

BEFORE AN INDEPENDENT COMMISSIONER APPOINTED BY THE GISBORNE DISTRICT COUNCIL

IN THE MATTER OF:

The Resource Management Act 1991

AND

IN THE MATTER OF:

The Resource Consent application for coastal erosion management works at Wainui Beach lodged by Gisborne District Council

STATEMENT OF EVIDENCE OF REUBEN CHRISTIAN HANSEN

1.0 INTRODUCTION

- 1.1 My name is Reuben Hansen and I am a Principal Environmental Planner at Tonkin & Taylor Ltd ("T+T"). I hold the following qualifications:
- Masters Degree with Distinction in Environmental Planning from Waikato University;
 - Post Graduate Diploma in Applied Science from Massey University; and
 - Bachelors Degree in Science majoring in Natural Resource Management from Massey University.
- 1.2 I am a full member of the New Zealand Planning Institute, the Resource Management Law Association and the New Zealand Coastal Society.
- 1.3 I have over 16 years of experience in all facets of planning, resource and environmental management relating to: resource consent application preparation; resource consent processing; policy development and review, and environmental monitoring and management plans and reporting.
- 1.4 Prior to joining T+T in 2012 I was employed by the Bay of Plenty Regional Council ("BOPRC"), the Port of Tauranga and a planning consultancy firm.
- 1.5 Since joining T+T I have specialised in coastal management and coastal planning. Of particular relevance to this Resource Consent application ("application"), I have been involved in consent acquisition associated with coastal erosion management works on open coast, lake and harbour shorelines throughout New Zealand for local authorities, private land owners, transportation infrastructure providers, and government departments.
- 1.6 I have experience in the development of strategy and policy relating to natural hazards. For example, I was engaged by the BOPRC to undertake a critical review of, scenario testing of, and reporting on, draft natural hazard provisions contained within their second generation Regional Policy Statement.

- 1.7 Further, I was a member of a working party of experts formed by the BOPRC to develop a risk based approach framework for natural hazard policy for inclusion in their second generation Regional Policy Statement. I was a co-author of the final working party report to the BOPRC.
- 1.8 I have also received an award from the New Zealand Planning Institute for my input to the Ministry for the Environment's risk based approach to natural hazards under the Resource Management Act 1991 ("RMA") project.
- 1.9 I appear for Gisborne District Council ("the applicant") and my evidence today is in support of their proposal to replace an existing rail iron log and rock seawall ("rail iron wall") with a rock revetment seawall ("revetment") in the vicinity of Tuahine Crescent, as well as retrospectively authorise a gabion basket structure constructed on esplanade reserve seaward of 21 Wairere Road, at Wainui Beach.
- 1.10 I have visited the site on several occasions, am familiar with the general locality and assisted with the preparation of the Resource Consent Application and Assessment of Environmental Effects¹ ("AEE").
- 1.11 My preparation for this hearing has involved reviewing:
- The AEE;
 - The consent authorities' request for further information and the T+T response to the consent authorities' request for further information ("s 92 response");
 - The peer review of the proposal undertaken by Dr Willem de Lange;
 - The submissions received;
 - The memo from Paul Murphy; and
 - The s 42A report prepared for the consideration of the Commissioner by Mr Whittaker.
- 1.12 I confirm I have read the Code of Conduct for expert witnesses contained in the Environment Court's Practice Note and I agree to comply with it. The opinions expressed in this evidence are mine and within my expertise and experience.
- 2.0 THE SITE
- 2.1 The AEE contains full details of the site and its environs. It is not necessary for me to repeat those details in full, but to introduce the applicant's case, I shall provide a brief summary of the significant points.
- 2.2 The segment of shoreline where the applicant proposes to construct the replacement revetment is backed by cliffs. This cliffed shoreline contains sedimentary deposits which have a high propensity to coastal erosion. That is, there is no "sand dune" located behind the southern part of the rail iron wall.
- 2.3 The slope, height and geology of the shoreline at the revetment site are significant contributors to the "extreme risk erosion zone" classification assigned to 2,4,6,8 Tuahine

¹ Entitled *Erosion Protection Works-Wainui Beach-Resource Consent Applications and Assessment of Environmental Effects* dated May 2017 T+T reference 1000724.

Crescent and also the beach accessway land parcels at Tuahine Crescent, within the Tairāwhiti Resource Management Plan.

- 2.4 As shown on drawing 1000724-02 annexed to the AEE as Appendix D, the revetment is to be sited largely on private land. A small portion is to be sited on esplanade reserve adjacent to the existing concrete groyne, and a portion is to be sited on the local purpose reserve which facilitates the beach accessway from Tuahine Crescent.
- 2.5 Due to the morphology of the beach and nearshore environment, public access is currently restricted at the revetment site some of the time depending on the width and elevation of the beach. That is, in some circumstances (e.g. during periods of erosion, higher than average tides and/or larger waves) access is restricted due to low beach levels and tidal water interacting with the seaward face of the rail iron wall.
- 2.6 The revetment site is characterised by the following development and land use activities:
- The dwellings located in the backshore area;
 - The rain iron wall;
 - The concrete groyne;
 - The tipped rock seawall to the south of the concrete groyne, and
 - The timber access stair structure at the end of the beach accessway from Tuahine Crescent.
- 2.7 The conglomeration of structures described in paragraph 2.6 above contribute to the existing environment. The structures provide for a general feel of a highly modified environment, where human intervention and development have detracted from the natural values often expressed and found in other open coastline beach environments.
- 2.8 Whilst I am not an expert in safety in design, it is clear that the timber access stair structure has deteriorated to the extent that it has become unsafe to use. Further, the rail irons of the rail iron wall are badly corroded and could cause cuts or abrasions to people who come into contact with them.
- 3.0 STATUTORY PLANNING DOCUMENT ASSESSMENT
- 3.1 An assessment of the proposal against the New Zealand Coastal Policy Statement ("NZCPS"), the Tairāwhiti Resource Management Plan ("the Plan") (incorporating the Regional Policy Statement, Regional Coastal Plan and District Plan documents) are included both within the AEE, and Mr Whittaker's s 42A report.
- 3.2 The assessments provided within the AEE and s 42A report find that the proposal is consistent with all relevant objectives and policies relating to natural character, access, ecology, coastal processes, surf break protection and cultural heritage contained within the NZCPS and the Plan. I consider these assessments to be both comprehensive and accurate.
- 3.3 Accordingly, I do not intend to duplicate those assessments in this statement of evidence. Instead, I will focus on what I consider to be the two key areas for the consideration of the Commissioner. These are the public access and natural hazard related provisions of the

NZPCS and Plan. In my view, the provisions of the NZPCS and the Plan that are most significant to this proposal are those annexed to this evidence as Annexure A.

3.4 The assessment contained in the s 42A report suggests that the revetment is “overdesigned” and therefore the revetment design is somewhat misaligned with some of the actions contained within the Wainui Beach Erosion Management Strategy (“WBEMS”), as well as being inconsistent with the natural hazard based policy directives contained in the NZPCS and the Plan.

3.5 My understanding is that Mr Whittaker considers that a replacement revetment at the site would be consistent with the policy directives contained in the NZPCS and the Plan, provided that the design life was reduced. In particular, if the design life of the revetment matched the consent expiry of 2042 for the tipped rock to the south of the concrete groyne, then the revetment would be consistent with the relevant policy frameworks of the NZPCS and the Plan.

3.6 I am not convinced that the NZPCS nor the Plan make any distinction between “hard protection structures” with short design lives and long design lives. I set out my reasons for reaching this conclusion below.

3.7 NZPCS

In summary the objectives and policies identified in Annexure A require that:

- Coastal hazards risks are managed by:
 - Setting new development back from the hazard;
 - Using a range of responses, including managed retreat, for existing development; and
 - Protecting or restoring natural defences to coastal hazards.
- The risk of coastal hazards affecting anthropocentric resources and activities is avoided and reduced over time;
- The use of hard protection structures is discouraged the use of alternatives to them, such as natural defences, is promoted;
- A careful consideration of the environmental and social costs of hard protection structures is made and, by inference, that these costs are weighed against their benefits.
- A range of management responses is developed and implemented; and
- In circumstances where hard protection structures are deemed necessary, then ensure these are located and designed to minimise adverse effects and are not located on public land if protecting private assets.

3.8 I consider that the proposal accords with these objectives and policies for the reasons set out below at paragraphs 3.9 to 3.17.

3.9 As set out under Item 3 of the s 92 response, the development controls contained in the Plan limit building extensions that extend the dwelling beyond the existing building envelope, as well as preventing new building and subdivision.

- 3.10 Further, the WBEMS is a longer term and more strategic instrument than the Plan that also addresses coastal erosion management at the site. The WBEMS clearly states that in 2042 (when the coastal permits for the tipped rock seawall and the revetment sought by this application expire) a consideration of alternative strategies for managing coastal erosion in "Area 2" should be undertaken. In my view, this process is likely to consider the full range of management options available, including "do nothing", adaptation and managed retreat.
- 3.11 Based on the above, it is my view that the Plan and the WBEMS are effectively managing the coastal hazard risk at the site, the risk profile of the backshore housing and other assets is likely to be reduced over time, and the requirements of the NZCPS are being met.
- 3.12 I therefore disagree with Mr Whittaker (paragraph 147 of his s 42A report) where he considers that the proposed 50 year design life of the revetment "elevates its purpose and function to the primary means or response to managing coastal hazard risk". I consider the Plan and the WBEMS are the primary means to managing coastal erosion risk at Wainui Beach.
- 3.13 In my opinion, there is nothing in the NZCPS to suggest that the engineering design life of a hard protection structure, or any other management method or response for that matter, makes it any more or less preferable and aligned with the intended outcomes prescribed within the document. Indeed if this were the case, then the policies would provide some guidance around what might assist decision makers with determining what an acceptable engineering design life may be.
- 3.14 I consider that the NZCPS simply discourages the use of hard protection structures in coastal hazard management. The Plan seeks to limit hard protection structures to "appropriate situations" with qualifications provided around what constitutes the situation.
- 3.15 The WBEMS clearly discourages the use of hard protection structures. This is because "Area 2" is the only segment of shoreline where a hard protection structure is recommended. The revetment is approximately 40 m long and Wainui Beach is approximately 6 km long.
- 3.16 Further, it can be assumed that a careful consideration of the environmental and social costs of the revetment recommended for Area 2 was made when it was deemed necessary to develop and implement the revetment as a response.
- 3.17 Through the AEE, Mr Whittaker's s 42A report and evidence provided by Dr Shand and myself it is clear that the form, location and design of the revetment will minimise adverse effects on the coastal environment.
- 3.18 A small portion of the revetment is to be sited on esplanade reserve adjacent to the existing concrete groyne, and a portion is to be sited on the local purpose reserve which facilitates the beach accessway from Tuahine Crescent. Whilst this outcome is inconsistent with the NZCPS, the revetment will assist with the protection of the local purpose reserve, a future access structure. Therefore, the revetment will facilitate ongoing public access to the CMA, which is an outcome consistent with the NZCPS. Consequently, it is my view that, on the whole, siting a portion of the structure on public land is not inconsistent with NZCPS.

3.19 Coastal Provisions of the Plan

I have compiled a list of the objectives and policies of the Plan within Appendix A that are either materially different to those contained in the NZCPS and/or more specific to the economic, social, cultural and environmental issues and expectations of the Tairāwhiti Community, in so far as coastal hazard management is concerned.

3.20 In summary, the objectives and policies identified in Annexure A require that:

- Provision is made for appropriate structures;
- Structures should not reduce the level of public access to the CMA;
- Structures should not be damaged by coastal processes or [coastal] events and should be designed to take into account the most up to date future sea level rise predicted by the Inter-Governmental Panel on Climate Change (“IPCC”);
- The impact of coastal hazards on existing use and development is recognised and provision is made for coastal protection works to mitigate these impacts where the protection works can be shown to be the best method.

3.21 I consider that the proposal accords with these objectives and policies for the reasons set above in paragraphs 3.7-3.18 above in relation to the NZCPS. I note that the policies actually seek to ensure that any coastal protection structure at the site is designed in a way that it is not damaged by coastal storms and coastal processes. Based on Dr Shand’s evidence, it is my view that arbitrarily reducing the engineering design life of the revetment (as proposed by Mr Whittaker) would result in an outcome that is contrary to certain policies of the Plan.

3.21 Summary

3.21 Dr Shand has, through his evidence, provided conceptual details of different permutations for revetments with different design lives in order to assist with providing the Commissioner with an understanding of the impact of adjusting engineering design parameters on the geometrics of any sloped rock revetment seawall at the site.

3.22 What can be concluded from Dr Shand’s evidence is that, in reducing the engineering design parameters of the revetment, there will be consequential adverse effects on the structural integrity of the structure and erosion of the cliffed backshore for a correspondingly modest to inconsequential total reduction of 0.4 m of the width of the structure.

3.23 In summary, it is my view that engineering design life in itself is not a matter which is directly related to achieving consistency with the policy directives in the NZCPS but could be in so far as the Plan is concerned. This is because the Plan requires that structures for coastal protection works are designed so that they do not sustain damage from coastal storms and coastal processes and are in accordance with the IPCC recommendations in respect of making allowances for future sea level in engineering design of revetments. For this reason, I consider that arbitrarily reducing the design life of the revetment sought by this application to match that of the adjacent tipped rock structure will result in a proposal that is inconsistent with the Plan.

4.0 NON STATUORY DOCUMENT ASSESSMENT

The WBEMS and the Ministry for the Environment's ("MFE") December 2017 publication *Coastal Hazards and Climate Change: Guidance for Local Government* ("guidance document") are non-statutory documents able to be considered by the Commissioner under s 104(1)(c) of the RMA.

- 4.1 The AEE and s 42A report are in general agreeance that the proposal is consistent with the WBEMS, in so far as the replacement of the rail iron wall with a rock revetment is concerned. However, at paragraph 178 of the s 42A report Mr Whittaker states that he is less convinced that the design life of the revetment proposed in the application "achieves the finer grained details of the WBEMS", with specific reference provided to the footprint of the structure and the timescale in which it should remain in place.
- 4.2 My reading of Section 6.2 of the WBEMS suggests there are no "finer grained details" specified with regards to footprint or durability of the replacement revetment. In my opinion, the only detail provided has been paraphrased by Whittaker at the first paragraph of 177 of the s 42A report.
- 4.3 A lack of finer grained details within the WBEMS is not surprising given it is a "strategy" which takes a strategic long term and community led approach to coastal erosion management at Wainui Beach.
- 4.4 The MFE's guidance document contains a new planning approach to past coastal hazard management practice in respect of how uncertainty and community engagement is used in the decision making process. This new approach is a dynamic adaptive pathway ("DAP").
- 4.5 At a conceptual level, a DAP can accommodate change in the future without locking in investments that make future adjustments difficult and costly. The DAP encompasses a series of interlinked pathways, where the course can change at agreed trigger or decision points within the context of a range of future scenarios. By exploring different pathways to meet objectives, an adaptive plan can be developed and implemented to include short-term actions and long-term options. This approach assist with both long-term sustainability and community resilience.
- 4.6 The DAP is being promoted by MFE through the guidance document as a current best practice approach to coastal hazard management. I note Mr Whittaker's suggestion that the revetment's design life should mirror the expiry date for the tipped rock seawall to the south of the concrete groyne, and that the revetment should be deconstructed in 2042.
- 4.7 In my opinion, determining the outcome of a future resource management process some 25 years ahead of when it needs to be made is unusual and contradicts the sustainable management purpose of the RMA. Further, that course of action would also contradict the guidance document which seeks to keep various "pathways" open at critical and pre-defined junctures (decision points), not close the pathways off before your adaptive plan has even commenced its implementation phase.

5.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

5.1 I consider the AEE and s 42A report to be comprehensive and accurate with respect to the identification and assessment of actual and potential effects that are likely to result from the proposal. The AEE and s42A report both conclude that the magnitude of any resultant adverse effects is likely to be minor.

5.2 Accordingly, I do not intend to duplicate those assessments in this statement of evidence. Instead, I will focus on a couple of minor and "new" effects related issues which have been discussed in the s 42A report.

5.3 Occupation area and public access along the beach

It is important to make it clear that in substituting the vertical rail iron wall for a sloped rock revetment, the area of cliff shoreline and beach required to site the structure on will increase (see Dr Shand's evidence). This outcome was specifically foreshadowed in the WBEMS where it discussed minimising the extra area that would be required for the "new structure".

5.4 Consequently, irrespective of the design life, it is likely that the revetment will occupy a greater area than the rail iron wall and protrude further seaward if constructed in the same location.

5.5 In my opinion, the discussion contained in the s 42A report relating to the "extra" occupation area associated with the revetment, and its adverse effects on public access over and above those associated with the rail iron wall, is a little overstated.

5.6 From Dr Shand's evidence it can be seen that under a low beach profile scenario the lower portion of the revetment structure will be exposed. However, under a higher beach profile scenario, an enhanced level of public access to what is available presently in front of the rail iron wall is likely to be evident. Therefore, in a mean beach profile context, there is not likely to be any appreciable difference between the rail iron wall and revetment in terms of effects on access along the foreshore.

5.7 Paragraphs 73 and 90 of the s 42A report discuss the design of a replacement structure for the currently closed timber access stairs at the end of the Tuahine Crescent beach accessway. The same paragraphs also intimate that the reconstructed stairs could further restrict public access along the beach.

5.8 As stated in the AEE, the applicant has not designed the stair structure to date. From Dr Shand's evidence, it is clear that it is possible to ensure the stairs terminate at the toe of the revetment, and therefore do not create any additional public access restrictions along the beach.

5.9 On the basis of the above, I consider any additional adverse effects on public access associated with the revetment to be less than minor.

5.10 Vegetative mitigation

Paragraph 67 of the s 42A report discusses planting opportunities along the crest of the revetment.

5.11 Based on the slope of the shoreline behind the revetment (it is not a "sand dune"), it will be problematic to establish vegetation above or behind the crest of the revetment. More importantly, it will be problematic to maintain this vegetation due to periodic wave overtopping and scour during coastal storm events. This issue will become more of an issue should the crest of the structure be reduced.

5.12 I note that the AEE and s 42A report are in agreement regarding the natural character and visual effects associated with the revetment being in keeping with the existing environment. Therefore, as mitigation will be difficult to maintain, and there is no real effect requiring mitigation, I do not consider it is necessary to maintain planting along the crest of the structure.

6.0 SUBMISSIONS

6.1 40 submissions were received from largely local residents at Wainui Beach and tangata whenua. Based on information provided to me by the applicant, it would appear there were more submissions in support than opposition for construction of the revetment in the vicinity of Tuahine Crescent, and retention of the gabions and removal of the rock at 21 Wairere Road.

6.2 I agree with Mr Whittaker where he states at paragraph 45 of the s 42A report that the submissions express a wide and divergent range of views. My view is that there is no subject matter contained within the submissions that has not already been addressed by the AEE, the s 92 response, the s 42A report, Dr Shand's and my evidence.

7.0 OFFICER'S REPORT

7.1 With the exception of the linkage between the revetment's engineering design life and consistency with the NZCPS and Plan discussed earlier in my evidence, I generally concur with the opinions expressed by Mr Whittaker in his 42A report.

7.2 With the same caveat provided under 7.1 above, I also agree with the analysis Mr Whittaker has provided of the proposal against the relevant planning documents. I note that his analysis is generally consistent with the assessment provided within the AEE and my evidence.

7.3 Mr Whittaker's report includes a suite of draft conditions for consideration of the Commissioner. In general, I consider the draft conditions to be fair and reasonable. Some minor amendments are required and these are set out in paragraphs 7.4 to 7.13 below. Please note, my recommended insertions to the draft conditions are shown in bold underline text, and my recommended deletions are shown in strikethrough text. I have also provided an accompanying brief explanation of the rationale for and intent of the amendments where necessary.

7.4 Condition 1

The proposed coastal erosion works authorised by this consent are limited to;

- *The replacement section of rock revetment wall along the coastal boundary of 2,4, 6 and 8 Tuahine Crescent, the local purpose reserve (Lot 16 DP 3216) and esplanade reserve (Lot 14 DP 3216) located adjacent to Tuahine Crescent and*
- *The gabion basket works along the coastal boundary of 21 Wairere Road, including retention of the existing gabion basket structure and removal of the rock which has been placed on the dune face above the gabion basket.*

This amendment is required to ensure that all land parcels the revetment is proposed to be located on are referenced in the consent.

7.5 Condition 6

~~Pursuant to section 125(1) of the RMA, The consent shall lapse for the rock revetment works shall expire:~~ either 25 years from the date of its commencement (pursuant to section 116(5), or by February 2042, whatever is the earliest date.

This amendment is required to reflect the fact that the intent of the condition is to have an expiry date specified. An expiry date is not related to the lapsing provisions of s 125 of the RMA. It also necessary to delete reference to s 116(5) of the RMA, as this applies to a Board of Inquiry process.

7.6 Condition 7

~~Pursuant to section 125(1) of the RMA, The consent for the gabion basket works shall lapse~~ expire 5 years from the date of its commencement (pursuant to section 116(5) of the RMA).

7.7 Condition 10

At least ~~1 month~~ 2 weeks prior to the works commencing, the Consent Holder shall submit to the Consents Manager, Gisborne District Council, for certification, a Construction Management Plan (CMP) prepared by a suitably qualified and experienced person(s). The CMP shall outline the environmental management and monitoring measures to be installed prior to and maintained during construction works and shall address, but not be limited to the following:

- *Compliance with all consent conditions*
- *Sediment and erosion control measures and water quality management*
- *Management of works in relation to tide and weather conditions*
- *Machinery and truck refuelling and maintenance*
- *Contingency plans*
- *Stockpile management*
- *Waste management and disposal*
- *Vehicle and machinery access management within the coastal marine area*
- *Public notice information and signage*

- *Public health and safety measures*

This amendment is required to allow the successful tenderer time to finalise their CMP to incorporate their specific construction methodology. Under NZS 3910, the contractor takes possession of the site two weeks after being awarded the tender and this is the time that they would finalise their CMP.

7.8 Condition 17

~~*Works shall only occur during low tidal conditions, three hours either side of low tide.*~~

Work involving the disturbance of the intertidal area of the Coastal Marine Area to construct the rock revetment seawall authorised under this consent shall only be carried out when the area is dry (above sea level at the time).

This amendment is required because the current draft condition imposes an arbitrary and somewhat ineffective control. Clearly, the intent of the condition is to ensure construction works do not occur when tidal water is inundating the area affected. Restricting work to 3 hours either side of low tide may not achieve this. This is because it is a combination of the beach profile and tidal water level (influenced by neap and spring cycles) that determine whether the works area is likely to be inundated by tidal water, and for how long in a flood or ebb tidal cycle.

It may also be possible for the contractor to construct a bund along the seaward extent of a localised area they are working using sediments won from excavating the foreshore to construct the toe of the revetment. This bund may be able to be constructed to ensure tidal water does not inundate the works area.

I consider that the amendment provides a more relevant and practical condition.

7.9 Condition 18

~~*Works are to occur during favourable weather conditions and fine weather forecast.*~~

This amendment is required because the current draft condition imposes an arbitrary and somewhat ineffective control. What constitutes "favourable weather"? If it is raining (the assumed opposite of "fine" weather, then this does not necessary mean Wainui Beach is experiencing a coastal storm event where strong on shore winds are generating waves and high water levels, which increase the risk of erosion and inundation affecting the works area.

More effective and appropriate mitigation towards these types of effects should be contained within the Construction Management Plan ("CMP") required under Condition 10. Vigilant attention to weather forecasting to prevent commencing work close to the arrival of a coastal storm, and undertaking the construction in discrete stages using pragmatic measures, such as the following, should form part of the CMP:

- Commencing and completing the work in discrete daily sections to minimise the exposed area. For example, removing the rail iron wall in say 10 m sections and placing a geotextile layer over the shoreline bank once trimmed to the design grade

and securing with rock immediately following placement to protect the exposed area from the next high tide.

7.10 Condition 19

~~Sediment control measures shall be in place at all times when there is an exposed dune face.~~

This amendment is required because the draft condition is superfluous. The CMP (under condition 10) is required to contain erosion and sediment control measures.

7.11 Condition 39

~~At least 6 months prior to the expiry of the consent for the affected works, the Consent Holder shall submit a plan and methodology for the decommissioning and removal of the works. This shall include the final planting and site works to establish the final profile and vegetation of the dune face. The decommissioning works shall not commence until the plan has been certified by the Consents Manager, Gisborne District Council. The consent authority will endeavour to have the certification process completed within 10 working days (excluding any periods where additional information is sought from the consent holder).~~

At least 2 years prior to the expiry of this Resource Consent that authorises the construction and use of a rock revetment adjacent to Tuahine Crescent the Consent Holder shall undertake comprehensive investigations to determine the best practicable option for the long term management of the coastal hazard risk at Wainui Beach. The investigations shall consider the full range of management options available to the Council and Community at that time using the most up to date hazard information data and the application of best practice based risk reduction measures.

This amendment is required to reflect the fact that the draft consent condition as proposed is, in my view, inappropriate for a number of reasons; these are:

- The WBEMS does not state that the replacement revetment needs to be deconstructed and removed from the site once the consent for the tipped rock revetment to the south expires. The WBEMS foreshadows that "structures" could still be an appropriate measure to incorporate in the future management measure option identification and selection process.
- There could be very different policy directives, regulatory approaches and Community understanding and perspectives to management of coastal hazards, as well as more certainty around rates of future sea level rise in 25 years' time.
- Determining the outcome of a future resource management process some 25 years ahead of when it needs to be made is unusual and contradicts the sustainable management purpose of the RMA.

In my view, the proposed amended condition is more appropriate and certainly does not preclude the deconstruction and removal of the revetment, should that action be deemed the most acceptable by the future decision makers in a future resource management process.

7.12 Condition 40

~~The approved decommissioning works shall be completed within 6 months after the expiry of the consent.~~

7.13 Condition 41

~~The conditions associated with the CMP and the construction works as set out in conditions 10 to 31 shall equally apply to the decommissioning works.~~

8.0 CONCLUSION

8.1 Gisborne District Council ("GDC") developed and adopted the WBEMS for the long term and strategic management of coastal erosion, land use and development at Wainui Beach. The WBEMS contains recommended actions agreed between GDC, Wainui Beach residents, tangata whenua and other key stakeholders.

8.2 The general philosophy underlying the WBEMS is a hierarchy of management options for addressing coastal erosion, with an emphasis on risk avoidance and risk reduction. The hierarchy is consistent with the RMA, the NZCPS, as well as good practice in Risk Management.

8.3 In my opinion, the WBEMS represents a joint management approach which takes into consideration the different viewpoints within the community and is founded on an adaptive management philosophy. The revetment proposed by this application is clearly promoted by the WBEMS.

8.4 The Plan augments the WBEMS by imposing controls on subdivision and land use activities to prevent exacerbation of the existing coastal hazard risk and reduce the risk profile over time. Specifically, development controls are used as methods to limit building extensions that extend the dwelling beyond the existing building envelope, as well as preventing new building and subdivision in high and extreme risk erosion zones.

8.5 I consider that the WBEMS and the Plan are the primary measures and responses to managing coastal hazard risk at Wainui Beach, not the revetment. Further, the WBEMS and the Plan give effect to the higher order NZCPS, in terms of how they provide a logical and cohesive approach to the long term and sustainable reduction of coastal hazard risk at Wainui Beach.

8.6 The AEE, s 92 response, s 42A report and evidence presented by Dr Shand and myself have demonstrated that the effects of the proposal will be minor. Therefore, the proposal satisfies the first limb of the gateway test.

8.7 The only area where there is disagreement between Mr Whittaker and myself is whether the revetment design life needs to match the expiry date of the tipped rock to the south of the concrete groyne, in order for the revetment to be consistent with the relevant policy frameworks of the NZCPS and the Plan.

- 8.8 It is important to note that this area of disagreement relates only to the natural hazards provisions of the NZCPS and the Plan. That is, in so far as the natural character, public access, ecology, coastal process, surf break protection and cultural heritage related provisions are concerned, we both consider that a replacement revetment at the site would be consistent with the policy directives contained in the NZCPS and the Plan.
- 8.9 I agree that the design life of the revetment does require careful consideration. I also note that it is not unusual to see consent terms imposed that are shorter than the engineering design life of a coastal hazard management asset. I consider the evidence provided by Dr Shand will be useful to assisting the Commissioner in determining the most appropriate design life for the revetment.
- 8.10 Finding the appropriate package of responses to managing coastal hazards where those hazards affect or interact with manmade resources, development and activity is undoubtedly a challenging and complex task. The challenge is somewhat exacerbated by the nature of coastal hazards, which can be episodic and are subject to uncertain variables which contribute to the frequency and severity of the effects of the hazard, such as the scale and rate of future sea level rise.
- 8.11 In my opinion, the proposal assists with assuaging the challenge at Wainui Beach because the construction and use of the revetment will provide a degree of protection to the cliff shoreline which is located within an extreme risk erosion zone and has dwellings located on top of it. This protection will, in my view, create the time and space for the development of the most appropriate, sustainable and long term response or responses to the coastal hazard risk at the site.
- 8.12 Ideally this response package would be based on a DAP approach, as prescribed in the MFE guidance document.
- 8.13 Given the Plan is currently limiting building extensions that extend the dwelling beyond the existing building envelope, as well as preventing new building and subdivision, the "do nothing", managed retreat and adaptation methods could be recommended as potential pathways for implementation in the future for "Area 2".



Reuben Christian Hansen

22 January 2018

ANNEXURE A – KEY PROVISIONS OF STATUTORY PLANNING DOCUMENTS

<p>New Zealand Coastal Policy Statement Provisions</p> <p>Objective 4 <i>To maintain and enhance the public open space qualities and recreation opportunities of the coastal environment by:</i></p> <ul style="list-style-type: none"> • <i>recognising that the coastal marine area is an extensive area of public space for the public to use and enjoy;</i> • <i>maintaining and enhancing public walking access to and along the coastal marine area without charge, and where there are exceptional reasons that mean this is not practicable providing alternative linking access close to the coastal marine area; and</i> <p>...</p>
<p>Objective 5 <i>To ensure that coastal hazard risks taking account of climate change, are managed by:</i></p> <ul style="list-style-type: none"> • <i>locating new development away from areas prone to such risks;</i> • <i>considering responses, including managed retreat, for existing development in this situation; and</i> • <i>protecting or restoring natural defences to coastal hazards.</i>
<p>Objective 6 <i>To enable people and communities to provide for their social, economic, and cultural wellbeing and their health and safety, through subdivision, use, and development, recognising that:</i></p> <ul style="list-style-type: none"> • <i>the protection of the values of the coastal environment does not preclude use and development in appropriate places and forms, and within appropriate limits;</i> <p>...</p>
<p>Policy 6 - Activities in the coastal environment</p> <p>...</p> <p><i>(2) Additionally, in relation to the coastal marine area:</i></p> <p>...</p> <p><i>(b) recognise the need to maintain and enhance the public open space and recreation qualities and values of the coastal marine area;</i></p> <p><i>(c) recognise that there are activities that have a functional need to be located in the coastal marine area, and provide for those activities in appropriate places;</i></p> <p>...</p>
<p>Policy 24</p> <p><i>(1) Identify areas in the coastal environment that are potentially affected by coastal hazards (including tsunami), giving priority to the identification of areas at high risk of being affected. Hazard risks, over at least 100 years, are to be assessed having regard to:</i></p> <ul style="list-style-type: none"> <i>(a) physical drivers and processes that cause coastal change including sea level rise;</i> <i>(b) short-term and long-term natural dynamic fluctuations of erosion and accretion;</i> <i>(c) geomorphological character;</i> <i>(d) the potential for inundation of the coastal environment, taking into account potential sources, inundation pathways and overland extent;</i> <i>(e) cumulative effects of sea level rise, storm surge and wave height under storm conditions;</i> <i>(f) influences that humans have had or are having on the coast;</i> <i>(g) the extent and permanence of built development; and</i> <i>(h) the effects of climate change on:</i> <ul style="list-style-type: none"> <i>(i) matters (a) to (g) above;</i> <i>(ii) storm frequency, intensity and surges; and</i> <i>(iii) coastal sediment dynamics;</i> <p><i>taking into account national guidance and the best available information on the likely effects of climate change on the region or district.</i></p>
<p>Policy 25</p> <p><i>In areas potentially affected by coastal hazards over at least the next 100 years:</i></p> <ul style="list-style-type: none"> <i>(a) avoid increasing the risk of social, environmental and economic harm from coastal hazards;</i> <i>(b) avoid redevelopment, or change in land use, that would increase the risk of adverse effects from coastal hazards;</i>

- (c) encourage redevelopment, or change in land use, where that would reduce the risk of adverse effects from coastal hazards, including managed retreat by relocation or removal of existing structures or their abandonment in extreme circumstances, and designing for relocatability or recoverability from hazard events;
- (d) encourage the location of infrastructure away from areas of hazard risk where practicable;
- (e) discourage hard protection structures and promote the use of alternatives to them, including natural defences; and
- (f) consider the potential effects of tsunamis and how to avoid or mitigate them.

Policy 27

- (1) In areas of significant existing development likely to be affected by coastal hazards, the range of options for reducing coastal hazard risk that should be assessed includes:
- (a) promoting and identifying long-term sustainable risk reduction approaches including the relocation or removal of existing development or structures at risk;
 - (b) identifying the consequences of potential strategic options relative to the option of 'do-nothing';
 - (c) recognising that hard protection structures may be the only practical means to protect existing infrastructure of national or regional importance, to sustain the potential of built physical resources to meet the reasonably foreseeable needs of future generations;
 - (d) recognising and considering the environmental and social costs of permitting hard protection structures to protect private property; and
 - (e) identifying and planning for transition mechanisms and timeframes for moving to more sustainable approaches.
- (2) In evaluating options under (1):
- (a) focus on approaches to risk management that reduce the need for hard protection structures and similar engineering interventions;
 - (b) take into account the nature of the coastal hazard risk and how it might change over at least a 100-year timeframe, including the expected effects of climate change; and
 - (c) evaluate the likely costs and benefits of any proposed coastal hazard risk reduction options.
- (3) Where hard protection structures are considered to be necessary, ensure that the form and location of any structures are designed to minimise adverse effects on the coastal environment.
- (4) Hard protection structures, where considered necessary to protect private assets, should not be located on public land if there is no significant public or environmental benefit in doing so.

Regional Policy Statement Provisions

Objective B5.1.2

1. A pattern of human settlement that:
- Provides a high level of personal safety from natural hazards for its inhabitants.
 - Avoids or mitigates the risk to property and infrastructure from natural hazards.
 - Does not accelerate or worsen the effects of natural hazards upon the natural and physical environment.
- ...

Policies B5.1.3

1. To encourage and facilitate changes, over time, to patterns of human settlement, development and activities which are not affected by natural hazards and which do not induce or worsen the impacts of natural processes, and which recognise and allow for some natural features to migrate inland as a result of dynamic coastal processes.
2. To recognise the limitations of attempts to control natural processes by physical work and limit such attempts to appropriate situations where they are:
 - a) needed to protect existing development, or waahi tapu or new public infrastructure such as ports, roads, bridges; and
 - b) have a favourable benefit to cost ratio; and
 - c) will not have significant adverse effects on the natural character of the coastal environment, or other adverse environmental effects; and
 - d) will not cause or worsen hazards to other lands/waters; and
 - e) can be designed with confidence of long-term effective performance; and
 - f) are the only practical alternative.
3. To maintain a strong commitment to researching, recording and publicising information about natural hazards.

4. To recognise that natural systems and features may provide a defence against natural hazards and that the integrity of such natural systems should be protected and enhanced, where appropriate.
5. To recognise the possibility of sea level rise and the likelihood of changes to the frequency and impacts of some natural hazards due to climate change and sea-level rise.
6. To encourage participation by the affected communities in managing the risks of natural hazards.

Coastal Management Provisions – Regional Plan, Regional Coastal Plan, District Plan

Objective C3.5.2

1. Maintenance and enhancement of existing legal public access to and along the CMA and lakes and rivers in the Coastal Environment unless conservation values, cultural values, the rights of private property owners or public safety are significantly compromised.

Policies C3.5.3

1. To ensure that existing legal public access to and along the foreshore and along lakes and rivers in the Coastal Environment for which the Council is responsible is maintained or enhanced.
10. As far as practicable, avoid the adverse effects on public access arising from the erection of structures or occupation of space in the Coastal Environment. Where complete avoidance of these adverse effects is not practicable, the adverse effects will be mitigated and provision made for remedying them, to the extent practicable.

Objectives C3.7.2

1. Provision is made for appropriate structures in the CMA provided that any adverse effects on the environment arising from the erection, reconstruction, placement, alteration, extension, removal or demolition of a structure are avoided as far as practicable. Where complete avoidance is not practicable, the adverse effects are mitigated and provision made for remedying those effects, to the extent practicable.

...

4. No reduction in the level and quality of access the public have to and along the Coastal Marine Area as a consequence of structures located in the Coastal Environment and, where appropriate, enhanced levels of access.

...

6. Avoidance of damage to structures from physical coastal processes or events.

7. Avoidance of adverse effects on the environment, including the adverse effect of preventing the natural migration of coastal systems such as dunes and wetlands which occurs as a result of dynamic coastal processes, as a result of the placement of structures where they may interfere in the dynamic processes of the coast and as a result of changes in the rate of coastal erosion or accretion caused by structures.

...

Policies C3.7.3

...

2. To provide for the maintenance and upkeep of structures located in the Coastal Environment. To avoid, remedy or mitigate the effects of maintenance and upkeep (Ref: C3.7.2(1), C3.7.2(2)).

...

8. To avoid, remedy or mitigate any adverse effects of structures in the Coastal Environment on processes necessary to sustain the diversity of organisms within biological communities and of communities within the CMA. (Ref: C3.7.2(3)).

10. To maintain or enhance existing levels of public access to and along the coast or...

...

13. To ensure that new structures are designed, located and managed in a way that avoids threats to them from coastal processes. Where appropriate, to ensure that the design, location and management of structures located in or adjacent to the CMA takes into account the most recent Inter-Governmental Panel on Climate Change (IPCC) "best estimate" for sea level rise (Ref: C3.7.2(6)).

14. To ensure that structures are designed, located and managed in a manner that avoids any adverse effects they might have on existing physical coastal processes as far as practicable. Where complete avoidance is not practicable, the adverse effects should be mitigated and provision made for remedying those effects, to the extent practicable. (Ref: C3.7.2(7)).

...

16. To recognise the potential impacts that natural hazards have on the existing subdivision, use or development in the Coastal Environment and to provide for the mitigation of these adverse effects by providing for coastal protection works only where coastal protection works can be shown to be the best method for preventing or minimising adverse effects on the environment having regard, among other things,

to the sensitivity of the surrounding environment, the effects of the protection work when combined with other options, and the current state of technical knowledge and the likelihood that the option can be successfully applied.