

Coastal Zone Management

The Kapiti Experience

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Abstract

The population of the Kapiti Coast District, located on the west coast of Wellington, is among the fastest growing in New Zealand. Situated along the Kapiti coastline are three distinct communities: Paekakariki, Raumati and Paraparaumu, each bordering a coastline that has suffered periods of active erosion during at least the last 100 years. In the past, development has been permitted too close to the coast, and this has become a significant factor in the process of determining the future management of the coastal zone.

This paper outlines the background to development at Kapiti and the particular pressures this has placed on the coastal zone. Historically, structural solutions have been used to control erosion and much of the coastline is thus no longer in its natural state.

Coastal erosion is recognised by the District Council as a natural hazard that from time to time will require an emergency response and the special measures that have been taken to prepare for such events, are described.

The options available for the sustainable management of the coastline in the future, in each of the three communities, are discussed in relation to the coastal processes, existing development, and the requirements of current legislation including the Resource Management Act 1991.

Introduction

The Kapiti Coast District is located on the west coast of the Wellington region. Because of its proximity to the city of Wellington, its generally favourable climate and its long, attractive coastline, its population is among the fastest growing in New Zealand. During the first half of this century, the district evolved from mostly farming-related activities towards more of a holiday/retirement area with little commercial development. Since the 1950's, the focus has shifted towards the district becoming a permanent settlement area. The expectation is that the present high growth rate will continue over the next 20 to 30 years thus placing considerable development pressures on the natural and physical resources of the area.

The Kapiti coastline, which is nearly 40 km long, is an important community asset that has many unique characteristics and natural qualities. Part of its uniqueness is due to the fact that, despite the presence of development close to the shore in some areas, there are parts that are less highly developed and remain more or less in a natural state. The coast is also of cultural and spiritual significance to Maori and is an important source of food. The Kapiti Coast District Council's policy is to restrict further subdivision close to the coast and to maintain what remains of its natural character.

Situated along the Kapiti coastline, south of the Waikanae River, are three distinct communities: Paekakariki, Raumati and Paraparaumu, each bordering a part of the coast that has suffered periods of active erosion during at least the last 100 years. With the benefit of hindsight it is clear that, in the past, development of these communities, in some cases, was permitted too close to the coast, and this has become a significant factor in the management of the coastal

zone. Although each of these communities is located on different parts of the same coastline, each has unique characteristics that influence coastal planning.

Four further coastal settlements, at Waikanae, Peka Peka, Te Horo and Otaki, lie to the north of the Waikanae River, but much of this part of the Kapiti coast has been protected from erosion cycles by the presence of a sufficient sand dune system.

This paper discusses the issues surrounding the sustainable management of the part of the Kapiti coastline extending from Paekakariki to the mouth of the Waikanae River, which includes Paekakariki, Raumati and Paraparaumu.

Legislated Responsibilities

In developing coastal management plans it is necessary to take into account the provisions of the Resource Management Act 1991 (RMA) and the relevant clauses of the New Zealand Coastal Policy Statement 1994 (NZCPS). Plans must also be consistent with the Regional Coastal Plan (in this case the Proposed Regional Coastal Plan prepared by the Wellington Regional Council) as well as the District Plan (currently the Proposed District Plan dated 2 September 1995).

Among other things, the Kapiti Coast District Council is responsible for the maintenance of public assets within its jurisdiction and this includes, where appropriate, the protection of those assets from coastal erosion. For the most part, these assets consist of public roadways along the shoreline at Paekakariki (The Parade), Raumati (The Esplanade) and Paraparaumu (Marine Parade).

Along the northern part of Paraparaumu, the land adjacent to the shoreline, between MHWS and the boundaries of the mostly privately-owned properties behind, is vested in the Council in the form of an Esplanade Reserve. Here the Council's responsibility for maintenance is less clearly defined.

Section 229 of the RMA describes the purposes of an Esplanade Reserve and these include in Sub-section 2a:

"To contribute to the protection of conservation values by, in particular—

- (i) Maintaining or enhancing the natural functioning of the adjacent sea, river, or lake; or*
- (ii) Maintaining or enhancing water quality; or*
- (iii) Maintaining or enhancing aquatic habitats; or*
- (iv) Protecting the natural values associated with the esplanade reserve; or*
- (v) Mitigating natural hazards;*"

Clearly there are natural values associated with the Esplanade Reserve at Paraparaumu and it also has a significant role to play in mitigating the risk of erosion. On its own, maintaining the Esplanade Reserve to prevent erosion is, arguably, not a Council responsibility where the properties so protected are mostly privately-owned. The Proposed District Plan does, however, recognise the unique character of the coastal environment at Kapiti and the need to protect the natural character through proper maintenance of the coastal margin and this includes existing Esplanade Reserves.

This is also consistent with Part II of the RMA, which includes a number of general matters outlining the purpose and principles of the Act. In particular, Section 5 promotes sustainable management of natural and physical resources, and Section 6 lists matters of national importance including: *"the preservation of the natural character of the coastal environment and the maintenance and enhancement of public access to and along the coastal marine area"*.

This is further spelled out in Chapter 1 of NZCPS 1994, which lists a number of national priorities for the preservation of the natural character of the coastal environment including, where appropriate, restoration and rehabilitation (Policy 1.1.5). Given the amount of legislation

referring to the natural character of the coastline, no-one should be in any doubt as to the level of attention likely to be given to this in resource consent hearings, the Environment Court and in cases where litigation is involved.

Defining the term "natural character", however, remains somewhat elusive. The term is not defined in the RMA, nor in the NZCPS but it seems the Environment Court will place significant weight on a 1982 decision of the Planning Tribunal (*Physical Environment Assoc. v Thames-Coromandel District Council*), which said: "*What is natural is that created by nature, as distinct from that which is created by man*". In other words "preservation of the natural character" means preservation of those qualities and features in the coastal environment that have been brought into being by nature. While a worthwhile goal, this appears to imply that all things created by nature are necessarily worth preserving and, among other things seems inconsistent with the requirements in the RMA for the mitigation of natural hazards, which after all are creations of nature and which have had a major influence on the shape of coastal landforms.

Part II of the RMA contains provisions that require the protection of natural and physical resources of value to the tangata whenua. The extent to which Maori values have been compromised in the past may not always be apparent and should be discussed with iwi representatives. Consultation is also advisable to establish whether or not coastal management proposals will be compatible with the views of the tangata whenua.

Section 31 of the RMA is also important. This imposes on every territorial authority the function of controlling "*any actual or potential effects of the use, development, or protection of land, including the implementation of rules for the avoidance or mitigation of natural hazards*" A necessary first step in this process where the coast is concerned is covered in Policy 3.4.1 of the NZCPS, which states:

"Local authority policy statements and plans should identify areas in the coastal environment where natural hazards exist."

Because of the nature of the Kapiti coastline, and its periodic exposure to adverse sea conditions, it is fair to say that all of it is potentially hazardous to some degree. The extent to which public (or private) assets may become threatened by natural hazards will depend on the integrity of the barrier that exists between the assets and the sea. At Raumati and at Paekakariki seawalls have been constructed along significant lengths of shoreline but at Paraparaumu the Coastal Marine Area (CMA) remains mostly in its natural state and there is a natural barrier along much of the shoreline consisting of a wide beach and sand dunes. Proper management of the barrier clearly has a significant role to play in mitigation of the potential hazard.

NZCPS Policy 3.4.6, referring to protection of existing development, is also relevant, particularly where coastal protection works have not hitherto been necessary:

"Where existing subdivision, use or development is threatened by a coastal hazard, coastal protection works should only be permitted where they are the best practicable option for the future. The abandonment or relocation of existing structures should be considered among the options. Where coastal protection works are the best practicable option, they should be located and designed so as to avoid adverse environmental effects to the extent practicable."

Where coastal works are contemplated, this policy requires careful consideration to be given to appropriate alternatives including the likelihood of the need for further works in the future, both as a result of coastal processes and any consequences of the works themselves.

Outline of Coastal Processes at Kapiti

Despite a tendency to erode in geologically-recent times, the Kapiti coast has historically undergone long-term accretion since sea levels stabilised following the last post-glacial rise around 6500 years ago. This accretion has given rise to the present coastal plain and this has been most pronounced at Paraparaumu. Here the off-shore presence of Kapiti Island creates a

zone of reduced wave energy in its shadow, resulting in deposition of sediment and producing what is sometimes referred to as a "tombola".

The cusped headland so formed now extends a significant distance beyond the adjacent coastline. Gibb (1978) reported that between 1880 and 1977, the advance of the foredune at Paraparaumu varied between 49 and 195 metres. As a consequence of this, there are wide, safe beaches around the headland and the Paraparaumu coastline enjoys a well-deserved reputation as an amenity of significant recreational importance.

During this century, at least, the growth of the headland has been interspersed with periods of erosion. During the 1940's, for example at Paraparaumu, properties along Manly Street on the northern flank of the headland were affected by erosion and part of Marine Parade to the south was closed in the 1950's because of damage caused by coastal erosion.

Both Gibb (1978) and Morris et al (1981) suggested that the growing headland at Paraparaumu tends to act as a barrier to the southward movement of sediment. Both also stated the view that the south-moving longshore current, including the dominant ebb-tide flow, is deflected off-shore by the headland, and consequently much of the longshore drift of sediment that is not trapped on its northern side is also deflected off-shore, thereby creating a deficit in the amount of sediment available to supply the southern beaches.

There are, of course, many factors; wind, currents, tides, etc., that may influence what actually happens and it is perhaps simpler to take the view that when the combination of these factors are such that some of the available sediment is deposited on the northern beach, or deflected off-shore, there will clearly be less available to supply the beaches to the south.

Certainly, events since 1982 seem to support these views. It also seems that there is a pattern emerging in the erosion/accretion cycles of the coastline in that extended periods of accretion on the north side of the headland (along Manly Street) appear to have been accompanied by erosion to the south, and vice versa. The erosion along Marine Parade and the accretion adjacent to the Manly Street properties, during the period 1984 to 1993, is consistent with this view.

The generally insufficient amounts of sediment available to supply the beaches south of Paraparaumu is clearly evident in the noticeably diminishing width of dry beach. This is most apparent at South Raumati where the sea laps the timber seawall during much of the tidal cycle. Immediately to the south of Raumati at Queen Elizabeth II Park, the unprotected dunes are eroding, thus maintaining a wider beach along this section of the coast and also supplying sediment to the coast at the northern end of Paekakariki. There also seems to have been sufficient sediment available, at least partly from this same source to maintain the southern part of the Paekakariki coastline in a reasonable state of equilibrium during the last two decades, despite the presence of coastal protection works.

The important point that arises out of this discussion is that the beach systems to the north and south of the Paraparaumu headland are inter-dependent in terms of sediment budget (the difference between the amount of sediment supplied to a beach and that lost by wave and wind energy, etc.). A desirable objective for future management will be to bring these two areas into balance as far as is possible.

Present Status

Timber seawalls, some parts of which are reinforced with rock toe protection, have been built to protect property along much of the coastline at Paekakariki (1.4 km) and Raumati (3.1 km) and, to a much lesser extent, at Paraparaumu. Generally these seawalls protect public assets except along Raumati beach, where a significant portion of the seawall, constructed by the Council following the destructive storms in the 1970's, borders private property located along the top of a high and potentially erosive remnant dune.

The timber seawalls, despite predictions to the contrary at the time of construction, have successfully stabilised the coastline without causing noticeable degradation of the nearshore

zone over a period approaching 20 years. Particularly at Raumati and Paekakariki, where assets including housing and roadways are, in some cases, located inappropriately close to the coastline, the seawalls continue to provide a measure of protection. This is not to say, however, that a major storm at any time in the future could not destroy any part of the seawall and attack the embankment behind.

From the northern end of Raumati to the Waikanae River, and also at Queen Elizabeth Park between Paekakariki and Raumati, the coastline remains more or less in a natural state except for some private attempts to prevent erosion of individual properties at Raumati, and a short length of seawall that was constructed during the early 1970's at Paraparaumu. This seawall has, for some time, been mostly buried in sand as the beach has accreted in this area during the past two decades.

The shoreline along Marine Parade, Paraparaumu, on the southern flank of the headland, receded during the period 1983 to 1993 at a rate of up to around 2 metres per year, to the point where the southern part of the roadway was at risk of inundation. Although there were calls for construction of a seawall, there remains a beach that is a valuable community asset and beach renourishment was considered to be a more appropriate first option. A trial renourishment exercise has been undertaken to assess the wisdom of using this technique to restore the beach and thereby mitigate the erosion hazard.

As noted, much of the northern part of the Paraparaumu coastline has accreted significantly during the past decade and erosion events have been less frequent. The mostly private property along this section of coastline is not currently considered to be at risk.

Some mention of Coastal Hazard Zoning is appropriate here. The Kapiti Coast District Council currently has a 20 metre wide zone (from MHWS) along most of the coastline where new construction is not permitted, and a further 30 metre wide zone where new development is required to be relocatable. This zoning has been in existence since the mid 1980's and has been included in the Proposed District Plan. While it can be argued that a rigid delineation is not appropriate on a highly-developed coastline that exhibits such variation in behaviour, some form of hazard zoning is preferable and there are presently no more appropriate methods being used in practice.

Case Study: Paraparaumu Beach Renourishment Trial

Beach cross-section surveys at Paraparaumu during the period 1984 to 1993 showed that the foredune along Marine Parade had been eroding at an average rate of around 2 metres per year. Conversely, the beach along Manly Street, to the north, had generally accreted during the same period.

By early 1993, the recession of the dune face along Marine Parade, and thus the encroachment of high tide, had reached a stage where the Kapiti Coast District Council decided that if measures were not taken to reduce or stop the erosion, the roadway, which provides the only link other than State Highway 1 between Paraparaumu and Raumati, would be threatened with inundation.

Following investigation, the Council was advised that in order to preserve, as far as possible, the natural character of the coastline in this area, the most appropriate course of action was to renourish the beach and dune system. It was proposed that a trial be conducted to determine whether or not a larger-scale renourishment exercise was likely to be successful. This approach in effect used the beach as the prototype, to avoid the need for time-consuming and costly investigations that might otherwise be necessary to justify a renourishment project. The most suitable source of material for the renourishment trial was from the accreting beach adjacent to Manly Street.

The Kapiti Coast District Council accepted these recommendations and an application for the necessary resource consents, in terms of the Resource Management Act 1991, was duly submitted to the consenting authority, the Wellington Regional Council. A hearing was

subsequently held in Paraparaumu on 11 August 1994 before a Wellington Regional Council Hearings Committee, and a consent to allow a trial renourishment, involving the transfer of 6000 m³ along the beach, from Manly Street to Marine Parade, was granted on 5 September 1994. The consent did not allow on-going renourishment subject to a satisfactory trial, as had been requested.

The main purpose of the trial at Paraparaumu was to ascertain whether or not there would be any adverse effects caused by the removal of sand from the beach fronting Manly St., and to determine if the sand deposited along Marine Parade would remain in sufficient quantities to provide the necessary protection to the remaining beach and sand dunes. The impact of the project on marine life in both areas, and along the beach in the transportation zone, was also a consideration.

A 200 metre long trial site was selected at the southern end of Marine Parade, Paraparaumu, where the remaining dune width was unsatisfactory. During November 1994, 6000 m³ of sand was obtained by scraping from the inter-tidal zone on a section of the beach fronting Manly Street. This sand was transported along the inter-tidal zone and deposited on the beach and against the dune face at the trial site, at an average rate of 30m³ per metre of beach.

Cross-section beach surveys were carried out at regular intervals following completion of the renourishment work and the results, after approximately twelve months of monitoring from October 1994 through to September 1995, were reported in Lumsden (1996).

During the monitoring period significant accretion occurred in the vicinity of the supply zone and around the tip of the Paraparaumu headland. Although sand volumes in the trial area at Marine Parade fluctuated, no additional accretion occurred and the net change in beach volume, during this same period, was insignificant.

This evidence suggested that, if the renourishment exercise had not been undertaken, there may not have been much net change in the volume of sand on the beach along the Marine Parade trial area. On the other hand, the north-westerly storms that occurred during the 1994/95 summer would almost certainly have threatened the roadway along Marine Parade and, possibly, would have required emergency mitigation measures and given rise to further calls for construction of a seawall. While the beach may have subsequently recovered, it would have taken additional effort to restore the dunes to their previous state. It was significant too that, despite fluctuating beach volumes following the storms, the dune face along the trial site, for the most part remained around 4 to 5 metres seaward of its position prior to the trial commencing.

Further, it was determined that, in the conditions that prevailed during the twelve-month trial period, the replenishment sand mostly remained within the beach system without significant losses through longshore transport. It was also noted that the renourishment trial had taken place during a year in which little net erosion occurred along Marine Parade and this was not necessarily typical of the average behaviour of this section of the coastline during the past decade. Within the limitations of the exercise the renourishment trial was considered to have been successful.

Further north in the region of the supply zone, apart from at the northern end of Manly Street, accretion occurred along this part of the coast at a rate that was two to four times the average during the previous decade. The impact of the sand extraction on this occasion was considered to have been negligible.

Protection of Marine Parade as well as maintenance of the adjacent beach are clearly important issues for the Kapiti Coast District Council. Whereas construction of a seawall would achieve the former objective, it would be unlikely to be of much help with the latter. Periodic renourishment on the other hand is able to satisfy both needs as long as it remains economically viable.

Despite the environmental benefits of beach renourishment as a management technique, like any other of the recognised methods, it will not always be appropriate for a variety of reasons that include availability of a source of sand and suitable shoreline conditions. Public understanding and acceptance will always be important as will economic cost.

Emergency Response Planning

Emergency response procedures are also a necessary part of coastal management planning, and coastal erosion hazards are no exception. Relevant here are Sections 330 and 330A of the Resource Management Act 1991, which give a territorial authority the right, under certain conditions, to carry out emergency protection work without first obtaining a resource consent. A decision, however, by the Planning Tribunal (*Gisborne District Council and the Minister of Conservation v J I Falkner and the Pare Street Partnership, October 1994*) concerning coastal protection works at Wainui Beach, Gisborne, rather limits the ability to take action under these provisions by suggesting that Sections 330 and 330A may not be applicable if the events leading to the emergency could have reasonably been foreseen.

A territorial authority, having quite properly (in accordance with NZCPS Clause 3.4.1) identified areas where coastal erosion hazards exist, should, therefore, not rely on the emergency provisions of the RMA, to allow emergency mitigation work to be carried out on the coastline in such areas without an appropriate resource consent. This means that territorial authorities with coastal boundaries that include areas with known erosion hazards need to prepare emergency response plans in order to be able to take appropriate action during an emergency.

In other words, if there is a foreseeable risk of public assets, such as a roadway, being inundated during storm action and requiring urgent response measures to be taken, a prudent council will have procedures in place with the necessary resource consents in hand.

The protection of private property that is placed at risk during adverse conditions is less straightforward. An individual landowner, of course, has the same right as a territorial authority to carry out emergency work and then apply for a retrospective resource consent providing the event could not have reasonably been foreseen. Again, though, without some prior assessment, it would seem unwise to rely on this.

Protection of private property can provide something of a dilemma for territorial authorities. In most cases, councils will not have a legal responsibility to provide coastal protection for private property but, on the other hand, where some form of protection is desirable, it will be in the council's best interests to try and maintain some consistency of design from property to property rather than allow an ad hoc approach resulting in a variety of solutions, some of which are likely to be more successful than others.

A pragmatic approach will be for a council in this situation to meet with the owners of the properties at risk and attempt to seek agreement on specific mitigation measures. Preferably, any mitigation measures required could then be provided by the council and paid for by the residents concerned or, at the very least, constructed to a consistent standard by a third party on behalf of the property owners. There will also be obvious advantages for the consenting authority in only having to deal with one organisation.

Similarly, where there is a possibility of privately-owned assets being placed at risk during storm action and requiring an emergency response, the form of that response should, again, preferably be agreed on a community basis beforehand rather than leaving individual property owners to act independently.

The need for emergency management planning was highlighted by events during December 1994 and January 1995 at Paekakariki that demonstrated the speed at which conditions can change on this coastline. Aggressive sea conditions in the form of rip currents lowered short lengths of the beach by up to 2 metres over a period of just 2 - 3 days and destroyed a section of the seawall. On that occasion, an emergency response was necessary to prevent erosion of the roadway (The Parade) and a rock revetment was built following loss of the timber seawall. A resource consent was subsequently obtained, on that occasion, under the emergency provisions (Sections 330 and 330A) of the Resource Management Act. In granting the consent, however, the Wellington Regional Council made it clear that, in view of the Wainui Beach decision, the Council should not rely on the emergency provisions of the RMA to enable it to carry out future work of this nature.

The Kapiti Coast District Council has subsequently applied for and been granted resource consents allowing it to construct rock revetments as an emergency response measure to mitigate the impacts of coastal erosion along all parts of the Kapiti coastline where such an emergency is reasonably foreseeable.

Coastal Management Issues and Strategies for the Future

Preservation of the coastal environment in its natural state as far as possible, is a prime consideration for the Kapiti Coast District Council. Other issues such as mitigation of natural hazards, protection of public and private property, provision of access, etc., must be considered in light of this guiding principle, which is enshrined in the Resource Management Act 1991 as a matter of national importance.

The task for the Council is to practise sustainable management of its coastal resources while at the same time recognising and responding to the needs of the community. While there is plenty of scope for conflict it seems that the resource management regime including the Environment Court (former Planning Tribunal) will take what is essentially a practical approach to sustainable management.

There are, of course, many coastal management issues such as ensuring that the natural character is not lost through inappropriate subdivision, use and development; preservation of Esplanade Reserves; cultural and heritage issues; habitat maintenance; public access; etc., that are properly dealt with in District Plans. The management issues particularly concerned with preservation of the coastline include:

- mitigating the impacts of natural hazards;
- encouraging natural development of foredunes;
- maintaining natural coastal processes including the longshore movement of sediment;
- enhancing and, where necessary, rehabilitating the natural character.

Central to these issues is minimising the impact of storm action and adverse sea conditions, which have the potential to cause serious erosion at Kapiti from time to time and place assets at risk.

To the south of Paraparaumu, where, apart from Queen Elizabeth II Park, much of the Kapiti coastline has been modified by land development and seawall construction, the "natural character" has been significantly modified, and rehabilitation, while remaining a desirable goal, is not a realistic option. The objective now is to maintain the status quo as far as possible in a way that minimises adverse effects while at the same time continues to provide some degree of protection to public (and at Raumati, private) property. Effectively, at Paekakariki and Raumati there is little choice other than to limit further development and maintain the existing coastal protection works as long as it remains practical to do so. Retreating from the coastline in these areas is not considered a realistic option at this time.

At Paraparaumu, because of the historical trend of accretion evident in the growth of the headland, the character of the coastline, as noted previously, is more natural and is for the most part dominated by a wide flat beach backed by an extensive dune system. Arguably the finest unconfined beach in the Wellington region, it is a valuable community asset that has a significant role in maintaining the quality of life in the region. While its aesthetic and recreational importance is unquestioned, the economic benefit it brings to the district should also not be overlooked. Its preservation may be properly considered a matter of national, as well as local, importance.

Managing the erosion of the beach and foredune along Marine Parade remains the most pressing issue concerning the coastline at Paraparaumu at this time. Although the evidence to-date indicates that beach renourishment is the most appropriate means of mitigating the erosion threat, the Resource Management Act 1991 requires that other options be considered to demonstrate that the best practicable alternative is selected. There are presently no practical

options for relocating or closing the road and planning solutions are thus limited. Of the possible structural options, seawall construction offers the only practical alternative. Although a seawall may ultimately be necessary if renourishment becomes uneconomic, this solution is less favoured at present because of the potential for adverse environmental impacts and also because the cyclical nature of erosion suggests that the beach may accrete again in the future.

Elsewhere along the Paraparaumu coast, to the north of Marine Parade, the natural character of the coast is more dominant and, except at the northern end near the mouth of the Waikanae River where recent erosion has been occurring, there are ample reserves of sand present in the beach and dune system to protect shoreline properties. Here, management strategies will be concerned with dune preservation and encouraging natural development.

Conclusion

Further growth of the headland will undoubtedly be to the continuing detriment of the southern beaches. A strong case can be made for artificially "by-passing" some of the excess sand from the northern flank of the headland as was done for the purposes of the renourishment trial along Marine Parade. However, achieving this on any long-term basis will be not be a straightforward matter because owners of properties located along the accreting shoreline take the view that the removal of any sand from "their" beach will expose their seaward boundaries to increased erosion risk. These views are understandable and highlight the need to involve the community in decision-making during the planning stages. In cases such as this, the amount of sand necessary to be held in reserve within the beach/dune system to withstand storm action can be estimated using numerical modelling techniques. At Paraparaumu, it is expected that the risk of inundation or property damage due to coastal erosion is so small as to be almost non-existent. The extraction of future accumulations of sand for the purposes of supplying less fortunate beaches to the south, imposes virtually no additional risk and has a wider community benefit that must be considered.

The Kapiti Coast District Council recognises the importance of its coastline and its vulnerability to erosion hazards. The Council supports the use of sustainable management practices and integrating these with the needs of the community. As is the case with much of the New Zealand shoreline, there is never sufficient data to allow much analytical input into decision-making, but the Council is regularly surveying important parts of the coast allowing changes to be monitored and, ultimately, a better understanding to be obtained of the processes involved.

Acknowledgement

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