

Riversdale Beach Sewerage Scheme CONSULTATION PACK

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‘Have Your Say’

This pack contains everything you need to make an informed submission on the proposed sewerage scheme options. Inside, you will find:

- *The Council's preferred option*
- *A map of the area*
- *An overview of the five scheme options*
- *A breakdown of the cost allocation methodology and how this will affect property owners*
- *A section about scheme estimates and the cost of connection*
- *Why ‘opting out is not an option’*
- *A section on ‘Frequently Asked Questions’*
- *A tear-off post paid submission form, also available to download on www.mstn.govt.nz*

Council would like people to be fully informed as this is a major decision for Riversdale Beach and the Masterton district. Please feel free to email your questions to riversdalesewerage@mstn.govt.nz or call the Council on (06) 370-6300 and ask for Special Projects Manager Ian Steer. Alternatively contact the Riversdale Beach Sewerage Steering Group Chairman Roddy McKenzie on (06) 372-5828 or visit www.mstn.govt.nz where you will find Riversdale information under the ‘quick links’ section on the homepage.

This phase of consultation will last approximately six weeks. Please return your submission to the Council by 4pm Wednesday 23 July 2008. You will have the opportunity to attend and speak in support of your submission before Councils’ Hearings Committee. Hearings are expected to be held in early August 2008.

Results of submissions and hearings will be reported to the August 2008 Council meeting, and a decision will then be announced on a preferred scheme type and location.

Council will be holding an open day at the Riversdale Beach golf club on Saturday 28th June 2008 from 10:00am to 2:00pm. Please come along to view the display and ask questions.



Why do we need to consult?

We want to know what you think and how you think your financial contribution should be used. Also, under the Resource Management Act, and Long Term Council Community Plans (LTCCP), councils are required to consult on all major public works where a number of options exist and where public and private money is to be spent.

In the case of the proposed Riversdale Beach Sewerage Scheme, Council has narrowed the choices down to five options, all with varying degrees of local impact, and all of which could affect you and your families in years to come.

The scheme types and locations Council seeks feedback on are:

- *Option 1 – A pond-based scheme on Tatham land to the south-west of the Riversdale Beach community (Council's preferred option)*
- *Option 2 – A pond-based scheme on Eastleigh land, also south-west of the community*
- *Option 3 – A pond-based scheme located in the reserve at the southern end of the Riversdale Beach community*
- *Option 4 – An Innoflow package type system on Eastleigh land to the west of the Riversdale Beach community*
- *Option 5 – A sequencing batch reactor system using grinder pumps, and small-bore pressure pipes on Tatham land*

Pond-based scheme on Tatham Family Trust land favoured

Details of the preferred scheme type and location decision were communicated to property owners in Riversdale Beach Sewerage Scheme Community Update No.7 (December 2007, www.mstn.govt.nz). The preference was for a pond-based system on land owned by the Tatham Family Trust south-west of Riversdale Beach.

However, in February of this year, the Riversdale Beach Sewerage Steering Group (RBSSG) asked the Council to consider another sewerage scheme similar to that proposed for Himatangi Beach by the Manawatu District Council.

This scheme is one which uses grinder pumps to macerate (chop) the raw effluent, small bore pressure pipes to pump the effluent for treatment and a “sequencing batch reactor” or SBR to treat the effluent.

Following the request, Council engaged MWH Consultants, Christchurch, to cost this type of system and report to the RBSSG and to brief Council.

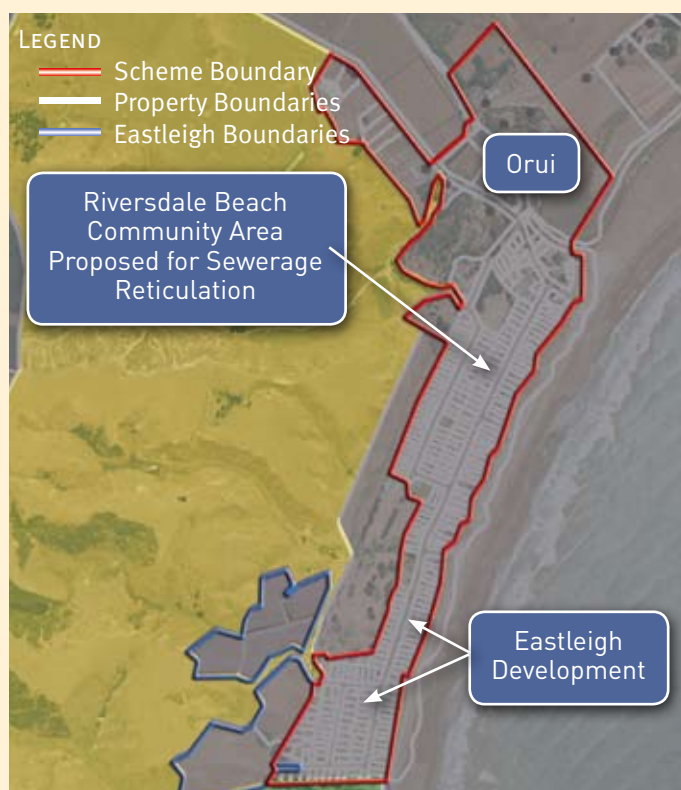
After considering the MWH report Council reaffirmed its preference for a pond-based scheme on the Tatham property on the basis that all investigations and analysis of options

pointed to this being the optimum solution. However, Council has agreed that it will consider alternative scheme types during the tendering phase of the project provided they are well-engineered, cost-effective, provide whole-of-life costings, and do not put the subsidy that has been secured from the Sanitary Works Subsidy Scheme, at risk.

- Reports relating to this investigation and decision process can be found at www.mstn.govt.nz. Click on Riversdale under Quick Links.

Riversdale Beach Community

Area Proposed for Sewerage Reticulation



Main features of each scheme type

Three scheme types and four scheme locations are offered for your consideration. While each is different in terms of type or location, all require a sewerage reticulation system to be built within the community.

Reticulation systems comprise a network of underground pipes and associated infrastructure, generally located within the road, and convey raw sewage or wastewater to a main collection point from where it is pumped or fed to a treatment plant. There are a number of types of sewerage reticulation systems possible including gravity systems, pumping or pressure systems, vacuum systems, or a combination of some or all of the various types.

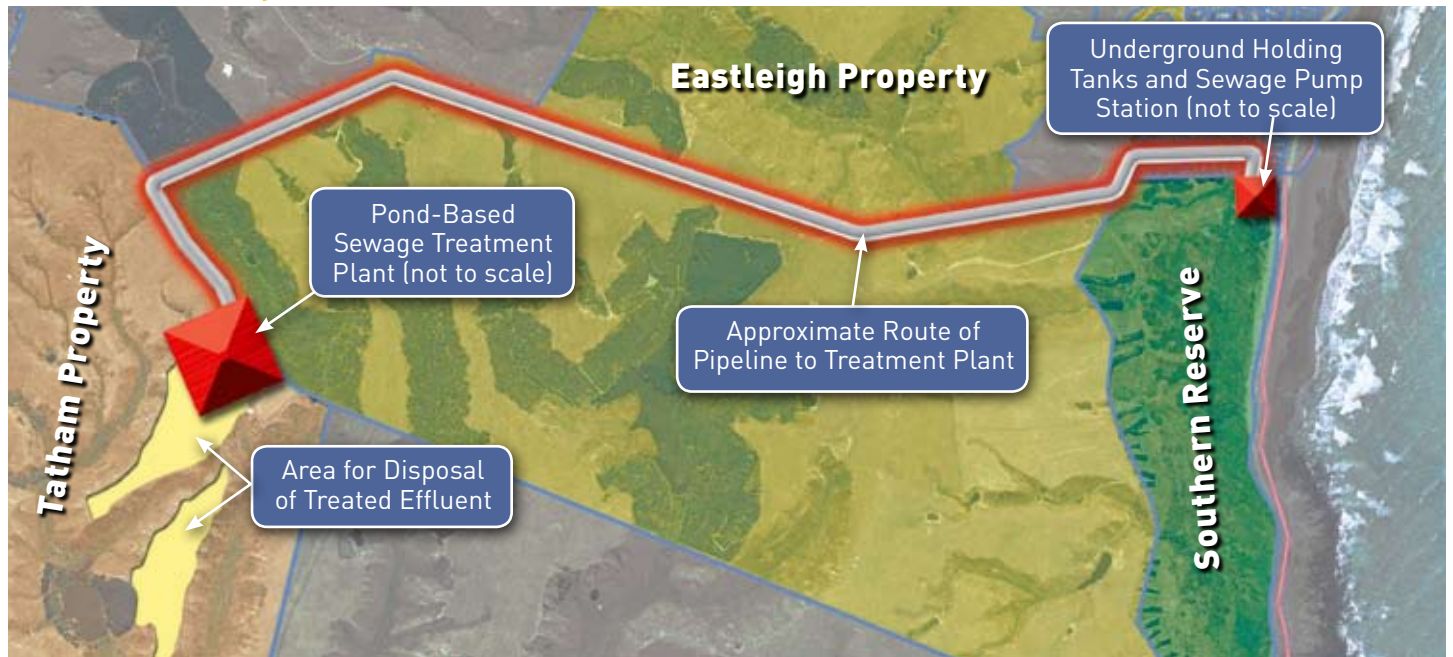
The choice of reticulation system will be made during the detailed design phase of the project, and will to some degree be based on the type of treatment plant to be constructed. Both the Innoflow and sequencing batch reactor plants propose to use septic or holding tanks on properties, and small-bore pressure pipes to transport effluent to the main pump station. The pond-based schemes will use gravity mains where possible, but may need holding tanks and pressure pipes when design considerations dictate.

With Riversdale Beach, the choice of treatment plant is between a pond-based scheme, an Innoflow scheme, or a sequencing batch reactor. Detail about the difference between the three systems can be found in the Frequently Asked Questions section on page 10 of this pack.

For costing comparisons, each of the scheme types include on-property costs: demolition of existing septic systems, the laying of pipes to the property boundary, and in the case of the Innoflow and SBR systems for the installation of septic tanks, pump and electrical control systems. For the Innoflow and grinder pump/

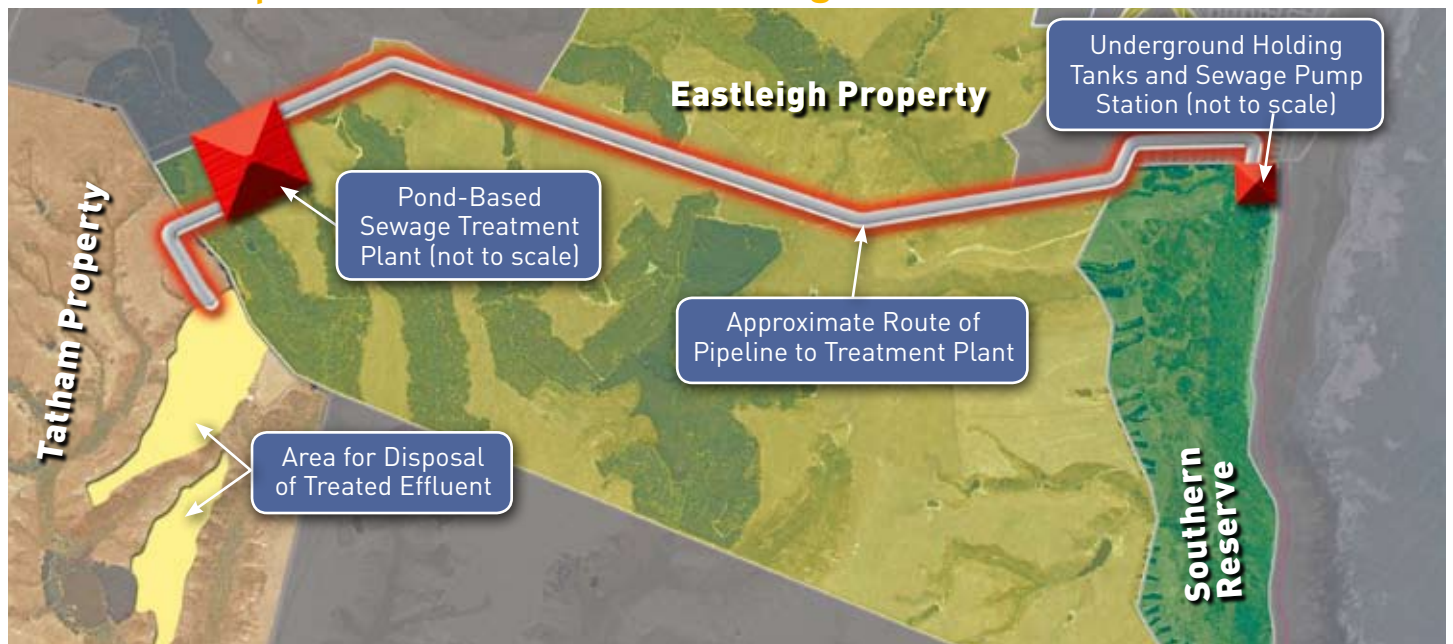
small bore pipes/SBR systems the cost of maintenance of pumps and chambers on properties would be met by council and charged as an operating cost through rates. The cost of electricity would be met by property owners.

OPTION 1 – A pond-based scheme on Tatham land



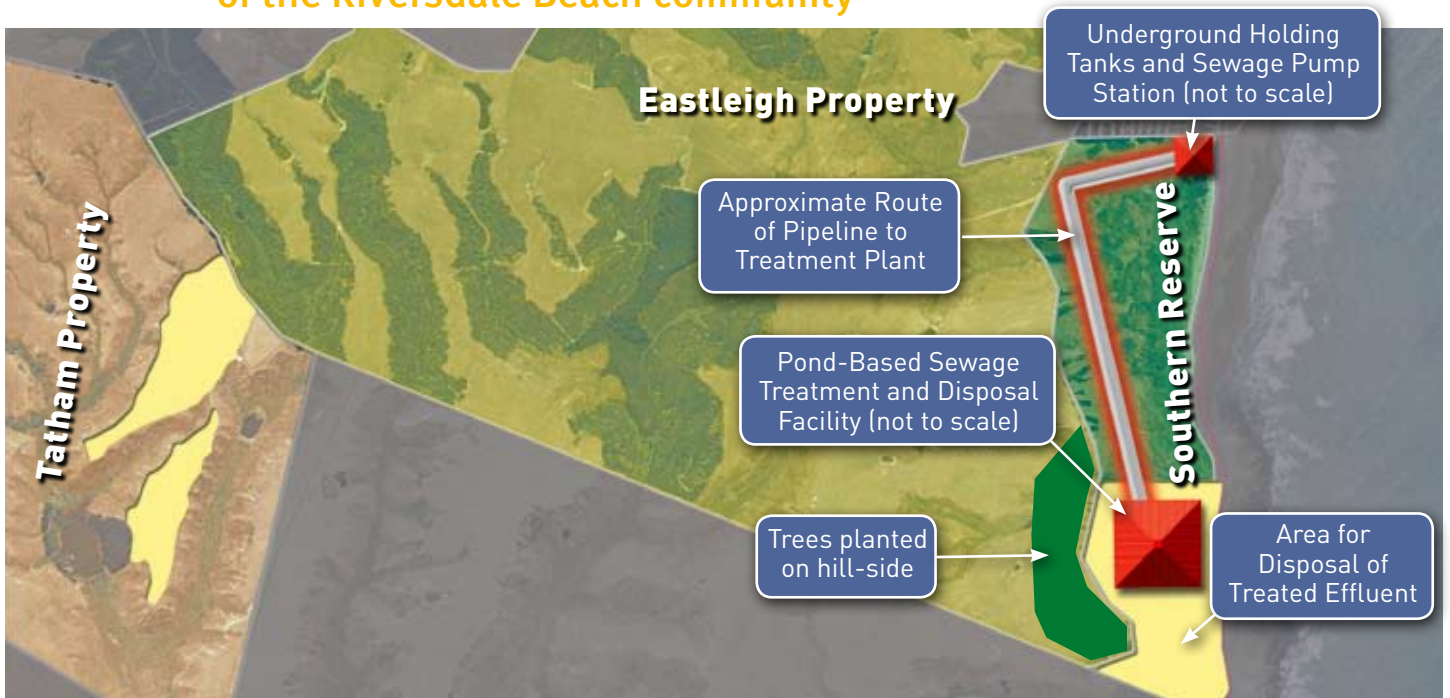
The pond-based sewage treatment and disposal scheme on Tatham land is Council's preferred option, featuring a reticulation system within the community to transport raw effluent to the main pump station: a main pumping station at the southern end of the Riversdale Beach community adjoining the Southern Reserve, to receive sewage from the reticulation system; a pumping or rising main through Eastleigh property to the Tatham property to transport sewage; a system of oxidation ponds to treat the sewage; and an area of land on which the treated effluent would be irrigated to land. Subject to the meeting of strict animal health requirements, grass from irrigated areas could be used as baleage, or possible grazing for sheep.

OPTION 2 – A pond-based scheme on Eastleigh land



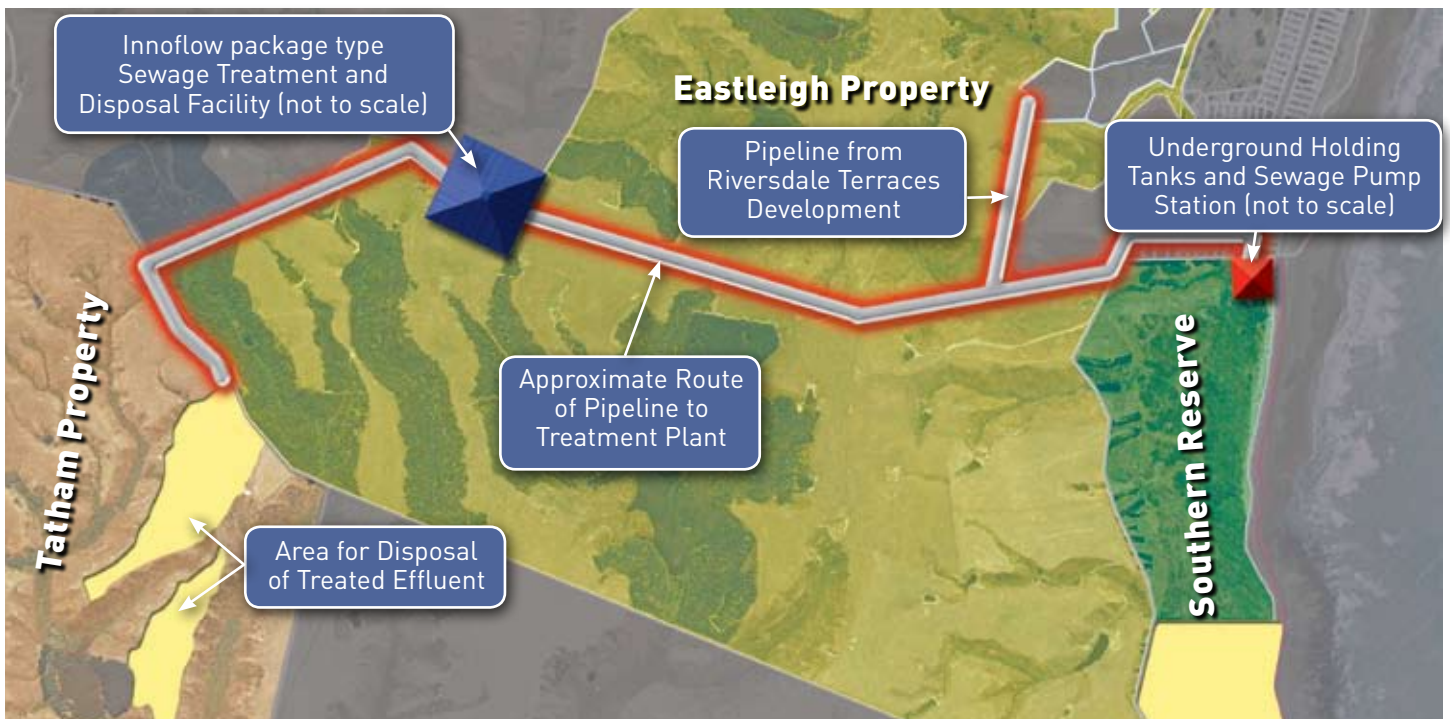
A pond-based sewage treatment system on Eastleigh land with disposal on Tatham land is a further option. The key features of this proposal are a reticulation system within the community to transport raw effluent to the main pump station: main pumping station at the southern end of the Riversdale Beach community adjoining the Southern Reserve to receive sewage from the reticulation system; a pumping or rising main within Eastleigh property to transport sewage; a system of oxidation ponds on Eastleigh property to treat the sewage; and a pumping system to transport the treated effluent to the Tatham property where it would be irrigated to land. Again, subject to the meeting of strict animal health requirements, grass from irrigated areas could be used as baleage, or possible grazing for sheep.

OPTION 3 – A pond-based scheme located in the reserve at the southern end of the Riversdale Beach community



This was the original “benchmark” scheme and that upon which application was made for subsidy from the Sanitary Works Subsidy Scheme. The key features of this proposal are a main pumping station at the southern end of the Riversdale Beach community adjoining the Southern Reserve; a pumping or rising main running through the reserve to transport raw sewage; a system of oxidation ponds at the southern end of the reserve to treat the effluent; and the planting of trees on the slope above the reserve into which treated effluent would be irrigated to land. Please also see Frequently Asked Questions on pages 10 and 11. The Council regards this as the least preferred option.

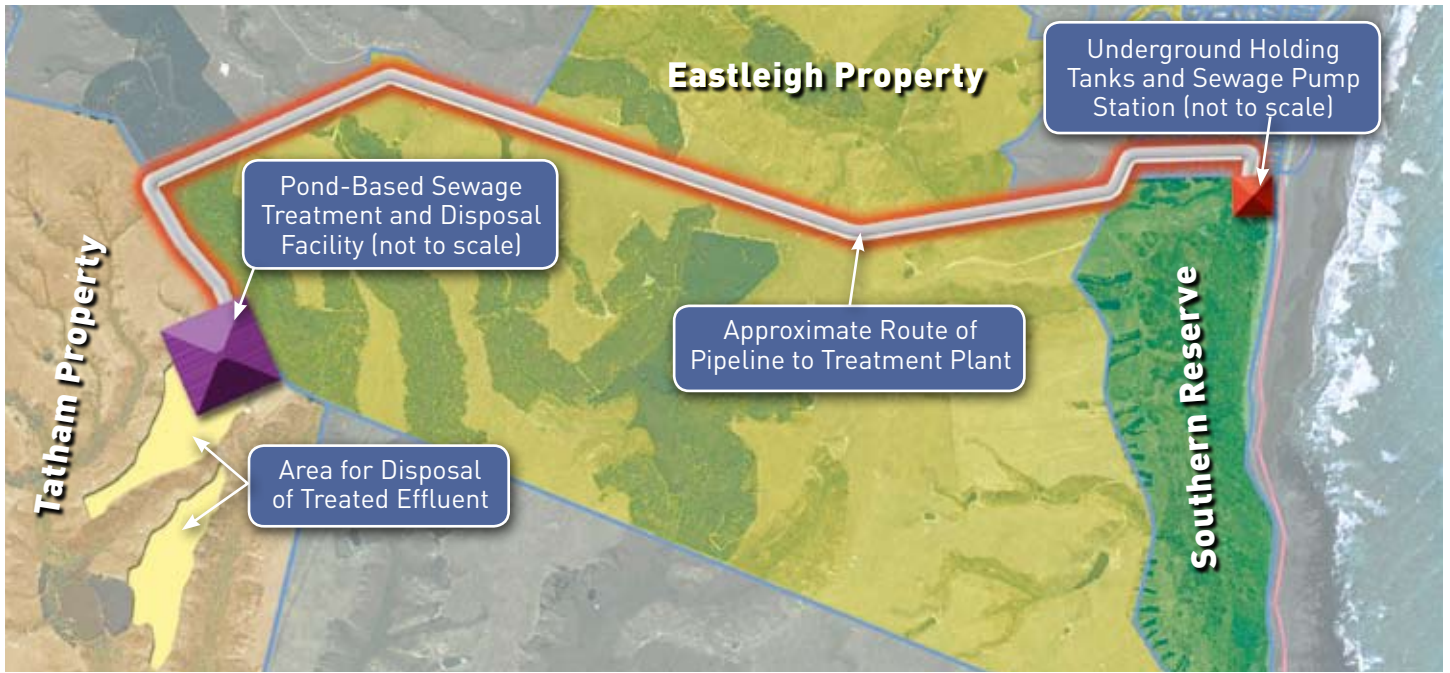
OPTION 4 – An Innoflow package type system on Eastleigh land.



An Innoflow sewage treatment plant on Eastleigh land with disposal on Tatham Family Trust land is another option. The key features of this proposal are septic tanks on each property that are fitted with small pumps connected to a pressure reticulation system within the community; a pressure reticulation system to transport partially treated effluent to an Innoflow sewage treatment plant located on Eastleigh property; and a pumping system to transport the treated effluent to the Tatham property where it would be irrigated to land. Again, subject to the meeting of strict animal health requirements, grass from irrigated areas could be used as baleage, or possible grazing for sheep.

Note: The cost of maintenance of pumps and chambers on properties would be met by council and charged as an operating cost through rates. The cost of electricity would be met by property owners.

OPTION 5 – A sequencing batch reactor system using grinder pumps, and small-bore pressure pipes on Tatham land.



This the final option. Holding tanks on each property would be fitted with grinder pumps to chop the raw effluent and a small-bore reticulation system would transport effluent to a main pumping station at the southern end of the Riversdale Beach community adjoining the Southern Reserve. This would require a pumping or rising main through the Eastleigh property to the Tatham property, to transport sewage; a sequencing batch reactor on Tatham land to treat the sewage; and an area of land on which the treated effluent would be irrigated. Again, subject to the meeting of strict animal health requirements, grass from irrigated areas could be used as baleage, or possible grazing for sheep.

Note: The cost of maintenance of pumps and chambers on properties would be met by council and charged as an operating cost through rates. The cost of electricity would be met by property owners.

Cost Apportionment – the issues around charging

Discussions with Riversdale Beach property owners on the type and location of a new sewerage treatment and disposal facility have been underway for some time. During the past two years, Council and its consultants have evaluated no fewer than six options for the siting and construction of the new plant.

Regular communication with the community – through the Riversdale Beach Sewerage Steering Group (RBSSG) – has benefited both Council and Riversdale Beach residents.

Council Special Projects Manager Ian Steer says public meetings and informal meetings have been held on many occasions and the outcome of these has been fed into the decision making process ‘each step of the way’.

“While progress has appeared slow, the benefits have been many. We enter into this phase of the project with certainty

as to the availability of land because we have Heads of Agreement in place with landowners. We also have had a high degree of community engagement - views have been exchanged and agreement sought on all significant issues, except where matters of a commercially sensitive nature have been involved,” Mr Steer said.

One of the major hurdles to date has been how to apportion costs to those connecting to the proposed scheme.

“When you are dealing with a holiday resort with a small resident population that has a large influx of people at holiday periods, and you have a range of different sized baches or residences, two campgrounds with varying types and sizes of dwellings, a surf club, a golf club, public toilets, Camp Anderson, etc, finding a methodology to apply to the apportionment of costs

is no easy task, especially in light of ongoing commercial and residential developments.”

A survey was undertaken by a group of concerned residents some years ago to determine occupancy levels for the different dwelling types in existence at that time. Resulting from this survey is the general acceptance that a bach or residence at the beach has an average occupancy level of 7.5 persons at peak times. However, since the survey was undertaken, holiday homes have been developed on the campgrounds, and there has been other development within the community.

The assumptions that were valid at the time of the original survey have been subject to vigorous debate as they directly impact on cost apportionment and who pays what to connect to the scheme. A series of meetings were held to discuss

this issue, but little progress was made. To aid the discussion, Council engaged MWH Consulting Engineers to undertake an occupancy study to determine levels for communities similar to Riversdale Beach (see www.mstn.govt.nz). Underlying the findings of the study was agreement that

one connection equivalent was 7.5 people, reflecting the earlier survey.

A further series of meetings were held and, while some progress was made, an agreement could not be reached. Council was requested to make a decision on a preferred cost apportionment model

leading into the public consultation phase of the project.

In December 2007, Council adopted the MWH report as the basis for public consultation, while acknowledging not everyone found favour with the outcome.

What will it cost?

Rough order costings have been prepared for each of the five options. These costings allow comparison between the scheme options, but are not based on detailed design and have not been subject to a tender process.

See page 8 for information on how the estimates for each of the scheme options were prepared.

A net present value (NPV) calculation has been applied to estimated operating costs over the next 20 years, again in order to provide a valid comparison between options. For scheme options using pumps and pump chambers on private properties, the cost of maintenance would be met by council, and charged back to ratepayers through scheme rates. The cost for electricity would be met by property owners.

Total costs of scheme options (costs shown are GST exclusive)

	Option 1	Option 2	Option 3	Option 4	Option 5
Expected Capital Cost	\$9.85M	\$10.57M	\$9.25M	\$9.52M	\$9.7M
NPV of Operations & Maintenance	\$1.65M	\$ 1.50M	\$1.38M	\$1.87M	\$2.5M
Estimated whole of life cost	\$11.50M	\$12.07M	\$10.63M	\$11.39	\$12.2M

The Council, in conjunction with representatives of the Riversdale Beach community, has developed an allocation model designed to equitably divide up the capital costs of the scheme between the properties that will connect to the scheme. The government subsidy of \$1.92 million, obtained from the Ministry of Health's Sanitary Works Subsidy Scheme, has been taken account of in the model, as well as

a Council subsidy to the Riversdale Beach community of \$575,000. The fractions and multiples of the Equivalent Connections for campgrounds and non-residential properties have been used to calculate the approximate level of contribution under each option, for each property type. The table on the following page provides a guide to the estimated cost to connect to the scheme.

The table shows the estimated Capital Contribution per Equivalent Connection, including an estimate of the costs of boundary-to-house connection and existing septic system decommissioning. These on-site costs will vary for each property depending on location, access and scheme type.

Proposed allocation of capital costs (including on-site connection costs) (incl GST)

Per Equivalent Connection	Option 1	Option 2	Option 3	Option 4	Option 5
Existing Riversdale properties	\$16,750	\$18,300	\$15,450	\$15,600	\$15,800
Private camps	\$20,200	\$21,750	\$18,900	\$20,300	\$19,700
Empty sections (subject to escalation)*	\$20,200	\$21,750	\$18,900	\$20,300	\$19,700
Riversdale Terraces stage II	\$21,100	\$22,650	\$19,800	\$20,650	\$20,300

* A number of empty sections have been allowed for in the costing model, with the effect of reducing the cost to existing properties. The cost to join the scheme for an empty section will escalate over time in order to encourage developers to buy-in to the scheme early.

Estimate of Annual Sewer Rate (per residential equivalent) (incl. GST)

The estimates of the annual sewer rate for each scheme option, as detailed below, are provided for comparison purposes only. These figures are based on estimates of

operations, maintenance and depreciation costs for the five scheme options. The actual sewer rate per equivalent connection can not be confirmed until contracts are accepted

for construction of the preferred scheme, and operation and maintenance costs are established.

	Option 1	Option 2	Option 3	Option 4	Option 5
Annual rate	\$495	\$486	\$422	\$660	\$975

Example: How costs would be allocated for Tatham pond option

Below is a table taken from the MWH report, with additional detail added, showing the assessed occupancy levels for the various dwelling and facility types at Riversdale Beach and shows the estimated cost to connect to the scheme for the various property types. The costs to connect are based on Option 1 – the Tatham pond option.

The on-site costs, that is the cost of demolition of existing septic systems and

the cost to lay new pipes to connect with the reticulated network in the road, will be met by property owners. Council will lay sewer laterals up to property boundaries. For comparison purposes the on-site connection costs have been averaged and included in the estimated capital costs.

Council has agreed that it will include in the contract documentation for the construction of the sewerage system a

schedule of prices which property owners can use to have their on-site system constructed. The contractor may be contacted by property owners to carry out this work. Alternatively property owners can use their own registered drainage contractor to undertake this work, subject to satisfying Council standards to undertake such work.

Dwelling or facility type	Assessed Occupancy at Peak Times (people)	Number of Equivalent Connections	Multiplier	Allocation of Capital Costs incl. GST. (\$)
Bach or residence	7.5	1	1.00	\$16,750
Riversdale Beach Holiday Park	360	48	0.60	\$12,100 (per site owner)
Riversdale Beach Family Camp	135	18	0.60	\$12,100 (per site owner)
Surf Club	12	1.6	1.6	\$26,800
Golf Club	9.8	1.3	1.3	\$21,800
Camp Anderson	71.3	9.5	9.5	\$159,100
General Store	18	2.4	2.4	\$40,200
Public Toilets	27	3.6	3.6	\$60,300



What are my payment options?

The Council proposes to collect the capital charge on connecting properties through rates over two years. On an existing bach/residence, it is proposed that 80% of the estimated capital charge would be charged to your rates as a lump sum in 2009/10. Based on Option 1, that would mean \$13,400 spread across four instalments in

2009/10 (first instalment due 20 August 2009). A second capital charge (being the final 20% or the balance required once all scheme costs are known) will be levied on rates in 2010/11.

The Council has investigated options where a third party lender could assist with a private loan to finance the capital charge.

The details of these arrangements have yet to be finalised, but are intended to provide Riversdale Beach property owners an option to pay off the cost of the sewerage scheme over an extended period. Further details will be provided to you through our Riversdale Beach Sewerage Scheme updates when they are available.



Qualification of Estimates

During the preparation of estimates, Innoflow Technologies was asked to cost a system for the Riversdale Beach community sewerage scheme as they had supplied the sewage treatment and disposal system for the first stage of the Riversdale Terraces development.

The process of estimating was “open book” which meant that Innoflow Technologies was given access to the costings for the various pond-based options, and Opus International Consultants on behalf of Council was given access to Innoflow’s costings. Innoflow’s initial estimate was for a scheme producing an effluent quality equal to that of their Riversdale Terraces treatment plant. As this estimate was higher than any of the pond-based options, Innoflow revised its system specification and prepared an estimate for a plant that would produce an effluent of similar quality to that of the proposed pond-based schemes.

As noted above, in February 2008 the Riversdale Beach Sewerage Steering Group requested that Council consider a further scheme option similar to that proposed for Himatangi Beach by the Manawatu District Council. MWH Christchurch, who has experience in the design and construction of these types of schemes elsewhere in New Zealand, prepared the estimate for this option. MWH had access to the costings prepared by Opus International Consultants,

reference to costing data for the proposed Himatangi Beach system, and their knowledge and experience of these types of systems.

The estimates for each of the options do provide a good basis for comparison. However, because no detailed design has yet been done, the estimates use approximate quantities which require the use of “averages”. This will have the effect of inflating costs for some property owners and reducing them for others. For example the cost of on-property works will vary from site to site with those furthest from the road paying more to connect than those adjoining the road.

Riversdale Terraces Stage 2 has been factored into the estimates for the scheme costs and funding model, but the terms under which Eastleigh will contribute have yet to be negotiated.

As you go about comparing each of the scheme options please be aware that a number of stages in the process of delivery of the preferred scheme option remain to be completed, and that there are no commitments in place with any supplier which have the effect of formally securing the prices utilised in the estimating process.

While Opus, Innoflow and MWH have applied considerable expertise to the estimation process there are likely to be unknown elements to the project, the cost of which will only become clear once design has been completed and the project has been tendered. These unknown elements may have the effect of either reducing or increasing the current capital, operations, and maintenance estimates.

Why opting out is not an option!

Currently, sewage treatment in the community is by way of on-site septic tanks followed by ground soakage. For some years now this system has been struggling to cope with both the growing population and the constant over-loading of the system due to the summer visitor influx.

Groundwater testing undertaken by the Greater Wellington Regional Council (GWRC) has shown that there is contamination of the groundwater underlying the community. If the status quo were to prevail and no changes were to be made, the situation would get progressively worse. However, this is not an option for the GWRC and for Council. Something must be done to stop this contamination and so there is an urgent need for a sewerage scheme.

The GWRC is charged with monitoring water quality throughout the region and is concerned that contaminated groundwater could pollute the beach. If members of the

community decided they did not want the sewerage scheme then the GWRC would take a keen interest in seeking to stop this pollution by other means. The simplest method of doing so is for the GWRC to require property owners to have resource consents to operate their septic systems. Obtaining consents would require property owners to demonstrate that the standard of treated effluent is sufficiently high enough that it would not pollute the groundwater.

Please reference the Frequently Asked Questions for the Greater Wellington Regional Council's responses to a range of questions about on-site sewage treatment.

There are a range of higher specification septic systems on the market. Council requested Opus International Consultants to investigate the cost of upgrading existing septic systems and installing individual treatment plants. Please reference the Frequently Asked Questions for further details.

Where to from here?

Revised Project Timeline

Date	Action
June 2008	Public consultation material distributed
July 2008	Consultation period closes and submissions received
July 2008	Submissions evaluated and report prepared for Council's Hearings Committee
August 2008	Council adopts recommendation and agrees to scheme proceeding
February 2009 – August 2009	Resource consent process
December 2009	Physical works contract accepted by Council
Late January 2010	Physical work commences
November 2010	Physical works contract completed
November 2010	Plant commissioning commences

frequently asked questions

Answers to these FAQ's were prepared by MWH ChCh, an independent consulting engineering company with experience in the design and construction of sewage treatment and disposal facilities.

? What is the difference between a pond-based system, a grinder pump/small bore pressure pipe/sequencing batch reactor (SBR), and a package-type (Innoflow) system?

The main difference between package plants and ponds is that package plants are manufactured off-site and delivered to the treatment plant as pre-fabricated units. They are typically installed as modules and are mostly used for the treatment of wastewater for small communities with a constant flow and load. The Innoflow system is a type of package plant, supplied as 'pods'. Treatment is provided as wastewater trickles over a textile sheet, onto which micro-organisms (bugs which treat the wastewater) attach. This is known as an 'attached growth' system.

SBR systems are tanks (or 'reactors'), usually constructed out of steel or concrete, but are sometimes provided as a package. Instead of 'attached growth' (like the Innoflow system) micro-organisms grow in suspension within the wastewater. This is known as 'suspended growth'.

Ponds are large basins dug into the ground, frequently in series, through which

screened wastewater is passed. Pond treatment takes place over several weeks or even months, whereas the treatment process in package plants usually takes only a few hours.

? What are the key features of each system?

The key feature of the Innoflow system is that the micro-organisms treating the wastewater attach themselves to the 'sheets'. Air is naturally available to the bugs, so blowers are not required. In order to keep the bugs supplied with moisture, the treated water will occasionally be recycled back through the pods. As the Innoflow system is supplied as 'pods', the works can be upgraded in a modular fashion.

The SBR system comprises a tank or tanks containing a liquid mixture of micro-organisms and wastewater (also known as 'mixed liquor'). Air is provided to the bugs by either blowers or aerators. After sufficient air is provided, the solids are allowed to settle and the clear water is discharged. Sludge is generated in the process, and needs to be disposed of. Good control of aeration, settling, and sludge handling is vital.

Ponds, as the name suggests, are large earthen basins or lagoons that are dug into the ground. They are simple to construct and are usually constructed as a 'system', with a number of ponds constructed in series. Oxygen is provided by algae present in the pond and, to a degree, by wind action on the surface of the pond. Settlement of solids prior to the ponds is not usually required as solids will settle to the bottom of the ponds. De-sludging is not required for many years. However, a screen may be required to remove large solids entering the ponds.

Ponds take up a large area. Because of this they are resistant to sudden increases in wastewater flow.

? Does one type of system treat sewage better than the others?

Innoflow has costed its scheme on the basis that it will produce an effluent quality similar to a pond-based scheme. Typically the Innoflow plant would be expected to produce a better quality effluent than a pond system. An SBR, operated correctly, can potentially treat sewage better than both a pond system and Innoflow system.





? Does one type of system produce more odours than the others?

If all systems operate within their designs then no odours will be produced. However, if organic overload occurs, an Innoflow or SBR will generate more odours when compared to a pond system. A pond system has a built-in buffer capacity which will reduce the potential for odour emissions.

? If the three systems are to be built on land between 1.5km and 2.5km distant from the Riversdale Beach community, will odours be of any concern?

No.

? What is the life expectancy of each system?

A well-operated, well-maintained pond can be expected to operate for several decades. Some ponds in New Zealand and Australia have been in use for over 30 years. Package plants, such as the Innoflow system, are usually designed for a 20 to 30 year horizon although some of the mechanical and electrical components might have to be replaced within 15 years. An SBR, if constructed from concrete, could be expected to last for 40 to 50 years. However, like the Innoflow system, mechanical and electrical components may need to be replaced after 15 to 20 years.

? Does one type of system produce more “greenhouse gases” than the others?

All systems will produce some greenhouse gases such as methane and carbon dioxide, but the total amount released, in comparison with other industries and activities such as farming, will be very small. The SBR would be expected to produce more greenhouse gas, largely because operation and maintenance requirements will be greater, and extra road travel will be

required by the Operator. The SBR will also produce more nitrous oxide than the other options, a very potent greenhouse gas.

? Which type of system will manage the peak summer holiday and weekend flows better than the others, without a reduction in treatment quality?

Ponds.

? Which of the three types of systems has the higher operational and maintenance costs?

SBR.

? Does one type of system require more highly skilled operators than the others?

The SBR will require more highly skilled operators than the other options, particularly in the weeks and months leading up to the peak holiday period. The operator will need to significantly increase attendance at the plant during this period. Both the Innoflow and pond systems are relatively simple to operate. However, Innoflow plants require more control so operator skill levels will need to be higher for this option, and the operator will need to be on-site more frequently. The Innoflow plant will also need to be pre-conditioned for the summer holiday period.

? Which type of system is more robust and least susceptible to operational and outflow quality problems?

The Innoflow system will require ongoing maintenance of septic tanks, has a greater need for control, and will not cope as well as ponds with the sudden influx of visitors. Pond systems suffer from seasonal variations in quality due to sunlight and temperature, and excessive

algal growth can increase suspended solids in the treated wastewater. However, they don't often require de-sludging, there are less operational and maintenance requirements, and they have a large capacity to absorb sudden variations in the incoming wastewater. Ponds are therefore considered the more robust system for a community like Riversdale.

The SBR can be considered the least robust of the options under highly variable loads. It is a more complex system than the Innoflow or ponds and requires skilled operation, especially leading up to the summer holiday period.

? Are there any restrictions on putting things down the drain with either of the three systems?

The Innoflow system requires septic tanks, while ponds and the SBR system do not. The main restrictions will be with respect to houses connected to septic tanks. These would be prohibited from discharging the following:

- oil and grease,
- stormwater and other drainage,
- petrol, oil, and other flammable substances,
- proprietary septic tank cleaning compounds,
- cold water laundry detergents,
- waste chemicals from the household, garden, garage, or workshop, and
- disposable nappies, sanitary towels, condoms, and unbleached toilet paper.

? Which of the three systems will handle household cleaners, detergents, washing powders, etc, better?

Ponds, because of the larger buffering capacity. The Innoflow and SBR systems will be more sensitive to contaminants due to the lower buffering capacity.

Answers to these FAQ's were prepared by the Masterton District Council and the Greater Regional Council (GWRC).

? Why has Council included the Southern Reserve, Option 3, in the schemes under consideration?

It is the “benchmark” scheme and that upon which subsidy was secured from the Ministry of Health’s Sanitary Works Subsidy Scheme. While there have been comments that it would compromise community values and be culturally insensitive to build a sewerage scheme in the Reserve, this option remains because it provides a point of reference when consideration is being given to the costings for the various scheme options. Many property owners will be aware that the cost of the proposed sewerage scheme has increased over time. However the composition of the benchmark scheme has remained the same and so property owners can determine, through comparison with the other options, the marginal increase in scheme costs that they are prepared to pay to protect community values and cultural sensitivity.

? What is NPV (Net Present Value)?

NPV is a term used in the analysis of projects and investments such as the Riversdale Beach community sewerage scheme. NPV describes the “whole of life” cost of an investment or project over time in terms of today’s dollar value. As such it allows comparisons to be made between

a range of projects or investments and takes into account capital, operational and maintenance costs.

? What will the annual Riversdale Beach sewerage scheme rate be and how will it be charged?

Operating costs have been estimated but are preliminary and are subject to refinement following detailed design and the tender process. The type of scheme selected will also have a bearing on where operating costs fall, eg the Innoflow scheme will have power and maintenance costs for each on-site septic tank and pump.

It is expected that the rates will be set as a uniform targeted rate based on the Equivalent Connections that are proposed for the allocation of capital costs.

? What are the GWRC’s concerns with the current method of sewage treatment and disposal at Riversdale Beach?

The GWRC is concerned with groundwater quality at Riversdale Beach. There have been studies and investigations previously completed which demonstrate that poor groundwater quality at Riversdale Beach is due to the cumulative effect of on-site wastewater treatment and disposal systems.

? Is a “do-nothing” option acceptable to GWRC?

A “do-nothing” option is not acceptable to Greater Wellington as there will be on-site wastewater treatment and disposal systems that do not comply with standards, terms, and conditions of Rule 6 and 7 of its Regional Discharges to Land Plan. These rules outline minimum requirements for operating on-site wastewater treatment and disposal systems. Should individual systems remain rather than a communal system, an extensive programme of ongoing compliance of each individual system would be required on a regular basis.

? What is the GWRC’s preferred position on sewage treatment and disposal at Riversdale Beach and why?

The GWRC’s position has been and continues to be that a community wastewater treatment and disposal system is adopted at Riversdale Beach. The reason for this is that it is likely to be more cost and time effective and provide better environmental outcomes than relying on progressive upgrading of individual on-site wastewater treatment and disposal systems via a resource consent process for individual landowners. This is strongly supported by objectives and policies in the (GWRC) Regional Policy Statement and Regional Discharges to Land Plan.



Answers to these FAQ's were prepared by OPUS International Consultants, an independent consulting engineering company with experience in the design and construction of sewage treatment and disposal facilities.

? Is it cost effective for property owners to upgrade their present septic systems in order to comply with GWRC requirements?

In the event that residents do not want to connect to the new sewerage system, they may be able to continue to use their existing on-site systems providing the systems comply with Rule 6 or Rule 7 of the Wellington Regional Plan. In order to comply with the rules a new on-site system would have to prove that it did not contribute to contamination of ground water. However, given the sandy nature of the Riversdale site and the high water table, it is likely that the systems would contaminate groundwater and therefore compliance with these rules will be difficult.

For existing systems on-going council monitoring can require that the systems be upgraded (or the property connected to the community sewage scheme) if a public health risk (or other environmental effect) is identified. For a serious health risk, notice would generally be served under the Health Act.

? Is it possible for property owners to install an on-site treatment system that will meet discharge consent requirements?

It is possible to install an on-site system that will treat the effluent to a high level, however investigations suggest the cost to do this is likely to be in excess of the cost to connect to the proposed sewerage scheme. For an on-site treatment system with minimal environmental effects, a very high effluent quality would be required. The effluent would need to have very low bacterial numbers, and very low nutrients. The likely capital cost including supply, installation, connection, electrical systems, irrigation, reinstatement and building consent would be approximately \$20,000 plus GST. No allowance is made for resource consents which may be required and which could be expected to cost approximately \$3,000 plus GST.

Likely operating costs would be approximately \$1,200 per annum plus GST. No allowance has been made for ongoing monitoring to ensure the plants are operating as required by the consent. This will likely require

sampling of the treated effluent at intervals during the year, but especially during peak holiday periods. Given the remoteness of Riversdale Beach sampling and testing costs could be significant.

The NPV for installation and on-going maintenance of an on-site treatment system calculated over 20 years is likely to be approximately \$33,000 plus GST.

The above figures are based on averages for capital and operating costs for the two package type treatment plants that performed the best in trials on systems of this type undertaken in Rotorua. It is recognised that cheaper on-site treatment plants are available, however they were either not tested in the Rotorua trials, or they did not perform as well as the two plants costed.

? If I do decide to install an on-site treatment plant will I be entitled to subsidy from the Sanitary Works Subsidy Scheme?

No. Subsidy is only available for connection to a community scheme, and only if a property was sub-divided prior to March 2003.





RIVERSDALE BEACH SEWERAGE SCHEME SUBMISSION FORM

(tear off)

Please tear-off this form and complete the following:

Preferred Scheme Type and Location

Rank in order of preference which scheme Option you would like to see constructed to serve the Riversdale Beach community.

NOTE: 1 is *MOST* preferred – 4 is *LEAST* preferred. You do not have to rank all options.

- Option 1 – Pond-based scheme on Tatham Family Trust Land
- Option 2 – Pond-based scheme on Eastleigh land with disposal on Tatham property
- Option 3 – Pond-based scheme in the Southern Reserve
- Option 4 – Innoflow scheme on Eastleigh land with disposal on Tatham property
- Option 5 –Grinder pump/SBR System with treatment and disposal on Tatham property

COMMENTS: (please type your reply or ensure handwriting is legible and use more paper if necessary)

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Cost Apportionment

Council has proposed a methodology for the apportionment of costs for the proposed sewerage scheme (see tables on page 7). This methodology seeks to ensure costs are equitably shared across the community.

Do you agree with this methodology? If not please provide us with your reasons.

- Yes
- No

COMMENTS: (please type your reply or ensure handwriting is legible and use more paper if necessary)

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Please also tick the boxes below which relate to your submission:

- I would like to be contacted to make a time to speak in support of my submission
- My submission relates to Riversdale Beach property I own
- I am not a current Riversdale Beach property owner but want to take part in this consultation process

Please enter your details so that we can contact you if necessary:

Name:..... Phone Number:.....

Postal Address:.....

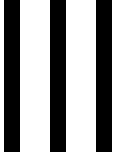
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Please return to: Masterton District Council Offices, PO Box 444, 64 Chapel Street, Masterton by 4pm, 23 July, 2008.
Visit www.mstn.govt.nz to make your submission electronically and send to admin@mstn.govt.nz

(tape here)

Masterston District Council
PO Box 444
Masterston

FreePost authority
number 112477



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