Retreat ⁸	4	 Enhance brings the benefit of incorporating growing sand dunes and riparian planting. Retreat will need to be considered as a possibility as a last resort. As large area could be impacted – it is the best option to keep the community together. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. Questions were raised if the NAA could withstand further storm surge events. Therefore retreat seems like the reality that the community needs to consider. Hard protection elements could become overwhelmed with both river flood and threats to flooding from the sea and the floodgates/stop banks not being able to cope.
	3	Enhance 2,3	Accommod ate ⁷	Retreat ⁸	5	 Enhance brings the benefit of incorporating growing sand dunes and riparian planting. The opportunity to use Enhance has previously shown positive results when working with nature. This has been demonstrated with the work within part of the Porirua Trust Board land. Dairying was ceased in 2021 and the farm is still operational. This land however was made available for a restoration wetland project back in 2021 – initiated mainly by GWRC along with Caleb Royal from NHoŌ. This allows for an area for excess water to safely gather. Working with nature for a positive impact. Retreat will need to be considered as a possibility as a last resort. As large area could be impacted – it is the best option to keep the community together. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. Questions were raised if the NAA could withstand further

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						 storm surge events. Therefore Retreat seems like the reality that the community needs to consider. Accommodate gives people the option to stay. Already there are houses in low lying land that are being established on poles. This is demonstrating that an accommodate option is working as the water is going under the homes yet not impacting the homes.
	4	Accomm odate ⁷	Additional Hard Protection 12, 13, 15	Retreat ⁸	2	 Hard Protection elements could become overwhelmed with both river flood and threats to flooding from the sea and the floodgates/stop banks not being able to cope. There is no Enhance option so less desirable.

Magmt Unit	Pathwa y	Pat	thway Desc	ription	Te ao Māori values					
2A	'	Short term	Medium term	Long term	Score	Notes				
Te Horo Unit 2A	1	Enhance 3,4	Enhance 3,4	Soft Engineering Protection ⁹	2	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination. This whole beach area has significant shellfish beds that has sustained mana whenua – it is seen as really important mahinga kai. Kai sources become a source of identity for the local hapu when hosting an event, they desire to serve the best of the best mahinga kai - flounder, kina, eel, pipis, tohemanga. Tohemanga spawn amongst the pingau and spinifex roots (at base of the dune) and the babies and adults travel just underneath the sand. They are nearly extinct – refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki too. Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area. 				
	2	Enhance 3,4	Soft Engineeri ng Protectio n ⁹	Soft Engineering Protection ⁹	1	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination. This whole beach area has significant shellfish beds that has sustained mana whenua – it is seen as really important mahinga kai. Kai sources become a source of identity for the local hapu when hosting an event, they desire to serve the best of the best mahinga kai - flounder, kina, eel, pipis, tohemanga. Tohemanga spawn amongst the pingau and spinifex roots (at base of the dune) and the babies and adults travel just underneath the sand. They are nearly extinct – refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki too. Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area. 				
	3	Enhance 3,4	Soft Engineeri ng Protectio n 9	Hard Engineering Protection 11	2	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination. This whole beach area has significant shellfish beds that has sustained mana whenua – it is seen as really important mahinga kai. Kai sources become a source of identity for the local hapu when hosting an event, they desire to serve the best of the best mahinga kai - flounder, kina, eel, pipis, tohemanga. Tohemanga spawn amongst the pingau and spinifex roots (at base of the dune) and the babies and adults travel just underneath the sand. They are nearly extinct – refer to <i>Kaimoana on beaches from Hōkio to Ōtaki</i> 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki too. Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area. Boulders for Hard Engineering Protection would be preferred over wooden seawalls. The potential of developing an offshore reed as a Hard Engineering Protection action would be desirable. 				
	4	Enhance 3,4	Soft Engineeri ng Protectio n 9	Retreat ⁸	2	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination. This whole beach area has significant shellfish beds that has sustained mana whenua – it is seen as really important mahinga kai. Kai sources become a source of identity for the local hapu when hosting an event, they desire to serve the best of the best mahinga kai - flounder, kina, eel, pipis, tohemanga. Tohemanga spawn amongst the pingau and spinifex roots (at base of the dune) and the babies and adults travel just underneath the sand. They are nearly extinct – refer to <i>Kaimoana on beaches from Hōkio to Ōtaki</i> 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki too. Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area. 				
	5	Enhance 3,4	Enhance 3,4	Retreat ⁸	5	 Rated high as there is no Soft Engineering Protection option – would be the best for mahinga kai. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. Building up the sand dunes and plants between the beach and the road slowly over time is a desirable adaptation option. There has been proven results in the Hawkes Bay where the dunes have been enhanced. In parts there are now houses, sand dune, flat area, another sand dune, and then the beach. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. Questions were raised if the NAA could withstand further storm surge events. Therefore retreat seems like the reality that the community needs to consider. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. 				

	Te Horo 2B (Inundation)							
Mgmt Unit	Pathwa	Short	Medium	Long term	Score	Notes		
Te Horo 2B	1	Enhance 2,3	Accommo date ⁷	Additional Hard Protection 12, 13, 15	4	 The opportunity to use Enhance has previously shown positive results when working with nature. This has been demonstrated with the work within part of the Porirua Trust Board land. Dairying was ceased in 2021 and the farm is still operational. This land however was made available for a restoration wetland project back in 2021 – initiated mainly by GWRC along with Caleb Royal from NHoŌ. This allows for an area for excess water to safely gather. Accommodate gives people the option to stay. Already there are houses in low lying land that are being established on poles. This is demonstrating that an accommodate option is working as the water is going under the homes yet not impacting the homes. Additional Hard Protection options are favourable options for adaptation –building on structures that already exist. Reinforce what is already in situ. 		
	2	Enhance 2,3	Additiona I Hard Protectio n ^{12, 13, 15}	Retreat ⁸	4	 Enhance brings the benefit of incorporating growing sand dunes and riparian planting. Retreat will need to be considered as a possibility as a last resort. As large area could be impacted – it is the best option to keep the community together. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. Questions were raised if the NAA could withstand further storm surge events. Therefore retreat seems like the reality that the community needs to consider. Hard protection elements could become overwhelmed with both river flood and threats to flooding from the sea and the floodgates/stop banks not being able to cope. 		
	3	Enhance 2,3	Accommo date ⁷	Retreat ⁸	5	 Enhance brings the benefit of incorporating growing sand dunes and riparian planting. The opportunity to use Enhance has previously shown positive results when working with nature. This has been demonstrated with the work within part of the Porirua Trust Board land. Dairying was ceased in 2021 and the farm is still operational. This land however was made available for a restoration wetland project back in 2021 – initiated mainly by GWRC along with Caleb Royal from NHoŌ. This allows for an area for excess water to safely gather. Retreat will need to be considered as a possibility as a last resort. As large area could be impacted – it is the best option to keep the community together. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. Questions were raised if the NAA could withstand further storm surge events. Therefore Retreat seems like the reality that the community needs to consider. Accommodate gives people the option to stay. Already there are houses in low lying land that are being established on poles. This is demonstrating that an accommodate option is working as the water is going under the homes yet not impacting the homes. 		
	4	Accom modate	Additiona I Hard Protectio n ^{12, 13, 15}	Retreat ⁸	2	 Hard Protection Elements could become overwhelmed with both river flood and threats to flooding from the sea and the floodgates/stop banks not being able to cope. There is no Enhance option so less desirable. 		

Managemt Unit	Pathway	1	thway Descri	leeting – 15/06, ption	Te ao Māori values			
3A		Short term	Medium	Long term	Score	Notes		
	1	Enhance ^{3,4}	term Enhance ^{3,4}	Soft Engineering	2	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required 		
Peka Peka 3A				Protection ⁹		 Soft Engineering Protection is a pathway that concerns NHOO as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination. This whole beach area has significant shellfish beds that has sustained mana whenua – it is seen as really important mahinga kai. Kai sources become a source of identity for the local hapu when hosting an event, they desire to serve the best of the best mahinga kai - flounder, kina, eel, pipis, tohemanga. Tohemanga spawn amongst the pingau and spinifex roots (at base of the dune) and the babies and adults travel just underneath the sand. They are nearly extinct – refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki too. 		
		Enhance ^{3,4}	C-ft	Caft		Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area.		
	2	Ennance 37	Soft Engineering Protection ⁹	Soft Engineering Protection ⁹	1	 Rated low because of Soft Engineering Protection pathway. Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination. 		
						 This whole beach area has significant shellfish beds that has sustained mana whenua – it is seen as really important mahinga kai. Kai sources become a source of identity for the local hapu when hosting an event, they desire to serve the best of the best mahinga kai - flounder, kina, eel, pipis, tohemanga. Tohemanga spawn amongst the pingau and spinifex roots (at base of the dune) and the 		
						 babies and adults travel just underneath the sand. They are nearly extinct – refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki too. 		
	3	Enhance ^{3,4}	Soft	Hard	2	 Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area. Rated low because of Soft Engineering Protection pathway. 		
	4	Enhance 3,4	Engineering Protection ⁹	Engineering Protection ¹¹ Retreat ⁸	2	 Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand — this would be harmful to the mahinga kai. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination. This whole beach area has significant shellfish beds that has sustained mana whenua — it is seen as really important mahinga kai. Kai sources become a source of identity for the local hapu when hosting an event, they desire to serve the best of the best mahinga kai - flounder, kina, eel, pipis, tohemanga. Tohemanga spawn amongst the pingau and spinifex roots (at base of the dune) and the babies and adults travel just underneath the sand. They are nearly extinct — refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source — it is part of the mana and manaaki too. Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area. Boulders for Hard Engineering Protection would be preferred over wooden seawalls. The potential of developing an offshore reed as a Hard Engineering Protection action would be desirable. Rated low because of Soft Engineering Protection pathway. 		
			Engineering Protection ⁹			 Soft Engineering Protection is a pathway that concerns NHoŌ as machinery is required to bring in or/and move sand – this would be harmful to the mahinga kai. Heavy machinery would cause disturbance and additional sand could cause suffocation of the shellfish. Even the option to bring in sand via boat for Soft Engineering Protection is also not desirable as this creates the potential for contamination. This whole beach area has significant shellfish beds that has sustained mana whenua – it is seen as really important mahinga kai. Kai sources become a source of identity for the local hapu when hosting an event, they desire to serve the best of the best mahinga kai - flounder, kina, eel, pipis, tohemanga. Tohemanga spawn amongst the pingau and spinifex roots (at base of the dune) and the babies and adults travel just underneath the sand. They are nearly extinct – refer to Kaimoana on beaches from Hōkio to Ōtaki 2014 Report. Connection to mahinga kai goes beyond a food source – it is part of the mana and manaaki too. Bringing in sand (Soft Engineering Protection) does not maintain the mauri of the area. 		

Managemt Unit	Pathway	Pat	thway Description	n		Te ao Māori values		
Peka Peka 3A	5	Short term Enhance ^{3,4}	Medium term Enhance ^{3,4}	Retreat ⁸	Score 5	 Rated high as there is no Soft Engineering Protection option – would be the best for mahinga kai. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. Building up the sand dunes and plants between the beach and the road slowly over time is a desirable adaptation option. There has been proven results in the Hawkes Bay where the dunes have been enhanced. In parts there are now houses, sand dune, flat area, another sand dune, and then the beach. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. Questions were raised if the NAA could withstand further storm surge events. Therefore retreat seems like the reality that the community needs to consider. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. 		
Peka Pek	a 3B					prisoned:		
Peka Peka 3B	1	Enhance ^{2,3}	Accommodate ⁷	Additional Hard Protection 12, 13, 15	4	 The opportunity to use Enhance has previously shown positive results when working with nature. This has been demonstrated with the work within part of the Porirua Trust Board land. Dairying was ceased in 2021 and the farm is still operational. This land however was made available for a restoration wetland project back in 2021 – initiated mainly by GWRC along with Caleb Royal from NHoŌ. This allows for an area for excess water to safely gather. Accommodate gives people the option to stay. Already there are houses in low lying land that are being established on poles. This is demonstrating that an accommodate option is working as the water is going under the homes yet not impacting the homes. Additional Hard Protection options are favourable options for adaptation – building on structures that already exist. Reinforce what is already in situ. 		
	2	Enhance ^{2,3}	Additional Hard Protection ^{12, 13,} ¹⁵	Retreat ⁸	4	 Enhance brings the benefit of incorporating growing sand dunes and riparian planting. Retreat will need to be considered as a possibility as a last resort. As large area could be impacted – it is the best option to keep the community together. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. Questions were raised if the NAA could withstand further storm surge events. Therefore retreat seems like the reality that the community needs to consider. Hard protection elements could become overwhelmed with both river flood and threats to flooding from the sea and the floodgates/stop banks not being able to cope. 		
	3	Enhance ^{2,3}	Accommodate 7	Retreat ⁸	5	 Enhance brings the benefit of incorporating growing sand dunes and riparian planting. The opportunity to use Enhance has previously shown positive results when working with nature. This has been demonstrated with the work within part of the Porirua Trust Board land. Dairying was ceased in 2021 and the farm is still operational. This land however was made available for a restoration wetland project back in 2021 – initiated mainly by GWRC along with Caleb Royal from NHoŌ. This allows for an area for excess water to safely gather. Retreat will need to be considered as a possibility as a last resort. As large area could be impacted – it is the best option to keep the community together. Retreat was most desired long-term option with hapu during conversations. Not necessarily popular – but preference for last resort as follows traditional practices. There was a large storm surge and rain event in June 2022. Seawater came up on the beach and up the river mouths. Questions were raised if the NAA could withstand further storm surge events. Therefore Retreat seems like the reality that the community needs to consider. Accommodate gives people the option to stay. Already there are houses in low lying land that are being established on poles. This is demonstrating that an accommodate option is working as the water is going under the homes yet not impacting the homes. 		
	4	Accommodate 7	Additional Hard Protection ^{12, 13,} 15	Retreat ⁸	2	 Hard Protection Elements could become overwhelmed with both river flood and threats to flooding from the sea and the floodgates/stop banks not being able to cope. There is no Enhance option so less desirable. 		

Management Unit	Pathway	Pathway Description				Te ao Māori values		
		Short term	Medium term	Long term	Score	Notes		
₹	1	Status Quo ¹	Enhance 3,4	Enhance 3,4	5	 Scored high due to no Soft Engineering Protection - would be the best option for mahinga kai. 		
Rural 4A	2	Status Quo ¹	Enhance ^{3,4}	Soft Engineering Protection 9, 10	1	Scored low due to having Soft Engineering Protection.		
	3	Enhance ^{3,4}	Enhance ^{3,4}	Soft Engineering Protection 9, 10	2	 Scored slightly higher due to have Enhance option, however still not desirable due having to Soft Engineering Protection option. 		
Rural 4B								
Rural 4B	1	Status Quo ¹	Enhance ^{2,3}	Accommodate 7	5	 Enhance option desired due to incorporating growing sand dunes, enhancing flood gates & stop banks and riparian planting in front of seaward side of Katihiku Marae. There ultimately would need to be some adaptation for along the Ōtaki River to offset whatever is done on the northern side of the Ōtaki River. This marae has significant cultural values, along with the land surrounding it. Note sensitivity as the urupā for this hapū was washed out to sea when the first lot of stop banks were put in. Enhancement around the marae and the back dune area will benefit the te ao Māori values associated with this area. 		
æ	2	Accommodate 7	Accommodate 7	Retreat ⁸	4	 Katihiku Marae is situated on south of Ōtaki River and west of the coastline just inland from the coast. Within this rural unit, any additional hard engineering associated with the north of the Ōtaki River likely will have a direct impact this land area on the south side of the Ōtaki River. The marae is on a bit of sand dune but slightly flat, and it is the only marae that is close to the coast. Most houses are already up high (so already adopting 'Accommodate' to some degree). Marae are often built in places where land was iwi/hapu owned. Iwi/hapu may be open to relocating Katihiku Marae as part of Retreat. 		