



RESOURCE MANAGEMENT ACT 1991

Applications for resource consents CRC102547, CRC102548, CRC102549, CRC102807, CRC102809, CRC102810, CRC102694, CRC102695, CRC102696, CRC103328, CRC103330, CRC103331, CRC103443, CRC103444 and CRC103445 by the Hurunui District Council for land use consents to install flood diversion structures, water permits to divert excess floodwater and discharge permits to discharge excess floodwaters, near Amberley, Amberley Beach, Leithfield Beach and in the Coastal Marine Area.

(Note: this report and decision does not include consideration of resource consent application CRC082988 which was heard in conjunction with the above applications and is to be determined separately at the request of the applicant).

Hearings held 8th – 11th and 15th - 18 November 2010 in the Council Chambers of the Hurunui District Council, Amberley.

Report and Decision Number 1 of Hearing Commissioners:

Craig Shearer, Sharon McGarry & Robert Batty

Dated 26th January 2011

Representations and Appearances:

For the applicant, Hurunui District Council ('HDC'): **Mr. C. Carranceja**, counsel; **Mr. B. Yates**, HDC chief technical officer; **Mr. M. Pennington**, consultant hydraulics and hydrology engineer; **Mr. M. Taylor**, consultant freshwater ecologist; **Dr. J. Roper-Lindsay**, consultant ecologist; **Ms. L. Torgerson**, consultant environmental engineer; **Ms. M. O'Callahan**, consultant planner; **Mr. A. Watson**, consultant water resource planning engineer; **Mr. T. Parsons**, consultant hydraulic modelling engineer.

Submitters: (Excluding those who appeared solely in relation to resource consent application CRC082988) **Mr. J. Manson** (Amberley Beach Residents and Ratepayers Association ('ABRRA')); **Ms. J. Demilliac**; **Mr. E. Upritchard**, supported by witness **Ms. K. Henry**; **Mr. J. Hibbard**; **Councillor Ms J. McKendry** (for the Amberley Ward Cttee); **Ms. V. Belcher**; **Mr. B. Croft**; **Mr. J. Richards** (Amberley Ward Cttee, Drainage sub-cttee.); **Councillor R. Little** (Amberley Ward Cttee); **Mr. M. Palliser**; **Mr. N. Kerr** (for Neil Kerr Ltd.); **Mr. L. Smart**, supported by witness **Ms. N. Malloch** (environmental planning engineer); **Mr. T. Johns**; **Mr. W. Chisnall & Ms. J. Alexander**; **Mr. R. Harper**; **Mr. T. Deans**; **Mr. R. Uffindel** (for Christchurch Ready-Mix Concrete Ltd.)

Environment Canterbury ('ECan') Section 42A report:

Ms. S. Holt, ECan consents investigating officer, all applications except resource consent application CRC082988.

Decision

For the reasons set out in the following report it is the decision of the Canterbury Regional Council, pursuant to sections 104, 104B, 105, 107 and 108, and subject to Part 2 of the Resource Management Act 1991, that the Hurunui District Council be granted land use consents to install flood diversion structures, water permits to divert excess floodwater and discharge permits to discharge excess floodwaters, near Amberley, Amberley Beach, and Leithfield Beach and in the Coastal Marine Area as referred to in resource consent applications CRC102547, CRC102548, CRC102549, CRC102807, CRC102809, CRC102810, CRC102694, CRC102695, CRC102696, CRC103328, CRC103330, CRC103331, CRC103443, CRC103444 and CRC103445, each resource consent to be for a duration of 35 years, subject to the conditions set out in Annexure 1 to this decision.

1.0 Background and Introduction

- 1.1 Hurunui District Council ('HDC' / 'the applicant') proposes to introduce an integrated stormwater management plan for the area of Amberley Township and the surrounding rural areas, including the settlements at Amberley Beach and Leithfield Beach. The affected area concerned extends from Leithfield Beach Lagoon and the Outfall Drain on the coast to the south (south of the Kowai River) up to the Amberley Beach (Northern) Lagoon on the coast to the north (south of the Waipara River), and inland to the west to approximately Brown/Innes/Purchas Road area.
- 1.2 HDC has applied for a total of 16 separate resource consents for this purpose, these are to divert and discharge stormwater into land, into water bodies and subsequently into the coastal marine area ('CMA') under flood flow conditions in the partial catchments of the Eastern Drain, Dock Creek and the Kowai River north and west of Amberley, as well as including existing watercourses within and to the south-east extending from Amberley Township to the coast. A duration term of 35 years is sought for each of these consents. The combined purpose of these works is stated by the applicant to be the prevention of floodwaters entering people's houses in a 50 year average reoccurrence interval (ARI) rainfall event. They are not intended to prevent flooding of properties as such.
- 1.3 Central to this stormwater management plan is the urban area of Amberley Township (approximately 330 hectares (ha) of land that is the subject of a single 'global discharge application' (GDA) for resource consent - CRC082988). During the course of the hearings we raised a procedural question about CRC082988 as to whether consent to discharge treated stormwater into ground for the purpose of disposal was specifically within the scope of that application. We initially considered that there was insufficient information to consider and determine the matter of scope and requested further information in our Memorandum Number 1, dated 23rd November 2010.
- 1.4 At the adjournment of the hearing on the 18th November 2010, we were requested by Mr. Carranceja to consider issuing separate 'decisions' on the applications (other than the GDA) that relate to 'Flood Mitigation' measures,

so that if possible HDC might be able to proceed with some of those measures before next winter. Our Memorandum Number 1 also confirmed our agreement to that approach. We have therefore separated our consideration of the technical evidence, submissions and section (s) 42A report to exclude material dealing solely or principally with the GDA and so as to focus here on that material concerned with the Flood Mitigation applications.

- 1.5 While all submitters were concerned about the overall proposals by HDC to mitigate stormwater flooding, many of the formal written submissions specified only the GDA application CRC082988 as the sole focus of their submission. In our determination of the Flood Mitigation applications we are legally constrained to consider any submissions subject to that limitation. Submissions on application CRC082988 will be summarised and considered by us in our subsequent report and determination of that application. We accept however that many submitters are for practical purposes concerned about any increased levels or duration of stormwater flooding on their properties from whatever source.
- 1.6 In our initial deliberation following adjournment, we considered that we had a sufficient understanding of the information from the hearing together with observations made during our site visits to be able to determine the Flood Mitigation applications. However, on reflection it became clear that some of the further information we had requested in relation to the GDA in our Memorandum Number 2 (dated 25th November 2010) may also have been relevant to our consideration of the Flood Mitigation applications. Accordingly, a complete list of information covering all applications was requested in our Memorandum Number 3 dated 6th December 2010. The applicant's response to all of the above requests was provided to us on the 23rd December 2010.
- 1.7 As a result of the applicant's response, we issued a further Memorandum Number 4 on the 11th January 2011, we clarified that the extent of additional information previously requested (Memorandum 3) should be that which could be practicably be provided by HDC without incurring significant further cost and /or necessitate undue delay to our determination of the Flood Mitigation applications and the GDA in particular.

1.8 The following report and decision therefore focuses on the Flood Mitigation applications by HDC but NOT the 'GDA' CRC082988. We currently await the further information on that application as set out in the applicant's 23rd December 2010 response and accepted by us in our Memorandum Number 4. Technical evidences presented on behalf of the applicant at the hearing by Ms. O'Callahan, Mr. Watson and Mr. Parsons were primarily focused upon their respective analyses in support of the GDA and will be summarised and considered in our subsequent report and determination of that application.

2.0 The Hearing

The applicant's proposals

2.1 In opening legal submissions on behalf of the HDC, Mr. Carranceja indicated that consents sought are to enable the future management of stormwater in an "*integrated and holistic way*" as it affects Amberley Township and the surrounding rural areas extending eastwards to the coast. These areas had been subject to surface flooding from two major storm events in 2008 and a series of storm events over 2010. The flooding was due to a combination of factors involving flood discharges from Eastern Drain, Dock Creek and Dry Gully which led to extensive flooding of the low lying coastal area below Hursley Terrace Road and the overtopping of Amberley Beach Road in that vicinity, hindering vehicular access to the beachfront. Drainage of floodwaters out into the CMA was further impeded on those occasions by closed outlet to the sea for the water discharged into the coastal lagoons and similarly the closed Kowai River mouth.

2.2 The proposed Flood Mitigation applications seek to establish stormwater diversion infrastructure and measures to mitigate the impact of flood water on houses within the coastal settlements of Amberley Beach and Leithfield Beach stormwater catchment and to ensure that mechanical opening of the lagoons and river mouths occurs prior to flood levels reaching the point where existing houses are threatened. This is stated to be achieved by seven inter-related proposals to:

- Divert flows from the Eastern Drain above Amberley Township towards the Amberley Swamp (Stanton Road);

- Undertake works on the bed and banks of upper Dock Creek and related drains and divert stormwater in the vicinity of Stanton Road to discharge into Dock Creek;
- Construction of an diversion structure and flood flow path between the Eastern Drain and Amberley Beach Lagoon and thence to sea;
- Construction of a box culvert on Golf Links Road to protect access and provide outfall to the sea;
- Construction of a diversion swale (floodway) to discharge flood flows from Dry Gully via a more direct route to the Mimimoto Lagoon and thence to sea;
- Open the closed outlets of the Amberley Beach Lagoon, Mimimoto Lagoon and Leithfield Lagoons, and if required the piped Outfall Drain mouth at Leithfield Beach, when floodwater reaches prescribed trigger flood levels in each lagoon set slightly lower than the lowest floor levels of potentially affected residences;
- Open the closed mouth of the Kowai River when flood levels reach trigger levels.

Consent to these proposals would also obviate the need for the HDC to resort to the emergency provisions provided for by s330 of the Act, and the consequent necessity thereafter to seek retrospective consent on each occasion within 20 working days following notification of such action to the Regional Council, pursuant to s330A of the Act.

2.3 It is accepted by all parties that the overall status of these 15 applications for resource consent under the relevant statutory plans is that they are to be assessed as 'discretionary activities'. In terms of actual or potential effects on the environment of the Flood Mitigation proposals, Mr. Carranceja submitted that the nature of the 'receiving environment' in this case is one that is at risk of flooding with resultant erosion and scouring during higher rainfall events. He further submitted that the periodic opening of the lagoons under emergency provisions of the Act should be considered as part of the 'existing environment' and that it is appropriate to assess the effects (including significant positive effects) of these proposals on the existing environment holistically. He disputed the validity of the s42A report recommendations to decline the particular resource consents to open the lagoons based upon the reporting officer's inability to conclusively

determine what potential adverse effects on ecosystems and/or tangata whenua values might be.

- 2.4 Mr. Carranceja accepted the concerns expressed by parties at the hearing that the coastal settlements of Amberley Beach and Leithfield Beach have together with the intervening coastal area suffered regular surface flooding when upstream stormwater run-off coincides with blocked sea outlets from the lagoons and streams in the catchment area. At Leithfield Beach, where the main Outfall Drain passes through the residential settlement, that issue has recently been addressed by HDC constructing a piped concrete outfall from the drain to the sea at Leithfield Beach to prevent future blockages.
- 2.5 Mr. Yates stated the cost of similar permanent outfall structures could not be justified at Amberley Beach. In that area, two lagoons currently provide more natural drainage across the beach, however those outlets are also often prone to blockage by coastal gravel accretion processes. Following the two major stormwater flood events in 2008 and 2010, which damaged a significant number of houses in both Amberley and in the two coastal settlements, HDC acknowledged that it would need to address the wider stormwater drainage system surrounding the Township so that it could meet a 50 year ARI storm event design level of service before the land area subject to the GDA could be more fully developed and stormwater volumes discharged increased.
- 2.6 Mr. Pennington emphasised that the consents being sought here (excluding the GDA) are focused upon flood mitigation measures considered to be of the highest priority in order to reduce flood effects on houses in and around Amberley, Amberley Beach and Leithfield Beach. These were identified in a report produced for HDC by his Company ('PDP') in December 2008 "*Flood Management For Amberley and Amberley Beach*". He stated that these measures are not intended to ensure a required level-of-service for all stormwater drainage, although they will form part of a broader set of stormwater management measures yet to be produced by HDC for that purpose. He drew our attention to one stormwater flood mitigation measure (the Lawcocks Road flood diversion from Dock Creek) that has already been fully consented and constructed, and which has proved effective in mitigating flood effects on adjacent properties at least three times since it was commissioned.

- 2.7 Investigations of the stormwater drainage network in the upper catchments of the Eastern Drain and Dock Creek, in Mr. Pennington's opinion indicated changes in that part of what used to be the catchment of the Amberley Swamp and Dock Creek and have resulted in the 'unauthorised' diversion of stormwater flows into the upper reach of Eastern Drain. Consent is therefore being sought here to re-route the diversion back through the Amberley Swamp and into upper Dock Creek, reducing run-off to Eastern Drain and the flooding downstream in the Osborne Road and Courage Road areas.
- 2.8 At Amberley Beach, stormwater from the Eastern Drain gains outlet to the sea by breaches of the Amberley Beach Lagoon, and, Mimimoto Lagoon either by naturally breaching or overtopping those embankments, or more commonly by mechanical means under 'emergency' flood conditions. Given the newly constructed piped Outfall Drain capacity being increased to twin 1050 millimetre (mm) diameter pipes (separately consented), artificial opening of the Leithfield Lagoon is anticipated to be required less frequently than at the two northern lagoons. A 'trigger' flood level at each lagoon at which such mechanical breaches would be initiated is specified in each application. Mr. Pennington confirmed that each trigger level has been set so as to occur when floods levels in the lagoon rise to within half a metre (m) of the lowest potentially flood-affected house floor level.
- 2.9 The Amberley Beach Lagoon, the Mimimoto Lagoon and the Leithfield Beach Lagoon openings are proposed within the CMA and are all identified to be within Hazard Zone 1 on the Coastal Hazard Zone Maps of the proposed Natural Resources Regional Plan (pNRRP). The Outfall Drain at the northern end of Leithfield Beach is also within the CMA and Hazard Zone 1. When flood flows exceed the capacity of the existing Outfall Drain pipeline a broachable weir from the Leithfield Stream into the CMA is proposed (CRC081880). When flood levels recede and water levels in the lagoons stabilise, natural coastal processes tend to re-establish beach profiles. If sea-ingress remains significant however, that process may require to be assisted by mechanical means using previously cast-aside beach material so as to ensure that sea water entering these lagoon systems is minimised.

- 2.10 Mr. Pennington referred to a September 2009 report on the 2008 flood events which indicated that floodwaters in Kowai River were impeded by the closed mouth of the river causing the Kowai to overflow its southern banks and continue southwards towards the Outfall Drain and Kowai Lagoon, flooding the surrounding lands and reaching the township of Leithfield Beach. The proposed river mouth opening works required in this location (again located in the CMA) differ from those for the other lagoon mouths, but again will only be undertaken for a short term during flood events. He stated that resource consent to excavate beach build-up to allow Kowai floodwaters to reach the sea was previously held by an adjoining landowner, but was surrendered in 1995.
- 2.11 Mr. Taylor's evidence was that there would be unlikely to be any adverse ecological impact on fish species and diversity resulting from the effects of what he referred to as 'sporadic' lagoon mouth openings, whether by natural or mechanical means, which he considered to facilitate a natural ecological process for some species to complete the marine phase of their life-cycle. Turning to consider ecological effects of the diversion of Dry Gully into Mimimoto Lagoon via the proposed overland diversion (floodway) swale he considered it would provide adequate protection of the water quality in the lagoon from the effects of sediment-bound contaminants, provided that it was firstly designed and thereafter maintained as a 'swale' so as to assist in controlling sediment-bound nutrients. In that regard he considered that the swale should be cleared of sediment after each flood event and allowed to grow grass in the intervals between. He considered that floodwater discharge into the lagoon and thence out to sea represented a 'normal perturbation' and that the lagoon's ecology is closely linked to such events. He proffered some suggested modifications to the consent conditions recommended in the s42A report.
- 2.12 Reviewing the proposals for the Eastern Drain flood diversion into the Amberley Beach Lagoon, Mr. Taylor expressed the view that although he had not undertaken investigations at the Amberley Beach Lagoon and wetland areas, the ecology of the lagoon would be similar to that of the Mimimoto Lagoon, and that both were likely to broach to the sea. He noted that under flood conditions and with a flow of 9 cubic metres per second (cumecs) into the quarry pit, a degree of pond wash-water from the adjoining Christchurch Ready-Mix ('CRM') gravel quarry could enter the

wetland area and lagoon. His professional opinion on environmental grounds is that the use of the quarry pond and natural channel to the east should be avoided as a flood diversion path and that an alternative route away from the wetland should be identified.

- 2.13 Lastly, Mr. Taylor turned his consideration to ecological effects of the discharge of flood water into the CMA from lagoon openings and the opening of the Kowai River mouth. He considered the effects on aquatic ecology of the proposed discharge to the CMA from the Leithfield Outfall Drain to be no more than minor, given the commissioning of the permanent pipeline to the sea which now provides for fish passage to the sea during those times when the adjacent Kowai River mouth is closed. He further considered that the periodic mechanical opening of the Kowai River mouth to the sea would be particularly advantageous to the wider catchment of that river, owing to its size and (potentially high but relatively unknown) habitat range compared to the other drainage catchments involved here.
- 2.14 Dr. Roper-Lindsay's evidence assessed potential effects on species, habitats and ecological values arising from the Stormwater Management Plan ('SMP') on land including Amberley Township and the mix of urban and rural land use activities on the raised upper terrace area west of Hursley Terrace Road as well as the beach settlements along the low lying coastal area to the east. She noted that with the exception of Dock Creek (which she occasionally referred to as Dock Stream) other ephemeral watercourses originate in the wider catchment on the upper terrace then cut down into deeper gullies up to the edge of the terrace, but that east of Hursley Terrace Road there are then indistinct stormwater flow-paths and scattered wetlands amid the rural land on the coastal plain.
- 2.15 In Dr. Roper-Lindsay's opinion there are no areas of ecological significance within Amberley Township, although she considered Dock Creek to be an important aquatic habitat as it is the only 'flowing water' in the area and supports some indigenous riparian and in-stream vegetation. She considered that the Kowai River also exhibited low ecological value overall because of its periodic drying up. She had not considered the Amberley Swamp (Stanton Road) wetland in detail, but observed that area to have potential remaining ecological value for wetland species that might be improved as a result of the proposed diversion reinstatement.

- 2.16 As part of an overall assessment of these proposals, Ms. Torgerson's evidence presented a planning overview of the expert evidence provided by other witnesses and included details of the consultation undertaken through her Company ('PDP') in relation to the proposed mitigation applications. These included a pre-hearing meeting with ECan officers, correspondence and discussions with representatives of both Te Runanga o Ngai Tahu and Te Runanga o Ngai Tuahuriri, and with representatives of the Department of Conservation (DoC). She stated no adverse responses were received from any of the above contacts. Commenting on Ms. Holt's s42A report, Ms. Torgerson was critical that no consideration had apparently been given in that report to positive effects of the 'Flood Mitigation' proposals.
- 2.17 Ms. Holt's and Mr. Taylor's concerns about potential impacts on water quality that might result from the proposed routing of the Eastern Drain diversion through the CRM site wet quarry pit were noted by Ms. Torgerson. She considered that aspects of these proposals would be in contravention of Condition 4 of the resource consent attached to the CRM gravel extraction activity. That matter was currently under discussion between CRM and HDC and pending a resolution, HDC was prepared to accept a condition on its current application (CRC071742) restricting the implementation of that consent until that matter has been resolved.
- 2.18 Ms. Torgerson gave her overall assessment of these proposals against relevant Regional Policy Statement (RPS) objectives and policies together with provisions in the Regional Coastal Environment Plan (RCEP) and the pNRRP. Overall, she considered the flood mitigation proposals to be consistent with the relevant provisions. In relation to the statutory requirements in Part 2, and sections 105 and 107 of the Act, she concluded that subject to a range of consent conditions, the overall effects on the environment of these proposals would be no more than minor and that resource consent for a term of 35 years was appropriate in each case. She then discussed potential amendments to the range of resource consent conditions offered in Ms. Holt's s42A report and recommended a number of additions and alterations to those.

Submitter's concerns (excluding those solely specifying resource consent application CRC082988).

- 2.19 As a preliminary observation on submitter's concerns, while we accept that there is a general level of support for flood mitigation action to be taken by HDC to deal with future stormwater flood flows, we remind ourselves that these current applications do not attempt to mitigate all such existing conditions in that regard, they are simply a first/partial step toward doing so in relation to the protection of existing houses.
- 2.20 It is clear from the following summary of views expressed that many submitters are anxious for HDC to address other aspects of the existing stormwater network which they consider to be either deficient and/or directly responsible for the current extent of repeated property flooding particularly in the areas south of Amberley Beach Road and below Hursley Terrace Road. Several submitters propose 'alternative/additional' courses of action to those proposed in these applications. While some of these might indeed be beneficial it is not for us to 'prefer' those alternatives to the applicant's current proposals. Our task is simply to assess whether it is appropriate (having regard to the existing environment, relevant regional, and district plan provisions and statutory requirements) to grant resource consents to these particular applications.

Submitters in support

- 2.21 Mr. Manson spoke to the submission by Amberley Beach Residents and Ratepayers Association ('ABRRA'). While supporting these applications ABRRA seeks four additional matters to be considered. These are:
- That HDC ensure the maintenance of the outfall of the Eastern Drain or alternatively to reinstate the full working capacity of the Drain;
 - That in addition to diversion of the flows from Dry Gully to the Mimimoto Lagoon, flows from Goldminer's Gully should also be diverted via the proposed diversion swale to that Lagoon;
 - That HDC establish a programme of drain cleaning and maintenance for the Amberley Beach area;
 - That consideration is given to installing a stormwater outfall pipe at the Amberley Beach Lagoon outlet with sufficient capacity to deal with the anticipated future stormwater volumes from the Amberley catchment area.

2.22 Ms. McKendry, Mr. Richards and Cr. Little all spoke to their individual submissions and/or those by the Amberley Ward Committee. They considered that HDC's ability to plan with confidence for the future expansion and economic prosperity of Amberley Township is dependant on the granting of consent for all of the applications. Mr. Richards commented on the problem of stormwater management in the Amberley Swamp and Eastern Drain areas. He identified a need to maintain day to day flow levels in the Eastern Drain so as to provide for stockwater needs and amenity considerations in Amberley Township. He considered that only during heavy rainfall periods should stormwater be diverted through the swamp to Dock Creek, although he foresaw difficulties in achieving such a flow due to the shallow gradient west of Stanton Road. Cr. Little noted HDC's efforts to integrate the management of the many small stormwater drainage schemes in Amberley, and believed that evidence provided at this hearing would satisfy the concerns expressed by the ECan reporting officers, thus enabling these important stormwater measures to be implemented as quickly as possible.

2.23 Mr. Hibbard considered that the consents sought here would enable the HDC to progressively address the wider flooding problems in the Township as they arose.

Submitters in opposition

2.24 Mr. Upritchard and Mrs. Henry each own properties on the north side of Watties Road immediately adjoining and to the south of the Amberley Swamp (Stanton Road). Further landowners in that block (Mr. & Mrs. Carr) claimed to have been overlooked by ECan in the notification process and were not therefore formal submitters. All are concerned that any diversion of excess stormwater flow from Eastern Drain through the Swamp to upper Dock Creek will exacerbate the length of time that parts of their properties remain inundated. Mr. Upritchard indicated that approximately 6 ha of land attaching to the properties on that side of Watties Road would be likely to be permanently flooded if the proposed diversion proceeds. He was concerned that the current partial Swamp drainage via a weir system and the piped Stanton Road roadside drain would both be inadequate to cater for any additional stormwater and hence water levels in the Swamp would

be regularly (and possibly permanently) increased, possibly leading to stagnant water conditions and increased mosquito breeding conditions.

- 2.25 Mr. & Mrs. Belcher farm two properties, one at Douglas Road bordering 4 kilometres (km) of the Kowai River and the other at Stanton Road containing approximately 1.5 km of Dock Creek. They oppose the diversion of Eastern Drain to Dock Creek and instead submit that it should be upgraded and thereafter regularly maintained. They further oppose the diversion of excess stormwater through the Swamp and across their farmland to Dock Creek as they consider that this would have major adverse effects on their property, such as scouring and erosion. Finally, they oppose the proposed discharge of stormwater from Dock Creek into the Kowai River because of the proximity of that outlet to an historic timber treatment plant in that locality and the risk that might impose of contamination of the Amberley Township water supply, the intake for which is some 2 km downstream of the proposed discharge point.
- 2.26 Mr Croft was similarly opposed to the measures concerning the diversion of excess stormwater from the Eastern Drain. In his view increased irrigation on the western side of the catchment would be likely to result in increased floodwater and Dock Creek would be effectively at capacity during storm periods and unable to take any further diverted water from the Eastern Drain. He suggested that additional floodwater on the eastern side of the catchment should utilise the original line of the Glasnevin Drain and/or the Eastern Drain be deepened to accommodate additional flows.
- 2.27 Speaking on behalf of Neil Kerr Ltd., Mr. Kerr farms 90 ha of land bounded by Stanton Road and Watties Road, known as part of the “Amberley Peat Land”. The Company has owned that land since 2002 and utilises it for grazing beef and dairy animals. He strongly opposes HDC’s proposal to block a tributary of the Eastern Drain on his property and divert the flow across his land to Stanton Road and thence to via a 600 mm pipe under that road westward to Dock Creek (he also complained that he had received no knowledge or communication from HDC as to such details). In his view, Dock Creek does not have the capacity to accept a further 710 litres per second (l/s), as proposed by HDC. The proposed ‘outflow’ pipe capacity is also substantially less than the current 1.2 m ‘tributary’ that is to be blocked off and is therefore likely in his opinion to result in additional

depth, extent and duration of flooding on his land for little real benefit to flood conditions in Amberley during most of the year. It would also result in the loss of his stock water sourced from the tributary to be blocked. In 2008 and 2010, he estimated that some 35 ha of his land was under water for periods of up to 5 – 6 months and noted that pasture dies under such conditions. He considers that the Eastern Drain should be widened to take increased flows or alternatively that such flows should be pumped down the Stanton Road open drain.

- 2.28 Mr. Smart farms land in the Leithfield Beach area that in the past has been affected by floodwater break-out to the south of the Kowai River. He considers that the proposed diversions of stormwater from the northern end of the Eastern Drain and thence via the Amberley swamp, Dock Creek and Stanton Road into the northern branch of the Kowai River will further exacerbate future flooding in the Leithfield Beach area and surrounding farmland. While accepting that the Eastern Drain needs to be upgraded north of Amberley to Watties Road, he considers that the current applications do little or nothing to prevent or mitigate the increased flooding potential for the Leithfield Beach community and that an integrated drainage plan is necessary for the whole of the Amberley-Leithfield catchment (rather than simply the Amberley area as currently proposed).
- 2.29 Evidence in support of Mr. Smart's submission was presented by Ms. Malloch, an environmental planning engineer. She referred to a report produced by Mr. Pennington dated October 2008 (*"Flood Management for Amberley and Amberley Beach"*) in which he noted that any proposal to divert the Eastern Drain to the Kowai River would need to demonstrate that it would not adversely affect properties alongside that river. A subsequent report to HDC by Mr. Pennington in March 2009 (*"Flood Management for Leithfield and Leithfield Beach"*) reiterated the importance of assessing effects from the entire catchments affecting this area (all those contributing to the Kowai and Waipara Rivers). She observed that report went on to consider only flooding issues related to the residential settlements rather than potential resultant adverse effects of the proposed mitigation measures on other flood prone land.
- 2.30 Commenting upon potential effects from the consents sought to enable mechanical opening of the lagoon and Kowai River mouth, Ms Malloch

noted that following previous openings of the Kowai mouth the process of southerly drift of coastal gravel had in the past then caused a build up of shingle, which further diverted Kowai River flood flows towards the south and Mr. Smart's land. In her view, it was therefore desirable that any consent to the current application should define the location of any opening based on assessment of potentially resultant effects of such actions on adjoining land and the likely duration of these effects. She was critical of the lack of information on anticipated floodwater volumes provided by the applicant, noting that without such data for a range of storm events the ability to assess the resultant effects of the proposed mitigation measures is unlikely to be possible.

- 2.31 Mr. Johns has farmed approximately 100 acres of flood prone land in the Newcombes Road area and adjacent to the HDC's sewage ponds. He is concerned about the potential for additional volumes of stormwater from Dry Gully to further increase adverse flood effects on Newcombes Road and potentially cause seepage from the adjoining sewage ponds into this area, as well as prolonging the length of time that his grazing land would be under water.
- 2.32 Mr. Chisnall and Ms. Alexander reside on some 9.6 ha on the west side of Hursley Terrace Road and also farm some 58 ha of land to the east of that road extending from Amberley Beach Road southward almost to Newcombes Road. Their primary concern is any potential increase in the volume of stormwater entering Dry Gully from further subdivision and/or development in the large catchment area to the north-west (including the proposed detention pond 63 area, or any re-alignment of Teviots Drain). Dry Gully experiences flow (even under low-rainfall conditions) which crosses their paddocks and Hursley Terrace Road before flowing to the south towards Newcombes Road. Under more severe storm conditions such flows result in heavy silt deposits which damages those pastures. He presented photographic evidence of erosion effects caused by the volume of stormwater on properties alongside Goldminer's Gully in the 2008 flood event, noting that stormwater from the Gully then flowed to the north-east from his property resulting in flooding the lower portion of Amberley Beach Road east of the terrace.

- 2.33 Mr. Chisnall suggested that stormwater flow in Goldminer's Gully should alternatively be reduced by diverting approximately half down the existing Amberley Beach Road drain to the existing culvert east of Hursley Terrace Road, with the balance of stormwater flow from that Gully directed to a (new) extension to the Eastern Drain north of the Mimimoto Lagoon, rather than to the proposed new 'floodway/swale' across his property to the east of Hursley Terrace Road, which he opposed due to its impact on his farming of that land. He indicated support for the application to enable mechanical opening of the Mimimoto Lagoon as this had proved successful in reducing the degree of flooding in his paddocks in the past.
- 2.34 Mr. Harper's 40 ha property is located south of Amberley Beach Road and east of Hursley Terrace Road. This land is generally affected by flooding from June to October in most years and while welcoming HDC's initiative to resolve this issue, he has significant reservations about the current applications in the absence of information on such aspects as stormwater volumes and flow rates and whether any 'improvement' from the current proposals is capable of being demonstrated. His submission is focused upon all land below the terrace in the Amberley Beach area which he considers to function as a "default flood plain" for the wider Amberley stormwater catchment.
- 2.35 In Mr. Harper's view the current applications do not address the need for speedy removal of water from this flood-prone area due to insufficient capacity in current drains and culverts (particularly the existing twin-culvert under Amberley Beach Road near his property), the four gullies north of Dry Gully and also as a result of the alteration of topographic features (lowering of a section of "storm beach/ridge") within the CRM quarry site. Unless these "other sources" of flooding are addressed first, he does not consider that the current proposals will result in any mitigation of flood extent or duration in the Amberley Beach area.
- 2.36 The location of the proposed new road bridge on Golf Links Road ('box culvert') adjoining the Amberley Beach Lagoon/coastline was in his opinion likely to be vulnerable to coastal erosion or inundation processes within a short time frame and he suggested an alternative location some 150 m to the north for such works. He also doubted whether the natural (undulating) topography in this area would be sufficient to channel stormwater flow from

the Eastern Drain alongside the Amberley Beach Lagoon without additional bunding/embankment (as is currently proposed). The majority of Eastern Drain floodwaters are therefore likely in his view to continue to flow southwards towards the constricted twin culvert on Amberley Beach Road and eventually the Mimimoto Lagoon. He noted the timing and duration of any mechanical opening of the Lagoon during flooding is also critical in his view if serious and continuing beach erosion and/or adverse ecological effects are to be avoided in that area.

- 2.37 Mr. Deans expressed concern about the lack of information accompanying all of these applications, including any assessment given to any potential alternative solutions, but especially details of the volume, levels and duration of water likely to be directed through his property and the maintenance of that particular provision thereafter. In particular he notes that applications CRC102789, CRC102790, and CRC102791 (HDC's proposed 'Bell Diversion' connecting to the Eastern Drain immediately west of Amberley) are currently 'on hold' and are not to be considered here, even though in his view they are likely to be directly relevant to flow rates and potential volumes of floodwater in that Drain and eventually those effects on his property.
- 2.38 Without significant additional works beyond those applied for here, Mr. Deans considers that consents to the current applications are unlikely to achieve any mitigation and will exacerbate flooding effects over extended areas, including his property. He endorsed many of the concerns expressed by Mr. Harper including the inadequacy of the current drain and twin-culvert capacities on Amberley Beach Road that caused backing-up and ponding of floodwater, together with resultant siltation and erosion effects on farmland. He also expressed concerns about effects on the ecology of the northern Amberley Beach Lagoon and adjoining swamp areas from potential seawater intrusion and/or rise in water level.
- 2.39 Mr. Uffindel is General Manager of Christchurch Ready-Mix Concrete Ltd ('CRM') and he spoke to its submission. CRM's concerns are that the terms of its current resource consents do not permit discharge of stormwater or gravel wash water via open channels or culverts. HDC's proposal would therefore require the conditions of CRM's resource consent to be changed to allow stormwater from the quarry pit to be discharged into the Amberley

Beach Lagoon and wetland. Mr. Uffindel is also concerned that more floodwater may be directed through CRM's property over a shorter time period with potential erosion and siltation effects given the relatively unstable sands and shingle on that site. CRM seeks that consent should not be granted unless all of the above issues are adequately addressed by the applicant in this case.

Section 42A report

2.40 Based upon the limited information supplied with the applications, Ms. Holt's initial s42A report concluded that resource consent should not be granted for applications CRC102547, CRC102548, and CRC102549 to divert water from the Eastern Drain into to the Amberley Beach Lagoon and wetland during excessive floodwater conditions. For similar reasons of insufficient information, she further concluded that resource consent should not be granted for applications CRC102694, CRC102695, and CRC102696 to undertake works in the CMA at Amberley Beach Lagoon, Mimimoto Lagoon, Leithfield Beach Lagoon and at Outfall Drain. In relation to all other of the 'Mitigation flood' applications she concluded that resource consents could be granted, subject to recommended conditions.

2.41 However, following the supplementary elaboration of information provided by Mr. Pennington at the end of the hearing, together with amended conditions offered by the applicant (via Ms. Torgerson), in relation to CRC102547, CRC102548, CRC102549 CRC102694, CRC102695, and CRC102696, Ms Holt amended her recommendation to also grant consent to these subject to those conditions.

3.0 Site Visits

3.1 During the course of the hearing and immediately following we were able to visit all of the general areas concerned with the Flood Mitigation applications proposals, these included:

- Amberley Swamp and the Stanton Road/Douglas Road/Lawcocks Road areas, together with locations on SH1 to the north and south of Amberley township (including Amberley House);
- The Teviots subdivision and several properties on Amberley Beach Road at the head of Dry Gully and Goldminer's Gully;
- Christchurch Ready Mix Concrete Ltd. site, together with the adjoining Amberley Beach North Lagoon and coastal areas;

- Hursley Terrace Road and the proposed Dry Gully diversion route;
- The Kowai River mouth and the Leithfield Outfall Drain structure.

We are particularly grateful to those submitters and others who assisted us in conducting those inspections.

Applicant's Right of Reply

- 3.2 The applicant's written 'Right of Reply' together with a revised set of recommended conditions was received by us on the 1st December 2010. Mr. Carranceja reiterated that it was not the applicant's intention that these 'Flood Mitigation' applications would address all stormwater flooding such as that affecting paddocks or driveways as raised by submitters. Rather, they are particularly focused upon stopping floodwaters entering people's houses in a 50 year ARI rainfall event, effectively the so-called flooding 'black spots'. He accepted that a number of alternative or additional works suggested by submitters might have the potential to provide a higher level of service in addressing flood issues. These were not the subject of the current applications and would need to be the subject of subsequent consideration, if the cost of funding such work is generally endorsed by the community. Overall he concluded that the current proposals if granted would provide a wide and significant benefit to the people and communities currently at risk of flooding from significant rainfall events.

4.0 Assessment

- 4.1 Excluding consideration of the GDA CRC082988, our initial evaluation can be divided between those applications affecting the immediate areas to the north of the Amberley Township: CRC103443, CRC103444 and CRC103445 ('the Northern Group'), and those to the east and south extending to the CMA applications: CRC102547, CRC102548, CRC102549, CRC102807, CRC102809, CRC102810, CRC102694, CRC102695, CRC102696, CRC103328, CRC103330, CRC103331 ('the Eastern Group').

Status of the Applications

- 4.2 There was agreement between the parties that the 'bundle' of Flood Mitigation applications should be assessed as discretionary activities under s104 of the Act. We concur with this assessment.

Statutory Considerations

- 4.3 In terms of our responsibilities for giving consideration to the applications, we are required to have regard to the matters set out in sections 104, 104B, 105 and 107 of the Act. In having regard to the criteria set out in s104(1), and subject to Part 2 of the Act, which contains the Act's purpose and principles, we are required to have regard to:
- (a) Any actual and potential effects (including reasonably foreseeable effects) on the environment of allowing the activity;*
 - (b) Any relevant provisions of a plan or proposed plan; and*
 - (c) Any other matters the consent authority considers relevant and reasonably necessary to determine the application.*
- 4.4 In terms of s105, when considering a s15 (discharge permit) matter, we are required to have regard to:
- (a) The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
 - (b) The applicant's reason for the proposed choice; and*
 - (c) Any possible alternative methods of discharge, including discharge to any other receiving environment.*
- 4.5 In terms of s.107, we are prevented from granting a discharge permit allowing any discharge into a receiving environment which would, after reasonable mixing, give rise to any of the effects set out in s107(1)(c)-(g).

Section 104(1)(a) Actual or Potential Environmental Effects

Northern Group Applications:

Land Use Consent CRC103443 – For works in the beds and banks of Dock Creek and a tributary to Eastern Drain upstream of Amberley Swamp near Stanton Road and Watties Road, Amberley.

Water Permit CRC103444 – To divert excess flood water into the Kowai River, an unnamed drain and Upper Dock Creek, near Stanton Road and Watties Road, Amberley.

Discharge Permit CRC103445 – To discharge excess flood water and contaminants into the Kowai River, an unnamed drain and Upper Dock Creek, near Stanton Road and Watties Road, Amberley.

- 4.6 Amberley Township was severely flooded during the 2008 storm and there is community support for reducing the flood risk. The measures proposed by HDC in these applications are designed to in part help achieve this reduction. The flooding problems in Amberley Township in 2008 were exacerbated by the Eastern Drain overtopping its banks to the north of Amberley and then flowing unimpeded to merge with the flows in Dock Creek in the township on the western side of Amberley. Extensive flooding also occurred in the Courage Road and Osborne Road areas of the Township to the west of State Highway (SH) 1 through which Eastern Drain flows. The proposed works will reduce flood flows through these areas.
- 4.7 For the applicant, Mr. Pennington indicated that part of the catchment area of Amberley Swamp has previously been diverted into the Eastern Drain catchment. This has resulted in the Eastern Drain having insufficient capacity to convey flood flows, leading to it overtopping its banks and thus creating flooding to surrounding properties. He stated that the re-routing of the diversion back into Amberley Swamp and the upper catchment of Dock Creek would reduce the potential for Eastern Drain to overflow and flood Amberley Township. He considered this would also reduce flood flows in Courage Road and Osborne Road areas to the west of SH1 and through which Eastern Drain flows.
- 4.8 In summary, the proposed works fall into four areas (working down the catchment) as follows:
- Divert water to what the applicant stated is the original flow path for part of the Eastern Drain catchment via an open channel west towards Amberley Swamp, by blocking off an existing drain (on the property of submitter Mr. Kerr) and re-opening a previously blocked off culvert. That part of the existing catchment which enters the Eastern Drain (downstream from the diversion) from the east of SH1 would continue to do so, but that from the balance of the catchment (land to the west of SH1) would now be diverted via a channel from Eastern Drain.
 - Placement of a new 600 mm culvert in the road reserve and under Stanton Road, connecting the eastern and western sides of the Swamp to provide greater capacity for drainage flow westwards and into Upper Dock Creek. The existing pipe that drains the swamp into the Stanton Road drain has a maximum consented

rate of 142 l/s, insufficient to drain the swamp quickly. The proposed new 600mm pipe will convey up to 710 l/s and will be placed to increase the discharge of flood flows once the existing outlet is running at capacity. The 600 mm pipe should also prevent flooding over Stanton Road at this point, caused by insufficient drain capacity underneath the road.

- Maintain and upgrade, if necessary the existing Upper Dock Creek channel downstream from the western side of Amberley Swamp to ensure adequate capacity for proposed increased flood flows resulting from the works further upstream.
- Upgrade and realign the existing 600 mm culvert at the intersection of Stanton and Douglas Roads, so that it discharges on the south side of the existing weir. This will mean flood flows will bypass the weir and have unimpeded access to discharge straight into the Kowai River (North Branch).

Principal Issues:

4.9 Several submitters provided extensive submissions on the northern group of applications, some in support and some opposed. They raised a number of issues especially flooding, but also extended to other issues related to the proposals. The principal issues are listed and evaluated below:

- Potential effects on flooding;
- Potential effects on river beds, banks and structures; and
- Potential effects on water quality.

4.10 A number of subsidiary issues were raised by various submitters. These included the potential for septic tanks to be impacted by flood waters, the option of diverting water northwards towards the Waipara River via the Glasnevin Drain or to the Kowai River via a new outlet, potential effects upon ecological values, and effects upon amenity values. The later issue was addressed by several submitters and has in part already been dealt with, for example the request by Mr. Richards to protect the amenity value of the Eastern Drain as it passes through Amberley Township by providing for low flow. None of these issues were supported by detailed evidence although most were used as partial justification for the positions taken by the submitters. We do not dispute the views of the submitters proposing

them but consider there is no justification for modifying the overall proposals in the Upper Dock Creek area.

- 4.11 Although we appreciate the concerns expressed by the submitters with respect to these issues, except to the extent where they may have been in part considered in other parts of this decision we have not received evidence to lead us to believe the proposals will have an effect on these issues which is more than minor. We thus recommend no changes to the proposals as a result.

Potential Adverse Effects on Flooding

- 4.12 We were fortunate to receive submissions from people who have lived in the area for many years and have first hand experience of flooding problems. There is agreement that flooding in the catchments north of Amberley is having a serious impact upon the township of Amberley itself and there is acceptance that works need to be undertaken to avoid a recurrence of the flooding in 2008. The nature of these works proposed by the applicant is the source of disagreement with some of the parties.
- 4.13 We note that information provided to us by Mr. Pennington was that the ARI for the 31st July 2008 event was approximately 48 years for the 24 hour rainfall depth, and 37 years for the 48 hour rainfall depth. This information was not been refuted by any of the submitters and indicates that flooding to the levels experienced in 2008 is likely to be relatively infrequent.
- 4.14 Several of those presenting evidence to us at the hearing were concerned that poor planning decisions, such as permitting subdivision on flood prone land, were to blame for creating the flood hazard in the first place and that they were now paying the cost. While we accept this may be the case the subdivision has already occurred. HDC now has the unenviable task of trying to resolve it, and we support their endeavours to do so. We acknowledge that any solutions must be in the wider interest of the local community.
- 4.15 The applicant has proposed a suite of mitigation works which it believes will prevent current flooding conditions from worsening. In the view of HDC, the threat to houses in Amberley Township, and in particular around the Dock Creek area downstream from the Lawcock's Road diversion is a

major issue which must be resolved. HDC's proposed solution is to ensure flood waters are diverted away from the Eastern Drain so that in a flood event water will be re-diverted back towards Amberley Swamp, from where it had previously been diverted. We accept this proposal would have the desired effect, reducing flooding not only around the Dock Creek area but reducing flows in the Eastern Drain in the Osborne Road and Courage Road areas, to the east of SH1.

- 4.16 We note that there were many submissions in support of the applicant's proposals including those by ECan's Regional Engineer and the Amberley Ward Committee. We also note that some of the submitters in support live adjacent to the streams downstream of Amberley Township. They also have flooding problems and are supportive of any measures which will lead to a reduction of floodwaters from the Township area onto their properties.
- 4.17 We were provided with conflicting evidence on the "natural" flow of the upper tributary of the Eastern Drain and whether it originally flowed down the Eastern Drain towards Amberley Township or west towards the Amberley Swamp. Although we remain uncertain of the 'natural' flow path above the Swamp, we accept the evidence of HDC witnesses that the proposed diversion of flood flows from the upper Eastern Drain will reduce the flood risk to Amberley Township from stormwater flowing from the north. In this regard we consider our task is to determine, based on the evidence presented to us, if the diversion and subsequent works will on balance achieve the purpose and principles of the Act. It is our view the approach proposed by the applicant constitutes a reasonable solution and that overall the effects are likely to be positive by reducing the flood risk to people and property in the Amberley Township.
- 4.18 We note also that not all stormwater flows are proposed to be diverted towards Amberley Swamp, as some of the existing flow from the hills to the east of SH1 (as pointed out by Mr. Pennington on the final day of the hearing) would continue to flow unabated towards Amberley. In respect of the diversion of Eastern Drain, we heard from landowners who believed they would be directly affected by the proposals. Mr. Kerr stated that although he is sympathetic with the objectives of the total scheme, he has never supported the diversion of greater volumes of water across his land as he considers the extent and duration of flooding in the Amberley Swamp

will be made worse and that he will incur significant costs associated with pasture destruction.

- 4.19 To support this assertion Mr. Kerr said that the pipe to be blocked on his property is 1200 mm in diameter and that the proposed outlet pipe under Stanton Road 600 mm. With all other conditions being the same, Mr. Kerr argued there will be insufficient capacity to discharge flood flows from the swamp equal to the input, thus leading to a worsening flooding in both extent and duration on his and neighbouring land. Mr. Kerr has also advised that his stock watering system is reliant on water supply below the proposed diversion of Eastern Drain and will therefore be rendered redundant as a result of the diversion. He advised other stock watering sources suggested by HDC are not acceptable due to poor quality of water, and that he would have to pay for establishment of any new stock watering system. Mr. Kerr made a valid point when he stated that it seemed unusual to divert all water in the Eastern Drain tributary towards the Swamp when *"in over 95% of the time there is no risk to Amberley"*. From his perspective he is losing his source of stock water for no good reason.
- 4.20 At this point it is useful to refer to the suggestion made by Mr. Richards of diverting only flood flows towards the Amberley Swamp, enabling base flows to continue down Eastern Drain. This would resolve Mr. Kerr's concerns regarding stock water and protects the amenity value of a base flow (referred to by Mr. Richards) of water down Eastern Drain and through Amberley Township. Mr. Pennington was of the view that this suggestion of providing for a base flow had merit, with the proviso that there would need to be a definition of low (or base) flow.
- 4.21 Other submitter's views on the diversion proposals were also very strong. Mr. Upritchard, as a long term local land owner supports the view of Mr. Kerr. Mr. Upritchard's advice greatly assisted our understanding of how the stormwater drainage system in the area currently works. Although he requested the applications be declined, he helpfully suggested that if granted, there should be conditions imposed ensuring that there be no increase in surface or groundwater levels as a result of the works and that all floodwater be removed within 72 hours to save pasture from destruction. We note it was Mr. Upritchard, who installed the 450 mm pipe under

Stanton Road many years ago designed to control water levels in the swamp.

- 4.22 We received no evidence on the viability of removing floodwaters within 72 hours from the applicant and other submitters advised us that with the current drainage arrangements water often floods land surrounding the Swamp for much greater periods of time than 72 hours. Because of the range of intensities and durations of flood events and the potential for variability in groundwater levels and their contributions to flooding in this area, we do not consider it reasonable to apply the conditions Mr. Upritchard is suggesting. Ms. Henry, in supporting Mr. Upritchard's submission intends developing her block into a wetland and does not want increased flooding to prevent her from doing the necessary works to create the wetland. Other submitters opposing the diversion included Mr. Croft, whose family owned the western part of Amberley Swamp from 1930 onwards. He believes the additional floodwater will be too much for Amberley Swamp and Dock Creek to absorb.
- 4.23 Mr. and Mrs. Belcher provided evidence on the channel of Dock Creek running through their property east of Stanton Road. They object to *"the proposal that excess water be diverted through our farm land via the Stanton Road pipe, instead of taking its more natural course, that is, through Eastern Drain"*. The Belchers are concerned there may be a number of effects, including threats to wells and septic tanks, amenity values, increased likelihood for drowning of stock and children, and the potential for erosion. They are also concerned that they have no information on what the channel improvements needed to convey increased flow through their property will be.
- 4.24 Mr. Smart, who farms near the mouth of the Kowai River below where the two branches of the Kowai River merge, expressed a view that Kowai River may not be able to able to withstand additional flood waters from Upper Dock Creek. Ms. Malloch, in providing evidence on behalf of Mr. Smart expressed concern that there needed to be overall catchment planning.
- 4.25 One submission received questioned the adverse effects of increased flows on land adjacent to the Stanton Road outfall. Other submitters commented on the need to ensure the Dock Creek channel is kept clear of obstructions.

We received evidence that flows are restricted by vegetation growing in the watercourse and agree that channel maintenance should be considered an essential part of any consent to these applications.

Evaluation

- 4.26 We accept the evidence provided by the applicant and some submitters that significant flooding of the Amberley Swamp from surface stormwater flows is not a regular occurrence, and that much of the ambient flooding is caused by undercurrent (groundwater) flow. As referred to above, we have received technical evidence that major flooding similar to that occurring in 2008 is likely to be a relatively rare occurrence. We also note that all parties accept the Swamp is geographically positioned to function as a natural stormwater detention area or 'sponge' for attenuating surface water flows above Amberley Township and that it has significant potential for reducing flood flows through the Township.
- 4.27 From the evidence presented to us, we believe there will be significant positive effects for Amberley Township from the diversion of Eastern Drain into Amberley Swamp during flood flow conditions up to the design flood. While we acknowledge this diversion of flood flows would increase the extent and duration of flooding in the Amberley Swamp, we accept that if the diversion is limited to flood flows only that this will not be a regular occurrence and will occur when the receiving environment is subject to surface water flooding. We also consider that by limiting the proposed diversion to flood flows only, issues of access to stock water and amenity values through the Township are addressed.
- 4.28 We accept the suite of works proposed by the applicant to install a new 600 mm culvert under Stanton Road is likely to minimise the effects of flooding on adjacent properties by enhancing the discharge of all ponded water in the Swamp, whether it is derived from surface flooding or undercurrent flow. This is particularly the case as evidence presented to the hearing was that the existing 150 mm pipe under Stanton Road is too small, and is placed too high to currently assist in conveying ponded water. Evidence presented indicated that even in conjunction with the existing 450 mm pipe flowing down to the Stanton Road Drain, the capacity of both pipes collectively is too small to cope with flood flows in a 50 year ARI storm event. We accept this to be the case. The applicant's evidence is that the

proposed new pipe under Stanton Road, strategically placed to discharge water, is needed to convey flood flows. We accept this evidence. This new culvert will in our opinion create a positive effect by conveying ponded water west across the Amberley Swamp and will mitigate flooding exacerbated by the proposed diversion of flood flows.

- 4.29 Overall, we believe the diversion of flood flows only is a sensible approach and we support it. The issue of how to define the flow which would continue down Eastern Drain is a valid issue. We believe this needs further investigation and could be finalised at the stage when diversion works were undertaken. Accordingly we have imposed a condition requiring HDC to provide to ECan design details which will ensure that flows of the Eastern Drain are kept to a height which do not exceed the current channel capacity.
- 4.30 In considering the concerns of landowners regarding the lack of design details of the works on their properties, we believe it would have been useful for the hearing to have received preliminary investigative analysis and design from the applicant on the likely extent of works needed in Upper Dock Creek to convey flood flows and in particular the gradient of the existing watercourse and its capacity and the consequent potential effects on adjacent landowners. Lack of such information makes it difficult for all parties to understand the potential effects and to have meaningful input into the proposal. Mr. Pennington stated in his evidence *“the sizing of the channel dimensions and the extent to which the creek needs to be upgraded is yet to be determined”* (para 10.12), and the applicant’s AEE states the capacity of Upper Dock Creek is currently under investigation.
- 4.31 We understand the issue the Belchers have with the proposal for upgraded channel works through their Stanton Road property. On balance however we consider the advantages of mitigating flood risk in Amberley Township by diverting flood flows through Amberley Swamp and thence down towards the Stanton Road outfall, significantly outweigh the potential effects or risks as outlined by Mr. and Mrs Belcher. We are satisfied from the evidence presented that, following investigations and necessary modifications Upper Dock Creek will be able to safely convey flood flows from the Swamp. Conditions imposed on the consents can ensure best practice in the design and implementation of the works and we are mindful

that any proposed works on private property will be dependent on HDC obtaining the permission of the landowners.

- 4.32 While we agree with Ms Malloch that a catchment wide approach is desirable, we accept the applicant is also legitimately able to make application for consent to the proposed works in the Dock Creek catchment. We note that rating districts of both branches of the Kowai River exist and that comprehensive applications for resource consent for these catchments are soon to be lodged with the Regional Council.
- 4.33 We accept the evidence of Mr. Pennington when questioned on this issue raised by Mr. Smart that the impacts on flooding will be less than minor considering the overall catchment of the north branch of the Kowai River (some 105 km²) and the fact that this flow and the flow of the south branch catchment impact the flows in the River adjacent to Mr. Smart's property. He advised us less than 3% of the flow in a major flood would come from the Dock Creek catchment into the Kowai River and we accept this would not be significant in terms of overall effects in flood flow conditions.
- 4.34 Further, we concur with the Regional Engineer that improvements to the opening process of the mouth of the Kowai River, considered below in 'the Eastern Group' of applications, will assist in overcoming the problem of flooding in the lower Kowai River catchment and behind the settlement of Leithfield Beach.
- 4.35 We agree with submitters that regular channel maintenance is an essential part of flood mitigation measures and accordingly we have imposed a condition requiring HDC to develop a programme to ensure maintenance of all channels in the Upper Dock Creek catchment is regularly undertaken.
- 4.36 The evidence presented suggests that floodwater is unlikely to back up at the Stanton Road outfall. We accept the view of Mr. Pennington that with the new culvert from Upper Dock Creek under Stanton Road discharging directly towards the Kowai River, flows are unlikely to back up in major storms as they do at present. The new and modified arrangements will in our view lead to the improved flows at this point, as the flows bypass the Dock Creek weir area.

Potential Effects on River Beds, Banks and Structures

- 4.37 Concerns were expressed that the works aimed at modifying stream channel beds may lead to instability and to increased erosion and scouring of the watercourses. Mr. and Mrs Belcher in particular expressed such concerns. In the absence of investigations being undertaken to date we can understand the Belcher's concerns given that significant earthworks may be undertaken along Dock Creek between Amberley Swamp and Stanton Road. Similar concerns were expressed by another submission concerned at the possible impacts heavy machinery may have.

Evaluation

- 4.38 We note the applicant has stated via Mr. Pennington that earthworks and channel shaping may not be needed at all in this vicinity, and channel clearance and maintenance alone may improve the capacity to a sufficient level to convey all flood flows up to the design level. If the proposed investigations identify the need to carry out earthworks we consider the issues raised by the submitters can be addressed by the imposition of consent conditions. A condition requiring an erosion and sediment control plan has been imposed on CRC 103443.
- 4.39 Although we believe the potential works suggested by the applicant can be successfully implemented, we consider the applicant should consult with those landowners where significant stream widening and other works are to occur and that is should be undertaken during the design phase.

Potential Effects on Water Quality

- 4.40 Some submitters expressed concerns that there may be impacts on the quality of other water bodies as a result of the works. In particular Mr. and Mrs Belcher alerted us to the presence of an historical timber treatment plant which is listed as a contaminated site. They were concerned chemicals were previously discharged from the plant into the creek upstream of the discharge point into the Kowai River and that there is a risk of contamination. They requested a monitoring programme to include any chemicals currently and previously used at the site.

Evaluation

- 4.35 While we understand the concerns of the Belchers, we have received no technical evidence that any contaminants will be dislodged as a result of the proposals for which consents are sought and the Belchers did not explain how this may occur. We have no mandate to impose such conditions, but suggest the Belchers should take this issue up directly with the Regional Council, which has the legal and regulatory responsibility for any such monitoring programme associated with any known contaminated site.

Eastern Group of Applications:

North of Amberley Beach

Land Use Consent CRC102547 – To carry out works in the bed and margins of Eastern Drain and the Amberley Beach Lagoon

Water Permit CRC1012548 – To divert excess flood flows from Eastern Drain into a quarry pit and the Amberley Beach Wetland

Discharge Permit CRC102549 – To discharge water and contaminants from the Eastern Drain into a quarry pit and the Amberley Beach Wetland

- 4.36 There were seven submissions in support, seven submissions in opposition, and two submissions neutral in relation to applications CRC102547 and CRC102548; and seven submissions in support, eight submissions in opposition, and one submission neutral in relation to application CRC102549.
- 4.37 The applicant acknowledges that the diversion of flood flows into Amberley Beach Wetland and Lagoon must be undertaken in conjunction with the mechanical opening of the outlet in order to ensure there are no significant adverse effects.

Principal Issues

- 4.38 Several submitters provided extensive submissions on applications, some in support and some opposed. They raised a number of issues especially flooding, but also extended to other issues related to the proposals. The principal issues are listed and evaluated below:
- Potential effects on flooding;
 - Potential effects on water quality; and

- Potential effects on ecological values.

Potential Effects on Flooding

- 4.39 It is accepted by all parties that the existing environment of the Eastern Drain and the lower terrace below Hursley Terrace Road is susceptible to surface flooding after moderate rain events. The settlement of Amberley Beach is vulnerable to flooding and can become cut off if Amberley Beach Road is flooded.
- 4.40 Photographs of the July 2008 storm event presented by Mr. Yates, clearly illustrate the extent of surface flooding from the estimated 50 year ARI storm event and the properties in Amberley Beach most vulnerable to damage. An investigation into flooding issues at Amberley Beach, prepared for HDC by Pattle Delamore Partners¹, indicated principal causes of the July 2008 are linked to excessive surface flows entering Eastern Drain, and impeded conveyance capacity and outfall to the sea. The report discussed a number of flood mitigation alternatives and noted the lack of natural flood water drainage outfall to the sea.
- 4.41 The applicant has prioritised flood mitigation measures based on protecting houses that were flooded in July 2008 and maintaining access to Amberley Beach settlement by providing conveyance and outfall for a 50 year design event. It is considered this is the appropriate design standard as the NZ Building Code requires that surface water resulting from an event having a 2% percent probability of occurring annually (50 year ARI), shall not enter buildings.²
- 4.42 The applicant acknowledges that private land maybe flooded by the diversion of water from Eastern Drain, but emphasises the objective is to overall reduce flood levels, and protect houses and Amberley Beach Road. In order to achieve this, the applicant proposes to divert up to 9 cumecs of water out of Eastern Drain (when the flows in the Eastern Drain exceed of 9 cumecs) into the quarry pit and thence into Amberley Beach Wetland and Lagoon. It is considered the diversion will 'throttle back' the flow in Eastern Drain to half of the capacity of the culverts under Amberley Beach Road,

¹ Pattle Delamore Partners Ltd, December 2008: 'Flood Management for Amberley and Amberley Beach'

avoiding water backing up behind the culverts and overflowing across land behind Amberley Beach settlement. There appears to be agreement that the existing twin culverts under Amberley Beach Road are a point of constriction or 'bottle neck' during flood flows.

- 4.43 It is estimated that water flows in the Eastern Drain will be diverted via a conveyance structure (open channel or culvert) into the quarry pit during 10 year ARI storm events (and larger) and that flooding of the quarry pit and lagoon will be avoided by opening the mouth of the lagoon to the sea and allowing water levels in the lagoon to return to normal.
- 4.44 It is proposed that the 'stand alone' quarry pit will provide additional storage and that once water levels reach the invert of the outlet to the wetland, water from the pit will flow through a pipe beneath the access road and into a natural depression leading to the wetland. Water will cease to flow from the quarry pit when the level drops to below the invert and it is proposed that water will only flow into the wetland from the quarry pit when the flood diversion structure in Eastern Drain is utilised.
- 4.45 The applicant noted that during the 2008 flood events water over flowed from the quarry pits into the Amberley Beach Wetland and Lagoon from a breach in the eastern side of the pit. It is considered the diversion structure will formalise a flow path, allowing for controlled overflows and avoiding uncontrolled breaches over the front of the pit wall. Due to the fact that the applicant has insufficient information to determine current frequency of overtopping, it is proposed to divert half of the current capacity of the twin culverts (i.e. 9 cumecs).The applicant has emphasised that the alignments shown on the concept plans are indicative and will depend on landowner agreement and detailed design. Mr. Pennington submitted it would be difficult to engineer an alternative diversion route around the quarry pits because of their location.
- 4.46 Concerns were raised by submitters regarding increased flooding of private land around the quarry pit and diversion channel, and increased durations of surface flooding. Mr. Deans is particularly concerned that use of his access way along the quarry pit face is maintained and that his farming operation is not affected. He considered stop banking of his land to prevent

² Clause E1.3.2 of the New Zealand Building Code

overflow from the diversion channel may be necessary and that use of his land would require his permission. In this regard, Mr. Pennington stated it would be reasonable to impose a condition requiring the applicant to prevent the backflow of flood water onto Mr. Deans' land.

- 4.47 Submitters in support considered the proposed works will reduce the flooding risk to the settlement at Amberley Beach and improve the flood carrying capacity.

Evaluation

- 4.48 Having considered the evidence presented, we accept the proposed works to divert flood water from the Eastern Drain and to discharge it into the 'stand alone' quarry pit and ultimately into the Amberley Beach Wetland is likely to have a positive effect on the risk of significant surface flooding around the settlement of Amberley Beach.

- 4.49 We consider any potential adverse effects on landowners around the quarry pit or the wetland can be adequately mitigated and avoided by the imposition of appropriate consent conditions. We are mindful that the applicant will need to obtain the agreement of landowners to implement final design plans and that their permission to access the land will be required in order to exercise the consents sought.

- 4.50 In finding the proposal is likely to have a positive effect on the existing frequency, extent and duration of surface flooding to the west of Amberley Beach township, we are satisfied that any adverse effects on landowners from the diversion of flood waters are likely to be minor. Overall, we consider that the effects of the proposal to be positive as they will increase the flood carrying capacity of the Eastern Drain and provide alternative outlet to the sea during flood flow conditions.

Potential Effects on Water Quality

- 4.51 Potential adverse effects on water quality could occur during the construction phase and post construction during flood events. During the construction phase the applicant proposes to mitigate any adverse effect on water quality by undertaking works in a dry stream bed (i.e. offline) during periods of low flow, progressively stabilising and revegetating disturbed areas, and gradually reintroducing flow. It is proposed that all works will be

undertaken in accordance with the 'Environment Canterbury Erosion and Sediment Control Guidelines' (2007).

- 4.52 The applicant considers the water diverted during flood flows will be turbid (with fine particles/suspended solids) and that some settlement will occur in the quarry pit and Amberley Beach Wetland, resulting in the gradual accumulation of sediment. Given the anticipated sediment reduction in the quarry pit and the wetland, the applicant considers the water quality in the Amberley Beach Lagoon will not be materially affected in flood conditions. The applicant considers that given the turbid nature of surface water flood flows, the proposal would have no discernible adverse effect on water quality in the receiving environment during flood flows.

Evaluation

- 4.53 We are satisfied that the mitigation measure proposed by the applicant will adequately protect water quality during the constructions phase of the works. The evidence supports the view that the diversion and discharge of excess flood water into an already flood affected turbid receiving environment is likely to have a minor effect on water quality.

Potential Effects on Ecological Values

- 4.54 Mr. Taylor submitted there is little ecological survey information on the Amberley Beach Wetland and Lagoon, but that he considered the fish fauna would be dominated by sea-migratory short finned eels. He outlined it is included in two environmental databases and is considered to have valuable raupo habitat for indigenous birds. He further noted the potential for adverse effects on aquatic ecology from the diversion of water from the quarry pond, but was unable to assess this because the water quality of the pond water is unknown. He was of the view that the proposed removal of vegetation for the diversion channel was of a minor scale and stated that while he would prefer flood water was not diverted into a quarry pit before being discharged to the wetland, he acknowledged the location of the quarry pits clearly made it difficult to go around them.

Evaluation

- 4.55 The evidence supports the view that the construction works, and the diversion and discharge of flood water into the Amberley Beach Lagoon is likely to have a minor and temporary effect on ecological values.

South of Amberley Beach Applications

Land Use Consent CRC102807 – To carry out works in the bed and margins of a tributary of Eastern Drain and Mimimoto Lagoon

Water Permit CRC102809 – To divert excess flood flows from a tributary of Eastern Drain into Mimimoto Lagoon

Discharge Permit CRC102810 – To discharge water and contaminants from a tributary of Eastern Drain Mimimoto Lagoon

- 4.56 There were eight submissions in support, seven submissions in opposition, and two submissions neutral in relation to the above application. Overall, submitters were supportive of the applicant's intentions to reinstate the capacity of existing drains and undertake regular drain clearance. Having considered the evidence presented, we consider our assessment of the above applications can focus on the principal issues of, potential effects on the flood carrying capacity of the receiving environment, existing flow paths and directions, potential effects on surface water quality, location of the proposed diversion swale, and potential erosion and scour.

Principal Issues:

- 4.57 Principal issues raised by submissions on these applications are listed and evaluated below:
- Potential effects on flooding;
 - Existing direction of flood-flow paths;
 - Potential effects on water quality;
 - Location of proposed 'floodway' swale; and
 - Scouring and erosion.

Potential Effects on Flooding

- 4.58 During the 2008 flood events the land below Hursley Terrace Road was subject to extensive surface flooding from the flows from Dry Gully and Goldminer's Gully. Water flowed overland towards Amberley Beach Road and due to the insufficient capacity of the culvert under the road (1500mm culvert), the road was overtopped and water flowed into the Eastern Drain upstream of the twin culverts under Amberley Beach Road.

- 4.59 The PDP report (2008)³ considered that flood flows from Dry Gully contributed to flooding in the Eastern Drain at Amberley Beach Road. Mr. Pennington's evidence described the land below Hursley Terrace Road as a "low-lying ponding area" that "is a natural detention area and is controlled by the 1500mm diameter culvert in Amberley Beach Road and the natural topography" (p.32). He described water backing up upstream of the culvert and threatening to overtop Amberley Beach Road. In an effort to reduce the likelihood of Amberley Beach Road being overtopped and cutting access, the applicant proposes to divert a proportion of the flood flows from Dry Gully and Goldminer's Gully by constructing a direct route floodway (open swale) into the Mimimoto Lagoon.
- 4.60 It is proposed that the existing 1500 mm culvert will continue to provide natural detention and that flood waters will only be diverted when the capacity of the culvert is exceeded and the water level in the ponded area upstream of the road rises to within 0.5 m of the Amberley Beach Road. He submitted the invert of the proposed diversion floodway is high to prevent backflow and that it will not make the risk of potential flooding of any houses any worse. He re-iterated that the purpose of the diversion swale (and therefore level of the invert) is to ensure Amberley Beach Road is not overtopped, cutting off access.
- 4.61 The diversion floodway is designed to divert up to 2.5 cumecs during a 50 year ARI flood event. The location of the swale is considered to be approximate and it is estimated its construction will require the excavation of approximately 3,400m³ of material. The applicant considers the diversion of flood flows to the Mimimoto Lagoon, via the proposed diversion, will not adversely impede existing flood flows, if it is undertaken in conjunction with the opening of the lagoon to the sea.
- 4.62 Mr. Pennington was of the view the proposed diversion of excessive flood flows would significantly reduce the risk of flooding and damage to land and structures. Mr. Johns stated he accepted his house was flood prone, but that the proposals must not exacerbate flooding. Mr. Johns, Mr. Palliser and Mr. Chisnall raised concern that the invert of the diversion swale is too high to prevent flooding.

³ Pattle Delamore Partners Ltd, December 2008: 'Flood Management for Amberley and Amberley Beach'

Evaluation

- 4.63 The evidence supports the view that the proposed works will have a positive effect on the flood carrying capacity of Eastern Drain by diverting water directly to the Mimimoto Lagoon when surface flooding threatens to overtop Amberley Beach Road. We accept that maintaining access to Amberley Beach settlement is critical to ensure the lagoons can be mechanically opened and that people can get out in a significant flood event.

Existing Direction of Flow Paths

- 4.64 Concerns were raised by submitters that the flow paths and directions indicated by the applicant were not correct and that Dry Gully flows into Newcombes Drain (south), not into Eastern Drain (north). Mr. Manson provided us with a very helpful diagram of the flow paths and direction of stormwater flows behind Amberley Beach Township. The diagram showed the direction of flow from Goldminer's Gully going north to Eastern Drain and the flows of Small Gully and Dry Gully going south to Newcombes Drain and indicated a high point (flow boundary) slightly south of Goldminer's Gully.
- 4.65 We questioned all relevant witnesses regarding the accuracy of Mr. Manson's diagram and all parties accepted the indicative flow paths and directions shown. Mr. Chisnall agreed the diagram was accurate, but indicated the high point was further to the south than shown (between the high point indicated and the marked "open diversion swale"). Mr. Johns concurred, submitting Goldminer's Gully flows north and Dry Gully flows south. Mr. Pennington was of the view that there was no disagreement regarding flow paths and directions and that these are different under low flow and flood flow conditions. He submitted that in flood flow conditions the entire area is subject to surface flooding and that water flows in many directions.

Evaluation

- 4.66 We are satisfied on the basis of the evidence presented that Mr. Manson's diagram accurately indicates stormwater flow paths and directions, and ponding areas. We are mindful that in a flood event the entire terrace below Hursley Terrace Road is likely to be subject to flooding. We agree

with Mr. Chisnall that the applicant's Figure A6 of the AEE is incorrect and that the catchment of Dry Gully flows south in normal flow conditions.

Potential Effects on Water Quality

4.67 As discussed above, potential adverse effects on water quality could occur during the construction phase and post construction during flood events.

The applicant proposes that no construction works will occur in flowing water, works will be undertaken during drying weather, refuelling will be carried out on adjacent roads, and disturbed areas will be revegetated and stabilised. It is proposed that all works will be undertaken in accordance with the 'Environment Canterbury Erosion and Sediment Control Guidelines' (2007).

4.68 The applicant considers that given the poor quality of the receiving water during flood flows the proposal will have no discernible adverse effect on water quality in the Mimimoto lagoon. Mr. Pennington and Ms Holt agreed that the proposed diversion swale is not considered to be a surface water body. They considered that the conditions of HDC's consent to discharge wastewater onto land (CRC102115) are sufficient to ensure water quality in the Mimimoto Lagoon is maintained and that the construction of the swale through the disposal area will not increase any negative effects on water quality. Mr. Taylor considered the grassed nature and length of the proposed swale would provide adequate protection for the lagoon by trapping sediment and contaminants, so long as it was maintained as a swale. In this regard, he recommended that if the swale is utilised it should be inspected to ensure sediment is removed and the grassing is maintained in a healthy state.

Evaluation

4.69 We are satisfied on the basis of the evidence presented that the proposal will have no more than a minor adverse effect on water quality in the receiving environment. We accept there will be no direct discharge into the Mimimoto Lagoon during times of low and normal flow and that the discharge of flood flows will occur infrequently and only during flood conditions.

Location of proposed floodway swale

4.70 Mr. Chisnall questioned the location of the proposed diversion swale and its potential adverse effect on his farming activities and its proximity to the existing oxidation ponds and disposal area. Mr. Pennington submitted the proposed diversion swale had been designed to ensure it won't look like a drain but rather a subtle grassed depression. He considered it could be mown or grazed and that it would not require to be fenced off. He emphasised the actual location of the swale would be determined in consultation with the landowners and that their permission would be required. He indicated that if necessary any change in location could be addressed by variation of the consent sought.

Evaluation

4.71 We are satisfied that the proposed swale will not adversely effect Mr. Chisnall's ability to farm the land. The applicant will require the landowner's permission to access the land before the consents can be exercised and Mr. Pennington appears to be open to alternative alignments based in soil type.

Scouring and erosion

4.72 Mr. Chisnall raised concern regarding the soil type at the proposed location of the swale. Mr. Johns also referred to the sandy soil and potential for scour if the grass is not maintained or the swale stabilised. Mr. Pennington confirmed that he had considered the soil type and that the grade of the swale had been kept low to prevent erosion and scour. He also noted the diversion swale would be constructed with minimal changes to the existing cross section of the ponded area to ensure flow velocities remain unchanged. He considered that overall reduced flows to Eastern Drain would reduce the risk to stability of stream banks and structures.

Evaluation

4.73 The evidence supports the view that that the proposed low grade of the diversion swale and its stabilisation with grass will prevent significant scour and erosion. We accept that overall the proposals are likely to reduce erosion and scour in Eastern Drain by reducing flow volumes in significant flood events.

Amberley Beach and Leithfield Beach Applications

Coastal Permit CRC102694 – To disturb, excavate and deposit material, construct a structure and to occupy the coastal marine area and coastal hazard zone

Coastal Permit CRC102695 – To divert water into the coastal marine area

Coastal Permit CRC102696 – To discharge water and contaminants into the coastal marine area

- 4.74 These applications relate to the proposed mechanical opening of the Amberley Beach Lagoon, Mimimoto Lagoon, Leithfield Lagoon, and Outfall Drain, and the construction of a box culvert at Golf Links Road. There were eight submissions in support, four submissions in opposition, and three submissions neutral in relation to the above application.
- 4.75 Having considered the evidence presented, the principal issues to be considered in these applications are:
- Potential effects on the flooding;
 - Potential effects on water quality; and
 - Potential effects on ecological values.

Potential Adverse Effects on Flood Carrying Capacity

- 4.76 The applicant proposes to open the outlet of Amberley Beach Lagoon, Mimimoto Lagoon, Leithfield Lagoon, and Outfall Drain when the water level in each lagoon rises to within 0.5 m of the floor level of the lowest house in the immediate surrounding area. Staff gauges for monitoring water levels will be erected in all the lagoons, marked with a red level when mouth opening is allowed. These specific levels have been set for each lagoon.
- 4.77 It is anticipated the outlet at Outfall Drain will only need to be mechanically opened when the capacity of the outfall pipe is exceeded. The Leithfield Lagoon has no outlet to the sea and currently drains via a small channel to a wetland to the north, which in turn is drained by a waterway that outfalls to the Kowai River immediately upstream of the dunes at the mouth when flow levels in the Kowai River are suitably low.
- 4.78 It is considered that in times of high flood flow in the Kowai River, water from the Leithfield Lagoon can not outfall at the mouth. It is suggested that in flood flows water from the Kowai River may backflow into the wetland

and lagoon contributing to flooding around the settlement of Leithfield Beach. It is anticipated that it would be in these conditions that water levels in the lagoon would rise and an opening to the sea from the Leithfield Lagoon would be necessary. The height of the sand dunes in this location would prevent any natural breaches occurring before surrounding houses were flooded and therefore mechanical openings may be required to prevent flooding.

4.79 The Amberley Beach Lagoon and Mimimoto Lagoon are intermittently open to the sea by natural breaches and are naturally closed by gravel build up from coastal processes. The proposed works for opening the lagoon outlets are the same for all the locations. It is proposed to use an excavator to make a shallow cut in the dune and the excavated material will be cast onto the coastal marine area adjacent to the site, but out of the flow path. Once the cut has been made, water will widen and deepen the breach. It is anticipated that the lagoon outlets will remain open (or will be reopened) until water levels in the lagoons return to normal levels, and that coastal processes will fill the opening. If necessary, once water levels have receded, the outlets will be closed mechanically.

4.80 A 'box culvert' structure is proposed at the outlet of the Amberley Beach Lagoon in order to maintain access along Golf Links Road to the public and HDC staff and contractors. Mr. Harper and Mr. Deans considered the proposed 'box culvert' structure should be relocated as they considered it is located in a hazard zone and would be vulnerable to coastal processes. Mr. Chisnall stated that the mechanical opening of the Amberley Beach Lagoon and Mimimoto Lagoons in 2010 (some 4 to 5 times) has resulted in their paddocks not being flooded for so long and that they supported the openings.

Evaluation

4.81 The evidence before us indicates the significant positive effects of opening the lagoons to the sea during significant flood events. Natural coastal processes, land use activities and housing currently restrict outfall to the sea and there is significant potential for flood water to back up behind the settlements of Amberley Beach and Leithfield Beach threatening people and their properties. We consider the proposals will have a positive effect by providing temporary outfall to the sea and reducing the risk of flooding.

Potential Adverse Effects on Water Quality

- 4.82 As discussed above, the applicant acknowledges the opening of the lagoon outlets will result in the discharge of water and sediment into the CMA. However, Mr. Pennington noted that based on the infrequency of the openings, the short duration of the works, and the proposed mitigation works, any adverse effects on the CMA will be no more than minor. With regard to potential salt water intrusion, Mr. Pennington noted that it would be minimised by coordinating any opening with an ebb tide, if possible. The PDP report noted that while there is sufficient outflow from the lagoons, seawater intrusion would be prevented.
- 4.83 Submitters have raised general concern regarding adverse effects on water quality. Mr. Deans raised concern that placental waste and effluent from stock would be washed out into the flood waters causing a risk to public health. Mr. Deans was also concerned regarding the potential for salt water intrusion and potential effects on future use of the soil. Mr. Smart was also concerned about seawater intrusion into the Leithfield Lagoon and requested a consent condition requiring the mechanical closing of the lagoon after the flood waters recede.

Evaluation

- 4.84 While we accept there is potential for seawater intrusion into the lagoons, the evidence supports the view that the openings will be closed by natural coastal processes when the outflow is insufficient. There is no evidence to suggest the lagoons could be completely drained or that saltwater intrusion has occurred following previous mechanical openings.

Potential Effects on Ecological Values

- 4.85 Mr. Taylor outlined current knowledge of the ecology of the Amberley Beach Lagoon and Mimimoto Lagoon, and the characteristics which indicated their connectivity to the sea. He considered the water quality to be generally good, but that high levels of bacterial concentration were probably attributable to bird activity and upstream stock access. He outlined the ecological values of the Leithfield Lagoon and its 'good health' and was of the view that provision of sea access by sporadic breaches of the lagoon to the sea, whether by natural means or mechanical, facilitates a natural ecological process and allows known fish populations to complete their life

cycles. He considered the proposals do not perturb the environment any more than would occur in normal flood conditions, but would facilitate discharge to the sea.

Evaluation

- 4.86 On the basis of the evidence presented we accept the infrequent and temporary opening of the lagoons to the sea will have a minor effect on ecological values present.

Kowai River Mouth Applications

Coastal Permit CRC103328 – To disturb, excavate and deposit material in the coastal marine area

Coastal Permit CRC103330 – To divert water into the coastal marine area

Coastal Permit CRC103331 – To discharge water and contaminants into the coastal marine area

- 4.87 The applicant has applied for separate consents for the opening of the mouth of the Kowai River because it is considered that the frequency of openings will be different to the lagoons. Like the lagoons, the Kowai River has no continuous surface connection to the sea, and natural breaches can occur under flood flows. In the past, the mouth has been mechanically opened to alleviate flooding. There were seven submissions in support, three submissions in opposition, and three submissions neutral, in relation to the above three coastal permits.

Principal Issues

- 4.88 Having considered the evidence presented, we consider the principal issues to be evaluated are:
- Potential effects on the flooding;
 - Potential effects on ecological values; and
 - Potential erosion and scour effects.

Potential Effects on Flooding

- 4.89 Mr. Pennington stated that during the 2008 flood events, the impeded flow at the mouth of the Kowai River caused inundation of the surrounding land and may have contributed to the flooding in the settlement of Leithfield Beach. It is considered that flood water from the Kowai River has previously flowed into the Kowai wetland and Leithfield Lagoon and contributed to flooding behind houses in Leithfield Beach. An investigation

into flooding issues at Leithfield and Leithfield Beach, prepared for HDC by Pattle Delamore Partners⁴, indicated a number of potential flood mitigation measures and noted lack of outfall to the sea from Leithfield Beach Lagoon.

- 4.90 Mr. Pennington noted the proposed diversion of water into the Kowai River represented less than 3% of the flow in the North Branch and would therefore have a less than minor effect on flood flows or the frequency with which the mouth would require opening. Mr. Smart submitted there was insufficient information on the effect of the proposed diversions into the Kowai River and the effect on flood flows.

Evaluation

- 4.91 As discussed above, we are satisfied that the opening of the Kowai Mouth during flood flows will significantly reduce the risk of surface water flooding of Leithfield Beach by providing outfall to the sea. We do not consider an increase in flow of 3% during flood flows would be significant to the frequency of openings.

Potential Effects on Ecological Values

- 4.92 Mr. Taylor submitted the opening of the mouth would reduce the risk of flood water discharging into the Leithfield Beach Lagoon protecting its current 'good health'. Overall, Mr. Taylor agreed with the reporting officer that the effects of the discharge of flood water to the CMA were likely to be minor, and noted there would be no difference to the natural flood-breach sequence and therefore potentially beneficial effects to ecology. The reporting officer considered that there was insufficient information on the impact of the flood discharges on the lagoon systems and that a condition requiring the outlets to be mechanically closed would prevent the lagoons draining completely.
- 4.93 Mr. Taylor was of the opinion that a condition for closing the outlets is not necessary as the sea closes the mouths with gravel over a short period of time and the lagoons have never been known to drain completely after openings. He submitted the openings were 'induced' rather than 'constructed' and that the invert would be significantly higher than the lagoon bed. He suggested the risk of seawater intrusion and lagoon

⁴ Pattle Delamore Partners Ltd, September 2009: 'Flood Management for Leithfield and Leithfield Beach'

draining was unlikely as the powerful wave action of the sea would close off the outlet when the flood flows subside. He also noted seawater intrusion is a natural event and is beneficial for fish populations and birds.

Evaluation

- 4.94 On the basis of the evidence presented, we are satisfied that any adverse ecological effects of opening the Kowai River to the sea would be minor.

Potential Erosion and Scour Effects

- 4.95 Ms Malloch (on behalf of Mr. Smart) raised concern that the chosen location of any mechanical breach and the effect of the easterly drift can cause channelling over 300 m and can divert water south onto Mr. Smart's land. To prevent this Mr. Smart requests that the opening be fixed to the location indicated by the applicant and that the same location be used each time as far as practicable. Mr. Pennington supported the applicant's view that any consent should not be fixed to a particular location, but accepted the imposition of a condition requiring the breach point be in a similar place as far as practicable.

Evaluation

- 4.96 In considering the evidence presented, we agree it is preferable to utilise the same location for breaching, as far as possible. In recognising these openings are required in times of flood we do not think it is necessary to precisely fix the location. We consider the proposed map reference and wording to be sufficient.

Summary

- 4.97 Overall, we accept that the actual and potential environmental effects of the above 'Eastern Group' of resource consent applications are likely to be positive by reducing flood risk to the low lying settlements of Amberley Beach and Leithfield Beach. We accept that the diversion and discharge of flood water into the lagoons, and ultimately the CMA, will occur when the receiving environment is subject to extensive surface water flooding and poor water quality.
- 4.98 We consider that the applicant's intentions to reinstate and maintain the capacity of existing drains and waterways, implemented in conjunction with the consents sought, will significantly reduce the risk of damage to houses

and loss of access. We note the applicant has not applied to realign the existing drain around Mr. Harper's house, and that we therefore can not consider the alternative route put forward by Mr. Manson.

- 4.99 We are mindful of the strong community support for flood mitigation measures, and agree with the applicant that some of these measures (i.e. lagoon openings) could be undertaken as 'Emergency works' under s330 of the Act.

5.0 Overall Statutory Evaluation

Section 104(1)(b) Statutory Planning Provisions

- 5.1 In her initial s42A report on these 'mitigation applications' Ms. Holt presented a thorough analysis of their consistency or otherwise with the objectives, policies and provisions of relevant statutory Policy Statements and Plans. From that analysis she concluded that these proposals considered as a 'bundle' were to be assessed as 'discretionary activities' With the exception of applications CRC102547, CRC102548, CRC102549, CRC102694, CRC102695, and CRC102696, in her opinion all were consistent with the relevant provisions of the National Coastal Policy Statement (1994), the Regional Policy Statement, the Regional Coastal Environment Plan and the Natural Resources Regional Plan, and would have either no adverse effects or alternatively no more than minor adverse effects on the environment. Subject to a range of recommended conditions, she considered that resource consents could therefore be granted to those applications. The evidence of Ms. Torgerson for the applicant endorsed Ms. Holt's analyses. On the basis of that evidence we therefore agree with and accept those conclusions and recommendations.
- 5.2 As to the remaining specific applications identified above, on the basis of the lack of information available to her prior to the hearing Ms Holt concluded that adverse effects of the lagoon openings and Dry Gully diversion might be more than minor and that she could not therefore recommend that resource consents be granted. In particular she was concerned about a lack of response to issues of potential significance to tangata whenua; uncertainty regarding potential effects on water quality in the DoC reserve and the ecology of this area, together with a conflict

between these proposals and the existing resource consent CRC071742 related to discharge of stormwater from the CRM quarry pit.

- 5.3 Additional evidence presented by the applicant at the hearing (notably that by Mr. Taylor, Dr. Roper-Lindsay, Ms. Torgerson and Mr. Pennington) confirmed that correspondence and discussions with representatives of both Te Runanga o Ngai Tahu and Te Runanga o Ngai Tuahuriri, and with representatives of the Department of Conservation and that no adverse responses were received from any of the above contacts. Subject to a range of conditions discussed between Ms. Torgerson and herself following the applicant's evidence at the hearing Ms. Holt amended her recommendation to one of acceptance that the remaining applications were consistent with relevant statutory plan provisions and that she therefore recommended consent also be granted to those applications. On the balance of evidence presented we therefore accept that recommendation to be appropriate.
- 5.4 We concur with the assessments of the applicant and the reporting officer that the applications are overall consistent with the relevant provisions of the NZCPS, RPS, RCEP and the PNRRP.

Section 104(1)(c) Other Matters

- 5.5 Many of the submitters to the Flood Mitigation applications complained they had not been properly or adequately consulted. This view was so frequently expressed that we accept this to be the case. Many of those expressing such views do not have technical expertise in flood mitigation investigations and/or works, but many of them have a long history of living in the area and living with flooding on their properties and thus could contribute valuable local knowledge to consideration of any future works proposed by the applicant. Some of the works proposed will require to be undertaken on land owned by the several of these same submitters and will require their permission.
- 5.6 While we appreciate there is no legal requirement for the applicant to have consulted with the various submitters and consultation is at the discretion of the applicant, we believe that many of the concerns raised in the hearing may have been resolved. We consider that if HDC and the Amberley community intend to further develop the management of the wider property

impacts of stormwater in this locality, then full consultation with all affected property owners will be essential.

- 5.7 We note that any resource consents granted through this process do not give HDC the right to enter onto private property and carry out works. Consent for access and the legal right to use the land concerned will need to be obtained from the owners and occupiers of the land on which works will occur.
- 5.8 With regard to concerns raised in taking an integrated catchment management approach, we reiterate our comments that HDC are legitimately able to make application under the Act for stormwater management in parts of the catchment. While we agree it is good resource management practice and in the spirit of the Act to strive for integration, we accept this is not necessarily economically or practically possible for small territorial authorities such as HDC with a very small rating base. We accept we are obliged to determine the merits of the above 'Flood Mitigation' applications on the existing environment.
- 5.9 We note that there are three other applications potentially affecting proposals for Eastern Drain (CRC102789, CRC102790 and CRC1027910) to the east of Amberley Township that are currently 'on hold' at the request of this applicant. Because these are not before us to determine we are obliged to reach our conclusions on the basis that any future consent to those applications will have no effect on existing stormwater volumes or flow rates in the Eastern Drain and thence on any of the 'Flood Mitigation' applications assessed below. Should that not be the case it may be necessary to review any consent conditions that may be attached to some of the following applications.

Section 105 and 107 Considerations

- 5.10 In making our assessment, we are required to have regard to the matters set out in sections 105 and 107 of the Act. There is agreement regarding the nature of the discharge and the receiving environment. It is accepted the quality of the flood water discharged will be poor and that the quality of the receiving environment will also be poor during flood conditions. In this regard we accept the receiving environments are relatively insensitive to the water quality of the discharge.

- 5.11 There is also agreement that the receiving environment is highly sensitive to any increase in water quantities. It is accepted by all parties that the Eastern Drain catchment and the coast terrace below Hursley Terrace Road is high susceptible to surface water flooding. In this regard we consider the receiving environment to be extremely sensitive to any cumulative increases in stormwater volumes.
- 5.12 Section 13 of Ms. Torgerson's evidence referred to the two reports by her Company ('PDP') in December 2008 "*Flood Management from Amberley and Amberley Beach*", and the draft 2009 report "*Flood Management from Leithfield and Leithfield Beach*" which had been commissioned by the applicant. Her evidence was that the applicant had considered the alternatives presented in those reports, including that of taking no action. It had determined to pursue the current applications based upon project feasibility costs and the overall benefits to the community. Mr. Yates evidence (10.4) also recognised that HDC acknowledges that these current applications do not address the varying degrees of inconvenience suffered from other existing drainage systems elsewhere on rural land within these catchments. He indicated that HDC was prepared to continue to work on improving those separate drainage schemes where they would be beneficial and supported by the community as being economically viable.
- 5.13 We are satisfied the applicant has considered alternative methods of discharge by commissioning the PDP reports and accept there are limited options for providing adequate stormwater outfall to the sea in flood conditions.
- 5.14 In her initial s42A report, Ms. Holt expressed some uncertainty as to whether this provision of the Act could be complied with. There are two periods when contaminants are likely to be discharged arising from these proposals, firstly during construction of the works themselves and secondly during the discharge of exceptional stormwater flows. In relation to the first consideration we are satisfied that any adverse construction effects would be for a temporary period and that suitable conditions can be attached to relevant consents to ensure that appropriate measures are employed to avoid or substantially mitigate these. In the case of flood discharges, we accept that these are part of the 'existing environment' that already contains contaminant and sediment levels. Overall we are satisfied that the 'mitigation' measures proposed, particularly the prompt release of excess

stormwater to the ocean will not result in any significant adverse effect on water quality under those conditions.

- 5.15 On the basis of the evidence presented, we accept that, after reasonable mixing the discharge is unlikely to give rise to any of the effects, as set out in s.107(1)(c)-(g) of the Act.

Part 2 of the Act

- 5.16 All the considerations we have described are subject to Part 2 of the Act. In accordance with Part 2, we consider that overall the proposal is consistent with the purpose of the Act and the principles of the sustainable management of natural and physical resources, as defined in s5. We accept the flood mitigation measures will be beneficial to the social and economic health and well-being of people and the communities by reducing flood risk in significant flood events. These proposals are intended to relieve some of the adverse effects of stormwater flooding on such resources. We therefore consider them to be consistent with the Act's overall purpose.
- 5.17 We consider that methods outlined by the applicant will avoid or adequately mitigate any adverse impacts on water quality, ecological values, the stability of the beds and banks of waterways and current land use activities. In considering the applications, we are mindful of the importance sustaining water quality for future generations, safeguarding the life-supporting capacity of water, and avoiding remedying or mitigating adverse environmental effects.
- 5.18 Section 6 identifies matters of national importance to be recognised and provided for in achieving the purpose of the Act. First among these is the preservation of the natural character of the coastal environment and its protection from inappropriate use or development. The coastal environments concerned in this instance are already subject to periodic disturbance by stormwater flooding from the inland catchments. The existing ecology and character of these areas has evolved to its current state under those conditions. On the evidence presented we are satisfied that the current proposals more actively manage the impact of excessive stormwater flooding events and will assist management of the impact of such flood events on the coastal environment in this area.

- 5.19 In recognising and providing for the matters of national importance, set out in section 6, we consider that overall the applications are consistent with these. Given the limited nature of the occasions on which these proposals will be utilised we do not consider that there are any 'other matters' identified in section 7 of the Act that are of particular relevance in this instance although we note that water quality in the receiving environment must be maintained and enhanced. Given the evidence presented we consider the applications will have only a minor effect on water quality under flood conditions.
- 5.20 We are satisfied that there has been adequate communication on these proposals with both Te Runanga o Ngai Tahu and Te Runanga o Ngai Tahuiriri, and we therefore take the absence of any specific response to indicate that there are no matters of significance to tangata whenua involved with these proposals in relation to section 8 of the Act. Appropriate 'accidental discovery' protocols have been attached as conditions of consent to works where relevant.

Overall Summary

- 5.21 In assessing the environmental effects we accept that the relevant 'existing environment' affected by these proposals would be one experiencing significant flood flows at times. The question for us to determine is whether the range of 'Flood Mitigation' proposals under consideration would have any significant adverse effects or beneficial effects on the environment in that situation. Ecology and environmental conditions at such times will be experiencing the adverse impact of such floodwaters and their timely release can only benefit those aspects.
- 5.22 It is clearly also of critical importance to enable the build-up of floodwaters to be released through the lagoons to the sea before they attain a depth or extent likely to affect existing houses in these coastal communities or prevent appropriate emergency vehicle access. Overall we conclude that the beneficial effects of these proposals are likely to significantly outweigh any adverse effects on the environment. On the basis of the evidence we have considered, we conclude that subject to appropriate conditions (as set out in the Annexure to this report), resource consents may be granted for each of these applications.

6.0 Conditions

- 6.1. We have considered the proposed conditions of consent proffered by the applicant and in general we find them both appropriate and reasonable to ensure any actual or potential adverse are avoid, remedied and mitigated.
- 6.2. We consider that any potential adverse effects on people and amenity values during the construction phase of the flood mitigation works can be adequately mitigated by limiting works to 6am-6pm Monday to Saturday.
- 6.3. Ms. Torgerson requested the removal of the condition stating that no works shall be carried out in flowing water. We consider the condition should be imposed as it is both appropriate and reasonable given the construction works are proposed to be undertaken “offline”.
- 6.4. In relation to concerns raised regarding potential adverse effects on bank and bed erosion and scour (in particular in relation to the proposed works in Dock Creek) we consider it is adequate to impose conditions requiring the preparation and implementation of specific erosion and sediment control plans.
- 6.5. In relation to Water Permit CRC102548 to divert water from the Eastern Drain into the quarry pit, we have included Condition 5 which requires the reinstatement of the eastern pit wall to the height of the existing access road to ensure there are no uncontrolled discharge from the quarry pit through the existing low/breach point evident on our site inspection.
- 6.6. Given the proposals are based on conceptual plans only, we consider it is appropriate that a copy of any final design reports is forwarded to the CRC RMA Compliance and Enforcement Manager before construction commences to ensure it is accordance with the consent granted and that the necessary land owner approvals have been obtained.
- 6.7. To ensure the diversion of the upper Eastern Drain into the Amberley Swamp only occurs in flood flow conditions we have imposed Condition (4) on Water Permit CRC103444.

- 6.8. As discussed above, we consider it is not necessary to fix the location of the lagoons or river mouth any more precisely than indicated in the proposed conditions. However, we accept it would mitigate any potential effect on coastal erosion to ensure the openings are undertaken in the same location (as far as practicable in flood conditions) and by a person who has read the conditions of the consent. We have imposed a condition in this regard. On the basis of the technical evidence we have not imposed any condition requiring the mechanical closing of the outlets.
- 6.9. We note that at the request of the applicant our evaluations have been undertaken on the basis of the hydrological conditions as they exist today. They have been undertaken in isolation from the GDA. We are mindful however that significant changes to the hydrology of the various catchments are likely to occur in the future, and in particular from Amberley Township. The Hurunui District Plan Change 13 for example provides for a significant increase in the size of Amberley Township, leading to more impermeable surface and a consequent change in the hydrological regime. There are also stormwater works proposed to the east of Courage Road which are not part of these applications. In the absence of appropriate information, unless mitigation measures are applied, these changes could lead to an increase in flooding problems at downstream locations. For these reasons we have imposed conditions on discharge permits CRC102549 and CRC102810 requiring the applicant to confirm the volume and peak discharges of flood waters in Eastern Drain, Goldminer's Gully and Dry Gully under the hydrological conditions existing as at 26th January 2011 under a range of rainfall intensities.
- 6.10. We agree with the applicant that a holistic and comprehensive approach to stormwater and flood management is good practice but in the absence of likely future changes to land use practices and consequent hydrological conditions being provided to the hearing we have applied a general condition which restricts discharges to those which exist at the time of the decision being released. We have also provided an Advice Note setting out the information needed to determine if the effects of any changing land use practices will be significant and the assessment needed to determine the effects. We urge HDC to undertake this work and develop mitigation measures needed if there are likely to be increases in the hydrological regime.

7.0 Decision

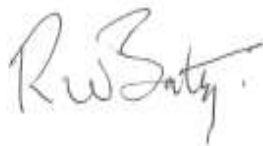
7.1 For all of the foregoing reasons we therefore determine that pursuant to sections 104, 104B, 105, 107 and 108, and Part 2 of the Resource Management Act 1991, that the Hurunui District Council be granted land use consents to install flood diversion structures, water permits to divert excess floodwater and discharge/coastal permits to discharge excess floodwaters, near Amberley, Amberley Beach, and Leithfield Beach and in the Coastal Marine Area as referred to in resource consent applications CRC102547, CRC102548, CRC102549, CRC102807, CRC102809, CRC102810, CRC102694, CRC102695, CRC102696, CRC103328, CRC103330, CRC103331, CRC103443, CRC103444 and CRC103445, each resource consent to be for a duration of 35 years, subject to the conditions set out below in Annexure 1 to this decision.



C. Shearer
Hearing Commissioner



S. McGarry
Hearing Commissioner



R. W. Batty
Hearing Commissioner (Chair)

Dated: 26th January 2011

Annexure 1.

Land Use Consent CRC102547 - To carry out works in the bed and margins of Eastern Drain and the Amberley Beach Lagoon.

- 1) The works authorised by this consent shall be limited to:
 - (a) The disturbance of the bed, banks and margins of Eastern Drain, clearing of vegetation and removal of soil for the construction and maintenance of a diversion culvert, as shown on attached Plan CRC102547/8/9B which forms part of this consent;
 - (b) The diversion culvert in Eastern Drain shall have a maximum diversion capacity of nine cubic metres per second during design flow conditions;
 - (c) The construction and maintenance of a floodwater conveyance structure (culvert or open channel) between Eastern Drain and the quarry pit, and out of the quarry pit, as shown on attached Plan CRC102547/8/9B which forms part of this consent; and
 - (d) The clearing of vegetation in the margins of Amberley Beach Wetland and Lagoon for the construction of the floodwater diversion channel, as shown on attached Plan CRC102547/8/9B which forms part of this consent.

- 2)
 - (a) Works authorised by Condition (1)(a) of this consent shall only be undertaken on land parcel Pt Lot 3 DP 7001 in Eastern Drain at or about map reference NZMS 260 N34:9187-8268, as shown on attached Plan CRC102547/8/9A which forms part of this consent.
 - (b) Works authorised by Condition (1)(c) of this consent shall only be undertaken on land parcel Pt Lot 1 DP 7226 in Eastern Drain and the quarry access road between map reference NZMS 260 N34:9190-8271 and NZMS 260 N34:9195-8269, and adjacent to the quarry pit at or about map reference NZMS 260 N34:9212-8255, as shown on attached Plan CRC102547/8/9A which forms part of this consent.
 - (c) Works authorised by Condition (1)(d) of this consent shall only be undertaken on land parcels Pt Lot 1 DP 7226, Pt Lot 3 DP 7001, Lot 1 DP 78964, Lot 1 DP 78963 and, Section 1 SO 14568 between about map reference NZMS 260 N34:9212-8255 and about NZMS 260 N34:9238-8215, as shown on attached Plan CRC102547/8/9A which forms part of this consent.

- 3) This consent shall only be exercised when consent CRC071742 (quarry discharge consent) has expired or has been cancelled or has been varied to allow for the discharge of quarry washwater and floodwater into the diversion channel during a design flood event.
- 4) A chartered professional engineer shall design the flood diversion structures and prepare a design report. This design report shall include, but not be limited to the following:
 - (a) Details of the location and layout of the floodwater diversion structures and floodwater flow path;
 - (b) Details of the engineering design of the culvert in Eastern Drain, the diversion structures into and out of the quarry pit, and the diversion channel between the quarry and Amberley Beach Lagoon;
 - (c) An erosion and sediment control plan;
 - (d) Details of procedures to be followed for post construction site restoration;
 - (e) Certification by the chartered professional engineer, that the diversion structures have been designed according to engineering standards and practices, and will not result in increased flooding of surrounding land, and erosion of the river beds and banks;
 - (f) Details of routine maintenance work that shall be undertaken by the consent holder during the operational life of the structures; and
 - (g) A copy of the design report shall be forwarded to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, no less than ten working days prior to commencement of construction.
- 5) The duration of the works in Eastern Drain shall not exceed five days and the duration of all of the works specified in Condition (1) shall not exceed three weeks. This excludes any working days that may be lost due to adverse weather conditions.
- 6) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not less than two working days prior to the commencement of works.
- 7) Prior to commencing works, a copy of this resource consent shall be given

to all persons undertaking activities authorised by this consent.

- 8) Works authorised by this consent shall only occur between the hours of 6am and 6pm Monday to Saturday inclusive, and shall not be carried out on Sundays or statutory holidays.
- 9) The flood diversion structures specified in Condition (1) shall be inspected at least annually and maintained in sound structural condition.
- 10) Works shall not cause erosion of the banks and bed of Eastern Drain, the Amberley Beach Wetland or the Amberley Beach Lagoon.
- 11) All practicable measures shall be undertaken to prevent the discharge of sediment to surface water arising from the works, including, but not limited to the following measures:
 - (a) The measures in the erosion and sediment control plan referred to in Condition (4) shall be installed prior to the commencement of works.
 - (b) Machinery shall not enter or work in flowing water.
 - (c) The section of Eastern Drain where works are to be undertaken shall be temporarily dammed using sandbags to divert water around the works area.
 - (d) The construction and maintenance of effective scour or erosion protection at the discharge point into the Amberley Beach Wetland.
 - (e) All erosion and sediment control measures shall be constructed and maintained in accordance with the principles contained in Environment Canterbury's "Erosion and Sediment Control Guideline (2007)".
- 12) No cut vegetation, debris, or other excavated material, shall be placed in any surface water body, or in a position such that it may enter any surface water body.
- 13) The consent holder shall ensure that:
 - (a) All practicable measures are undertaken to prevent oil and fuel leaks from vehicles and machinery;
 - (b) There is no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river; and
 - (c) Fuel shall be stored securely or removed from site overnight.

- 14) Machinery shall be free of plants and plant seeds prior to use in the riverbed.
- 15) The consent holder shall ensure that:
 - (a) Works authorised by this consent do not prevent the passage of fish, or cause the stranding of fish in pools or channels; and
 - (b) In the event that fish are stranded in pools or channels, fish are relocated from the pool or channel by a person trained by a suitable qualified and experienced fish handler.
- 16) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 16) The consent holder shall ensure that:
 - (a) Vehicles and/or machinery shall not operate within 100 metres of birds which are nesting or rearing their young; and
 - (b) For the purposes of this condition birds are defined as those bird species listed in Attachment A, which forms part of this consent.
- 17) Prior to any mechanical works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
 - (a) A suitably qualified and independent person inspects the area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Attachment A, which forms part of this consent;
 - (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council;
 - (c) The name and qualifications of the person carrying out the inspection are provided to the Canterbury Regional Council with the report;
 - (d) Any person carrying out works authorised by this consent is informed of any bird breeding or nesting sites located; and
 - (e) Where work ceases for more than 10 days, the site is re-inspected for bird breeding and nesting sites in accordance with clauses (a) to (d) of this condition.
- 18) To prevent the spread of Didymo or any other aquatic pest, the consent

holder shall ensure that activities authorised by this consent are undertaken in accordance with the Biosecurity New Zealand's hygiene procedures.

Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz> or Environment Canterbury Customer Services.

- 19) The consent holder shall ensure that:
- (a) All disturbed areas are stabilised and revegetated following completion of the works; and
 - (b) All spoil and other waste material from the works are removed from site on completion of works.
- 20) In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
- (a) Advise the Canterbury Regional Council of the disturbance;
 - (b) Advise the Upoko Runanga of Tuahuriri, or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
 - (c) Cease earthmoving operations in the affected area until an area has been marked off around the site, and Kaumatua and archaeologists have given approval for the earthmoving to recommence.

Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol) or the New Zealand Historic Places Trust.

- 21) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 22) The lapsing date for the purposes of section 125 shall be 31 December 2015.

Advice Note: *In addition to this consent, the consent holder is required to obtain permission from landowners in order to secure access to and/or undertake works unless the land is owned by the consent holder. If the identity of the land owner is unknown, please contact Land Information New Zealand Limited (LINZ).*

If the land belongs to the Department of Conservation, the consent holder

will be required to obtain a concession from the Department of Conservation prior to undertaking works on their land.

Water Permit CRC102548 - To divert excess flood flows from Eastern Drain into a quarry pit and the Amberley Beach Wetland.

- 1) Water shall only be diverted from Eastern Drain at or about map reference NZMS 260 N34:9195-8269 and from the quarry pit at or about map reference NZMS 260 N34:9212-8255, as shown on attached Plan CRC102547/8/9A which forms part of this.
- 2) Water shall only be diverted from Eastern Drain and from the quarry pit at a rate not exceeding nine cubic metres per second during design flow conditions.
- 3) This consent shall only be exercised when consent CRC071742 (quarry discharge consent) has expired or has been cancelled or has been varied to allow for the discharge of quarry washwater and floodwater into the diversion channel during design flood events.
- 4) Water shall only be diverted from Eastern Drain and the quarry pit when the construction works authorised by Land Use Consent CRC102547 are complete, and when the rate of water flow in Eastern Drain has exceeded nine cubic metres per second during design flow conditions.
- 5) Water shall not be diverted into the quarry pit from the Eastern Drain until any low point or breaches in the eastern wall of the quarry pit are reinstated to the existing continuous height of the access road.
- 6) The consent holder shall take all practicable steps to avoid leakages from culvert pipes, channels and structures.
- 7) The diversion shall not prevent the passage of fish.
- 8) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not more than two working days after the diversion of floodwater.
- 9) The Canterbury Regional Council may, once per year, on any of the last five

working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

- 10) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction works authorised by Land Use Consent CRC102547.

Discharge Permit CRC102549 - To discharge water and contaminants from Eastern Drain into a quarry pit and the Amberley Beach Wetland

- 1) The volume and peak discharges of flood waters authorised by this consent shall be restricted to those which occur under the hydrological conditions existing as at 26th January 2011. The consent holder shall within 6 months of the date of the commencement of this consent provide the following information to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager:-
 - (a) An accurate map delineating the catchments, above Hursley Terrace Road, for the following watercourses:
 - Dry Gully
 - Goldminer's Gully
 - Eastern Drain
 - (b) The existing flows volumes and durations (over a range of storm event intensities), for each of the above three watercourses.
- 2) Water shall only be discharged into the quarry pit at or about map reference NZMS 260 N34:9195-8269 and into the Amberley Beach Wetland at or about map reference NZMS 260 N34:9212-8255, as shown on attached Plan CRC102547/8/9A which forms part of this consent.
- 3) Water shall only be discharged when the construction works authorised by Land Use Consent CRC102547 are complete, and the discharge shall only be floodwater, diverted under Water Permit CRC102548.
- 4) The discharge shall be via the diversion channels located between map reference NZMS 260 N34:9190-8271 and NZMS 260 N34:9195-8269, and adjacent to the quarry pit at or about map reference NZMS 260 N34:9212-

8255, as shown on attached Plan CRC102547/8/9A which forms part of this consent.

- 5) This consent shall only be exercised when consent CRC071742 (quarry discharge consent) has expired or has been cancelled or has been varied to allow for the discharge of quarry washwater and floodwater into a surface waterway.
- 6) The discharge shall not exceed nine cubic metres per second during design flow conditions.
- 7) The discharge shall not cause erosion and scour of the banks or bed of the Amberley Beach Wetland.
- 8)
 - (a) The discharge shall not exceed the flood carrying capacity of the channel between the discharge point in the Amberley Beach Wetland and the Amberley Beach Lagoon.
 - (b) The discharge shall not cause flooding on land parcels Pt Lot 3 DP 7001, Pt Lot 1 DP 7226, Lot 1 DP 78964, Lot 1 DP 47785, Lot 1 DP 78963 and Section 1 SO 14568.
- 9) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not more than two working days after the discharge of floodwater.
- 10) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 11) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction works authorised by Land Use Consent CRC102547.

Land Use Consent CRC102807 - To carry out works in the bed and margins of a tributary of Eastern Drain and Mimimoto Lagoon

- 1) The works authorised by this consent shall be limited to:
 - (a) The disturbance of the bed, banks and margins of the tributary to Eastern Drain and Mimimoto Lagoon, clearing of vegetation and removal of soil for the construction and maintenance of the diversion swale, as shown on attached Plan CRC102807/9/10B which forms part of this consent.
 - (b) The diversion swale in the tributary to Eastern Drain shall have a conveyance capacity of 2.5 cubic metres per second during design flow conditions.

- 2) Works authorised by Condition (1) of this consent shall only be undertaken on land parcels Pt RS 10691, RS 14379, Pt RS 22595 and Lot 1 DP 60327, between map references NZMS 260 N34:9072-8126 and NZMS 260 N34:9141-8097, as shown on attached Plan CRC102807/9/10A which forms part of this consent.

- 3) A chartered professional engineer shall design the flood diversion structures and prepare a design report. This design report shall include, but not be limited to the following:
 - (a) Details of the location and layout of the floodwater diversion structures and floodwater flow path;
 - (b) Details of the engineering design of the swale between the tributary to Eastern Drain and Mimimoto Lagoon;
 - (c) An erosion and sediment control plan;
 - (d) Details of procedures to be followed for post construction site restoration;
 - (e) Certification by the chartered professional engineer, that the diversion structures have been designed according to engineering standards and practices, and will not result in increased flooding of surrounding land, and erosion of the river beds and banks;
 - (f) Details of routine maintenance work that shall be undertaken by the consent holder during the operational life of the structures; and
 - (g) A copy of the design report shall be forwarded to The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, no less than ten working days prior to commencement of construction.

- 4) The duration of the works in the tributary to Eastern Drain shall not exceed three days and the duration of all of the works specified in Condition (1) shall not exceed three weeks. This excludes any working days that may be lost due to adverse weather conditions.
- 5) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not less than two working days prior to the commencement of works.
- 6) Prior to commencing works, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent.
- 7) Works authorised by this consent shall only occur between the hours of 6am and 6pm Monday to Saturday inclusive, and shall not be carried out on Sundays or statutory holidays.
- 8) The consent holder shall ensure that:
 - (a) The flood diversion system specified in Condition (1) is inspected at least annually and maintained in sound structural condition; and
 - (b) The overflow swale is inspected after any storm event in which floodwater is diverted into the overflow swale. If the inspection finds:
 - (i) A 3 centimetre (or greater) depth of sediment in the bottom of the swale, the sediment shall be removed and disposed of in a suitable location; or
 - (ii) Patches of bare soil or non-vegetated areas, these bare areas will be re-vegetated as soon as practicable.
- 9) Works shall not cause erosion or scour of the banks and bed of the tributary to Eastern Drain or the Mimimoto Lagoon.
- 10) All practicable measures shall be undertaken to prevent the discharge of sediment to surface water arising from the works, including, but not limited to the following measures:
 - (a) The measures in the erosion and sediment control plan referred to in Condition (3) shall be installed prior to the commencement of works;
 - (b) Machinery shall not enter or work in flowing water;
 - (c) The construction and maintenance of effective scour or erosion

protection at the discharge point into Mimimoto Lagoon; and

(d) All erosion and sediment control measures shall be constructed and maintained in accordance with the principles contained in Environment Canterbury's "Erosion and Sediment Control Guideline (2007)".

- 11) No cut vegetation, debris, or other excavated material, shall be placed in any surface water body, or in a position such that it may enter any surface water body.
- 12) The consent holder shall ensure that:
 - (a) All practicable measures are undertaken to prevent oil and fuel leaks from vehicles and machinery;
 - (b) There is no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river; and
 - (c) Fuel shall be stored securely or removed from site overnight.
- 13) Machinery shall be free of plants and plant seeds prior to use in the riverbed.
- 14) The consent holder shall ensure that:
 - (a) Works authorised by this consent do not prevent the passage of fish, or cause the stranding of fish in pools or channels; and
 - (b) In the event that fish are stranded in pools or channels, fish are relocated from the pool or channel by a person trained by a suitable qualified and experienced fish handler.
- 15) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 16) The consent holder shall ensure that:
 - (a) Vehicles and/or machinery shall do not operate within 100 metres of birds which are nesting or rearing their young; and
 - (b) For the purposes of this condition birds are defined as those bird species listed in Attachment A, which forms part of this consent.
- 17) Prior to any mechanical works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
 - (a) A suitably qualified and independent person inspects the area of

works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Attachment A which forms part of this consent;

- (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council;
- (c) The name and qualifications of the person carrying out the inspection are provided to the Canterbury Regional Council with the report;
- (d) Any person carrying out works authorised by this consent is informed of any bird breeding or nesting sites located; and
- (e) Where work ceases for more than 10 days, the site is re-inspected for bird breeding and nesting sites in accordance with clauses (a) to (d) of this condition.

- 18) To prevent the spread of Didymo or any other aquatic pest, the consent holder shall ensure that activities authorised by this consent are undertaken in accordance with the Biosecurity New Zealand's hygiene procedures.

Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz> or Environment Canterbury Customer Services.

- 19) The consent holder shall ensure that:

- (a) All disturbed areas are stabilised and revegetated following completion of the works; and
- (b) All spoil and other waste material from the works is removed from site on completion of works.

- 20) In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:

- (a) Advise the Canterbury Regional Council of the disturbance;
- (b) Advise the Upoko Runanga of Tuahuriri, or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
- (c) Cease earthmoving operations in the affected area until an area has been marked off around the site, and Kaumatua and archaeologists have given approval for the earthmoving to recommence.

Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site

Accidental Discovery Protocol) or the New Zealand Historic Places Trust.

- 21) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 22) The lapsing date for the purposes of section 125 shall be 31 December 2015.

Advice Note: *In addition to this consent, the consent holder is required to obtain permission from landowners in order to secure access to and/or undertake works unless the land is owned by the consent holder. If the identity of the land owner is unknown, please contact Land Information New Zealand Limited (LINZ).*

If the land belongs to the Department of Conservation, the consent holder will be required to obtain a concession from the Department of Conservation prior to undertaking works on their land.

Water Permit CRC102809 - To divert excess flood flows from a tributary of Eastern Drain into Mimimoto Lagoon

- 1) Water shall only be diverted from the tributary to Eastern Drain at or about map reference NZMS 260 N34:9072-8126, as shown on attached Plan CRC102807/9/10A which forms part of this consent.
- 2) Water shall only be diverted from a tributary to Eastern Drain at a rate not exceeding 2.5 cubic metres per second during design flow conditions.
- 3) Water shall only be diverted from the tributary to Eastern Drain when the construction works authorised by Land Use Consent CRC102807 are complete, and when the level of water in the tributary to Eastern Drain has exceeded an elevation of 4.3 metres above mean sea level.
- 4) The consent holder shall take all practicable steps to avoid leakages from the swale.
- 5) The diversion shall not prevent the passage of fish.

- 6) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not more than two working days after the diversion of floodwater.
- 7) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 8) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction works authorised by Land Use Consent CRC102807.

Discharge Permit CRC102810 - To discharge water and contaminants from a tributary of Eastern Drain into Mimimoto Lagoon

- 1) The volume and peak discharges of flood waters authorised by this consent shall be restricted to those which occur under the hydrological conditions existing as at 26th January 2011. The consent holder shall within 6 months of the date of the commencement of this consent provide the following information to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager:-
 - (a) An accurate map delineating the catchments, above Hursley Terrace Road, for the following watercourses:
 - Dry Gully
 - Goldminer's Gully
 - Eastern Drain
 - (b) The existing flows volumes and durations (over a range of storm event intensities), for each of the above three watercourses.
- 2) Water shall only be discharged into the Mimimoto Lagoon at or about map reference and NZMS 260 N34:9141-8097, as shown on attached Plan CRC102807/9/10A which forms part of this consent.
- 3) Water shall only be discharged when the construction works authorised by Land Use Consent CRC102807 are complete, and the discharge shall only be floodwater, diverted under Water Permit CRC102809.

- 4) The discharge of floodwater via the swale shall not contain treated effluent discharged under resource consent CRC102115 or any subsequent replacement thereof.
- 5) The discharge shall be via the diversion swale located between map references NZMS 260 N34:9072-8126 and NZMS 260 N34:9141-8097, as shown on attached Plan CRC102807/9/10B which forms part of this consent.
- 6) The discharge shall not exceed 2.5 cubic metres per second during design flow conditions.
- 7) The discharge shall not cause erosion and scour of the banks and bed of the Mimimoto Lagoon.
- 8) The consent holder shall take all practicable steps to ensure that the discharge will not:
 - (a) Exceed the design flood carrying capacity of the swale; and
 - (b) Cause flooding on land parcels Pt RS 10691, RS 14379, Pt RS 22595 and Lot 1 DP 60327.
- 9) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not more than two working days after the discharge of floodwater.
- 10) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 11) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction works authorised by Land Use Consent CRC102807.

Land Use Consent CRC103443 - To carry out works in the bed and margins of Dock Creek and artificial drains connected to it

- 1) The works authorised by this consent shall be limited to:
 - (a) The construction of a drain connecting to Dock Creek and the relocation of the existing 600mm culvert near the intersection of Stanton and Douglas Roads, as shown on attached Plan CRC103443/4/5B which forms part of this consent;
 - (b) The disturbance of the bed, banks and margins of Dock Creek, the clearing of vegetation and removal of soil as shown on attached Plan CRC103443/4/5B which forms part of this consent; and
 - (c) The partial blocking of an unnamed tributary of Eastern Drain, constriction of a culvert on land parcel Lot 2 DP 304791, and restoration of the drain to the Stanton Road lowland, generally as shown on attached Plan CRC103443/4/5B which forms part of this consent.

- 2)
 - (a) Works authorised by Condition (1)(a) of this consent shall only be undertaken at or about map reference NZMS 260 M34:8668-8514, as shown on attached Plan CRC103443/4/5A which forms part of this consent.
 - (b) Works authorised by Condition (1)(b) of this consent shall only be undertaken in Dock Creek between map references NZMS 260 M34:8684-8637 and NZMS 260 M34:8668-8514, as shown on attached Plan CRC103443/4/5A which forms part of this consent.
 - (c) Works authorised by Condition (1)(c) of this consent shall only be undertaken at or about map reference NZMS 260 M34:8764-8720, as shown on attached Plan CRC103443/4/5A which forms part of this consent.

- 3) A chartered professional engineer shall design the flood diversion structures and prepare a design report. This design report shall include, but not be limited to the following:
 - (a) Details of the location and layout of the floodwater diversion structures and floodwater flow path;
 - (b) Details of the engineering design of the works in Dock Creek and the artificial drains;
 - (c) An erosion and sediment control plan;
 - (d) Details of procedures to be followed for post construction site

restoration;

- (e) Certification by the chartered professional engineer, that the diversion structures have been designed according to engineering standards and practices,, and will not result in increased flooding of surrounding land, and erosion of the river beds and banks;
 - (f) Details of routine maintenance work that shall be undertaken by the consent holder during the operational life of the structures;
 - (g) Details of the capacity of the Eastern Drain channel in a cleared and maintained state, and design details included in the floodwater diversion structures design (see (a) above) which will divert flood flows in excess of the Eastern Drain channel capacity downstream of the proposed diversion towards Stanton Road lowland (Amberley Swamp).
 - (h) The development of a programme aimed at ensuring all channels in the Upper Dock Creek are maintained free from obstructions that could impede the free flow of flood waters, and
 - (i) A copy of the design report shall be forwarded to The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, no less than ten working days prior to commencement of construction.
- 4) The duration of the works shall not exceed two months. This excludes any working days that may be lost due to adverse weather conditions.
- 5) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not less than two working days prior to the commencement of works.
- 6) Prior to commencing works, a copy of this resource consent shall be given to all persons undertaking activities authorised by this consent.
- 7) The works authorised by this consent shall only occur between the hours of 6am and 6pm Monday to Saturday inclusive, and shall not be carried out on Sundays or statutory holidays.
- 8) The flood diversion structures specified in Condition (1) shall be inspected at least annually and maintained in sound structural condition.

- 9) Works shall not cause erosion of the banks and bed of Dock Creek, or the drains in which the overflows may be diverted into.
- 10) All practicable measures shall be undertaken to prevent the discharge of sediment to surface water arising from the works, including, but not limited to the following measures:
 - (a) The measures in the erosion and sediment control plan referred to in Condition (3) shall be installed prior to the commencement of works;
 - (b) Machinery shall not enter flowing water; and
 - (c) All erosion and sediment control measures shall be constructed and maintained in accordance with the principles contained in Environment Canterbury's "Erosion and Sediment Control Guideline (2007)".
- 11) No cut vegetation, debris, or other excavated material, shall be placed in any surface water body, or in a position such that it may enter any surface water body.
- 12) The consent holder shall ensure that:
 - (a) All practicable measures are undertaken to prevent oil and fuel leaks from vehicles and machinery;
 - (b) There is no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river;
 - (c) Fuel is stored securely or removed from site overnight.
- 13) Machinery shall be free of plants and plant seeds prior to use in the riverbed.
- 14) The consent holder shall ensure that:
 - (a) Works authorised by this consent do not prevent the passage of fish, or cause the stranding of fish in pools or channels; and
 - (b) In the event that fish are stranded in pools or channels, fish are relocated from the pool or channel by a person trained by a suitable qualified and experienced fish handler.
- 15) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 16) To prevent the spread of Didymo or any other aquatic pest, the consent

holder shall ensure that activities authorised by this consent are undertaken in accordance with the Biosecurity New Zealand's hygiene procedures.

Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz> or Environment Canterbury Customer Services.

- 17) The consent holder shall ensure that:
- (a) All disturbed areas are stabilised and revegetated following completion of the works; and
 - (b) All spoil and other waste material from the works is removed from site on completion of works.

- 18) In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
- (a) Advise the Canterbury Regional Council of the disturbance;
 - (b) Advise the Upoko Runanga of Tuahuriri, or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
 - (c) Cease earthmoving operations in the affected area until an area has been marked off around the site, and Kaumatua and archaeologists have given approval for the earthmoving to recommence.

Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol) or the New Zealand Historic Places Trust.

- 19) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

- 20) The lapsing date for the purposes of section 125 shall be 31 December 2015.

Advice Note: *In addition to this consent, the consent holder is required to obtain permission from landowners in order to secure access to and/or undertake works unless the land is owned by the consent holder. If the land belongs to the Crown or the identity of the land owner is unknown, please contact Land Information New Zealand Limited (LINZ).*

Water Permit CRC103444 - To divert water from an unnamed tributary of Eastern Drain, Dock Creek and artificial drains connected to it.

- 1) Water shall only be diverted via:
 - (a) A culvert on Pt Lot 1 DP 7625 at or about map reference NZMS 260 M34:8668-8514, as shown on attached Plan CRC103443/4/5A which forms part of this consent;
 - (b) A culvert beneath Stanton Road on Lot 2 DP 304791 at or about map reference NZMS 260 M34:8684-8637, as shown on attached Plan CRC103443/4/5A which forms part of this consent; and
 - (c) A drain on Lot 2 DP 304791 at or about map reference NZMS 260 M34:8764-8720, as shown on attached Plan CRC103443/4/5A which forms part of this consent.

- 2) Water shall only be diverted from:
 - (a) Pt Lot 1 DP 7625 at a rate not exceeding 710 litres per second;
 - (b) Lot 2 DP 304791 at a rate not exceeding 710 litres per second during design flow conditions; and
 - (c) An unnamed tributary of Eastern Drain on Lot 2 DP 304791 at a rate not exceeding 2 cubic metres per second during flood flow conditions.

- 3) Water shall only be diverted when the construction works authorised by Land Use Consent CRC103443 are complete.

- 4) Water shall only be diverted in accordance with Condition (2)(c) in flood flow conditions. Prior to the exercise of this consent, the consent holder shall confirm to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager the existing capacity of the drain at the point of diversion to enable the term 'flood flow conditions' to be clearly understood.

- 5) The consent holder shall take all practicable steps to avoid leakages from drains and structures.

- 6) The diversion shall not prevent the passage of fish.

- 7) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager shall be notified not more than two working days after the diversion of floodwater.

- 8) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 9) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction of the works authorised by Land Use Consent CRC102443.

Discharge Permit CRC103445 - To discharge water and contaminants into Dock Creek and artificial drains connected to it

- 1) Water and contaminants shall only be discharged:
 - (a) From Pt Lot 1 DP 7625 at or about map reference NZMS 260 M34:8668-8514, as shown on attached Plan CRC103443/4/5A which forms part of this consent.
 - (b) Via a culvert beneath Stanton Road at or about map reference NZMS 260 M34:8684-8637, as shown on attached Plan CRC103443/4/5A which forms part of this consent.
 - (c) Via a drain on Lot 2 DP 304791 at or about map reference NZMS 260 M34:8764-8720, as shown on attached Plan CRC103443/4/5A which forms part of this consent.
- 2) Water shall only be discharged when the construction works authorised by Land Use Consent CRC103443 are complete, and the discharge shall only be water and contaminants, diverted under Water Permit CRC103444.
- 3)
 - (a) The discharge described in Condition 1(a) shall occur at a rate not exceeding 710 litres per second.
 - (b) The discharge described in Condition 1(b) shall occur at a rate not exceeding 710 litres per second during design flow conditions.
 - (c) The discharge described in Condition 1(c) shall occur at a rate not exceeding 2 cubic metres per second during design flow conditions.
- 4) The discharge shall not cause erosion and scour of Dock Creek, or the drains where the overflow may be diverted to.

- 5) The consent holder shall take all practicable steps to ensure the discharge will not:
 - (a) Exceed the design flood carrying capacity of Dock Creek or the drains which flow into it; and
 - (b) Cause an increase in flooding on land parcels Lot 2 DP 304791, Lot 3 DP 78383, RS 9225, RS 9321, Lot 1 DP 82052, Lot 2 DP 82052, Lot 3 DP 82052, Lot 4 DP 82052, Lot 5 DP 82052, Lot 6 DP 82052, Lot 7 DP 82052, Lot 9 DP 81073, Lot 3 DP 353796, Lot 1 DP 8322, Lot 2 DP 56036, Lot 2 DP 353796, Lot 2 DP 8322, Pt Lot 1 DP 7625, Lot 1 DP 45325, RS 5320, Lot 1 DP 354091, Lot 1 DP 25428, RS 42336 and Pt Lot 3 DP 13195.
- 6) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not more than two working days after the discharge of floodwater.
- 7) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 8) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction of the works authorised by Land Use Consent CRC103443.

Coastal Permit CRC102694 - To disturb, excavate and deposit material, construct a structure, and to occupy the coastal marine area and coastal hazard zone

- 1) Location of works authorised by this consent shall be at:
 - (a) Amberley Beach Lagoon, at or about map reference NZMS 260 N34:9211-8237;
 - (b) Mimimoto Lagoon, at or about map reference NZMS 260 N34:9171-8065;
 - (c) Leithfield Beach Lagoon, at or about map reference NZMS 260 N34:9033-7767; and

- (d) Outfall Drain at or about map reference NZMS 260 N34:9018-7725; as shown in attached Plan CRC102694/5/6A.

As far as practicable, the above works shall be undertaken in the same location each time.

- 2) The works in the coastal marine area shall be limited to:
- (a) The construction and maintenance of a bridge at Amberley Beach Lagoon;
 - (b) The excavation of an outlet in Amberley Beach Lagoon, Mimimoto Lagoon, Leithfield Beach Lagoon, and the mouth of Outlet Drain;
 - (c) The deposition of the excavated materials from the outlet openings;
 - (d) The placement of gauging staffs located in the Amberley Beach Lagoon, Mimimoto Lagoon, Leithfield Beach Lagoon, and the mouth of Outlet Drain;
 - (e) Disturbance of the foreshore and seabed for the purpose of the works specified by clauses (a) through (d); and
 - (f) Occupation of the coastal marine area for the works specified by clauses (a) through (d) of this condition.
- 3) The trigger levels at which the openings of the lagoons and drain shall occur are at the water levels defined in Table A as measured at the gauging staffs located at the sites below:

Table A

Trigger levels for opening works	
Location	Trigger level
Amberley Beach Lagoon	1.89 metres above mean sea level
Mimimoto Lagoon	2.18 metres above mean sea level
Leithfield Beach Lagoon	2.16 metres above mean sea level
Outfall Drain	2.4 metres above mean sea level

- 4) All practicable measures shall be undertaken to minimise the discharge of sediment to the coastal marine area.
- 5) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and Te Runanga o Tuahuriri shall be notified at least

two working days prior to the commencement of works to install the bridge authorised by Condition 2(a).

- 6) Prior to commencing any of the works authorised by this consent, a copy of this consent shall be given to all persons undertaking activities authorised by this consent.
- 7) Except at times when works that may be hazardous to public safety are being undertaken, the consent holder shall take all practicable measures to not limit public access to the foreshore.
- 8) The consent holder shall ensure:
 - (a) All practicable measures are undertaken to prevent oil and fuel leaks from vehicles and machinery;
 - (b) There is no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river or the coastal marine area; and
 - (c) Fuel is stored securely or removed from the site overnight.
- 9) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 10) The consent holder shall ensure that:
 - (a) For the works described in Condition (2)(a) of this consent, vehicles and/or machinery do not operate within 100 metres of birds which are nesting or rearing their young; and
 - (b) For the purposes of this condition birds are defined as those bird species listed in Attachment A, which forms part of this consent.
- 11) For the works described in Condition (2)(a) of this consent, prior to any mechanical works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
 - (a) A suitably qualified and independent person inspects the area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Attachment A, which forms part of this consent;
 - (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury

Regional Council;

- (c) The name and qualifications of the person carrying out the inspection are provided to the Canterbury Regional Council with the report;
- (d) Any person carrying out works authorised by this consent is informed of any bird breeding or nesting sites located; and
- (e) Where work ceases for more than 10 days, the site is re-inspected for bird breeding and nesting sites in accordance with clauses (a) to (d) of this condition.

12) The consent holder shall ensure that:

- (a) Works authorised by this consent do not prevent the passage of fish, or cause the stranding of fish in pools or channels.
- (b) In the event that fish are stranded in pools or channels, fish are relocated from the pool or channel by a person trained by a suitably qualified and experienced fish handler.

13) Machinery shall be free of plants and plant seeds prior to use in the coastal marine area.

14) To prevent the spread of Didymo or any other aquatic pest, the consent holder shall ensure that activities authorised by this consent are undertaken in accordance with the Biosecurity New Zealand's hygiene procedures.

Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz/> or Canterbury Regional Council Customer Services.

15) The design of the bridge shall be certified by a chartered professional engineer and a copy of the certificate and the final bridge design plan shall be provided to The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, one month prior to construction.

16) A certificate signed by a chartered professional engineer confirming that the bridge was constructed according to the approved design plan and specification shall be submitted to The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of installing the bridge.

- 17) The consent holder shall:
- (a) Inspect the bridge on Golf Links Road at least annually and maintain it in sound structural condition;
 - (b) Keep a record of inspections and maintenance undertaken, and forward a copy of any records to the Canterbury Regional Council, Attention RMA Compliance and Enforcement Manager, upon request; and
 - (c) Remove the structure, if the bridge on Golf Links Road is damaged beyond repair.
- 18) In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
- (a) Advise the Canterbury Regional Council of the disturbance;
 - (b) Advise the Upoko Runanga of Tuahuriri, or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
 - (c) Cease earthmoving operations in the affected area until an area has been marked off around the site, and Kaumatua and archaeologists have given approval for the earthmoving to recommence.
- Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol) or the New Zealand Historic Places Trust.*
- 19) On the completion of the bridge at Amberley Beach Lagoon, the consent holder shall as far as practicable, restore the site to its original condition and reshape the works area to a state consistent with the natural surroundings.
- 20) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified no more than two working days after the commencement of the lagoon and drain mouth opening works.
- 21) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 22) The lapsing date for the purpose of section 125 shall be 31 December 2015.
Advice Note: *In addition to this consent, the consent holder is required to*

obtain permission from landowners in order to secure access to and/or undertake works unless the land is owned by the consent holder. If the identity of the land owner is unknown, please contact Land Information New Zealand Limited (LINZ).

If the land belongs to the Department of Conservation, the consent holder will be required to obtain a concession from the Department of Conservation prior to undertaking works on their land.

Coastal Permit CRC102695 - To divert water into the coastal marine area

- 1) Water shall only be diverted via:
 - (a) An opening at the Amberley Beach Lagoon, at or about map reference NZMS 260 N34:9211-8237, as shown in attached Plan CRC102694/5/6A;
 - (b) An opening at the Mimimoto Lagoon at or about map reference NZMS 260 N34:9171-8065, as shown in attached Plan CRC102694/5/6A;
 - (c) An opening at the Leithfield Beach Lagoon at or about map reference NZMS 260 N34:9033-7767, as shown in attached Plan CRC102694/5/6A; and
 - (d) An opening at the Outfall Drain at or about map reference NZMS 260 N34:9018-7725, as shown in attached Plan CRC102694/5/6A.

- 2) Water shall only be diverted in accordance with Condition 1, when the water levels have reached the levels in Table A as measured at the gauging staffs located at the sites below:

Table A

Trigger levels for opening works	
Location	Trigger level
Amberley Beach Lagoon	1.89 metres above mean sea level
Mimimoto Lagoon	2.18 metres above mean sea level
Leithfield Beach Lagoon	2.16 metres above mean sea level
Outfall Drain	2.4 metres above mean sea level

- 3) Water shall only be diverted when the works authorised by Coastal Permit CRC102694 are complete.
- 4) The diversion shall not prevent the passage of fish.
- 5) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not more than two working days after the diversion of water.
- 6) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 7) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction of the bridge or any lagoon opening works as authorised by Coastal Permit CRC102694.

Coastal Permit CRC102696 - To discharge water and contaminants into the coastal marine area

- 1) Water and contaminants shall only be discharged from the:
 - (a) Amberley Beach Lagoon, at or about map reference NZMS 260 N34:9211-8237, as shown in attached Plan CRC102694/5/6A;
 - (b) Mimimoto Lagoon at or about map reference NZMS 260 N34:9171-8065, as shown in attached Plan CRC102694/5/6A;
 - (c) Leithfield Beach Lagoon at or about map reference NZMS 260 N34:9033-7767, as shown in attached Plan CRC102694/5/6A; and
 - (d) Outfall Drain at or about map reference NZMS 260 N34:9018-7725, as shown in attached Plan CRC102694/5/6A.
- 2) Water shall only be discharged when the construction works authorised by Coastal Permit CRC102694 are complete, and the discharge shall only be water and contaminants, diverted under consent Coastal Permit CRC102695 into the coastal marine area.
- 3) The Canterbury Regional Council, Attention: RMA Compliance and

Enforcement Manager, shall be notified not more than two working days after the discharge of floodwater.

- 4) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 5) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction of the bridge or any lagoon opening works as authorised by Coastal Permit CRC102694.

Coastal Permit CRC103328 - To disturb, excavate and deposit material in the coastal marine area

- 1) Location of works shall be at Kowai River mouth at or about map reference NZMS 260 N34:9084-7879, as shown in attached Plan CRC103328/30/31A.
- 2) The works in the coastal marine area shall be limited to:
 - (a) Excavation of an outlet in the mouth of the Kowai River;
 - (b) Deposition of the excavated materials from the outlet opening;
 - (c) Placement of a gauging staff located in the mouth of the Kowai River;
and
 - (d) Disturbance of the foreshore and seabed for the purpose of the works specified by clauses (a), (b) and (c).
- 3) The trigger level at which the opening of the Kowai River mouth shall occur is when the water level reaches 200 millimetres below the top of the stopbank located at or about map reference NZMS 260 N34:9060-7912.
- 4) All practicable measures shall be undertaken to minimise the discharge of sediment to the coastal marine area.
- 5) Prior to commencing any of the works authorised by this consent, a copy of this consent shall be given to all persons undertaking activities authorised by this consent.

- 6) Except at times when works that may be hazardous to public safety are being undertaken, the consent holder shall take all practicable measures to ensure public access to and along the coastal marine area is not limited.
- 7) The consent holder shall ensure that:
 - (a) All practicable measures are undertaken to prevent oil and fuel leaks from vehicles and machinery;
 - (b) There is no storage of fuel or refuelling of vehicles and machinery within 20 metres of the bed of a river or the coastal marine area; and
 - (c) Fuel shall be stored securely or removed from the site overnight.
- 8) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 9) The consent holder shall ensure that:
 - (a) Works authorised by this consent do not prevent the passage of fish, or cause the stranding of fish in pools or channels; and
 - (b) In the event that fish are stranded in pools or channels, fish are relocated from the pool or channel by a person trained by a suitably qualified and experienced fish handler.
- 10) Machinery shall be free of plants and plant seeds prior to use in the coastal marine area.
- 11) To prevent the spread of Didymo or any other aquatic pest, the consent holder shall ensure that activities authorised by this consent are undertaken in accordance with the Biosecurity New Zealand's hygiene procedures.

Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz/> or Canterbury Regional Council Customer Services.
- 12) In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
 - (a) Advise the Canterbury Regional Council of the disturbance;
 - (b) Advise the Upoko Runanga of Tuahuriri, or their representative, and the New Zealand Historic Places Trust, of the disturbance; and
 - (c) Cease earthmoving operations in the affected area until an area has been marked off around the site, and Kaumatua and archaeologists have given approval for the earthmoving to recommence.

Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol) or the New Zealand Historic Places Trust.

- 13) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified no more than two working days after the commencement of the river mouth opening works.
- 14) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 15) The lapsing date for the purpose of section 125 shall be 31 December 2015. For the purpose of section 125, effect will be given to this consent upon the installation of the staff gauge used for monitoring the trigger level identified in Condition (3) of this consent.

Advice Note: *In addition to this consent, the consent holder is required to obtain permission from landowners in order to secure access to and/or undertake works unless the land is owned by the consent holder. If the identity of the land owner is unknown, please contact Land Information New Zealand Limited (LINZ).*

If the land belongs to the Department of Conservation, the consent holder will be required to obtain a concession from the Department of Conservation prior to undertaking works on their land.

Coastal Permit CRC103330 - To divert water into the coastal marine area

- 1) Water shall only be diverted via an opening at the Kowai River mouth at or about map reference NZMS 260 N34:9084-7879, as shown in attached Plan CRC103328/30/31A.
- 2) Water shall only be diverted in accordance with Condition (1), when the water level reaches 200 millimetres below the top of the stopbank located at or about map reference NZMS 260 N34:9060-7912.
- 3) Water shall only be diverted when the construction works authorised by

Coastal Permit CRC103328 are complete.

- 4) The diversion shall not prevent the passage of fish.
- 5) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not more than two working days after the diversion of water.
- 6) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 7) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction works authorised by Coastal Permit CRC103328.

Coastal Permit CRC103331 - To discharge water and contaminants into the coastal marine area

- 1) Water and contaminants shall only be discharged via an opening at the Kowai River mouth at or about map reference NZMS 260 N34:9084-7879, as shown in attached Plan CRC103328/30/31A.
- 2) Water shall only be discharged when the construction works authorised by Coastal Permit CRC103328 are complete, and the discharge shall only be water and contaminants, diverted under Coastal Permit CRC103330 into the coastal marine area.
- 3) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not more than two working days after the discharge of floodwater.
- 4) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and

which it is appropriate to deal with at a later stage.

- 5) The lapsing date for the purposes of section 125 shall be 31 December 2015. This consent shall be considered as having been given effect to after the completion of construction works authorised by Coastal Permit CRC103328.