



Gisborne District Council

Wainui Beach Management Strategy

Wainui Beach Management Strategy

FOREWORD

This document sets out a management strategy for the future of the Wainui Beach foreshore/foredune areas and Tuahine Point/Headland. The recommendations contained therein have been discussed with beachfront property owners and the wider community.

The results of the first formal consultation process undertaken August - November 2002 are included in this strategy document.

Discussion of particular aspects of the proposed strategy continued with property owners, wider community interest groups and sections of the Gisborne District Council.

There has been further survey and site investigations, a pre-feasibility study undertaken on a particular strategy option and a Peer Review of the total Draft Strategy, by Consulting Oceanographer, Dr Paul Komar.

Changes have been made to the original Draft Strategy as a result of the consultation and Peer Review process. This final Draft of the Wainui Beach Management Strategy is presented for public comment before it is submitted to the Gisborne District Council for adoption.

S W Patrick
Chairman and Committee Manager
Wainui Beach Management Strategy Committee
25 June 2003

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1.0 EXECUTIVE SUMMARY

This Wainui Beach Management Strategy (W.B.M.S.) is the result of a Gisborne District Council initiative to facilitate the development of a management strategy, through partnership with the community. Council identified the need for this facilitation/partnership approach in July 2000 as there are a number of unresolved issues at Wainui Beach that need addressing. Issues of beach foredune erosion and property protection, Environment Court appeals, increased beach and dune/Reserve usage and the growing community at Wainui, are all part of the need for an integrated management strategy. With funding assistance from a community advocacy grant, via the Department of Conservation, this has been possible.

This strategy document is not a statutory document, however once adopted by the Gisborne District Council, it will provide clear guidelines as to what activities can take place on the beach/foredune areas. It is anticipated that Council would support Resource Consent applications for protection works recommended in the strategy document.

The Management Strategy has been developed with the long term values of Wainui Beach in mind. Values such as the importance of the unique qualities of the volcanic and shell mix sand which has minimal sources for “new” sand in this closed pocket-beach,¹ the growing status of Wainui as an international surf beach, and the value of the beach to the developing Wainui community.

The Management Strategy Committee has recognised the fact that Wainui Beach has several natural divisions and varying physical features over its 4.2 km length. Any management strategy proposals for Wainui Beach must be made on the basis of considering what is the best practical option for each section of the beach, while also ensuring each section is integrated and complimentary and not detrimental to any other section. Each strategy that is proposed in his report has varying degrees of benefit to individual beachfront properties and the wider community. This is discussed in detail in Section 4 of this report.

2.0 BACKGROUND AND HISTORY

Wainui Beach is the fastest growing residential area in the Gisborne/Tairāwhiti region. It is a world renowned surf beach that plays a major part in the development of New Zealand’s best surfers. Its natural beauty and easy accessibility see it utilised by ever increasing

¹ Dr P Komar, “The Erosion of Wainui Beach, Gisborne” - 1996

numbers pursuing a variety of recreational interests. These amenity values of Wainui Beach are increasingly important factors in Gisborne's tourism potential.

Throughout New Zealand residential beachfront property has become highly sought after and Wainui Beach real estate echoes that trend. Over the past three years the bare land value of Wainui beachfront property has more than doubled. As with other coastal areas in New Zealand and in fact around the world, beachfront property protection from sea erosion is an ongoing problem where building/residential development takes place on the hazardous areas of the beach foredune.

Wainui Beach is described as a "dynamic" beach². Dynamic beaches are subject to the greatest change in beach profile, produce the most pronounced rip current embayments and therefore the foredunes at such beaches are generally more vulnerable than those on "reflective" or "dissipative" beaches³.

The southern half of Wainui Beach (2.1 kms), has 106 allotments of intensely developed beachfront residential property. Attempts at property protection from foredune erosion have been undertaken ever since baches and dwellings have been built on the foredune. A brief synopsis of these works over the decades include:

- Late 1920's The "Pyke's" concrete wall built south of the Stock Route.
- 1940's Sand or cobble filled Tar Drums.
- 1950's Manuka Fascines, stone set in concrete walls, timber walls.
- 1960's Sheet pile spur groynes (28), railway irons with manuka fascines, double row railway irons with manuka fascines.
- 1970's Gabion basket filled with cobbles longitudinal protection, double row railway irons and log wall longitudinal protection, timber walls.
- 1980's Rock placed behind log-rail seawall.
- 1990's Various rock works undertaken.

The damaging series of storms throughout 1992 caused considerable damage to protection structures, the foreshore marine silt base and parts of the foredune on the southern section of Wainui Beach, particularly south of the Stock Route/Oneroa Road. This resulted in some "emergency rock works" being undertaken and subsequently resource consent applications by the Wainui Property Protection Committee

² Dr P Komar "The Erosion of Wainui Beach, Gisborne" - 1996

³ D H Peacock, Wainui Beach Hearing Submission - 1998

(W.P.P.C.) to complete partial emergency work as well as extend rock protection work to other areas.

In December 1992 the Gisborne District Council resolved to discontinue all beach works within the framework of the Wainui Beach Fore-dune Protection Scheme Rating Area. What followed through 1992 to 1999 was a series of Environment Court and High Court hearings and appeals as the application by the W.P.P.C. to construct foreshore protection works was not consented to. The most recent appeal led to mediation and the setting up of a joint working party with Gisborne District Council, Department of Conservation and local residents.

In July 2000 the Gisborne District Council resolved to reactivate the Wainui Beach Fore-dune Protection Special Rating Area in response to a favourable poll of property owners. The joint Working Party to determine the range of options for beach management at Wainui, then led to the “Wainui Beach Open Days” in March 2001. From respondents to the “Open Days” a Wainui Beach Management Strategy Committee was formed and this Committee has sought to identify the preferred management strategy for Wainui Beach.

The Wainui Beach Management Strategy Committee is:

- | | | |
|------------------|---|--|
| Stewart Patrick | - | Chair and Committee Manager |
| Chester Haar | - | Wainui Councillor |
| Dick Calcott | - | Representative from Wainui Property Protection Committee |
| Brett Butland | - | Representative from Department of Conservation |
| Ingrid Searancke | - | Wainui Resident and Tangata Whenua at Wainui |
| Sandy Bull | - | Wainui Resident |
| Mac Johnson | - | Wainui Resident |
| Kathy Green | - | Wainui Resident |
| Doug Stewart | - | Wainui Resident |
| Nick Tupara | - | Ngati Oneone Representative |

This management strategy committee has considered the findings and opinions of the many professionals who have studied Wainui Beach, as well as the opinions of the local residents and community, as expressed through the Beach Open Days, the Management Options Survey, the draft strategy document, consultation meetings and subsequent questionnaires and submissions.

3.0 VISION STATEMENT

The agreed outcome of the Wainui Beach Management Strategy is the vision statement that was formulated at a meeting of the Working Party, 16 January 2001. That vision statement is:

“The protection and enhancement of Wainui Beach and adjoining reserves for the use and enjoyment of future generations.”

4.0 PREFERRED BEACH MANAGEMENT OPTIONS

The beach/foredune area over the whole 4.2 km length has been considered holistically, as sand derived from the foreshore and foredune at one end of the beach can migrate to the other end of the beach and vice-versa. However, the beach may also be divided into sections or “compartments” each with different characteristics which require different management strategies.

The strategies promoted for each section of the beach have been chosen such that any adverse effects on neighbouring sections of the beach are minimised as far as possible.

4.1 SECTION 1 – TUAHINE POINT/HEADLAND (POINT TO OLD GROUYNE 28)

(a) History and Physical Features

The correct Maori name for what is commonly known today as Tuahine Point, is Tuahene-O-Aue Te Rangi, as provided by local historian of this area, Mrs Ingrid Searancke.

Tuahene-O-Aue Te Rangi is an ancient male ancestor of this area.

At the Point there used to be ancient burial caves, however these eroded into the sea by around 1900 AD.

Tuahine Point/Headland consists of steep cliffs of banded mudstones and banded sandstones that dip toward the sea. The primary cause of erosion of the headland is the erosion of the toe by the sea. Sea cliffs are retreating at between 0.2m and 0.5 m per year⁴.

⁴ Dr J G Gibb, Wainui Beach Hearing Submission - 1998

To a lesser extent rain, wind and sun are also responsible for some of the slump flow and slip erosion⁵.

A major landslip occurred in September 2001 immediately south of the log rail and rock toe protection that commences from the Old Groyne 28, south of Tuahine Crescent.

(b) **Existing Protection Works**

There are no protection works south of Old Groyne 28.

(c) **Property/Housing**

Tuahine Headland is predominantly owned by (the late) Mr Les Bell, 34 Lloyd George Road, Gisborne. The headland is grazed as part of his farm by cattle. There are no buildings or homes on the headland.

(d) **Recommended Management Strategy – Section 1**

That approximately 20 hectares of Tuahine Point/Headland be fenced off and retired from grazing. That regeneration of native plants be encouraged as well as new planting undertaken with community input. Pest and noxious weed control will be undertaken by Gisborne District Council Pests and Plants section.

To achieve this the co-operation and generosity of the current landowners will be required.

The farm of the late Mr Les Bell covers the total headland of Tuahine Point. There are two small parcels of Maori Land that are part of the Bell farm property and these are likely to be excluded from any covenant that would be placed on the land.

Discussions were held with the late Mr Bell who was 100% in favour of the covenant reversion project. Further discussions have now been held with members of the Bell family who are keen to forge ahead and see Mr Bell's wishes fulfilled.

Applications for grant assistance have been made to the QE II Trust and the East Coast Forestry Project – Reversion To Indigenous Option. We are pleased to advise these applications have been successful and will provide for fencing off the retired area and the initial thrust of planting. The QE II covenant detail is currently being worked through. Wainui Beach Strategy Committee member, Sandy Bull, is

⁵ J G McKee, Chief Soil Conservator E.C.C.B. Report, 1978

the Co-ordinator/Manager of the proposed area to be covenanted. Other funding for future planting work may be sought from Charitable Trusts such as Project Crimson.

The Department of Conservation are supportive of this strategy proposal for Tuahine headland as they recognise the significance of the area for particular plant species. Department of Conservation also consider Tuahine Point is the southern most point of naturally occurring pohutukawa in the North Island.

Community support for this proposal is very strong with 98% of the Wainui Beach Management Strategy Questionnaire respondents in favour and 48 respondents indicating they are prepared to assist with planting programmes.

The erosion of Tuahine Point Headland is an irreversible natural process and any conservation strategy to attempt to slow this process down must be viewed in that light.

(e) **Assessment of Benefits and Apportionment of Costs – Section 1**

This project provides some benefit to the Wainui Beach community and Gisborne District in terms of its conservation values, however it would not be financially viable without considerable input from the East Coast Forestry Project Reversion Grant, QE II Trust, other charitable trusts and volunteer labour.

Gisborne District Council input to the project should be limited to facilitation of the project and pests and weed control work.

4.2 **SECTION 2 – OLD GROUYNE 28/COMMENCEMENT OF LOG RAIL WALL TO TUAHINE CRESCENT ACCESSWAY**

(a) **Physical Features**

This section marks the start of the Tuahine Point/Headland at the southern end of Wainui Beach. It consists of the same steep cliffs of banded mudstones and banded sandstones that dip towards the sea. The papa (mudstone/sandstone) wave cut platform in this area does reduce wave energy at the shoreline as wave heights possible are directly related to the depth of water.

The down-cutting erosion rate on the wave cut platform has been monitored over the past decade and averages out to 2 mm per year. A significant increase in the erosion rate has been observed over the Winter and Spring of 2002 whereby the down-cutting increased by 7 mm over six months. Weather and sea conditions with regular south - south east storm swells, saw sand stripped from this southern section of the beach over this period.

Another physical feature of this section are the large cracks opening up in the ground at the top of the ridgeline and even beyond the ridgeline as the movement of large areas of this hillside is constantly towards the sea. Monitoring of the movement of two of these cracks commenced in January 2002. As at 30 April 2002 no change had occurred while the district experienced the driest autumn on record.

After the heavy rainfall event of 6 August 2002, movement of plus 5.8 cms has been recorded. Further movement is expected when significant rainfall events occur.

(b) **Existing Protection Works**

The old steel Groyne 28 position marks the commencement of the railway irons and log wall with rock placed behind to the hill toe. The railway irons are now in very poor condition with corrosion and constant abrasion eating them through. They are ugly and becoming dangerous as they break up, leaving jagged edges. The logs placed between the two rows of irons are often coming free as it becomes more difficult to tie them down into the irons. The rock behind the log-rail wall is in reasonable condition but is randomly placed with no filter layer underneath. The top of the existing rock is at 2.5 – 3.0 metres R.L. on average.

The “Concrete Groyne – No 27” is also within this section at the point where the beach ends and the headland cliffs rise steeply. This concrete groyne is too short for its intended purpose of preventing sand movement, but it does mark a 20 degree change in the aspect of the beach coastline. North of the groyne the coastline is basically north/south in its aspect and south of the groyne it turns to south, south west/north, north east. The cliffs south of the concrete groyne are more exposed to the most damaging storm waves from the south east.

(c) **Property/Housing**

There are nine sections with title and a total of eight dwellings on the seaward side of Tuahine Crescent between Groyne 28 and the Tuahine Accessway that lie within the “Extreme” to “Moderate” Coastal Hazard Zones (Wainui 2001). Of these eight dwellings there are six that are situated wholly or partly within the “Extreme Risk” Hazard Zone.

(d) **Recommended Management Strategy – Section 2**

1. **Remove the Rail Irons and Log Wall**

The rail/log wall is deteriorating rapidly and is considered unsuitable as a future property protection option from environmental, aesthetic and coastal engineering perspectives. The estimated cost of removal of 192 metres of log/rail wall is \$10,000.

2. **Construction of a New Rock Revetment**

Protection of the cliff toe of this section of Tuahine Point is crucial for reducing the risk of landslide that threatens all properties within the Coastal Hazard Zones at Tuahine Crescent.

Theoretically a “Seawall’ (4.0 m to 6.0 m R.L.) would be necessary for “full” protection of this area with costs ranging from \$1,800 to \$3,000 per lineal metre.

The smaller “revetment” option at 3.5 m R.L. and costing approximately \$600 per lineal metre may be the most viable option but would need to be acknowledged as a “partial” protection option.

The minimum size Rock Revetment would follow the concept Design Revetment (No 1) as presented to the Wainui Beach Information Open Days by Gisborne District Council Engineer, Dave Peacock.

The toe of the revetment would be cut into the papa shelf 0.5 metres to a reduced level of approximately - 0.25 metres R.L. (above mean seal level), with a 3:1 slope rock face up to a reduced level + 3.5 metres R.L.

North of the concrete groyne the revetment could be reduced in height by 0.5 metres to 3.0 m R.L. Specific

design with filter layer and specific rock size is required and can be provided by Gisborne District Council Rivers and Land Drainage Asset Manager, Dave Peacock.

The estimated cost allows for the utilisation of existing rock behind the log/rail wall.

The estimated cost of this revetment work is:

Old groyne 28 to concrete groyne (150 metres)	\$91,000
Concrete groyne to Tuahine accessway (42 metres)	\$23,000
Plus Design, Supervision Approximate cost	\$4,000

(Note: Resource Consent costs can vary significantly, therefore no estimate is provided at this stage).

3. **Cobble Berm/Dynamic Revetment**

A recommendation from Dr Paul Komar in his peer review of the Draft Wainui Beach Management Strategy, 21 January 2003, is that this strategy incorporate the cobble berm or dynamic revetment concept, to front the proposed conventional rock revetment.

The use of natural cobble berms and beaches to dissipate wave energy and offer shore protection is of growing interest in coastal engineering with successful examples on the California coast. At Wainui a cobble berm placed on top of the mudstone/marine silt base would help armour that base in front of the rock revetment.

In summer beach conditions the cobble berm will be covered naturally by sand.

It is proposed that a cobble berm is developed in front of the Rock Revetment to be constructed in Sections 2 and 3 at Wainui Beach. This cobble berm will be

developed using the existing cobbles that naturally exist on the shore at Wainui and supplemented by more cobbles at times when parts of the beach sand is eroded down to the marine silt base. These cobbles may be sought from their source in the Tuahine Point area. Such work would be subject to resource consent.

4. **Planting/Vegetation Management on Cliff Face**

All property owners are to be encouraged to keep as much appropriate vegetative cover as possible on the cliff faces above the Rock Revetment line. Vegetation will not hold the cliff face as such but will assist in slowing down the weathering process.

This management strategy for this section of the beach is in line with the recommendations from Dr Paul Komar⁶ and Gisborne District Council Engineer, Dave Peacock⁷.

(e) **Other Shore Protection Options Evaluated but not recommended at this stage**

1. Beach Nourishment

Gisborne District Council Engineer, Dave Peacock, Dr J G Gibb and Dr Paul Komar all advise that beach nourishment, the import of sand from an outside “borrow” source, is a viable response to the erosion problems experienced at Wainui Beach. The main problem is finding a suitable source of sand in view of the unique qualities of the sand and shell mix sand found on Wainui Beach and obtaining it in sufficient quantities at an economic cost. There is also a cultural perspective to be considered in finding an acceptable source of sand.

Some suitable sand is available commercially sourced from Whangara but this could not be used in substantial quantity due to cost. Some use of this sand is proposed in our strategy of dune restoration and Geotextile sand bags, when supply for the bags is

⁶ Dr P Komar, “The Erosion of Wainui Beach, Gisborne” – 1996 and “Review of the Wainui Beach Management Strategy – 28 May 2003”

⁷ D H Peacock “Options for Wainui Beach,” EWTR92/1 - 1992

not feasible from the Wainui Beach source in proximity to the site to be protected.

2. Artificial Reefs

There are artificial reef projects around the world that seek to provide improved surfing conditions as well as shore protection. (Nearest examples are at Surfers Paradise, Australia and the proposal for Mt Maunganui, New Zealand).

Our advice from the surfing community in Gisborne is that the surf at Wainui is not in need of betterment by an artificial reef.

It would not be supported by surfers. The substantial capital cost could not be justified on the basis of shore protection alone.

There is a dome shaped concrete moulded product known as “Reef Ball” that is interesting, in that they are designed to mimic natural reef systems and can be floated into position before submerging. A possible future application at the southern end of Wainui but would not primarily be for coastal protection.

(f) **Assessment of Benefits and Apportionment of Costs – Section 2**

It is necessary at this point to discuss the setting of a fair basis for determining the apportionment of costs of recommended property protection works on Wainui Beach.

First of all a clear distinction is made between “Direct Benefits” and “Indirect Benefits” of particular works.

Direct Benefit is assessed to those properties where the risk of damage to the property is to be reduced. The Coastal Hazard Zones (2001) of Extreme Risk (CH1), High Risk (CH2) and Moderate Risk (CH3) can be used to determine the extent of Direct Benefit from works in a particular section or sections of the beach.

Indirect Benefit is assessed to a wider portion of the community on the basis of an improvement/enhancement to that community.

The second point to note is that the recommended works for each section of beach means no property can be treated in isolation along the foreshore and individual property protection can only be effective when the integrity of the whole scheme for that section is ensured. A communal attitude will be required from those assessed as receiving direct benefit from the recommended works, which leads to a discussion of how best to apportion the costs to direct beneficiaries?

The recommended protection works are designed to reduce the risk of damage to property owners capital assets (*i.e.* land and improvements), therefore property owner contributions could be fairly assessed as a factor of the Capital Value of their property. This is the current method used for rating of the existing Wainui Beach Foredune Protection Rating Area (WBFPR).

We note there is some dissatisfaction with the existing “Capital Value” assessment basis used for the WBFPR as it appears the “Land Value” is the key component for beachfront property owners. Land Value rating is simpler, provides greater certainty and is likely to fluctuate less markedly than Capital Value rating.

Another possible method of apportioning the costs of property protection works is by “Land Area”, using the Coastal Hazard Zones as differentials.

Examples of the effect of each practical contribution/rating system will be prepared for identified beneficiaries to consider and decide upon. A majority decision would be sought.

1. **Removal of Rail Irons and Log Wall - \$10,000**

The removal of the log/rail wall and all other rail works is seen as a significant improvement to the environment of the southern Wainui Beach foreshore. An improvement such as this will benefit all beach users, local residents and the wider Gisborne community. On this basis up to 50% of this cost could

be fairly apportioned to the DRA1 and DRA1A Rating Zones.

The new rock revetment proposed to replace the log/rail wall cannot be built until the wall is removed. Therefore the direct beneficiaries from the revetment, Tuahine Crescent “cliffside” residents, would pay around 50% of this cost.

2. **New Rock Revetment –188 metres - \$118,000 (plus resource consent costs)**

The costs of this new revetment work would fall primarily with the Tuahine Crescent residential properties that are situated within the Coastal Hazard Zones (Wainui 2001).

A small percentage (say 10%) could be apportioned to the total Wainui Beach Foredune Protection Rating Area on the basis of “Indirect Benefit”, whereby the holding of this southern beach corner will help, in a small degree, to maintain the long term shape of the beach.

3. **Cobble Berm/Dynamic Revetment Development**

Construction of the cobble berm will be incorporated as much as possible into the construction of the new rock revetment using cobble material that is uncovered in the process of construction. Further additions to the cobble berm will be made as and when it is uncovered in erosion events. These further additions would be funded by annual maintenance from the Wainui Beach Foredune Protection Rating Area.

(g) **Consultation/Questionnaire Results** - Sections 2 and 3 - removal of log/rail wall and rail iron and the construction of a sloping rock revetment.

As at 1 January 2003, we had received questionnaire responses from 80% of the beachfront property owners in Sections 2 and 3. Of these responses, 75% of these beachfront property owners are in favour of the proposed rock revetment strategy for Sections 2 and 3.

With regard to the apportionment of the capital costs of the proposed work in Sections 2 and 3, 62% of beachfront

property owners favour apportioning the local share by Hazard Zone area measurement on each property.

The wider Wainui Community questionnaire response shows 79% of the respondents are in favour of the proposed rock revetment strategy.

(Note: The overall proposed strategy for both Sections 2 and 3 are very similar and so were combined for the consultation questionnaire with regard to the rock revetment strategy).

4.3 **SECTION 3 – TUAHINE CRESCENT ACCESSWAY TO WAINUI STREAM**

(a) **Physical Features**

This southern section of the beach is approximately 430 metres in length. The beach foreshore has an estuarine silt base which has been exposed and eroded downwards, particularly in the early 1990's series of storms.

Approximately 10,000 cubic metres of estuarine silt (or 'pug' as it is commonly referred to) was lost during these storms. The beach is backed by a low escarpment comprising mostly estuarine silt with a capping of sand.

(b) **Existing Protection Works**

The Log/Rail Wall with rock behind continues north on this section to 52 Murphy Road, a distance of 160 metres. The wall and rock is in poor condition, as described previously for Section 2(b). From 52 Murphy Road to Lloyd George Road access steps there is 70 metres length of sloping Rock Revetment supported with rails at its base. This rock revetment is approximately 1.0 metres thick and the base at R.L. 0.0 metres with a slope of 3:1 rising to + 3.0 metres R.L. From Lloyd George Road north to old groyne 22 (85 metres) there is a rail and rock wall.

From old groyne 22 north to Wainui Stream there are rock filled gabion baskets, constructed by the previous East Cape Catchment Board. These gabions are in reasonable condition. Behind the gabions are private timber walls.

(c) **Property/Housing**

There are twenty one dwellings located in this section within the extreme, high and moderate risk Coastal Hazard Zones (Wainui 2001). Of these there are six dwellings that are situated wholly or partly within the “Extreme Risk” Hazard Zone and three of these dwellings are on small sections where they could not be relocated further back on the property.

It is noted here that all residential properties located on the beachfront at Wainui must ensure that stormwater overflows and septic tank effluent lines do not discharge onto the foredune or the beach.

(d) **Recommended Management Strategy – Section 3**

1. **Remove The Rail Irons And Log Wall** – Same as for Section 2 and described in Section 2 d(i) of this report.

Estimated cost of removal of 160 metres = \$8,000.

2. **Construction Of A New Rock Revetment** - (300 metres) and modification of existing rock revetment (70 metres). The rock revetment proposed for Section 2, the Tuahine Crescent area, should continue on from Tuahine Crescent Accessway to the natural end point just beyond old Groyne 21 at Wainui Stream.

Gisborne District Council Engineer, Dave Peacock, gives the following reasons as to why this rock revetment is a viable option in this section of beach:

- The south end of the beach is narrower and is more prone to sand loss in winter, and therefore the estuarine foredune/escarpment is more vulnerable to damage.
- Protection of the Tuahine headland by rock revetment in the Tuahine Crescent vicinity is supported to maintain the long-term shape of the beach and the area as far as Wainui Stream can be seen as a reasonable extension of this.
- Any “end effects” (of rock work) can be minimised by curving the rock revetment work into the Wainui Stream mouth.

- The option to “retreat” dwellings is more difficult in this section of beach due to smaller section sizes. There is no room to retreat on up to nine of the beachfront sections here.
- The foredune/escarpment between the Tuahine Crescent Accessway and Wainui Stream is low in comparison to that north of Wainui Stream and being comprised mainly of estuarine silt, is not a major contributor to the beach sand budget.

The toe of the revetment would be placed 0.5 metres down into the estuarine silt to a reduced level of approximately – 1.0 metres R.L. (-1.0m below mean seal level) with a 3:1 slope rock face up to a reduced level of + 3.0 metres. The existing and similar 70 metre long rock revetment at Lloyd George Road would be modified to this specification, by removal of the existing support rail irons and extending the toe from 0.00 metres R.L. to 0.5 metres down into the estuarine silt which will be approximately – 1.0 metres R.L.

A 65 metre long section of existing gabion protection would require removal for the new revetment work between old groyne 22 and old groyne 21 (vicinity of 32 to 44 Murphy Road). Gabion baskets would be removed and the cobbles returned to the beach or utilised as part of the filter layer in the new revetment design.

The estimated cost allows for the utilisation of existing rock protection on the beach. (Note that this existing rock varies in quantity on this section of the beach and will require further survey and assessment).

The estimated cost of this new revetment work is:

Tuahine Crescent accessway to 52 Murphy Road (Old groyne 24) – 162 metres	\$114,000
52 Murphy Road to 1 Lloyd George Road (Old groyne 23) – 70 metres	\$39,000
1 Lloyd George Road to 32 Murphy Road (Groyne 21) – 138 metres	\$104,000

Plus design, supervision
Approximate cost \$5,000

(Note: Resource Consent may be part of Section 2. Resource Consent costs can vary considerably, therefore no estimate is provided at this stage).

(Note 2: The consultation/questionnaire results for this strategy proposal are combined with Section 2 and are shown on page 11 part 4.2. (f)).

3. **Cobble Berm/Dynamic Revetment**

Same as for Section 2 and described in Section 2 and described in Section 2(d) 3 of this report, page 9.

4. **Monitor the Need to Replace Groyne 21 at Wainui Stream Mouth**

This is part of the maintenance schedule of the current Wainui Beach Property Protection Rating Area.

A small groyne may be required at a future date should the Wainui Stream mouth wander south and attack the toe of the proposed revetment. This is not expected but is a future consideration. Under the Proposed Regional Coastal Environment Plan, the opening of Wainui Stream is a permitted activity and Gisborne District Council Rivers and Drainage are able to facilitate this work as required.

5. **Horses Access to the Beach**

Through the Draft Management Strategy Consultation Questionnaire the Wainui community has commented as to whether or not a proper access to the beach should be created for horses on the southern Wainui Beach area. The suggestion from this Strategy Committee is that a horse access is created on the southern side of the Wainui Stream. The questionnaire results show 95% of respondents are in favour of this proposal. Parents of young riders who would use this access have verbally agreed that they should maintain/clean this access.

(e) **Assessment of Benefit and Apportionment of Costs – Section 3**

1. **Removal of the Rail Irons and Log Wall - \$8,000**

As for Section 2, the removal of the rail/log wall and all other old rail protection works is seen as a significant improvement to the environment and can be fairly shared widely by DRA1 and DRA1A Rating Zones.

2. **New Rock Revetment and Modification to Existing Revetment - \$262,000 (plus resource consent costs)**

The benefits and apportionment of costs would follow the same principals as for Section 2(e)(ii). The direct benefit to properties is assessed by the Coastal Hazard Zones (Wainui 2001) using differentials and then applied to the Capital Value of the property. Indirect Benefit (say 5%) could be apportioned to the total Wainui Beach Foredune Protection Rating Area as this work also plays a small part in holding the southern beach corner/Tuahine Headland.

3. **Cobble Berm/Dynamic Revetment**

The same principles as in Section 2 (e) 3 of this report apply here in Section 3. Construction of the cobble berm will be incorporated as much as possible into the construction of the new rock revetment using cobble material that is uncovered in the process of construction. Further additions to the cobble berm will be made as and when it is uncovered in erosion events. These further additions would be funded by annual maintenance from the Wainui Beach Foredune Protection Rating Area.

4. **Horses Access, Beach Accessways**

Any costs associated with improvements to beach access would be funded through the appropriate general rating or reserves rating mechanism of Council.

4.4 **SECTION 4 – WAINUI STREAM TO THE ONEROA ROAD
“STOCK ROUTE” – 350 METRES**

(a) **Physical Features**

This section incorporates two distinctly different foredune areas being:

- The low sand foredune from Wainui Stream to Cooper Street Reserve.
- The high (up to 8 metre) and steep sand foredune from Cooper Street to the Stock Route.

The low sand foredune was overtopped by the tsunami of March 1947.

There is an offshore reef at the Stock Route that creates the well-known surf break in this area.

At the end of Pare Street by the Wainui Stream, there is access to the beach for boats or vehicles, but this is often washed out.

(b) **Existing Protection Works**

- On the northern side of Wainui Stream there are gabion baskets with rail irons in front to support. These gabions are in good order and perform well in their correct setting, around the stream mouth.

As the gabions turn from the stream mouth onto the beach front, their condition deteriorates. The gabions on the beach front from Wainui Stream to Cooper Street Road Reserve access have had to be repaired many times and are nearing the end of their life. The gabions in this area are located a few metres in front of private wooden walls and within the property title boundaries.

The gabions from 10 metres north of Cooper Street Road Reserve access to 20 metres north of the Stock Route access have been destroyed.

- There are old (private yet continuous) timber retaining walls, 137 metres long in reasonable condition, from 30 Pare Street at the Wainui Stream mouth to 20 Pare Street, just into the Cooper Street Road Reserve. The timber walls are entirely within private property except for the last 8 metres in Cooper Street Road Reserve. Behind the pedestrian access ramp at Cooper Street

there is a low timber wall that is often covered by sand.

- There is randomly placed large rock and smaller rock placed on the beachfront at the base of the high sand foredune; from 10 metres north of Cooper Street (18 Pare Street) to the Stock Route (2 Pare Street).
- There are driven rail irons in front of this rock that would be remnant from the destroyed gabions. The top of the rail irons is at approximately 2.00 m R.L. The rock placed behind these rails rises to an average 2.80 metres R.L. This rock is predominantly located on the beach foreshore in front of these properties and has been the subject of Environment Court proceedings. This rock now has a Consent Order but is subject to annual review while the long term strategy for this area is decided.
- The remains of a concrete wall (referred to as the “Krzanich Wall”) in front of 2 Pare Street, now creates quite a hazard and eyesore at the commencement of the Stock Route. This privately built wall was built on the beach foreshore outside the property boundary.

(c) **Property/Housing**

There are 14 allotments with 14 dwellings on the beachfront side of Pare Street that are situated within the “Extreme to Moderate” Coastal Hazard Zones (Wainui 2001). One dwelling at 6 Pare Street has been moved back from the “Extreme Risk” zone to the Pare Street end of the section, making it now 18 metres outside the Safety Buffer Hazard Zone (Wainui 2001) and 45 metres back from the top of the foredune. Of the other 13 dwellings, there are 10 that are situated wholly or partly within the “Extreme Risk” Hazard Zone with three of these at 2, 8 and 12 Pare Street, very close to the edge of the high foredune.

(d) **Recommended Management Strategy – Section 4**

With the significant difference in the nature of the sand foredune north of Wainui Stream and in particular the high sand foredune north of the Cooper Street access come more complex issues in terms of beach foreshore management and

foredune property protection management. The Strategy Committee has considered the varied opinion on the effects of “hard” property protection works such as a rock revetment north of Wainui Stream. Our conclusion is that there is just too much at stake in terms of the high amenity, tourism, surf and recreation values to risk damage to the beach, physically and aesthetically, from hard protection structures. Our recommendation is to trial modern management practice of “soft” options rather than hard engineering structures. The aim being to preserve the amenity and character of the beach as well as providing protection to the adjacent properties. To this end the following specific strategies are recommended in this section of beach.

It is important to see the strategy options 1 to 7 as being interrelated and part of an overall strategy required for this section.

1. **Gabion Basket Maintenance**

The gabion basket property protection measure on the northern side of the Wainui Stream is appropriate and should be maintained. The gabions on the foreshore in front of the wooden walls between Wainui Stream and Cooper Street reserve are in a marginal condition. They can be maintained until such time as they are damaged beyond reasonable repair at which time they need to be replaced by a Geotextile Sand Cushion and Artificial Dune concept.

The destroyed and remaining unserviceable gabions and fronting rail irons from Cooper Street to the Oneroa Road Stock Route and 75 metres beyond to 5 Wairere Road must be removed.

A new Geotextile “Soft Rock” Cushion and artificial dune structure at the base of the main foredune is considered the best option to protect the main dune base now. This is described in (2) below.

Cobbles from the destroyed/damaged gabions are to be returned to the beach in front of the new structure to help build a natural cobble berm protection/ (Dr P Komar – Review of the Wainui Beach Management Strategy – 28 May 2003).

2. **Foredune Protection and Rebuilding Using Geotextile Sand Cushions/Bags**

We acknowledge that protection of the main foredune base from wave swash and run up is necessary to protect the properties located on that sand foredune in this section of Wainui Beach. At the same time we know the high foredunes function is to provide a natural buffer between the forces of the ocean and shorefront properties.

During the most extreme storms the erosion of the beach by waves extends back to the dunes cutting into them and carrying eroded sand out onto the beach. The dunes act as a reservoir of sand, providing nourishment to the beach and reducing the extent of landward shift of the shoreline at the height of the storm. During the intervening period between storms, sometimes spanning years, sand is blown back into the dunes to naturally rebuild them, restocking the reservoir of sand that will be needed in the next episode of storm induced erosion.

(Dr P Komar – Review of the Wainui Beach Management Strategy – 28 May 2003).

We therefore propose a balanced approach is taken here, whereby;

- (a) The base of the fore dune is protected from moderate storm and wave swash run up attack by a Geotextile “Soft Rock” Sand Cushion and artificial dune structure. Dr Paul Komar in his peer review of the Draft Wainui Beach Management Strategy (28 May 2003), encourages us to take up this artificial dune construction with sand covering and plantings of native dune grasses (e.g. Spinnifex and Pingao) in a similar fashion to his successful recent work on the Oregon Coast U.S.A.

We may not have sufficient room on the foreshore in this section to achieve the same result in maintaining vegetation cover, however

the artificial dune structure would still provide the main dune base protection.

The maximum height of the Geotextile Artificial Dune would be no higher than the existing rock that is placed in front of the main dune at approximately 2.6 metres R.L.

- (b) A strategy of dune replenishment/rebuilding is utilised. Beach scraping sand or even trucked in sand is placed and compacted back into the foredune on the artificial dune base after severe storm or rip embayment attack.

This strategy would not lock up entirely the sand contained in the high foredune and in effect will still allow the dune to “breathe” as it should in storm conditions. Dune replenishment/rebuilding and replanting, combined with the Geotextile “Soft Rock” sand cushions or containers as a base to rebuild the foredune is workable, as shown in the New South Wales, Byron Bay Belongil Spit and Oregon Coast case studies. The key to allowing the strategy to work is having a sufficient buffer zone from the top of the foredune back to a dwelling.

2. **Geotextile “Soft Rock” Sand Containers and Artificial Dune Trial**

It is proposed that a trial of Strategy 2 (above) is undertaken in the area of Oneroa Road, Stock Route beach access, through to 5 Wairere Road, a length of approximately 75 metres.

Funding for this trial would be sought from a combination of Gisborne District Council Roothing/Utilities, property owners affected and the overall Wainui Beach Foredune Protection Rating Area.

Additional yet related stormwater discharge improvements at the Stock Route would also be undertaken at this time.

Subject to the results of the monitoring of this trial area being positive, it would be expected that the

strategy would be implemented throughout the dune area of Section 4.

3. **Emergency Use of Geotextile Sand Bags In Erosion Events**

Another application of the Geotextile Sand Bags at Wainui is to have a stock of them available to protect areas where dwellings have come under threat of erosion. Plans would be put in place concerning where the supply of sand can be obtained to fill the bags and who would undertake the work.

Once the erosion event has passed the bags are left in place or re-arranged if necessary. They would be covered in sand by beach scraping or extra sand brought in and the dune area replanted. This strategy option has been recommended to the Wainui Beach Management Strategy Committee by Professor Paul Komar in his peer review of the Draft Wainui Beach Management Strategy (28 May 2003).

5. **Beach Scraping Trial**

This strategy option was originally proposed by a working party consisting of members of the Wainui Beach Property Protection Committee, Gisborne District Council and the Department of Conservation staff.

The concept involves scraping or skimming of thin surface layers of sand where “surplus” material is available in the beach profile and placing that sand at depleted areas of the dune toe. Beach scraping may be used at Wainui to quickly rebuild sand dunes after they have been eroded in a storm.

Nature will take some time to blow the sand back into those dunes but beach scraping could complete this process in a matter of days or weeks. Uneven distribution of sand occurs at times along the shore length and it may be that sand scraping can be used to a degree to redistribute sand.

The initial consultation response to this strategy option was one of scepticism from beachfront property

owners. However, with further positive reports and technical papers ⁸ received, we believe a trial of beach scraping should be undertaken over an 18 month – 2 year period. Survey monitoring of the beach profile at a scraping site and at the dune line deposition site will be undertaken as part of this trial.

This strategy option has been recommended to the Wainui Beach Management Strategy Committee by Dr Paul Komar in his peer review of the Draft Wainui Beach Management Strategy (28 May 2003).

6. **Retreat of Three Dwellings From the Front of the High Fore-dune**

There are three dwellings that are within 2 to 4 metres of the top of the high sand fore-dune at 2 Oneroa Road and 8 and 12 Pare Street. All dwellings could be relocated on their allotment to enable at least a 10 metre set back from the dune face.

Two neighbouring properties at 6 and 10 Pare Street have relocated in this way with the dwelling at 6 Pare Street now having a 40 metre set back. A preliminary total estimated cost of retreat of the three dwellings has been provided by C R Taylor Gisborne Ltd. At \$176,000 plus GST. The cost of each house varies considerably and the estimates provided include repositioning all ancillary buildings and reconnection of services.

The relocation of these three dwellings on their allotments would enable the fore dune replenishment/rebuilding strategy to be properly implemented for that property.

7. **Removal of the Rock Protection and Collapsed Concrete Wall**

When the three dwellings are retreated back on their allotments, the rock and collapsed concrete wall between 18 Pare Street and the Stock Route is to be

⁸ Per Bruun, "Beach Scraping – Is it damaging to beach stability?" Coastal Engineering 7 (1983) McNinch & Wells, "Effectiveness of Beach Scraping as Method of Erosion Control" (1992) Shore and Beach Vol. 60, No 1

removed from the beach foreshore. This rock can be re-used in the proposed rock revetment south of Wainui Stream and the property owners who purchased this rock will be reimbursed the current value of it.

After the rock and collapsed concrete wall is removed the Geotextile sand cushions or containers and artificial dune would be installed on a new alignment that would correctly tie in with the work required at the Stock Route. The existing rock and old wall alignment has created an erosion "end effect" at the Stock Route and properties 1 and 3 Wairere Road.

8. **Pare Street Beach Access**

There is a need for this “low-key” vehicle access point onto Wainui Beach to be constructed more permanently. There are occasions when emergency service vehicles, IRB rescue boat etc. need access to the beach foreshore and this is the only easy access point on the southern half of the beach. Although we do not want to encourage regular vehicle use of the access, the public should be able to launch small craft (yachts/dinghies) from the beach via an Amenity Reserve and Gisborne District Council Parks and Reserves section are responsible for this access.

(e) **Other Shore Protection Options Evaluated But Not Recommended At This Stage**

1. **Beach Drainage Management System (Danish De-Watering)**

We recommended in our first draft of the Wainui Beach Management Strategy that a pre-feasibility study of the suitability of a Beach Drainage/Management System (BMS) for this section of Wainui Beach be undertaken. Beach Systems Ltd were commissioned to carry out this pre-feasibility study on Sections 4 and 5 of Wainui Beach from Wainui Stream to “The Dip”.

Based on available information and the results of field study work, it is the evaluation of Beach Systems Ltd

that all of the studied beach length is suitable for the installation and operation of a BMS facility to establish an environmentally acceptable counteract to the ongoing erosion and improve beach amenity.⁹

Preliminary outline design of a 400 metre BMS, from just north of the Wainui Stream to just north of the Oneroa Road Stock Route was provided and as estimated capital cost of between \$450,000 - \$500,000.

The peer review of the draft Wainui Beach Management Strategy by Professor Paul Komar does not recommend a BMS dewatering approach at Wainui Beach.

Dr Komar points to inconclusive results on installations in the U.S.A. and to other reports (Turner and Leatherman – 1997)¹⁰ which identify the science involved in beach dewatering, but also conclude the concept is yet to be convincingly proven on a prototype scale.

The Director of Beach Systems Ltd, Trevor Richards, acknowledges that the last time the technology received any real scrutiny from its peers in the scientific and engineering community (based on then available 1995 data) beach drainage benefits were presented as inconclusive. Scientific research and project development work has been going on around the world, particularly in Europe and there are moves now to co-ordinate this research and the installation results.

The Wainui Beach Management Strategy Committee recommends that we continue to monitor the Beach Management Strategy/Beach Drainage option in terms of its results on other “dynamic” beaches where the technology is installed around the world. With the substantial capital cost and ongoing operating costs of

⁹ Richards & Vesterby – “Beach Management System Pre-feasibility Study for Wainui Beach, Gisborne” (Draft Report 21 March 2003)

¹⁰ Turner & Leatherman – “Beach Detwatering as a Soft Engineering Solution to Coastal Erosion – A History and Critical Review” (Journal of Coastal Research Fall 1997).

BMS technology, we are unable to recommend proceeding with a BMS at this time.

(f) **Assessment of Benefits and Apportionment of Costs – Section 4**

1. **Gabion Basket Maintenance**

Maintenance of the Gabion Basket work would remain a maintenance item financed by the Wainui Beach Property Protection Rating Area or any successor beach rating area.

2. **Foredune Protection and Rebuilding Using Geotextile Sand Cushions/Bags**

Construction of the Geotextile “Soft Rock” sand cushion and artificial dune structure to replace the gabions and rock is to the benefit of the beachfront property owners concerned and all costs would lie with those owners. Gisborne District Council Road Reserves and Reserve accessways would be responsible for their foredune frontage share.

In the same way replenishment/rebuilding of the foredune would be a cost to the particular property or road reserve where this work is undertaken.

3. **Geotextile “Soft Rock” Sand Containers and Artificial Dune Trial**

As stated in the description of this proposal, funding for the trial will be shared between Gisborne District Council Roading/Utilities, property owners directly affected and the overall Wainui Beach Foredune Protection Scheme. Percentages will be negotiated with the parties.

4. **Emergency Use of Geotextile Sand Bags**

Proposed that the Wainui Beach Fore dune Protection Scheme Rating Area purchases a supply of say 100 bags, kept in store by Gisborne District Council Rivers and Land Drainage. As they are used they are charged back to the property owner requiring them, less their

rated share of the original cost of purchase. More bags are then purchased to top up the supply.

4. **Beach Scraping Trial**

The beach scraping trial will ultimately benefit all beachfront property owners and for the 2003/2004 financial year it is proposed that \$12,000 is set aside for this. Funding will be 50% (\$6,000) from General Rates and 50% (\$6,000) from the Wainui Beach Property Protection Rating Area. (Note: This funding was approved for the 2002/2003 financial year and will be carried over to 2003/2004).

6. **Retreat of Three Dwellings from Front of Foredune**

Retreat of a dwelling at risk is to the benefit of the property owner and the entire cost would lie with the property owner.

7. **Removal of the Rock Protection and Collapsed Concrete Wall**

The rock that is to be removed from the beach between 18 Pare Street and the Stock Route can be used as part of the rock revetment proposed for south of Wainui Stream and can be incorporated into the cost of that revetment paid for by those beneficiaries.

The old collapsed concrete wall at 2 Pare Street cannot be reused and would be taken away for crushing. The concrete wall has been allowed to remain on the beach foreshore for many decades and it will be of considerable environmental benefit to see it removed.

The present owner of 2 Pare Street did not construct the wall in 1940, nor could they purchase the wall and be held responsible for it when they purchased the property.

At an estimated cost for removal of the wall of \$1,500, we recommend that cost be shared by the wider Wainui/Gisborne community, through General Rating.

(g) **Wainui Beach Draft 1 (June 2002) Consultation/ Questionnaire Results - Section 4 (Wainui Stream to the Stock Route and including Allotments 1 and 3 Wairere Road**

As at 1 January 2003 we had received questionnaire responses from ten of the sixteen (62%) of the property owners in Section 4.

In summary their responses were:

1. **Replacing Collapsed Gabion Baskets, Rail Iron, Rock, Broken Concrete Wall On Foreshore with a Geotextile Sand Cushion Structure at the Dune Toe**

Five of ten respondents (50%) agree with this strategy proposal. The wider Wainui community questionnaire responses are 66% in favour from all beachfront properties and 69% in favour from other Wainui residents.

The lower support for this strategy in this section of the beach than other sections relates to the considerable Environment Court proceedings over an application for existing and proposed rock revetment works sought by property owners and the Wainui Property Protection Committee. There is resistance to change, scepticism of new strategies and the removal of the existing rock placed by property owners during the 1992 storm erosion events.

Our recommendation is to continue discussion with property owners in this section and work towards providing more detailed property/dune survey and engineering concept plans so that property owners can see more clearly what is proposed.

If it can be funded, a trial section of the sand cushions/containers at the Stock Route/2 Oneroa Road area could be implemented.

2. **Strategy Of Allowing The High Sand Foredune to “Breathe” in Large Storm Events and Rebuilding the Dune on a Geotextile Sand Cushion Base after Sand Recovery**

63% of respondents are in favour of this strategy. The wider Wainui community questionnaire responses are 69% in favour from all beachfront properties and 57% from other Wainui residents.

3. **Beach Scraping Trials**

Five of ten respondents (50%) agree with this strategy proposal. The wider Wainui community questionnaire responses are 62% in favour from all beachfront properties and 62% from other Wainui residents.

4. **The Beach Management/Drainage System Prefeasibility Study**

86% of respondents are in favour of proceeding with this strategy direction. The wider Wainui community questionnaire responses are 76% in favour from all beachfront properties and 56% from other Wainui residents.

4.5 **SECTION 5 – STOCK ROUTE TO “THE DIP” (WAINUI SCHOOL)**

(a) **Physical Features**

This section is a continuation of the high, steep sand foredune, apart from the “Stock Route” Road Reserve Beach Accessway. The Stock Route is cut down into that foredune to be just above normal beach level at its exit onto the beach. A Department of Conservation (D.O.C.) Wainui Reserve varying in width from 2 to 10 metres, commences at the Stock Route and runs through to Hamanatua Stream. This D.O.C. Reserve at the base of the foredune is eventually to become an Esplanade Reserve strip administered by the Gisborne District Council.

(b) **Existing Protection Works**

Gabion basket protection with rail irons in front for support extend over this section of beach. Gabions are in relatively good condition apart from damaged gabions in front of the Stock Route. There are privately constructed walls at the base of the foredune on the beach foreshore in the following places:

- (i) “Caldwell’s Wall” – old damaged stone and concrete wall in front of 19 and 21 Wairere Road. This wall is located on D.O.C. Esplanade Reserve outside of the property boundaries.
- (ii) A wooden retaining wall located on the D.O.C. Esplanade Reserve in front of 47 Wairere Road, A Destounis. This retaining wall is set well back in the dune line.
- (iii) A low piled timber wall 100 metres long constructed in 1978 between old groyne 12 (53 Wairere Road) and the Gisborne District Council Amenity Reserve at the “Dip”. This wall is located on the Beach Reserve and DOC Esplanade Reserve, to a level of 2.5 metres R.L. (MSL). This wall is currently buried beneath the incipient dune at this point.

(c) **Property/Housing**

There are 28 allotments with 27 dwellings on the beachfront side of Wairere Road in this Section 5. Of the 27 dwellings, there are 19 that are within the “Extreme to Moderate” Coastal Hazard Zones (Wainui 2001). There are 7 dwellings that are situated in part within the “Extreme Risk” Hazard Zone.

(d) **Recommended Management Strategy – Section 5**

The management strategy proposed for Section 4 is applicable here in Section 5 being:

1. **Maintain the Existing Gabion Basket Protection**

As this property protection measure is still in reasonably good order it can be maintained. If however the gabions are damaged beyond repair at some future date, they would not be replaced. However, the use of “Soft Rock” geotextile sand

containers and artificial dune construction is considered an appropriate replacement.

2. **Foredune Protection and Rebuilding Using Geotextile Sand Cushions/Bags and Artificial Dune Structure**

This strategy is well suited to this section where the incipient (temporary dune) does form in favourable conditions.

The strategy can be implemented as necessary, after any significant erosion on the foredune from a storm or prolonged rip embayment attack.

3. **Emergency Use of Geotextile Sand Bags in Erosion Events**

Strategy is applicable to Sections 2, 3, 4, 5 and 6 of the beach.

(Refer to description in Section 4(d) 4 page 24).

4. **Beach Scraping Trial**

Strategy is applicable to Sections 2, 3, 4,5 and 6 of the beach.

(Refer to description in Section 4 (d) 5 on page 24)

5. **Removal of “Caldwell’s Wall” as it Collapses**

This old damaged stone and concrete wall is lower in elevation and set back further on the beach than the Krzanich Wall and Pare Street rock in Section 4. It is however located on reserve land and causes end effects and wave reflection when beach levels are very low at this point. This wall should not be repaired and should be removed from the beach as it collapses.

The existing gabion basket property protection measure on this section of the beach, currently stops at each end of Caldwell's Wall. When this old wall is removed the 28 metre gap in the gabion protection could be completed with the Geotextile sand containers option.

The wooden retaining wall in front of 47 Wairere Road is not considered a problem as it is further back into the foredune and is not reached by normal storm waves or wave run up.

The 100 metre piled timber wall at the Reserve “Dip” area is low in elevation at 2.5 metres R.L. which is just above the gabion basket level of 2.30 m R.L. On most occasions it is covered by sand and does not cause a threat to the beach at this area.

6. **Retreat of Threatened Dwellings from the Front of the High Fore dune**

Unlike Section 4 there are no dwellings considered to be under immediate threat from fore dune erosion. All dwellings that are situated in part within the “Extreme Risk” Hazard Zone, could be shifted back on their allotments if the need arose.

7. **Dunecare – Planting Incipient Dune and Fore dune**

Generally there is good vegetation growth on the fore dune with Tamarisk, various succulents and grasses, however better dune management can be achieved by all property owners and Reserve managers by:

- Discouraging the practice of putting garden waste over and onto the fore dune.
- Constructing beach accessways and steps that are angled down the fore dune to the beach rather than straight down onto it.
- Planting of Spinifex grass or other sand binding species/shrubs especially on the small incipient fore dune that develops. (A small incipient dune has developed north of Lysnar Reserve/33 Wairere Road).

8. **Stock Route Stormwater Overflow Outlet and Beach Access**

The Stock Route area has specific problems that need addressing. In heavy rain conditions the overflow from stormwater runs down the unformed steep accessway

and scours it out, particularly as it flows onto the beach. This coupled with the end effects caused by the old Krzanich concrete wall and general neglect of the accessway has heightened erosion here. This is a Gisborne District Council Engineering and Works problem that needs attention and will be addressed at the same time as the proposed Geotextile Sand container trial is installed.

(e) **Assessment of Benefits and Apportionment of Costs – Section 5**

Items 1 to 6 in the recommendations for this area would provide benefit and be apportioned in the same way as items 1 to 6 recommended for Section 4.

Item 7 – Planting On Incipient Dune and Foredune

This would be a maintenance item financed by the Wainui Beach Property Protection Rating Area, or any successor beach rating area.

Item 8 – Stock Route Stormwater and Beach Access Improvements – Is a Gisborne District Council General Rating issue.

(f) **Consultation/Questionnaire Results - Section 5 and 6 (Stock Route to Hamanatua Stream)**

Note that responses from Sections 5 and 6 have been combined due to the similarity of strategy options and the low number of responses from both of these sections of the beach.

As at 1 January 2003, we had received questionnaire responses from 15 of 58 (26%) of the property owners in Sections 5 and 6 .

In summary their responses were:

1. **Replacing Collapsed Gabion Baskets, Rail Iron, Broken Concrete Wall On The Foreshore With A Geotextile Sand Cushion Structure At The Dune Toe**

80% of respondents are in favour of this strategy. The wider Wainui community questionnaire responses are 66% in favour from all beachfront properties and 69% in favour from other Wainui residents.

2. **Strategy Of Allowing The High Sand Foredune To "Breathe" In Large Storm Events And Rebuilding The Dune On A Geotextile Sand Cushion Base After Sand Recovery**

75% of respondents are in favour of this strategy. The wider Wainui community questionnaire responses are 69% in favour from all beachfront properties and 57% from other Wainui residents.

3. **Beach Scraping Trials**

69% of respondents in this section are in favour of this strategy.

4. **The Beach Management/Drainage System Prefeasibility Study**

87% of respondents are in favour of proceeding with this strategy direction. The wider Wainui community questionnaire responses are 76% in favour from all beachfront properties and 56% from other Wainui residents.

4.6 **SECTION 6 – THE DIP (WAINUI SCHOOL) TO HAMANATUA STREAM**

(a) **Physical Features**

The most distinguishing feature of this section of beach is the double dune system that exists here. The “permanent” foredune is a continuation of the high, steep sand face with vegetation that is part of the previous two southern sections of beach. In front of this foredune is a “temporary” or incipient foredune which varies in height and width over its length. It is a substantial dune in most parts of this section and it does depend on Spur Groyne No. 1 at Hamanatua Stream to prevent that stream migrating southwards and eroding the dune away.

The Wainui “Dip” just before Wainui School, is a natural break in the high sand foredune where a significant catchment outlet occurs.

(b) **Existing Protection Works**

Buried beneath the large incipient foredune is a mixture of log/rail wall and gabion basket protection with rail irons in front for support. The log/rail wall extends from the northern side of “The Dip” approximately 187 metres to the Lysnar Reserve beach access at 81 Wairere Road. From this point the gabions extend 332 metres to old sheet pile longitudinal Groyne No. 4, in front of 123A Wairere Road. Old sheet pile Groynes Nos 2, 3 and 4 exist buried beneath the incipient foredune. Groyne 1 is an old sheet pile groyne modified and extended in timber and is clearly visible on the south side of Hamanatua Stream.

(c) **Property/Housing**

There are 37 allotments with 34 dwellings on the beachfront side of Wairere Road in this Section 6. Of the 34 dwellings there are 27 dwellings that are situated within the “Extreme to Moderate” Coastal Hazard Zones (Wainui 2001). There are 14 dwellings that are situated in part within the “Extreme Risk Hazard Zone”.

(d) **Recommended Management Strategy – Section 6**

The management strategy proposed for Sections 4 and 5 is largely applicable here in Section 6, with the addition of measures for the “Dip” and Groyne No 1. The complete strategy is:

1. **Maintain the Existing Gabion Basket Protection and Spur Groyne 1 at Hamanatua stream.**

The existing gabions in this section have rarely been exposed as they have been covered by the incipient dune that developed approximately 15 years ago in this section. Consequently the gabions are in very good condition and can be maintained. If at some stage they are exposed and damaged beyond repair, they would be replaced with the Geotextile Sand Cushion Artificial Dune structure. Spur groyne 1 on the southern side of Hamanatua stream is to be

maintained as it is important to prevent its southward migration into the fore dunes in certain sea conditions.

2. **Replace the Log/Rail Iron Wall**

The log/rail iron wall between the Dip and Wairere Road has been covered by the incipient dune for many years but was exposed in August-October 2002 when the incipient dune was eroded significantly. This wall is not a suitable dune protection structure and should be removed and replaced if it is to be exposed again to long term erosion conditions in this section of the beach. This would be replaced with the Geotextile Sand Cushion Artificial Dune structure.

3. **Foredune Protection & Rebuilding Using Geotextile Sand Cushions/Bags and Artificial Dune Structure**

This strategy is ideally suited to this section of the beach where the most substantial incipient dune has formed in favourable conditions. The strategy will only be implemented as necessary, after significant erosion of the foredune from a storm or prolonged rip embayment attack.

4. **Emergency use of Geotextile Sand Bags in Erosion Events**

Strategy is applicable to Sections 2, 3, 4, 5 and 6 of the beach.

(Refer to description in Section 4 (d) 4 on page 24)

5. **Beach Scraping Trial**

Strategy is applicable to Sections 2, 3, 4, 5 & 6 of the beach.

(Refer to description in Section 4 (d) 5 on page 24)

6. **Retreat of Threatened Dwellings from the Front of the High Foredune**

As with Section 5, there are no dwellings in this section considered to be under immediate threat from foredune erosion. All dwellings that are situated in

part within the “Extreme Risk Hazard Zone” could be shifted back on their allotments if the need arose.

7. **Dunecare – Planting Incipient Dune and Foredune**

Strategy proposed in Section 5 also applies in this section.

8. **The “Dip” Stormwater Outlet and Beach Access**

As with the Stock Route, this area has specific problems with stormwater that need addressing. A significant catchment area discharges under Wairere Road through a 1050 mm diameter culvert and another smaller culvert and flows overland through the dip and onto the beach. The beach remains wet and scour can be a problem. The beach access is rough and worn back constantly. This is a Gisborne District Council Engineering and Works problem that needs attention.

(e) **Assessment of Benefits and Apportionment of Costs – Section 6**

Items 1, 3, 4, 5, 6, 7 and 8 in the recommendations for this area would provide benefit and be apportioned in the same way as items 1 to 7 recommended for Section 5.

Item 2 – Replace the Log Rail Iron Wall. This work would be to the benefit of the beachfront property owners located directly behind the log/rail iron wall. The cost of the replacement with a Geotextile Artificial Dune Structure would be shared by these owners within the Coastal Hazard Zones (Wainui 2001). This log/rail wall is not the hazard to the public use of the beach that the log/rail walls in Section 1 and 2 are. Therefore replacement of it is not a public funding issue.

(f) **Consultation/Questionnaire Results - Section 6**

Note: These results are combined with Section 5 and are shown on pages 35 and 36 part 4.5(f).

4.7 **SECTION 7 – LYSNAR DOMAIN – HAMANATUA STREAM TO MAKORORI HEADLAND**

(a) **Physical Features**

This northern half of the beach is approximately 2.1 km long with the high sand foredune between State Highway 35 and the foreshore, being the W D Lysnar Amenity Reserve. The State Highway 35 Road Reserve briefly runs alongside the coastline for 100 metres at the northern end of the beach at the base of the headland.

The soft underlying estuarine silt deposits that characterise the “base” layer of the southern half of Wainui Beach give way to a raised shore platform cut by the sea from the late tertiary alternating siltstone-sandstone sequences, just north of Hamanatua Stream. This shore platform to the north is overlain by beach gravels, sands and dune sands. (Dr J G Gibb 1998) Dr Gibb concludes that there is a relatively more rapid rate of emergence of the Wainui Coast north of Hamanatua Stream compared to the coast to the south. (Gibb 1998).

(b) **Existing Protection Works**

There are no existing protection works north of Hamanatua Stream as there is no private property or private dwellings on the foredune. The Wainui Beach Surf Lifesaving Clubroom is located on the foredune in the Extreme High Risk Hazard Zone and is set back 15 metres from the present foredune line.

(c) **Recommended Management Strategy – Section 7**

All proposed management strategies for this northern section of the beach relate to aspects of Dune Care on the W D Lysnar Reserve. A questionnaire sent to all homes in the Wainui Beach community helped to clarify and confirm a number of Dune Care issues in this area. The results of that questionnaire are shown in Appendix I of this document.

It is anticipated that these recommendations will go forward to the review of the W D Lysnar Reserve Management Plan and the Open Space Strategy for Wainui. The recommendations are:

1. **Dune Care Planting**

Continue the policy of planting and fencing off bare or damaged areas of the foredune, with appropriate grasses. Native flax, Pohutakawa and other suitable species on the reserve area can be planted further back on the reserve area.

2. **Dune Care Education**

Involvement of the community in aspects of Dune Care is important for the future of the W D Lysnar Reserve and other foredune areas of Wainui Beach. The community and Council need ongoing education on:

- (i) The importance of using the constructed beach accessways on the foredune.
- (ii) The dumping of garden waste on the foredune (anywhere along the beach) is not acceptable. It is introducing creepers and plants that are damaging the dune environment and is aesthetically unacceptable.
- (iii) The value and benefits that native plants, and in particular, appropriate native trees, have to the long term stability and survival of the coastal dune habitat. Any tree and/or view problems should be discussed with Gisborne District Council Parks and Reserve staff in the first instance as in most cases, loss of views is short term and within a short period views can be restored through careful management of “problem” trees.

3. **New Pedestrian Access Structures to the Beach**

The following pedestrian accessways were identified as requiring attention:

– **At Wainui Surf Lifesaving Club/Hamanatua Stream**

This is a frequently used beach access area that needs upgrading. The natural beach access from the Surf Club carpark is a worn sand track

down the foredune on the northern side of Hamanatua Stream.

This track needs to be repaired with a wide beachmat or wooden ramp constructed over the foredune.

In front of the Surf Lifesaving Clubroom there is a partial concrete ramp leading onto the beach foreshore, for the launching of surf boats and the IRB rescue boat.

This concrete ramp drops away steeply when sand levels are low and renders it unusable. A beach vehicle sand ladder has now been installed at the end of the concrete ramp to improve this access.

– ***Opposite Okitu Store***

The existing access steps are hard to find and are not in the best location. People have created a new track to the beach down a “gully” approximately 50 metres to the north of the existing steps. This may be suitable for a Beachmat access?

– ***Opposite Francis Street***

It is to be expected that the Okitu residents make their way to the Lysnar Reserve and beach foreshore by way of the feeder streets that head toward the beach being Lysnar Street, Francis Street and Douglas Street. Lysnar Street and Douglas Street now have good beach access opposite, by stairs and/or beach mat. Consideration should be given to provision of the same opposite Francis Street. It was noticed from the survey that access suitable for baby buggies would be preferred which suggests Beachmat, Boardwalk or ramps are preferable to stairs.

– ***Between Douglas Street and the “Chalet”***

A worn track requires Beachmat, ramp or stairs at this location.

4. **Specific Horse Access/Bridle Path to the Beach**

The W D Lysnar Reserve has a long history as a horse riding area being part of the Winifred Lysnar Riding School and before it was given as a Reserve. The questionnaire results show that there is an expectation that horse riding is an accepted part of Wainui Beach activities. The results also show that specific horse accessways to the beach are required. We identify three natural access areas that should be flagged as the only horse accessways to the beach. They are:

- ***Northern End***
The track to the beach just north of the public toilets.
- ***Opposite the “Chalet”***
The natural low area dipping to the south onto the beach. This would require a Beachmat/Boardwalk to protect the sand access.
- ***Hamanatua Stream***
Natural access is already available on both sides of the stream.

5. **Carparking and Domain Track Restrictions**

There are several unformed vehicle tracks through the Reserve that at present encourage misuse of the Reserve by 4 WD vehicles, quad bikes, motorbikes and cars. We recommend that Bollards are placed to define the limits of vehicle access and parking areas. Barrier restrictions and/or turnstiles to limit motorcycles in strategic points are also required.

This strategy committee has examined an Opus Report (Ref W95/9 Works Consultancy Services) in regard to an option for a sealed cycleway and walkway through the Lysnar Reserve. The strategy committee believes this option is not viable and out of keeping with the nature of the Reserve.

6. **Culvert Outlets and Drains**

On the northern section of Lysnar Domain there are two significant drain outlets through the dune system.

Where walking tracks cross the drain there are culverts that are too small to take stormwater flows. These need to be upgraded so that scouring at the outlet is reduced.

7. **Public Support/Education of Issues to Community**

Public support and involvement in Dune Care work on Lysnar Reserve and other parts of Wainui Beach through to Tuahine Point, is important for the future of this community asset. An educating and active community group that works with Council staff and other groups/departments is a recommended strategy for the future.

8. **W D Lysnar Domain Whale Grave**

The Whale Grave at northern Okitu is a significant site for Maori and our community. Local historian and WBMS Committee member, Ingrid Serancke, advises that the Whales were given a burial with the same significance as persons. It was seen at the time of the stranding that a tragedy had occurred to the Whales, rather than to people.

The Pera-te-Weri family have guardianship over the Whale grave and will ensure that it is looked after. The whanau will assist the Gisborne District Council Parks and Reserves with maintenance of the Whale Grave. (Note that maintenance primarily means that the graves be undisturbed).

5.0 RELATIONSHIP BETWEEN IWI, GISBORNE DISTRICT COUNCIL AND DEPARTMENT OF CONSERVATION

The Iwi and Hapu with links to the Wainui Beach area are:

Ngati One One, Ngati Porou, Te Aitanga-a-Hauiti and Ngati Konohi. Nick Tupara has been the official Ngati One One representative on the Wainui Beach Management Strategy Committee and provided input to the Beach Open Days and preparation of the Draft Management Strategy.

WBMS committee member, Mrs Ingrid Searancke is Tangata Whenua at Wainui Beach and an Elder of Ngati One One Iwi. Mrs Searancke's family have lived at Wainui for many generations and her historical knowledge has been valued by the WBMS committee.

Ngati One One are supportive of the Wainui Beach Management Strategy process and especially with the process that has commenced to see Tuahene-O-Aue Te Rangi (Tuahine Point/Headland) destocked, planted and regenerated to native cover.

The Department of Conservation currently have administrative responsibility for a narrow strip of land which runs along Wainui Beach from Oneroa Road "Stock Route" to Hamanatua Stream. This strip of land is predominantly foredune or incipient dune and is classified as Local Purpose Reserve (Esplanade). A number of property protection works, normally covered by sand are located within this reserve strip. Department of Conservation are currently seeking to vest this reserve strip in the Gisborne District Council as it would be simpler for all public land here to be under the control of Council.

The Department of Conservation have undertaken consultation on this proposal with Ngati One One. However, further consultation will likely be required with the descendants of the original owners. This will be examined further by Nick Tupara (Gisborne District Council Maori Liaison Officer and WBMS committee member) and the Department of Conservation.

6.0 HOW WAINUI BEACH MANAGEMENT STRATEGY RELATES TO OTHER DOCUMENTS

The WBMS is a strategy developed by the community and Council to provide guidance on the management of the Wainui beach environs both now and in the future.

This document whilst having no legal status, has been developed in consultation with the community, and provides strong indications of what the community views are in relation to a number of issues. Strategies such as this are reasonably common within the Council framework, another recent example is the Open Space Strategy for Gisborne city.

To be a meaningful and useful document for Council the WBMS must be consistent with the intent and purpose of other documents which Council is required by legislation to develop and adhere to. This strategy is consistent with the purpose of the Resource Management Act and existing strategic documents developed by Council for the community.

Towards 2020

This strategic plan (1993-2020) assists Council to look ahead so that it can plan for projects and costs with some certainty. The directions relevant to Strategy are:

- ◆ The preservation, enhancement and sustainable management of natural and physical resources;
- ◆ Create within the coastal margins a rationally derived buffer zone within which no, or limited development or dune modification takes place except in already highly modified coastal urban areas;
- ◆ Develop community-based dune revegetation programmes with the community involved on an on-going basis;
- ◆ Control access points to beaches and ensure the appropriate use of beaches and dunes by vehicles and by people;
- ◆ Recognise areas within the coastal environment that have particular significance and in close consultation with affected communities, develop and manage those areas to enhance these attributes;
- ◆ Have an on-going programme that identifies, registers and monitors natural hazards, evaluates risks, formulates policies and communicates all these to the community

Regional Policy Statement (RPS)

The Resource Management Act 1991 requires Council to prepare a Regional Policy Statement for the District. The statement is to promote the sustainable management of the region's natural and physical resources and is expected to achieve this by:

- Providing an overview of the resource management issues of the region; and
- Setting out policies and methods to achieve integrated management of the regions natural and physical resources.

Natural and physical resources include land, water, soil, minerals, air and energy, all forms of plants and animals and all structures.

Proposed Regional Coastal Environment Plan (RCEP)
Proposed Gisborne District Combined Regional Land and District Plan (Proposed District Plan)

The purpose of these Plans is “*to promote the sustainable management of natural and physical resources*”. (Section 5(1), RMA 1991) The Plans, made under the RMA 1991, seek to manage activities on the basis of their effects on the environment.

The RCEP fits directly below the Regional Policy Statement and must not be in conflict with the Minister of Conservation’s New Zealand Coastal Policy Statement. Its emphasis is on minimising and avoiding the damaging effects of human activity in the coastal environment and particularly in the coastal marine area (the area between mean high water springs and the 12 mile limit of New Zealand’s territorial sea). Its intention, wherever possible is to allow maximum use of the coastal environment by people in a manner which will ensure ongoing enjoyment of the natural qualities that our coastline provides.

The District Plan is usually prepared by territorial local authorities and must be consistent with the over arching regional documents, including the RPS and the RCEP. Preparation of the District Plan is mandatory and its purpose is to ensure the sustainable management of natural and physical resources. Gisborne District Council is a unitary authority with both regional and territorial functions. A particular advantage of having a unitary authority is the opportunity this structure provides for integration of regional and territorial activities and plans to achieve a holistic and complementary approach to resource management.

The Plans are prepared and amended under a statutory process that allows the public to make submissions about the content of each document. This Strategy is not a statutory document. It is broadly consistent with and has been prepared to be read in conjunction with the Plans. Where the Strategy proposes new initiatives more appropriately addressed through the Plans, Council will consider amending the appropriate Plan. This process is open to public scrutiny.

Reserve Management Plans

Reserve Management Plans provide specific policies for the management of each park, or group of parks. When management plans are being prepared, affected parties including Iwi, neighbours and the wider community are encouraged to make submissions to Council. The approved plans are used as a guide and reference for future funding allocations and reserve management decisions. The current Reserve Management Plan for Lysnar Reserve was completed in 1980. The WBMS Committee wish to highlight the importance of a revision of the Management Plan for the Lysnar Reserve in the light of recent tree/view issues that this committee and Gisborne District Council Parks and Reserves have been involved with.

Long Term Council Community Plan (LTCCP)

Under the Local Government Act 2002 Council is required to produce and have in effect at all times a LTCCP. The LTCCP is produced triennially through a community consultation process and describes the activities of the Council, the community outcomes for the district, and provides for integrated decision-making and a long-term focus for Council decisions and activities. The LTCCP must cover a minimum period of 10 years and includes work that Council plans to do over the period of the plan including detailed budgets for the first 3 financial years. New projects and maintenance projects need to be identified in the LTCCP process to obtain funding and be provided for over the term of the plan.

Annual Plan

In addition to the LTCCP Council is required to prepare an Annual Plan for each financial year. The Annual Plan is adopted through a public consultation process and includes the annual budget for that financial year. The Annual Plan process can also provide an opportunity to amend the LTCCP.

Gisborne District Council Recreation Plan 1998-2003

The Recreation Plan identifies community needs and preferences for recreation provision with identified goals and objectives for achieving community expectations. This Plan was developed following extensive consultation with groups involved in providing recreational opportunities, and a public survey. The Plan identifies that beaches are considered to be a very valuable asset for recreation and Wainui is one of the most frequently used beaches.

7.0 ADVICE FOR RESOURCE CONSENT APPLICANTS

The Wainui Beach Management Strategy embodies and expresses a community position about the beach and identifies relevant environmental issues.

Recommendations from this strategy that are to be progressed would best be co-ordinated by the Gisborne District Council. One Resource Consent would be sought for each specific work to take place within a section or sections of the beach where agreement to proceed is obtained from beneficiaries.

Resource Consent for individual works on private property yet associated with the management strategy would be applied for by the property owner. (*e.g.* relocation of a beachfront dwelling on its allotment).

8.0 MONITORING AND REVIEW OF WAINUI BEACH MANAGEMENT STRATEGY

It is recommended that this management strategy be reviewed as technological change, research results or major changes to the beach require.

In the preparation of the Wainui Beach Management Strategy, the committee has heard a consistent request from the Coastal Science field for additional efforts to be made toward data collection and analysis to better understand the erosion hazards and process at Wainui. This requires a long-term commitment to this work.

We support this call while realising that funding for such work will always be limited and strategy decisions are progressed with the knowledge available at the time.

We do recommend that further research and monitoring of sediment/sand movement both onshore and offshore is undertaken at Wainui Beach.

Technology advances in recent years with Sonar and GPS mean even local crayfisherman are able to provide significant information on offshore sand movements. If this information is collected in a regular systematic way it will prove to be a valuable resource for the future.

WAINUI BEACH MANAGEMENT STRATEGY QUESTIONNAIRE RESULTS
AREA 1 – HAMANATUA STREAM TO THE CHALET

435 Questionnaires delivered, 28 Received back. (20 from Okitu, 8 from Wainui)

1(a) **Where are the best or most needed Car Parking areas to be located?**

Status Quo	22
Enlarge / Enhance	5
Additional Car Park	1

1(b) **Should vehicle access along the dunes be restricted by barriers?**

Yes	24
No	4

1(c) **Where are the best locations for protected pedestrian access from the dune to the beach?**

Status Quo	16	
New - opp. Okitu Store	2	(Note: recognised poor location of Okitu store steps, causing use of steep dune)
New - opp. Francis Street	10	
New - opp. Douglas Street	4	
New - between Chalet & Douglas Street	2	

1(d) **What type of structure should each pedestrian access be?**

Something suitable for Baby buggies	3
-------------------------------------	---

Note: most other comments agreed that boardwalks or ramps are preferable to stairs, but may not be suitable in high dune locations.

2 **Motorbikes and Quad-Bikes - Walking access tracks along the dune should have barriers and turnstiles to restrict motorbikes & Quad-Bikes on the dune area?**

Agree	28
Disagree	0

3 **Horses – Is there a need for a specific Horse access to the beach within this area?**

Yes	24
No	3
(No response)	1

Note: Two comments along the lines of, "Yes, but not to the detriment of pedestrian safety and access".

GLOSSARY OF TERMS

- R.L.* - Reduced Level above mean sea level (East Cape Catchment Board Datum).
- foreshore* - Shore between high and low water marks.
- foredune* - The front part of the sand dune area.
- incipient dune* - A temporary dune that builds up in front of the main foredune from time to time. Subject to considerable change.
- dip* - Geological term for the downward slope of bedrock/strata.
- end effects* - Resulting scour or erosion on an area of beach or foredune, from off the end of adjacent works or structures.
- pocket beach* - A beach that has a largely closed sand/sediment budget. Without outside sources of sand/sediment *e.g.* Rivers.
- gabions* - Plastic coated wire mesh baskets filled with cobbles. (Constructed by the East cape Catchment Board 1975/1976).
- spur groynes* - Sheet pile (steel) groynes, 20 metres long (constructed by Cook County Council in 1961/1962). Most now removed.
- rip embayment* - The action of a rip current causing deep scour on a portion of the beach and foreshore, lowering sand levels considerably and thus the high tide can attack the foredune.

WAINUI BEACH MANAGEMENT STRATEGY - QUESTIONNAIRES SUMMARY OF WRITTEN COMMENTS

Comments from people located in Sections 2 (Tuahine Point) and 3 (Tuahine Crescent to Wainui Stream)

TUAHINE POINT PROPOSALS

Tuahine Planting Help

L K Redstone – Free cuttings. Assist planting, fencing and track making.

A Reynolds – The planting of this area will significantly enhance Wainui's beauty and will prevent erosion.

S Cave – Holiday times, only in summer.

L Lautmann – Just say when.

J Prinsloo – If we are in New Zealand yes, we are temporarily in Australia.

M Jefferd – I am willing to donate native trees and shrubs.

B & G Nolan – My property runs from the trig above Tuahine to the back of the old mile range and from many years of observing erosion around this coast-line I believe that the only effective way to attack this problem is at sea level.

Rock Revetment Proposals

L K Redstone – I don't believe it is suitable at the point (sections 26, 27 and 28) unless the slope starts at the present log-rail wall and the stone is better quality and size than the shell shale used now. No time-frame is mentioned, is the project over in five, ten, fifteen years? Or as required? I do not agree to remove all the steel rail irons due to turbulence at the point or digging into the Papa base.

N Weatherhead/S Dunn – Should try to retain existing works if possible and build over it.

D & M Calcott – If the revetment can be created over the top of the wall and hide it reducing removal costs, I would support this also.

From discussion with Mr *G Ford* 31 October 2002. He would like to be able to place some further rock on Filter Cloth behind the proposed revetment but not higher than the revetment, at his expense.

N Benacek – Although the steel rails are ugly I am totally against the financial funding to be funded by beach front owners. The beautification of the beachfront is a community and tourism issue. If this is being done because it

is an eye sore or public safety is the issue then it should be funded by the whole of Gisborne – it should not be related to beach-front owners.

R Briant – The present rock and iron are an eye sore and of no benefit. I agree with removing them. I am less keen on new rockwork.

L Lautmann – I don't support rockwork in any form. The rock revetment I feel will damage the beach.

J. Falkner – As long as the rock that is up my bank is left there.

J Prinsloo – Can they not be left and sloping rock added on top of it?

M Jefferd – Rocks already in place could possibly remain underneath the new rock. Sections where rock revetment is already in place, could the railway iron on the seaward side of the rock be left to ensure stability? If more rock is added this would cover the railway iron?

B & G Nolan – I only support removal where it is not practicable for rock revetment to completely cover existing structures.

R Simmonds – Thought should be given to having in-built steps within the revetment, rather than wooden steps.

Rock Revetment Funding Options

R Brice – Definitely not in favour of “Property Frontage” basis as I have no beach frontage. Other Murphy Road back sections were not included in the “Property Frontage” list, so mine should not also.

D Fraser – Either way is ok.

N Weatherhead/S. Dunn – Costs have always been based on frontage. No reasons have been given to change.

S Cave/C Cave – Hazard zone areas are only subjective and only an assessment of probability. However, I do not have any strong objections to option 1 as recommended.

D & M Calcott – Would support hazard zone basis even though it would cost me more in this together approach.

N Benacek – I do not support either option. Cost should be apportioned to those who want this scheme.

R Briant – I don't feel strongly one way or the other.

J Falkner – My property is at the junction of two schemes. I have 3 metres in Lloyd George Road works and the rest is in the log wall works. The latter extend seawalls much further. How ld this be remedied?

B & G Nolan – Some smaller sections have large frontages and vice versa. I don't believe the former should subsidise the latter.

Geotextile Sand Tubes Proposal

L K Redstone – This is the sixth scheme since I have lived here and it depends on the size and quality of the rock.

Dune to be allowed to ‘breathe’

Beach drainage system pre-feasibility study

S Cave – Likely to be too expensive as a long-term solution as ‘forces’ at Wainui are very robust and destructive at times, also process is very repetitive.

Beach Scraping Trials

S Cave – Likely to be too expensive as a long-term solution as ‘forces’ at Wainui are very robust and destructive at times, also process is very repetitive.

Dune Care Planting

L K Redstone – Since stock has been banned from transit, the sand hills north of Hamanatua Stream have grown considerably due to vegetation entrapping sand and have made up for any shore side loss.

A Reynolds – It’s good to have an overall beach strategy and the residents are working together for the same outcome even if it is a long project.

R Briant – Should also remove weeds and forbid locals from dumping garden waste in the dunes.

M Jefferd – Only on areas of sand that are permanent, not coming and going as the seas dictate.

R Godwin – Tall trees on property-front damage the structural integrity of the bank and obstructs views.

Bridal Path At South End

L K Redstone – Also there should be vehicular access from Pare Street for emergencies.

J Falkner - Only at the southern end of Pare Street.

Other Comments

Note: Telephone conversation with *Ron Brice* at 8 am 25 October 2002. He had been away on the Gold Coast. Reported major sand replenishment there from the Tweed River by pumping sand onto the beach.

N Benacek – I don’t think that the “individual sections” (1-6), should be separate issues for voting and payment – this is a community issue!

It should be recorded which landowners vote “yes” to this project and share the costs only amongst them if this project is to go ahead. People have bought beachfront property KNOWING the risk of erosion. Any person has the right to decline paying for work they don’t wish for in the first place.

I oppose changing the beach front which has the possibility of losing the ‘surf’ that Wainui is famous for – not ‘Napier style’.

After observing the storms of 1992/93, it is my firm belief that nature will take what it wants when it wants. From historical records this is what occurred 50 years ago when the northern end of Wainui suffered. Please leave the beach to it’s own, the sand will come and go.

Comments from People Located in Section 4 – Wainui Stream to Stock Route including 1 and 3 Wairere Road

TUAHINE POINT PROPOSALS

Tuahine Planting Help

R Amann – As a shift worker, suitable time to be arranged.

D Ritchie – Light duties.

Rock Revetment Proposals

R Amann – Should pile drive all rail irons down into pug. If loss of base line material occurs then the sunken rail irons should retain the rocks in their relative position.

M Vita – Not sure about funding breakdown.

Geotextile Sand Tubes Proposal

D Ritchie – No rock shall be removed until Geo Tec bags have been proved effective beyond any doubt.

R Amann – I would support a rock wedge 3:1 slope from Wainui Stream to the Stock Route (drawings attached).

Dune to be allowed to ‘breathe’

Beach Drainage System Pre-Feasibility Study

Beach Scraping Trials

Dune Care Planting

Bridal Path At South End

Gabion Basket Replacement with Geotextile Sand Cushion (Wainui Stream to Cooper Street)

R Amann – I do not support the bags because of clipping enclosed and the relative cost compared to rocks. I would not authorise payment on my rates until other financial avenues are investigated.

B Donnelly – Very subjective question, Other factors hinge on this upgrade.

Subject to full loan repayment at any time without penalty, payment only if all listed parties provide written agreement to pay as well.

Remove restrictions on dwelling replacement/renovation within restricted areas if protection works proceed.

Gabion Basket Replacement With Geotextile Sand Cushion (Cooper Street To Stock Route, Including 1 And 3 Wairere Road

D Collure – Proven to be ineffective, an environmental hazard and an environment risk in the long term as shown when used elsewhere.

M Vita – Cannot support sand cushion idea with the limited information on this type of structure. Do support tidy up of broken concrete wall etc. We are prepared to pay for maintenance of existing style of works.

Other Comments

D Ritchie – There is no boundary between Stock Route and Hamanatua Stream. It seems ironic that all the meetings were separate, now this questionnaire has been bulked i.e. sections 4, 5 and 6 together.

R Amann – Additional ideas: Extend storm water pipes at the Stock Route and the school (Dip) as submarine out falls. Preferred order of work to start with section 1 first then numerical sequence i.e. section 2, section 3 each summer. Investigate feasibility of extending the Tuahine concrete wall groyne with a suitable artificial reef. The objective being to create a reservoir of sand on the leeward side of the reef in southerly swell and wind conditions.

Comments from people located in sections 5 and 6 - Stock Route to Hamanatua Stream

TUAHINE POINT PROPOSALS

Tuahine Planting Help

P Gall – Surface drainage is recommended.

A Donaldson – I'd plant some trees.

D McLernon – I live in Christchurch and while I would like to, I could not assist in a practical meaningful manner.

S Dowding – Within Limits, Usefulness? 80+ years?

Rock Revetment Proposals

D Timbs – There needs to be further debate regarding the obvious increase and ongoing increase, in beachfront rates because of rapid land value increases. 5, 10, 20 years down the track beachfront will pay proportionally much higher rates than the rest of town and funding the majority of beach erosion control. I don't see the logic or fairness in that.

P Dreifuss – Concern about effect on rest of beach.

A Donaldson – Why is 6% of the funding from 'Wainui Beach Fore-dune Protection Scheme' rates? That's over \$250 from me when I receive no benefit.

A Jefferd – I think sloping rock revetment has been very successful.

B Brown – Continue maintaining what is already successful.

Geotextile Sand Tubes Proposal

P Dreifuss – The bags are failing in Australia, gabions are effective and should be maintained.

A Donaldson – Yes but if we are paying 6% now for other properties (Tuahine Crescent to Wainui Stream) they should contribute the same for us.

B Brown – Unnecessary at this stage.

Dune to be allowed to 'breathe'

P Dreifuss – The beach recovers at its own perfect pace.

B Brown – Unnecessary at this stage.

A Donaldson – I don't understand this question.

Beach Drainage System Pre-Feasibility Study

P Dreifuss – Not designed for high wave activity such as that at Wainui.

B Brown – I suspect that the beach is too 'dynamic' for this system.

Beach Scraping Trials

P Dreifuss – Will Detrimentally affect surf.

D McLernon – Initial trial only.

B Brown – A waste of time and money. Survey cross-sections show that the sand goes and is later replenished naturally.

Dune Care Planting

P Gall – Geo sand cushions should be trialed elsewhere and proven before rock protection is removed.

P Dreifuss – Pleased to assist with help.

A Donaldson – Ultimately I don't think it makes any difference.

A Wells – Consider another groyne south of Hamanatua Stream, where the stream wandered south 3 years ago. That is the only major threat on this northern section of the beach.

Bridal Path At South End

Comments from people in locations other than sections 1 to 6

Note: *Amber Dunn* – A substantial 26 page submission received from Amber Dunn, who has prepared a Masters Thesis on Wainui Beach titled “*Coastal Erosion at Wainui Beach, Gisborne*”. Amber is strongly opposed to the use of the WBMS as a guiding document for addressing the property erosion problem on Wainui Beach. “There still remains massive gaps in our scientific knowledge on Wainui Beach and these must be addressed before any definitive management options can be adopted, and to ensure the options we implement will indeed work”.

TUAHINE POINT PROPOSALS

Tuahine Planting Help

C & K Hicks – Prepared to plant some trees.

A Bull – Project coordination.

G Sheriff – I am prepared to help with planting.

K Green – I can offer ‘communication help’ only, I am not fit enough to do manual work.

M Vita Snr. – Prepared to help with planting at Okitu.

K Barlow – I can supply some Cordyline Australis and Mountain Flax if needed.

A Dunn – Will need lots of notice.

Rock Revetment Proposals

C & K Hicks – Removal of irons for safety and they’re ugly.

J Fitzgerald & M. Mane – Removal of dangerous steel structures is very important. Is sand cushion not also an option?

N. Craft – The issue is for the whole community not just boundary owners.

R Gordon – I believe the beach should be allowed to take its natural course.

T & N More – User pays.

K Green – This work should be started as soon as possible.

A & P Cotterill – Priority should be given to the wishes of the people who live in the area.

W Hickling – Those who pay should have the say.

Geotextile Sand Tubes Proposal

R. Nalder – Attached Darryl Fry article Re. Geotextile. Geotextile Sand Cushions that have been used on the Gold Coast are now failing.

Dune to be allowed to ‘breathe’

K. Green – The high sand dune needs this protection base as soon as possible to stop further erosion.

W Hickling – Yes if there is a positive advantage.

Beach Drainage System Pre-Feasibility Study

K Green – This system is unproven in NZ or Australia. Funding would be better spent improving storm water erosion urgently.

W Hickling – Then a cost benefit study.

Beach Scraping Trials

R Barton – Does not work. Kapiti DC will tell you this.

W Hickling – Provided it will stay in place.

Dune-Care Planting

J Fitzgerald & M Mane – Removal of dangerous steel structures should be a priority.

A Bull – Plantings must be protected from human and animal damage.

N Craft – I don’t think that the point of view should be pitched from the point of view of the property owners. The beach is a whole community asset and the consequences affect everyone.

K Green – Two beachfront residents have asked for plants to be made available for them to plant now.

C & S Palmer – Would be willing to assist in the trimming and/or cutting down of overgrown Pohutukawa in the sand dunes along Moana Road, in the area near my home. Would also be willing to assist with the planting of suitable vegetation which will enhance the dunes, beautify the area and not spoil the view of the ocean for residents, visitors and members of the public.

W Hickling – Provided they are low native shrubs not Norfolk Pines, Pohutukawas, Chinese (?), as at present. During the 30 years I have owned my section my view has been reduced by one third. As we all know there is a cost to the view, corrosion.

Bridal Path At South End

B O’Shaughnessy – If we have to have horses they should only have access at a specific point.

Other comments

J Fitzgerald & M Mane – Scouring and movement of stream mouths will still undermine structures as they move north and south?

B Rasby – I would like to see the (steel) groynes PUT BACK. Why were they removed? Sand comes and goes at ALL beaches. It leaves sideways and returns sideways.

R Gordon (summary) – 60 – 80% of beachfront owners bought their properties knowing the risk of erosion. Placing structures on the south end of the beach reduces the replacement of sand. The sand is what makes Wainui an exceptional surf beach. Preservation of the surf is crucial. Let the beach take its natural course!

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