DUNEDIN CITY COUNCIL
Kaunihera-a-rohe o Otepoti

Report

TO:	Community Development Committee
FROM:	Parks Manager
MEETING DATE:	4 March 2013
SUBJECT:	**TE RAUONE EROSION UPDATE REPORT – ADDITIONAL INFORMATION**

SUMMARY

The Council discussed a rock breakwater structure and beach re-nourishment proposal at Te Rauone at their meeting on 24/25 January 2013 as part of consideration of the pre-draft 2013/14 Annual Plan. At that meeting the Council resolved to include a funding contribution toward the installation of the rock breakwater structure subject to a number of conditions.

As part of that conditional approval, Tonkin & Taylor have completed a review of the resource consent application and Te Rauone Incorporated have confirmed that it would own the rock breakwater structure and be responsible for maintenance and any liabilities.

This removes Council from any obligations other than a funding contribution subject to consultation on the draft 2013/14 Annual Plan and the resource consent process.

IMPLICATIONS FOR:

(i) **Policy:**	No
(ii) **Approved Annual Budget:**	$50,000 has been included in the draft 2013/14 Annual Plan
(iii) **LTP/Funding Policy:**	No
(iv) **Activity Management Plans:**	No
(v) **Community Boards:**	Otago Peninsula Community Board
(vi) **Sustainability:**	No

RECOMMENDATIONS

That the Community Development Committee:

1. Notes that the Tonkin & Taylor review findings will be used as part of Council's submission to the resource consent process.

2. Notes ownership, maintenance costs and liabilities will be the responsibility of Te Rauone Incorporation.

3. Notes that any funding contribution will be funded through general rates and the value of funding will be confirmed through the 2013/14 draft Annual Plan deliberations process.

INTRODUCTION

A joint proposal has been developed by Port Otago and the Te Rauone Coast Care Committee identifying a solution against the accelerated erosion occurring to and adjacent to Te Rauone Reserve.

The Council discussed this proposal at their meeting on 24/25 January 2013 as part of consideration of the pre-draft 2013/14 Annual Plan.

At that meeting the Council resolved to include a funding contribution toward the installation of the rock breakwater structure in the draft Annual Plan subject to the following:

"That the Council:

1. Note that protection of property is the responsibility of individual landowners

2. Note that the Council-owned Te Rauone reserve is currently undergoing significant erosion, particularly at the north end adjacent to informal sea-walls

3. Note that the proposed rock groyne, if it functioned as anticipated, might provide the reserve with short-term relief from these erosion issues, but would not prevent medium-long term inundation anticipated to occur as a result of sea level rise

4 Confirm that it will contribute a quantum to the construction of the rock groyne, subject to favourable results of the following:

a) A review of the design of the breakwater undertaken by its own experts
b) A report back to the Community Development Committee by March 2013:
i) Confirming a favourable outcome of the review
ii) Identifying an ownership structure that meets concerns of:
- liability
- on-going maintenance
- sea level rise effects on the groyne
- land owners involved
- confirmation of charging mechanisms
- any other risks of Council involvement

c) confirmation that on-going responsibilities and costs for sand renourishment requirements do not sit with Council.

5 Confirm that the quantum of the Council contribution will be a maximum $50,000 or a third of the total construction cost whichever is the lesser amount.

6 Confirm its willingness to engage with the community and other stakeholders to find solutions that will address both short-term erosion and longer-term sea-level rise issues, should the groyne proposal prove impossible to implement."

This report provides the findings of the independent review and other support information to allow for further discussions to occur.

DISCUSSION

Breakwater Design Review

An independent technical review of the resource Consent Application and Assessment of Effects was carried out by Tonkin & Taylor on behalf of the Council at a cost of $2,100.

The review findings have indicated that while the breakwater concept proposed appears to be a reasonable approach the application itself lacks technical detail and concludes:

1. That the application is lacking detail on the physical processes occurring in Te Rauone Bay;

2. That the concept of beach nourishment controlled by shore-normal structures is reasonable;

3. That the proposed breakwater is deficient structurally;

4. That the effectiveness of the scheme in terms of retaining sand in front of Te Rauone Bay and limited future migration to the south is not proven; and

5. That the effects of the proposal could not be assessed based on the level of detail included within the resource consent application and assessments of effects.

For the structure itself, the review identified that "*the seaward end of the breakwater appears inadequately designed to prevent slumping in the case of channel migration or current-induced scour and the suggested breakwater core material is unsuitable*". The review did acknowledge that the application identified further design work was likely before construction started.

For the beach itself, the review stated that "*we cannot conclude whether the proposed works are likely to be successful in maintaining an all-tide beach in the location indicated. However, we have concerns that the breakwater will be insufficient in sheltering the full extent of the nourished shore*". The review questioned whether long-term effects if sediment migrates to the south or of sand recycling had been considered.

The review also identified "*that no information is provided on whether sand that moves out of the system will end up in the deposition area to the south where it could exacerbate public access issues which currently exist there as described in the Shore Processes and Management Ltd. (2007) report or at Wellers Rock where shoaling is an existing issue*".

A full copy of the review has been provided as attachment one. Port Otago, Te Rauone Coast Care Committee and Te Rauone Incorporated have been provided with a copy of the review for their information.

These review findings will be used in a submission from the Council to the resource consent process and it will be the consent process that will determine feasibility of the proposal. The Council's financial contribution could be subject to consent conditions satisfactorily addressing the issues raised.

Ownership, Maintenance & Liabilities

Perpetual acting as Administrator for Te Rauone Incorporation has written a letter (dated 4 February 2013 and provided as attachment two) advising that at a previous meeting Te Rauone Incorporation had offered and is now reiterating and confirming that it can and will own the groyne and be responsible for maintenance and liability.

This letter provides clarity for the Council that what is now being sought is a one-off contribution towards construction of the breakwater structure and that any on-going maintenance costs or liabilities will remain with Te Rauone Incorporation.

The letter is requesting a copy of the full minutes of the meeting where the decision was made to commit $50,000, subject to limiting conditions into the 2013/14 budget plan. Te Rauone Incorporation is also requesting that the Council fully fund 50% of the project costs (maximum of $95,000) and in their words "would be genuine recognition of a helping hand shake (50/50) by the Council."

A copy of the requested Council meeting minutes has been provided and Perpetual as Administrator has been advised that their letter will need to be resubmitted after 9 March to be considered as part of the Annual Plan consultation process.

Sea Level Rise

While the effects of sea level rise have to be considered with any developments in and around the coastline the proposed rock breakwater groyne height is being designed to continue to function with the rate of projected sea level rise over the next forty years. Sea level rise in general will occur around the structure and private properties and the reserve will experience

regular inundation from the rise in the water table levels. This is an issue that needs to be addressed separately.

Charging Mechanisms

Ownership and maintenance responsibilities have been determined and confirmed that these will rest with Te Rauone Incorporated. Identifying a charging mechanism is no longer required as a payback loan scheme (similar to that used at Allanton) or a special rate does not apply to a non Council owned asset, so any funding contribution will be through general rating.

Te Rauone Reserve

In the overall project it has been proposed to tidy up the dune interface upon completion of the sand deposition works in conjunction with the community and the Council. These works could include restricting vehicle access and providing dedicated walkway access to the beach, removal of non-native vegetation to allow for existing dune grasses to re-establish and may also include some additional planting. The scale and details of the works are yet to be determined.

CONCLUSION

Tonkin & Taylor have completed a review of the resource consent application prepared jointly by Port Otago and the Te Rauone Coast Care Committee. This review identifies it being light on relevant supporting technical details.

Te Rauone Incorporated through their Administrator Perpetual has confirmed that it can and will be the owner of the rock breakwater structure and be responsible for any liabilities. This removes any maintenance or liabilities costs and risks from the Council.

Four funding options have been identified for further consideration.

Prepared by:

Lisa Wheeler
PARKS MANAGER

Approved for submission by:

Mick Reece
PARKS AND RECREATION SERVICES MANAGER

Approved by: Tony Avery
GENERAL MANAGER OPERATIONS

Date report prepared: 19 February 2013

Attachments

Attachment One	Te Rauone Rock Breakwater and Beach Nourishment Proposal: Technical Review by Tonkin & Taylor
Attachment Two	Letter from Perpetual Administrator for Te Rauone Incorporation dated 4 February 2013

Tonkin & Taylor

T&T Ref: 29111.000
15 February 2013

Dunedin City Council
PO Box 5243
Moray Place
Dunedin 9058

Attention: Lisa Wheeler

Dear Lisa

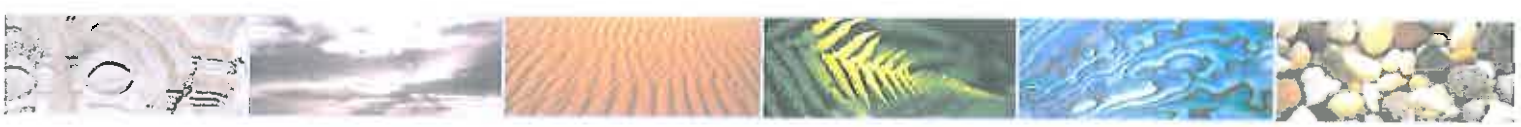
Te Rauone Rock Breakwater and Beach Nourishment Proposal: Technical Review

1 Introduction and scope of review

This memo sets out our review of Resource Consent Application No. LUC-2011-326 for a Land Use consent to nourish Te Rauone Beach by construction of a rock breakwater and deposit of sand by Port Otago Ltd. The primary review document is the Assessment of Effects titled *Te Rauone Beach – Rock Breakwater and Sand Nourishment*, prepared by GHD (July 2011, version 4) for Port Otago/Te Rauone Beach Coast Care Committee. The review focusses on the *coastal process and engineering matters* related to the application and does not address statutory, ecological, landscape or navigational issues. This review has been prepared to Dunedin City Council (DCC) to assist in their evaluation of the application.

Other documents considered in background, but not reviewed individually include:

Date	Author	Title
October 2004	Port Otago Ltd. Technical and Harbour Services	Te Rauone Beach Erosion
December 2007	Shore Processes and Management Ltd	Te Rauone Beach: Coastal resource management options.
January 2008	Mulgor Ltd.	Coastal Processes in Te Rauone Bay. Phase 2 monitoring Sep-Nov 2007
August 2008	Otago Regional Council	Te Rauone Beach – Wave, Tide and Current Monitoring
August 2009	NIWA/Metocean	Port of Otago dredging project: harbour and offshore modelling



2 Summary of Application

The Assessment of Environmental Effects begins with a brief introduction outlining the issue and the proposed works followed by a site description including the coastal zoning, sources of waves and sediment supply. The proposed works and consenting requirements are presented. The proposed works include:

- Construction of a rock breakwater extending offshore some 115 m including a 24 m long shore-oblique elbow. The total shore-normal length of the structure is 97 m. The breakwater is to be comprised of 3,750 m^3 of rock (volume shown on the plans, the AEE indicates 3,000m^3 only) with a crest elevation of 3.0 m above local chart datum.
- Nourishment of the Te Rauone Beach Reserve using 45,000m^3 of dredged material. The attached plan shows placement of sand along a 450 m length (assumed typo on page 8 of the AEE stating deposition along 45 m of coastline). This placed sand is to vary in width from 6 to 55 m and at depths from 0.5 to 2.0 m. Consent is also being sought for on-going nourishment for maintenance purposes on a 5 to 10 year basis. Approximate volumes for this are not provided, although they are predicted to be significantly less than the initial sand deposit and based on on-going monitoring.
- Excavation of a temporary sand storage pit approximately 150 m offshore of the shoreline and construction of temporary offshore pile moorings. This is to be used for storage of sand between dredging and placement on the beach.
- Improvement of the DCC reserve following construction. Details to be confirmed but likely to include planting of native dune grasses, establishment of pedestrian access ways and restricting vehicle access.

There is a brief discussion of alternatives options before an assessment of environmental effects for the selected option is presented. Statutory assessment and consultation sections are included along with suggested conditions of consent and conclusions. An overview of Te Rauone Bay is presented together with a Concept Design for Consent. This design includes a plan of the proposed works, two breakwater cross sections and beach section (Appendix A). Appendices include the Te Rauone Beach coastal resource management options report (Appendix B) by Shore Processes and Management Ltd (Single, 2007), Te Rauone Beach Benthic Sampling and Reporting study (Appendix C) by Benthic Science Ltd (2010), a review of the proposal for shore protection at Te Rauone Beach (Appendix D) by CPG New Zealand Ltd. (2011), consultation feedback (Appendix E) and site photographs (Appendix F).

3 Assessment of Application

Previous studies indicate that this coastline has been subject to extensive human modification over the past 100 years. This has included construction of shore-parallel structures for the purposes of channel re-alignment, infilling of tidal channels, protection of the backshore using a variety of ad-hoc seawalls and revetments and vegetation of the backshore with non-native species. The application suggests that the current erosion problem at the north end of Te Rauone Beach has a variety of causes including sediment deficits caused by modifications of the harbour entrance and the ad-hoc protective works installed by local residents. This is supported by the POL (2004) aerial photograph overlay which show classic seawall end effect erosion occurring at Te Rauone reserve immediately downdrift of the ad-hoc protective works protecting private property.

Conceptually, the proposed solution of extensive nourishment with a control structure to limit longshore loss appears to be a reasonable approach. However, the application is lacking in detail regarding baseline environmental conditions including wind, wave, and sediment characteristics and

longshore sediment transport regimes. This makes assessment of the suitability of any proposed works difficult. Extensive studies including a detailed hydrodynamic and wave study by NIWA (2009) have been undertaken, indicating this information is readily available.

Only one solution option has been seriously proposed and this appears based on the option suggested in the Shore Processes and Management Ltd. (2007) report. That report also suggests that other groyne options including a groyne field could be investigated and that the effect of groynes could be modelled. While details of the net longshore drift along this coast is not presented within the AEE it could be assumed based on the accumulation to the south that the net drift is in a southerly direction. It is therefore unusual to install a groyne on the updrift side of an erosion problem and would be more conventional to construct a groyne or groyne field downdrift of the problem area. A groyne field has the added advantage that each structure may be smaller as they are not retaining as long a segment of beach. They can therefore be constructed of smaller material and are less likely to significantly alter tidal flow regimes by projecting significantly into the ebb channel. Overall, these other groyne options and an option of nourishment without structures and ongoing sand movement along the beach should have been more thoroughly considered.

Based on the amount of detail provided within the AEE and supporting documents we cannot conclude whether the proposed works are likely to be successful in maintaining an all-tide beach in the location indicated. However, we have concerns that the breakwater will be insufficient in sheltering the full extent of the nourished shore. Additionally, the seaward end of the breakwater appears inadequately designed to prevent slumping in the case of channel migration or current-induced scour and the suggested breakwater core material is unsuitable.

Detailed commentary on the application is included in Appendix A

4 Conclusions

Review of the application leads to the following conclusions:

1. That the application is lacking detail on the physical processes occurring in Te Rauone Bay
2. That the concept of beach nourishment controlled by shore-normal structures is reasonable
3. That the proposed breakwater is deficient structurally
4. That the effectiveness of the scheme in terms of retaining sand in front of Te Rauone Bay and limited future migration to the south is not proven
5. That the effects of the proposal could not be assessed based on the level of detail included within the resource consent application and assessment of effects

5 Applicability

This report has been prepared for the benefit of Dunedin City Council with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
.....	.....
Dr Tom Shand	Dr Tim Fisher
Senior Coastal Engineer	Project Director

20-Feb-13
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Appendix A: Detailed commentary on the application

Section Reference	Assessment
2.	This section is brief considering the scale of the proposed works. We would expect detail on the existing structures, historical changes, environmental conditions including wind, wave (extreme and general climate) and current regimes, sediment characteristics and coastal processes including long shore sediment transport regimes. If these are not within the AEE body then they at least need to be included in an accompanying engineering report referred to by the AEE. Some of these issues are discussed in Appendix B but are not referred to directly in the AEE and are not to the level of detail required to undertake design or to allow thorough review of a design.
2.	There is limited supply of new sand at the site which is attributed to the constraints formed by entrance channel including the mole constructed at the harbour entrance in the late 1880s. However, this statement is not supported by references or additional discussion. Overall the longshore sediment processes and trends are not quantified well enough to inform design.
3.1	Sand is stated to be of similar nature but likely to be slightly coarser and more stable than the fine sand of the existing beach. This should be quantified in terms of the d_{50} or ideally grading curves for both existing and proposed nourishment material.
3.1	It is described how the rock breakwater will shelter the shore from waves penetrating into the harbour through the entrance, however, no estimates of the wave shadow region or refraction patterns are provided. In our opinion, any sheltering is likely to be limited to northern portion of the nourishment and it is possible that sand nourishment in front of Te Rauone Reserve could still be lost to the south. It is suggested that the breakwater will act as a headland holding the nourished beach in place and that the breakwater will prevent sand moving north along the shore. However, insufficient details as to the longshore sediment processes are included to review this conclusion. Critically is the net drift or potential drift in a northerly or southerly direction and so will the placed sand be on the updrift or downdrift side of the breakwater and is the breakwater design sufficient to hold this sand.
3.2.1	If the rock breakwater is intended to divert currents away from the nearshore some scour could be expected along its northern edge. No assessment is provided to confirm that the 0.5 m toe depth indicated in Profile B in drawing A1.11103_1_c is sufficient and what the consequences of undermining would be. Additionally, it is possible that the breakwater will be vulnerable to changes in the channel configuration as either the other historic groynes continue to degrade or larger scale changes to the channel occur. Is the seaward toe likely to sufficiently deep to prevent failure?
3.2.2	The report states that "The deposition area relates to approximately 45 metres of coastline..." We assume this is a mistake and it should be 450 m?
3.2.2	Details of the nourishment sand characteristics and how they compare to the existing

	material would be useful for assessing not only aesthetic and landscape issues but also for assessing longshore drift rates, expected residence time, expected re-nourishment frequency and volume and potential for shoaling further to the south.
3.2.2	No information is provided on whether sand that moves out of the system will end up in the deposition area to the south where it could exacerbate public access issues which currently exist there as described in the Shore Processes and Management Ltd. (2007) report or at Wellers rock where shoaling is an existing issue?.
3.2.2	The crest level of beach and front face slope information is not provided.
3.3	Details on construction of the 115 m breakwater are insufficient and design may not achieve a stable structure. Geotextile is proposed beneath the homogeneous rock section in Profile B only but not beneath the structure or around the fine core material in Profile A. This will lead to loss of fines through the armour material when subject to wave action. Details on how the core will be placed so as not to be damaged by tidal flows or wave activity before the armour rock can be placed is lacking. A clay or fine quarry debris core is suggested in the proposal but clay is certainly unsuitable for a breakwater core and the material should be a granular, non-cohesive material (run of pit or similar). A geotextile is required to minimise loss of fines and depending on the size of the armour layer, a secondary filter layer may be required. Refer standard design texts such as the CIRIA Rock Manual for guidance on rock sizing and construction methodology.
3.6.1	Details on the surface area occupied by the breakwater including the wide, curved landward end of are not provided.
4.	Consideration of alternative is insufficient does not appear based on economic or technical reasons but rather uses a single option suggested within the Shore Processes and Management Ltd. (2007) report. This report also suggested other groyne configurations including a groyne field could be feasible and that modelling of groyne options could be undertaken. Groynes within a groyne field would have the advantage of being shorter (as they retain relatively less material each) and easier to construct and not have the potential to interrupt longshore flows (hydrodynamic and sediment transport) to the same extent as a single large structure.
5.1	Agreed
5.2	What are the long-term effects if sediment migrates to the south? Are there possible adverse effects associated with sand accumulation? Have you considered sand recycling (i.e. moving from the south back to the north as it migrates)
5.2	Is there potential for placed sand to be lost onshore due to aeolian processes? This may cause hazard or annoyance for local residents? Some mitigation in the form of dune planting may be required.
5.8	Raises a number of possible effects of the breakwater including sheltering of wave energy and vessel wake from the north, prevention of sand migration towards the north and reducing alongshore tidal currents. However, while these conclusions are not unreasonable, these are not supported by sufficient technical background to be adequately assessed.
5.8	It is suggested that submerged groynes have compartmentalised Te Rouone Bay and that it is not possible for this small local proposal to affect further to the south. While there is likely limited exchange between Te Rouone and coastline further to the south, the submerged groynes and small headlands are unlikely to completely compartmentalise Te Rouone Bay and some effect to the south, though likely minor, is possible due to either interruption of hydrodynamic processes by the shore-normal structure or interruption of longshore sediment processes.
5.8	Shoaling is noted to be occurring at Wellers rock. Loss of material from the constructed

	beach to the south could contribute to further shoaling. Some loss is likely due to length of nourished beach compared to the length of the breakwater. The applicant is applying for on-going maintenance nourishment indicating they believe some loss is likely also. It should therefore be defined who would be responsible for monitoring and removing additional sand build up or extending the jetty and at what trigger point.
5.8	Current breakwater crest is 3.0 m, or ~0.85 m above MHWS level. While no detailed calculations on design wave climate and runup extents have been provided, this crest level may be adequate to limit present-day serious overtopping and risk to public safety (though review of these calculations would be required to verify). Any further sea level rise would likely require raising of the breakwater crest.
8.1	More frequent monitoring than five yearly surveys should be considered. At a minimum, pre- and post-construction surveys of the nourished beach and areas further to the south should be undertaken and then annual surveys should be undertaken and analysed to determine whether migration of sand is occurring. Thresholds for re-nourishment should be set as well as thresholds for dredging or removal of sand from the south if adverse accretion is found to be occurring .
8.1	Submission of full engineering drawings and specifications for review one month prior to construction probably isn't long enough to enable thorough review and provision of comments which could be incorporated. Given the lack of detail contained within the AEE, review of these documents is desirable and incorporation of review comments prior to construction would be more sensible.
8.1	Planting of dune grasses is mentioned but there should be a requirements for planning to ensure minimal loss of sand onshore through aeolian processes
9	Environmental impacts of 100 m long shore-normal structure are likely to be substantially different from shore-parallel works involved in widening Harrington Point Road.

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4 February 2013

The Manager
Dunedin City Council
P O Box 5045
Dunedin 9058

Dear Councillors and Staff

Te Rauone Incorporation - Groyne Funding – an open submission letter

Te Rauone Incorporation ("TRI") welcomes the Council's decision to commit $50,000, subject to limiting conditions and put that in the 2013/14 budget plan.

However, the Board of TRI makes the following further submission, comments and responses.

We request from council a copy of the full minutes of the meeting where the commitment was given. We are planning to have an AGM in March/April calling upon the more than 250 Maori owners to consider the matter and how it is progressing and what action should be taken.

TRI asked Council for $85-95,000 being half of the estimated $180,000-190,000 to build the rock groyne, with TRI funding the other half. This is a need, not a want – a community need. To commit another $45,000 to bring it up to the maximum of $95,000 would be genuine recognition for a helping hand shake (50/50) by the Council.

We know that this is the maximum cost and if it can be done cheaper it will be. TRI has strived to be a good ratepaying citizen of Dunedin that does not complain. Our application is a type of funding model as a private ratepaying partner. This is a funding arrangement that the council has seen very little of in the last few years and we thought you would have welcomed such an approach. TRI will struggle to meet its own commitment of $95,000 and has no easy access to funds to commit to this. Where the Council imagines the rest of the shortfall comes from is anyone's guess. If the Council has a view on contribution from others, then they should be declared and advised to TRI who are the principal applicant in this matter. TRI can make arrangements to approach others to support the groyne project and this will save Council staff time and costs. But, the talk about targeted rates is not welcomed. TRI pays its rates as the adjoining land owner and targeted rates would see us hit again, on top of the 50% we are already offering toward the project. The request to Council is as a funder and we are not asking council to be a business manager of the groyne project. We know the core business of the council is to meet the needs of its ratepayers. Many of our lessees and other private ratepayers who live on the east of the Otago Peninsula, have told us they get less for their rates than those (ratepayers) 'in town'. We are also distressed by various overvalued council comments reported in the Otago Daily Times ("ODT). These have the propensity to alienate and devalue this

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community, inflaming an anguish that is already apparent. The perception amongst many, is that higher value private properties and council assets 'in town' are more important and favoured by council, with red tape often cut under urgency. Our beach watchers says that Te Rauone Beach continues to lose a metre a month.

The comments reported, in respect of the following are in our view mostly disingenuous (a) sea level change, (b) and with that the temporary nature of the groyne, (c) private property protection and (d) council staff need to look into the matter themselves with experts. To leave these sound bites unanswered and in isolation is not fair on ratepayers or the community. *We comment here as follows;*

Accepting that potential sea levels will rise, and not do anything, is a bewildering conclusion. Does that mean, *so lets not do any work around the harbour, including harbour roads or facilities on that basis?* This rationale clashes more than once with Council's own actions, with the likes of the Council owned and funded $80,000 plus, rocky bird stoop in the Andy Bay Inlet. *As an aside, while there will probably be other examples of similar projects and works, the one thing we are certain of 'birds are not ratepayers'.*

The groyne will actually service a purpose to protect and is a permanent solution to remove and dissipate the energy directed down the channel, along the Harington Point road wall. To say it is short term or temporary, creates an unreasoned fear that lacks substance. The groyne will assist to accrete sand west, in front of private property and on to the Te Rauone beach reserve. Unfortunately the council road (reserve) north of the proposed groyne leading to the military gates at Taiaroa Head, exacerbates the erosion and has been quietly overlooked by Council in terms of its responsibility. To look at the issues in isolation is simply bureaucratic. The road has a hard rock wall built to protect it. The wall does not reduce the prevailing wind/wave water energy, but directs and channels the energy to the 'softer' private property west of it. We know there will be no evidence of consideration or expert advice by the council's road division, that it took into account any planning around addressing this issue when the road wall was put in place, although we can say, the walled road is atheistically pleasing. Arguably a matter of contributory negligence can be raised and leads into identifying this is a linked roading issue. We are also mindful and remind Council, that Maori were the earliest settlors and the road (reserve) was Te Rauone land before being taken for the benefit of the public. The Council's Te Rauone beach is a city reserve that deserves protection as an amenity for all Dunedin ratepayers as well.
The issue of private property forgets that the private properties on the seaward side, act as a buttress to protects council's Harington Point road. The lessees have each done what they can do, as required under their leases to mitigate the erosion. When the private property and beach are finally eroded, if nothing is done, it will certainly attack the Council road. Recognition that this peninsula highway which has 400,000 tourists transiting it annually only makes this a value added proposition. The fact that the road is an infrastructure asset worth protecting is self evident, but not at the expense of private property or the council reserve. Council indifference to this matter, and letting it fall into the trap of short term thinking is not becoming of New Zealand's most prestigious city.

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Scientific studies and reports, funded by Port Otago with the cooperation of residents are to hand. Port Otago, a highly professional and competent business that is fundamental to the economic base of the city and region, will coordinate the building of the groyne. Port Otago carrying out harbour work, will provide sand at no cost. The groyne is passive as a pile of rocks can be. We understand Council is in receipt of these independently professionally prepared reports Port Otago have provided. Council should be able to rely on these without having to create much extra work for its staff or consultants to re-examine the issue. To engage experts at a cost is duplication and is from funds which could go to the groyne or to other Council projects. Underlying these reports and the approach taken is practical reasoning combined with common sense, to do the job for minimal cost with a permanent outcome.

Councillors also declared issues about the Council (1) owning the groyne and (2) on-going liability for any maintenance. *We comment as follows;*

While Port Otago raised these questions to Council, we had proposed at a meeting and reiterate, that TRI can own the groyne and be responsible for maintenance and liability – so no future cost or liability to Council. The council need not own it. Te Rauone Incorporation will own it and remove any doubt. The Council need not waste any time for its staff's time to evaluate these matters.

Summary

It is in the very best interest of Council's most important stakeholder, it's ratepayers, to assist to fund the building of the groyne. It will stop more than 40 years of erosion and re-nourish a community asset. Te Rauone Incorporation being a neighbouring land owner will see its many residents relieved of the worry that the land already encroached, will re-stabilise, and over a relatively short time be repopulated with sand. Replanting with appropriate flora and fauna will take place. The groyne will assist to benefit the well being of Dunedin as a whole and has far more benefits than costs in the final analysis.

We respectfully make this further submission and ask the Council to re-consider its decision.

Yours sincerely

for **Management Committee**
Te Rauone Incorporation

Inquiries in the first instance to Martin Haanen, Trust Consultant
Administrator for Te Rauone Incorporation