

BEFORE THE WESTERN BAY OF PLENTY DISTRICT COUNCIL

IN THE MATTER OF of the Resource Management Act 1991

AND of a resource consent application by Glen Isla Protection
Society Inc.

UNDER section 88 of the Resource Management Act 1991 for the
activities associated with the construction and use of a
coastal protection structure

STATEMENT OF EVIDENCE BY ANDREW MCKENZIE FRASER

25 JULY 2025

1. INTRODUCTION

Association with GIPS

- 1.1 My full name is Andrew McKenzie Fraser.
- 1.2 My family owns 14 and 16 Glen Isla Place, Waihi Beach through a family trust. We have owned 16 Glen Isla Place since 1997.
- 1.3 My grandfather and my mother were born and brought up in Waihi and my grandparents lived at Waihi Beach early in their marriage. We love and value Waihi Beach and its environment.
- 1.4 I am a member of the Glen Isla Protection Society Incorporated (GIPS).
- 1.5 I have been involved in the formation of GIPS and the planning and preparation for the proposed works and the resource consent applications. I am authorised to give evidence about the project on behalf of GIPS.

Purpose and scope of evidence

- 1.6 The purpose of my evidence is to provide certain factual information about GIPS and the proposed project.

2. GIPS PURPOSES AND MEMBERSHIP

- 2.1 GIPS was formed by the Glen Isla Place waterfront property owners as an entity to formalise their cooperation as they work together for the following purposes:
 - > to protect and enhance the natural and coastal environment in the vicinity of Glen Isla Place, Three Mile Creek, and the Island View Reserve at Waihi Beach;
 - > to design, obtain permissions and approvals for, and construct coastal protection measures to protect that environment;
 - > to manage and, if necessary to own, such protection measures; and

- > to do such other things necessary or desirable to achieve the above purposes.
- 2.2 The proposed wall would advance those purposes by protecting the dune in front of Glen Isla Place, and the proposed replanting would enhance the natural and coastal environment within the dune.
- 2.3 GIPS's membership comprises representatives of the owners of all seven of the beachfront properties at Glen Isla Place, together with some other people who are aligned with those objectives.
- 2.4 GIPS, the proposed seawall, and the associated resource consent applications are unanimously supported by the waterfront property owners at Glen Isla Place. I would expect anyone facing a similar set of risks to be in favour of protecting their property in the way proposed by GIPS.

3. HISTORY OF EROSION PROTECTION AT WAIHI BEACH

- 3.1 The Glen Isla Place subdivision was created in the 1970s. There is a reserve owned by Western Bay of Plenty District Council (the Council) between the waterfront properties and the beach. The Glen Isla Place private property boundaries are further landward than those of the subdivisions to the North of Glen Isla Place.
- 3.2 Glen Isla Place is adjacent to Okawe Stream / Three Mile Creek which is a man-made diversion of natural watercourses and drains through the dune. Three Mile Creek serves an important role in discharging stormwater from the Waihi Beach community, thereby reducing flooding risk at Waihi Beach. The creek is maintained artificially by regularly dredging to prevent sand build-up.
- 3.3 Due to erosion issues being experienced at the time, a seawall was built in front of the Glen Isla Place dune in 1983. That seawall was a vertical wall with steel posts and wooden rails. At the same time, rock filled gabion cages were installed perpendicular to the seawall every 40 metres or so and rocks were placed landward of the seawall, remaining buried in sand

most of the time. The seawall was positioned around 20 metres seaward of the private property boundaries.



Image 1: The Glen Isla seawall built in 1983 (date of photo unknown but between 1997 and 2011)



Image 2: The seawall constructed in 1983 with the sand level lowered after a storm, showing the gabion cages seaward of the wall and rocks behind the wall (date of photo unknown but between 1997 and 2011).

- 3.4 That seawall remained in place, protecting the waterfront properties at Glen Isla Place, at the time when five out of the seven waterfront properties were acquired by their current owners, including when my family bought 16 Glen Isla Place. Those owners acquired their properties with the reasonable expectation that their properties would continue to be protected from coastal erosion and that the seawall would not be removed without being replaced with another effective measure.
- 3.5 In the late 1990s and early 2000s the Council investigated ways to improve the erosion protection at Waihi Beach. The option of diverting Three Mile Creek was considered at that time but was determined to be too expensive. Originally it was proposed to build a buried rock revetment wall in front of Glen Isla Place but, unfortunately, the Council moved away from that design during the public consultation phase of the project, and replaced it with a plan to implement soft protection in the form of dune enhancement.¹
- 3.6 My family and I (among others) were opposed to the change from a rock revetment wall to dune enhancement because dune enhancement does not provide effective backstop protection against storm cut.
- 3.7 The Council applied for resource consents to build a rock revetment wall on a section of beach north of Three Mile Creek, to install sand-filled geotextile bag groynes at Three Mile Creek, and to carry out dune enhancement at Glen Isla Place and for a section of the beach north of the rock revetment wall. The resource consents for that work were granted to the Council and then successfully defended by the Council in the Environment Court, with the final consents being granted in 2008.

¹ It has been incorrectly stated in certain places, including in the minutes of the WBOPDC Projects and Monitoring Committee meeting held on 31 October 2023 (page 3 - see Appendix 1(5)) and in some submissions, that a previous resource consent for a rock wall at Glen Isla Place was 'rejected' by the Environment Court. That is not the case. As mentioned, the 2004 proposal of a buried rock revetment wall was changed during public consultation prior to application for the resource consents being made. Neither GIPS nor any of the waterfront property owners has previously applied for resource consent for a rock revetment wall at Glen Isla Place, and to my knowledge neither has the Council.

- 3.8 The groynes at Three Mile Creek were constructed in 2009 and the other work to implement those consents was carried out in 2010-2011, at which time the existing seawall in front of Glen Isla Place was removed and the dune enhancement was completed. Despite its degraded condition, the existing seawall was still providing protection to the Glen Isla Place dune at the time of its removal.
- 3.9 The dune enhancement entailed placing large amounts of sand, including sand scraped from the beach, to build up the eroded dune, with the plan to replant the dune to stabilise it.
- 3.10 Unfortunately, the dune enhancement was a total failure and only lasted a few weeks before it had washed away after storm activity. No further dune enhancement work has been undertaken by the Council since then.
- 3.11 That is fortunate for the residents of Glen Isla Place because the dune enhancement had been costly, both in monetary and in environmental terms. The residents of Glen Isla Place have been paying a targeted rate for the dune enhancement that in 2010 was estimated to be \$400 to \$600 compared to the \$1200 to \$1400 estimated for properties fronting the rock revetment wall, meaning the dune enhancement was expected to cost about 40% of the cost of the rock revetment wall.²
- 3.12 Since the existing seawall was removed in 2011, a substantial amount of the reserve land dune that existed at Glen Isla Place has been lost.
- 3.13 I have attached in Appendix 3 some images showing how the Glen Isla Place dune has changed following Cyclone Gabrielle.

² Letter from WBOPDC dated 23 February 2010 regarding the costs of the dune enhancement – attached in Appendix 2.

4. PROPOSED SEAWALL PROJECT

Expert advice

- 4.1 My family and the other waterfront property owners at Glen Isla Place have become increasingly concerned about the coastal erosion risks to our properties. The matter has become particularly urgent since Cyclone Gabrielle, which caused a large amount of coastal erosion. After that event only a few metres of dune land remained at the Southern end of Glen Isla Place, and GIPS fears that a similar storm occurring in the next few years would cause damage to some or all of our properties.
- 4.2 GIPS sought the advice of Davis Coastal Consultants regarding the risks to waterfront properties at Glen Isla Place.
- 4.3 The advice of Davis Coastal Consultants was that all the waterfront properties at Glen Isla Place face serious risk of damage from coastal erosion, particularly from storm cut during an extreme storm event. The remaining dune could be fully eroded during a large storm event, and damage could be caused to the waterfront properties, including to buildings. GIPS was further advised that those erosion risks are exacerbated by the proximity of the waterfront properties to Three Mile Creek, and although groynes have been installed at Three Mile Creek, they do not fully mitigate the erosion effects of the creek and they are only consented until 2032. GIPS was advised that it would be prudent to implement coastal protection to mitigate the risks.
- 4.4 GIPS is aware that the Council is unwilling to spend its limited resources on protecting the reserve land seaward of Glen Isla Place,³ even though it is a strategic asset of the Council,⁴ and so the waterfront property owners will need to arrange and pay for the cost of the necessary protection themselves.

³ Agenda of the WBOPDC Projects and Monitoring Committee meeting on 31 October 2023, page 9, see Appendix 1(4).

⁴ Reserves and Facilities Memorandum, page 4 – Attachment 16 of the Section 42A Officer's Report.

- 4.5 GIPS engaged a project team of experts to advise on the best option for, and the design and the consenting of, coastal protection at Glen Isla Place.
- 4.6 The team comprised Mitchell Daysh as planner, Davis Coastal Consultants as coastal engineer, BlueGreen Ecology to advise on ecology and avifauna, Marshall Day to advise on noise and vibration, Isthmus to advise on landscape and visual effects, an arborist, and Morgan Slyfield to advise on the applicable laws. Nuwave Coastal was engaged later in the process to peer review the work of Davis Coastal Consultants. Beach Contractors Limited was consulted for advice regarding the construction methodology and to help with the noise and vibration test.
- 4.7 GIPS has relied on the advice of those experts.
- 4.8 The project commenced with a workshop attended by GIPS, Mitchell Daysh, BlueGreen Ecology, Davis Coastal Consultants and Morgan Slyfield. After the workshop, the consultants jointly carried out an assessment of all the options to implement coastal protection at Glen Isla Place.
- 4.9 The outcome of that assessment was that a buried rock revetment seawall was identified as the best option. The wall was accordingly designed, and the appropriate consent applications were made. The Regional Council consents have already been granted.

The chosen option

- 4.10 Acting on the advice of its experts, GIPS chose a buried rock revetment wall as the best solution because:
- > it provides effective backstop protection from coastal erosion risks, including storm cut;
 - > it is a proven and durable solution that can withstand the forces it will be exposed to on an ocean beach;
 - > the effects are negligible and can be managed through conditions.

Managed retreat

- 4.11 The do nothing / managed retreat options were considered but dismissed as failing to mitigate the erosion risk. The waterfront owners of Glen Isla Place do not wish to lose land or see their properties damaged, or be injured or killed as their homes collapse.
- 4.12 Although often talked about, there are very few examples of managed retreat actually occurring in New Zealand. I have attached in Appendix 1 links to some information on two examples of managed retreat that I have managed to find: Matatā (due to debris flow risk) and Christchurch (due to liquefaction risk). In both cases, there was no viable engineered solution to the relevant risk. The property owners were paid compensation at full market value without deduction for the risks, and in the case of Matatā the managed retreat scheme was voluntary. The managed retreat in Matatā left some residents ‘bitter, traumatised and physically and mentally ill’.⁵ Similarly, an academic study of the health effects of the 8000 households that were relocated in Christchurch found ‘a statistically significant increase in the likelihood and frequency of receiving treatment for moderate mental health problems among individuals compelled to relocate, when compared to other residents of the earthquake-affected city who were allowed to remain in situ’.⁶
- 4.13 The stress, misery and health effects of managed retreat are in addition to the substantial economic costs of moving or (much more likely)⁷ demolishing the buildings and relocating possessions. It seems wasteful when there is a housing affordability crisis to choose to destroy perfectly good housing that can easily be defended from the sea.

⁵ Matatā: The town that had to retreat, RNZ 26 May 2022 – see link in Appendix 1(1).

⁶ Heterogenous Mental Health Impacts of a Forced Relocation: The Red Zone in Christchurch (New Zealand), Health Economics 2025; 00:1-22 – see link in Appendix 1(3).

⁷ Most homes are demolished rather than moved, for example Kainga Ora had a target of relocating 7% of the properties it redevelops: so at least 93% were demolished: Kainga Ora Annual Report 2020-2021.

- 4.14 We believe that managed retreat is an appropriate response to serious risks that cannot be mitigated through a viable engineering solution, or where the cost or effects of the alternative solution are so excessive that managed retreat is the least harmful response. With the sea level rise that is predicted to occur far into the future if climate change is not stopped, the time might come when managed retreat becomes an appropriate option to consider for Glen Isla Place. But at present, when the opportunity exists to protect the reserve land and the waterfront properties with an affordable structure that has minimal effects, and where those effects can be mitigated through conditions, we believe that it would be absurd to miss that opportunity and instead leave the properties exposed to the dangers of storm cut, and plan to force people out of their homes.

Dune enhancement

- 4.15 Dune enhancement was considered and dismissed as an option because it would not provide sufficient backstop protection in the event of a major storm event, as illustrated by the near-immediate failure of the dune enhancement works that occurred in 2011.

Other options considered

- 4.16 The other options considered are discussed in the Engineering Design Report by Davis Coastal Consultants, submitted to Council with the present application as Appendix F to the application documents.

Location of the rock revetment

- 4.17 GIPS considered a number of possible locations for the seawall, including on private land and on the reserve land. GIPS's preferred location is for the wall to be located on the reserve land 5 metres seaward of the private boundaries at the southern end, increasing to 7.6 metres to clear the Norfolk Pine, and then finishing up around 6.5 metres seaward of the private boundaries at the northern end, near Three Mile Creek. There are a

number of reasons why, acting on the advice of its experts, GIPS chose this location as the best place to build the buried rock revetment wall:

- > Locating the seawall on the reserve land allows part of the reserve land (being a sand dune, which is a rare natural ecosystem⁸ and a strategic asset of the Council⁹) to be protected and thereby preserved, for the benefit of the community, as well as being enhanced by the replanting of the dune as part of the works.
- > Although the wall is being paid for by the waterfront property owners, it will mitigate the erosion effects of Three Mile Creek on those properties, which benefits the local community because of Three Mile Creek's role in reducing flooding risk, and so it is appropriate that it should be located on public land;
- > Locating the wall on the reserve land, particularly if it is sufficiently seaward of the private property boundaries, allows for emergency access to the beach and the option to provide public access along the foreshore should access along the beach become restricted in the future. These benefits were recognised by the Environment Court.¹⁰
- > Also, due to the width of land required to construct the wall, building the wall on private land would be very disruptive to existing structures including disturbing walls, several houses and a swimming pool.
- > The chosen location will allow the seawall to remain completely or mostly buried most of the time, and it enables the Norfolk Pine to be preserved, which Council indicated to GIPS was its preferred outcome.
- > It also improves the effectiveness of the wall by keeping wave action further from the buildings, and it improves the amenity of the beach by maintaining more separation between the public beach area and the adjacent private properties.

⁸ Section 42A Officer's Report, page 64.

⁹ Reserves and Facilities Memorandum, page 4 – Attachment 16 of the Section 42A Officer's Report.

¹⁰ *Mason and Keall v Bay of Plenty Regional Council* EC Auckland A98/2007, 30 November 2007.

- 4.18 The Beca report shown in Attachment 15 of the S42A Officers Report suggests that the back (i.e., the most landward part) of the southern end of the wall should be on the private property boundaries to minimise effects on coastal processes. GIPS has considered that recommendation.
- 4.19 Although GIPS still prefers the 5 metre distance at the southern end of the wall as originally proposed because it preserves more of the remaining dune, GIPS would be willing to accept a location where the landward edge of the wall at the southern end is moved closer to the private boundaries (if preferred by the independent commissioners and provided it is acceptable to the Council as landowner). In order to preserve some of the remaining dune (which is a rare natural ecosystem) and the reserve land (which is a strategic asset of the Council), to enable emergency access and future public access if required, to enable dune plants behind the wall to assist with natural sand accretion, and to enable construction, GIPS believes that the wall should be at least 1.5 metres seaward of the private boundaries at the southern end, and hopefully more than that.
- 4.20 To help better understand the options, GIPS has asked its consultants to consider an alternative location with the landward edge of the wall 1.5 metres seaward of the private boundaries at the southern end, with the rest of the wall remaining in the location originally proposed.

Arrangement with the Council

- 4.21 GIPS approached the Council, seeking permission to locate coastal protection on the Council's reserve land seaward of the waterfront properties at Glen Isla Place.
- 4.22 At a meeting of the Council's Projects and Monitoring Committee, the Council approved our proposal subject to conditions, including:¹¹

¹¹ Minutes of the WBOPDC Projects and Monitoring Committee meeting held on 31 October 2023 (page 4 - see Appendix 1(5)).

- > the waterfront property owners obtaining resource consent from the Regional Council;
 - > the waterfront property owners paying all costs of consenting and constructing the works; and
 - > agreement with Council on operational costs and responsibilities.
- 4.23 Subsequent to that meeting, and once it had been designed, it was determined that the proposed wall will be outside the coastal marine area (as defined in the Resource Management Act 1991) and so the Western Bay of Plenty District Council is the main consenting authority for the seawall resource consent, rather than the Bay of Plenty Regional Council, as had been assumed at the time of the Projects and Monitoring Committee meeting.
- 4.24 The Council and GIPS have been negotiating an agreement to give effect to the above arrangement, subject to consent being granted. The agreement is close to being finalised.
- 4.25 The terms of the draft agreement provide that the property owners will be responsible for any ongoing maintenance costs, either through the targeted rate they continue to pay, or by reimbursing the Council if maintenance costs exceed the amount of the targeted rate.
- 4.26 In the Reserves and Facilities Memorandum (Attachment 16 of the Section 42A Officer's Report), Mr Watson recommends a fixed term of the consent in order to provide for an end date to the Council's obligations to the waterfront property owners. GIPS would prefer that the land use consent have no fixed term. Instead, GIPS proposes that the Council's obligations to the waterfront property owners would terminate on the expiry of the agreement after say 30 years, or perhaps the Council could have a right of termination on or after that date. At that time, if the wall is still performing well, the parties could extend or continue the arrangement and there would be no need to seek a new consent. Conversely, if the Council considers that the structure is no longer appropriate, it can determine its

fate as it will own the structure and the land it is on, and the contractual obligations to the waterfront property owners will have expired or been terminated. GIPS intends to discuss this suggestion with the Council.

5. CARRYING OUT THE WORKS

- 5.1 If consent is granted, GIPS will engage a contractor to carry out the works, under the supervision of a project manager appointed by GIPS.
- 5.2 Consultants will also be engaged to supervise the works and help GIPS to comply with the conditions of consent.

6. INSURANCE COVER

- 6.1 Although GIPS is advised that damage to neighbouring properties from vibration is very unlikely, when carrying out the proposed coastal protection works, GIPS will have a public liability insurance policy that will cover GIPS's liability for damage caused to neighbouring properties, including due to vibration (subject to standard market terms and conditions). The claim limit for that policy will be at least \$5 million dollars. Contractors will also be required to maintain the same level of cover.

7. BEACH ACCESS

- 7.1 I note that in Attachment 13 of the Section 42A Officers Report, Wildlands has stated (in paragraph 3.0) that:

'Foot traffic destroys the sand binders that are essential to protect the dune form and functioning. This is an issue with the current situation as residents at each of the subject properties are traversing the dunes for beach access.'

- 7.2 The residents of Glen Isla Place do not damage the form and functioning of the dune. The residents use very narrow, shared paths to access the beach. The paths are not heavily used and are generally only about 25 to 50 cm wide. All of the residents are careful to stay on these narrow paths

and minimise any disturbance to the vegetation. As can be seen in the photographs in Mr Vaughan Keesing's brief of evidence and in Image 3 below, the vegetation on the dune is thick and the access paths are hardly noticeable. The access paths are shown in red in Figure 2 of Mr Keesing's brief of evidence. Note, however, that some erosion or disturbance seems to have occurred in the vicinity of the path to 12 Glen Isla Place recently.

8. MANAGED RETREAT

8.1 I note that the Section 42A Officers Report makes numerous references to some resource consents for waterfront properties at Glen Isla Place that he states mandate managed retreat. We requested those resource consents from WBOPDC and the Council provided the following link to access the documents: <https://wbopdc.sharefile.com/public/share/web-se73f4e89785e4ba0b628272291e7f1b4>.

8.2 My understanding, and that of my family, has always been that any resource consent conditions relating to removal only apply to the consented works themselves, not to the entirety of the buildings on our land.

9. MR FELL'S ACCUSATIONS

9.1 Due to their untrue and damaging nature, GIPS wishes to respond to a number of the allegations / defamatory comments made by Mr Fell in his submission as follows.

9.2 GIPS has provided detailed information about the proposed wall to neighbours in the street and has received feedback from a number of neighbours - some supportive, and some raising concerns, mostly regarding the potential for damage to nearby homes. GIPS responded to those questions and explained that the works are very unlikely to cause damage. Furthermore, GIPS requested that its resource consent application to the Council be publicly notified to ensure all affected parties had the opportunity to raise any concerns with the hearings panel.

- 9.3 In paragraph 8 of his submission Mr Fell refers to the 'guarantee' that he demanded from GIPS through his solicitor. GIPS received advice that it was not under an obligation to provide any such 'guarantee'.
- 9.4 GIPS has undertaken to Mr Fell to hold adequate insurance cover for liability to third parties, including for vibration damage. The relevant insurer will be chosen and the policy itself taken out shortly before works commence.
- 9.5 The policy Mr Fell describes in paragraph 11 of his submission is probably a home and contents policy, whereas GIPS will take out a public liability policy which will include cover for construction-related vibration damage to nearby properties.
- 9.6 GIPS does not know how any cracks described in Mr Fell's paragraph 12 occurred, but Marshall Day, which witnessed the test and had calibrated monitoring equipment in place adjacent to Mr Fell's property while the test occurred, has confirmed that it is very unlikely that the damage was caused by GIPS's vibration tests.
- 9.7 In response to paragraph 14 of Mr Fell's submission, GIPS is not aware of any threat to the stability of Mr Fell's property from the proposed wall.
- 9.8 Regarding paragraph 15 of Mr Fell's submission, GIPS denies that the statement 'the neighbours won't like you', if it was even made, is threatening. Indeed, it would seem a rather obvious consequence of Mr Fell threatening to start litigation to prevent the waterfront owners from protecting the dune and their properties.
- 9.9 GIPS did not intentionally delay informing Mr Fell of the date of the noise and vibration test as alleged in Mr Fell's paragraph 20. The late notification was due to an oversight on the part of the GIPS member who had volunteered to liaise with Mr Fell. That GIPS member explained to Mr Fell what happened and apologized for the delayed notice. It is unlikely that the equipment of another noise and vibration consultant would have

obtained significantly different readings to those measured by Marshall Day.

- 9.10 In response to Mr Fell's paragraph 21, GIPS does not believe that viewing ceiling cracks would shed much light on their cause or result in GIPS disbelieving the advice of its own experts regarding measured ground acceleration.
- 9.11 GIPS acknowledges that Mr Fell has accepted that the dropping of rocks will not damage his home. GIPS believes that the methodology and machinery it will use will be quite different to what occurred in 2010 and 2011.
- 9.12 In response to Mr Fell's paragraph 30, the reference to Section 4C.1, 18.4.1(t) of the District Plan on page 45 of GIPS's Assessment of Environmental Effects was quoted to make the point that the District Plan does not include vibration standards, which is true.
- 9.13 In response to Mr Fells paragraph 47, the part of the Fraser family's house built closest to the sea was built decades ago by a previous owner of the property. The Fraser family acquired the property in the 1990s when it was protected by an existing seawall that was subsequently removed.
- 9.14 Mr Fell's summary in paragraph 52 of his submission has overlooked an email he received from Mr Slyfield on 29 November 2024 informing him that Mr Slyfield would not be able to make a special trip to view Mr Fell's ceiling cracks. GIPS decided that, as Mr Slyfield is not an expert in building inspection and the cost for him to travel from Wellington to Waihi Beach and back would be considerable, the trip would not be worthwhile.
- 9.15 GIPS's offer described in paragraph 59 of Mr Fell's submission was reasonable given that building inspections can cost thousands of dollars.
- 9.16 The statement in paragraph 61 of Mr Fell's submission is not correct: supporting the resource consent application would not prevent a claim for

damages resulting from the associated works or deny Mr Fell the other remedies listed (except the ability to submit in opposition).

9.17 In paragraph 63 of his submission, Mr Fell says GIPS did not seek his written approval, when in paragraph 59 of the same document he criticizes GIPS for doing just that.

9.18 Regarding paragraph 68 of Mr Fell's submission:

9.18.1 Subparagraph (1): GIPS does deny damage will be caused to Mr Fell's home.

9.18.2 Subparagraph (2): GIPS denies that the vibration test caused damage to Mr Fell's home.

9.18.3 Subparagraph (12): The false and defamatory statements in this paragraph are denied.

APPENDIX 1 – LINKS TO EXTERNAL DOCUMENTS

1. Matatā: The town that had to retreat, RNZ 26 May 2022,
<https://www.rnz.co.nz/programmes/the-detail/story/2018843338/matata-the-town-that-had-to-retreat>
2. Whakatāne District Council: Awatarariki Managed Retreat Programme,
<https://www.whakatane.govt.nz/residents/awatarariki-managed-retreat-programme>
3. Heterogenous Mental Health Impacts of a Forced Relocation: The Red Zone in Christchurch (New Zealand), Health Economics 2025; 00:1-22,
<https://doi.org/10.1002/hec.70004>
4. Agenda of the WBOPDC Projects and Monitoring Committee meeting on 31 October 2023,
<https://www.westernbay.govt.nz/repository/libraries/id:25p4fe6mo17q9stw0v5w/hierarchy/property-rates-building/resource-consents/current-applications/Glen%20Isla/Agenda%20of%20Projects%20and%20Monitoring%20Meeting%20-%20Tuesday%2031%20October%202023.pdf>
5. Minutes of the WBOPDC Projects and Monitoring Committee meeting held on 31 October 2023,
<https://www.westernbay.govt.nz/repository/libraries/id:25p4fe6mo17q9stw0v5w/hierarchy/property-rates-building/resource-consents/current-applications/Glen%20Isla/Minutes%20of%20Projects%20and%20Monitoring%20Meeting%20-%20Tuesday%2031%20October%202023.pdf>

APPENDIX 2 – LETTER FROM WBOPDC RE COSTS OF DUNE ENHANCEMENT



23 February 2010

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Dear Sir / Madam,

Waihi Beach Coastal Protection Project Update

As you may be aware the Western Bay of Plenty District Council has recently awarded a contract to Transfield Services Limited for \$1.235m to complete Stage 3 of the Waihi Beach coastal protection project.

The awarding of the Transfield contract follows completion in December 2009 of the coastal and creek protection at Three Mile Creek. This involved the building of 'groynes' (textile sandbags each filled with five tonnes of sand).

The reduction in the overall estimated cost of Stage 3 of the project has resulted in a significant decrease in the annual rate for the coastal protection works. It is now expected that the rate for 2011 will be between \$1,200 to \$1,400 for properties fronting the rock revetment, compared to the \$3,958 previously estimated for 2010 and between \$400 - \$600 for properties fronting the dune enhancement, compared with the previously estimated rate of around \$1,050.

Stage 3 covers the building of a rock revetment and sand dune enhancement with construction work commencing after Easter weekend (6th April 2010). Some preliminary work may occur prior to this date.

A question and answer document is attached to help explain the subsequent impact on your rates.

Should you require any further information relating to the project, please feel free to correspond in writing or email in the first instance to the Project Manager, Christian Dullnig on beachwork@westernbay.govt.nz who will co-ordinate all responses.

The project team look forward to keeping in touch.

Yours faithfully

Kelvin Hill
Utilities Manager

APPENDIX 3 – IMAGES SHOWING CHANGES TO DUNE AFTER CYCLONE

