

23 October 2024

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Environment Canterbury
Resource Consents team
Via email: Olivia.Murray@ecan.govt.nz

Attention: Olivia Murray
Resource Consents Team, ECan

Dear Olivia,

Please see below for a response to the Request for Further Information (RFI), issued on 24 May 2024 for the resource consent applications CRC242267, CRC242268 and CRC242269, made by Christchurch City Council (CCC) relating to the Southshore and South New Brighton Inundation Protection Project.

Below is a partial response to Questions 1, 3 and 4 of the RFI. Question 2 is complex and is taking some time to work through and prepare relevant supporting information such as mapping.

Additionally, we have included a response to other questions sent via email in addition to the RFI letter. We have also included an assessment to cover the air discharge element, raised via a s91 request issued on 27 March 2024.

We would welcome further discussion if required to clarify the answers below. We will provide a further RFI response letter to address Question 2 as soon as possible. In the interim, we will continue to provide regular updates on the timeline for the Question 2 response.

1. Contaminated Land

Canterbury Regional Council (CRC) Contaminated Land Scientist reviewed the Detailed Site Investigation provided and noted that it has been written for human health and offsite disposal purposes. It did not assess environmental receptors. However, the Scientist has compared the results with the Australian and New Zealand Environment and Conservation Council (ANZECC) default guideline value (DGV) and saw that lead exceeded the DGV in three test pits (TP5, TP7 and TP18).

- a. *Please provide an assessment on how the applicant will manage impacts from soil exceeding the ANZECC guideline.*

These three TPs (TP5, TP7 and TP18) are in the walkway, separated from the shore (TP4 not TP5 exceeds the lead DGV). We would expect standard erosion and sediment controls installed along the top of the shoreline, catching any offsite migration of the sediment from the pathways works, to mitigate the risk of these soils being mobilised into the estuary. The CSMP will highlight this requirement, and it will be up to the contractor to design and implement suitable onsite controls using the CSMP as the guideline.

b. Please confirm whether there will be any soil mixing, and if so, what is the planned procedure.

There is no planned soil mixing, aside from what will occur during excavation and transportation. Considering the presence of asbestos in some locations soil mixing is not an appropriate methodology for this project.

c. As there is a greater opportunity to re-use excavated material from the site, please provide an assessment to clarify the quality of the material to be reused.

Reuse is covered in detail in Section 6.2.5 of the DSI (Appendix J of the application). Space and encapsulation requirements are the key factors to determining if soils can be reused (meeting the criteria set out in Section 6.2.5 of the DSI).

Reuse requirements will need to be worked through once the contractor is appointed and has a more thorough understanding of the space and encapsulation requirements.

The CSMP will include a soil reuse plan outlining where and how the material can be reused onsite. There is potential for the majority of the site's soils to be reused within the site if there is space and the asbestos contaminated soils are appropriately encapsulated.

d. Given the proximity to residential land, how will the works mitigate the dust from earthworks. The Contaminated soil management plan doesn't mention airborne asbestos monitoring. Given this proximity, how will this be mitigated?

Asbestos concentrations within soils are at a level where the works area considered to be 'asbestos related works' which do not require air monitoring as a compulsory element.

Asbestos management protocols are set out in Section 3.15 of the "Contaminated Soil Management Plan – Medium Risk Projects" prepared by Enviser Ltd, attached to RMA/2019/2727, CCC's Global Resource Consent authorising disturbance and disposal of contaminated land.

The CSMP and EMP will be updated by the appointed contractor and will include more detail on PPE requirements for soil disturbance where asbestos is present, guidance as to when air quality monitoring should be implemented and a handling and management guide.

e. Please provide an assessment of the procedure for identification of coal tar. How will sampling be undertaken and how will it be determined suitability for re-use of material? What guidelines will this be undertaken under?

CCC have extensive experience in management of coal tar throughout the city through post-earthquake work. Coal tar identification and management protocols are set out in Section 3.14 of the "Contaminated Soil Management Plan – Medium Risk Projects" prepared by Enviser Ltd, attached to RMA/2019/2727, CCC's Global Resource Consent authorising disturbance and disposal of contaminated land.

These coal tar management procedures will be incorporated into the CSMP and EMP, and further expanded if necessary. Sampling and assessment will be in general accordance with the *Guidelines for Assessing and Managing Coal Tar Contamination in Roadway, WasteMINZ 2023*.

**Question 2 in full has not been responded to as part of this RFI response. Technical reassessments have been required to support the answer to Q2 and as such require time to allow for these assessments to be completed.
A response to Q2 will follow as soon as possible, with ECan being kept updated on estimated response times.**

2. Ecological Values

CRC Principal Scientist – Land Ecology has reviewed the assessment and has stated that they disagree with the use of the EIANZ ecological impact assessment guidelines determinations of ‘ecological value’ in the AEE and Appendix M Ecology Assessment report descriptions of the ‘existing environment’. The EIANZ ecological impact assessment guidelines are non-statutory and have not been approved for use by MfE, DOC, Councils or the New Zealand Ecological Society.

The provided ecological assessment did not include an assessment of ecological significance of the affected area (considering both direct/construction effects and wider operational effects) following the criteria and associated guidance appended to the Canterbury Regional Policy Statement.

CRC Coastal Surface Water Quality & Ecology Scientist has reviewed the assessment and noted the Ecological Impact Assessment Report by Boffa Miskell (2023) refers to the EIANZ EcIA guidelines to assess the ecological values of the different habitat types within the project footprint and level of impact on estuarine ecology. These guidelines only apply to terrestrial and freshwater environments and haven’t been developed for coastal-marine areas. CRC expert disagrees they should be used.

The proposed works are within Land of National Significance (DOC), Regional Coastal Environmental Plan Area of Significance Natural Value.

In order to understand the specific ecological values at the site, further assessment is required.

Our CRC expert disagrees with the assessment that the seagrass (*Zostera muelleri*) beds only have a high ecological value. In Canterbury, seagrass beds are only present at a small number of locations, and the beds in Southshore are some of the largest that are present in Canterbury. The NZCPS Policy 11 states that indigenous biodiversity in the coastal environment should be protected by avoiding adverse effects of activities on indigenous taxa that are listed as threatened or at risk in the NZTCS. Therefore, the CRC expert considers that these beds should be considered to have very high ecological values and that they are protected from adverse effects.

- a. *Please provide an assessment justifying the conclusion of effects as high ecological values on Seagrass beds in Southshore and any necessary mitigation measures to address any potential detrimental effects. The application does not address the long-term climate change adaptation and projected sea level rise.*

The CRC expert disagrees with the assessment of proposed reclamation at SNBP and Southshore. They consider the effects of reclamation at SNBP will be moderate and at Southshore will very high.

Along Southshore there is a large area between the existing properties and the estuary edge that are part of this project area which could be considered for further landward movement of the erosion protection structures. This would avoid having to reclaim a significant area of estuarine habitat and potential damage to seagrass beds. Furthermore, Policy 10 of the NZCPS states that reclamation of land in the coastal marine area should be avoided unless the land outside the area is not available.

- b. Please provide a further assessment on the effects of the reclamation and how the proposed reclamation areas can be justified with area of land available landward of the Coastal Marine Area*

The report by Boffa Miskell has stated that the seagrass habitat disturbance will require careful management which may involve small design changes as well as the temporary removal and reinstatement of small patches. The report has assessed the effects as very low as it will only affect very small patches or isolated plants, which is contrary to their statement that any loss of seagrass habitat should be avoided.

The CRC expert disagrees with this assessment and considers that any removal or disturbance to the seagrass beds is considered to have very high adverse effects.

- c. Please provide further justification of the proposed disturbances of seagrass habitat and have regard to Policy 11 of the NZCPS which states that adverse effects of activities on Threatened or At-Risk taxa should be avoided.*

The Tern Street Jetty will shade approximately 55m² of mudflat habitat and has been assessed as having a very low (hard bottom substrates) to low level (mudflats) of effects. There are large seagrass beds on the mudflats near Tern Street which are growing and expanding.

- d. Please provide an assessment of the potential effects of shading of mudflat habitat on the growing and expanding Seagrass beds at Tern Street, by effectively reclaiming 55m² of habitat.*

The report by Boffa Miskell has assessed the effects of cobble beach substrates as being very low (negligible) with recommended actions to remove any material washed onto the mudflat because of storm events. The CRC expert is concerned about the potential damage to mudflat habitats from the deposition and subsequent removal of cobble material. They also state that cobbles are not a part of the natural estuary habitat and there is also the potential for long-term changes in the composition of substrate with the constant replenishment of cobble material. The CRC expert considers the effects on the mudflats to be low.

- e. Please provide an assessment of the potential damage to mudflats from the deposition and subsequent removal of cobble material*

The new erosion protection structures will include four new stepped facilities to facilitate access to the estuary, which may result in an increased number of people (and dogs) accessing the estuary bed. The report by Boffa Miskell have stated the effects associated with increased access will be very low. CRC expert disagrees with this assessment and considers that the effects will be moderate to high as this will cause increased trampling of seagrass beds, harvesting of mahinga kai species, dogs chasing native birds, and faeces in the estuarine area could have considerable adverse effects on the estuarine ecology and water quality.

- f. Please provide an assessment of alternatives to building the four new stepped facilities as there is already a walkway on the landward side of the estuary edge as well as grassed areas either side of the walkway which provide suitable areas for walking and dog exercising without providing access to the estuary bed.*

The CRC experts state that they disagree with the assessment that the effects of coastal squeeze along Southshore will be very low and consider that it will be moderate to high. They consider that the hard-walled structures will not only act as a barrier and prevent the inland migration of habitats and organisms but are likely to result in increased water depths throughout the intertidal area from sea level rise. These increased water depths may limit light availability and intensify wave action which are both unfavorable for seagrass (Keyser et al., 2020). This may result in loss of seagrass habitats and the ecosystem services they provide.

There are wide margins between the current houses and the estuary edge which could be used to allow a natural edge and for the seagrass habitats to survive and expand. Seagrass beds not only sequester and store organic carbon in the sediment acting as natural carbon sinks (Serrano et al., 2021) reducing the effects of climate change, but they also encourage sediment stabilisation and surface elevation making them a natural coastal defence (Potouroglou et al., 2017).

- g. Please provide an assessment on coastal squeeze which gives consideration to the inclusion of a natural edge at areas along Southshore to allow for the natural migration of seagrass beds.*

The proposed works construction and operation will disturb and displace sizeable populations of protected native birds, including threatened and at-risk species, and will result in inferior feeding and roosting habitats.

- h. Please provide further assessment of the effects of the proposed works on construction and operation on native birds and their feeding and roosting habitats, and any mitigation measures to address any potential detrimental effects.*

3. Coastal Processes

The CRC expert has noted that the objective of this application is to provide a restored level of inundation protection to the local community. As there is now a constructed bund (Land Information New Zealand LINZ bund) at a height of approximately 11.2m (and between 10.97 and 11.53 m CDD), and which is of similar or higher elevation than the corresponding 2003 land level, it appears unclear as to what the baseline for inundation protection is being measured against. If a pre-earthquake level of inundation protection is being requested by the community, then that appears to be met by the existing bund. The construction of a new engineered bund to a level of 11.5 m CDD therefore provides a significantly upgraded level of protection to the community as opposed to a restored level of protection.

The CRC expert considers that apart from two area of between 20 -25 m each between Heron and Penguin streets, it is the expert's opinion that the current position of the LINZ bund along Southshore is located a sufficient distance landward of the existing estuary edge structures that the LINZ bund is unlikely to be subject to coastal erosion for the next 20 years, even with relative sea level rise of up to 0.2 m. Overall the expert does not consider that the projected amount of estuary edge erosion along the Southshore estuary shoreline are likely to result in erosion of the existing LINZ inundation bund in this area within the next 20 years.

- a. Please provide justification on the requirements for the inundation bund when the LINZ bund will provide sufficient protection from coastal erosion for the next 20 years.*

The LINZ bund was constructed as a temporary response to protect the community in the immediate response to flooding impacts arising from the CES and impacts on land in this area. This bund was only ever intended to provide interim protection. The LINZ bund is comprised of non-engineered fill and is informally designed. The LINZ bund is not considered suitable to be relied upon for coastal inundation protection for a 20-year period. The rationale behind the bund levels is further detailed in the email from Jess Bould to Olivia Murray/Deepani Seneviratna on 3 September 2024. For completeness, a copy is included as Attachment A.

- b. Please provide justification for the inundation bund along Southshore as a cobble beach has been found to provide*

an appropriate level of protection against coastal erosion in Southshore.

The inundation bund does not serve an erosion protection function.

The CRC expert also considers that the wave and water level combination used in the design process is conservative, and particularly so when viewed over short timeframes of the design life of the structures. They also conclude that if a conservative combination of these factors has been used and has found that a cobble beach will provide sufficient protection against coastal erosion for the next 20 years in the South New Brighton Park area where the combination of water, wave and river channel processes are likely to be greatest within the estuary, the CRC expert can see no reason from a coastal process and hazard perspective why a 'harder' engineered rock revetment is required for the majority of the Southshore estuary shoreline. The CRC expert, therefore, considers that a slightly 'softer' engineered cobble beach along the Southshore estuary coastline would provide sufficient protection against coastal erosion for this area.

- c. *Please provide justification for the 'harder' engineered rock revetment along Southshore as a cobble beach has been found to provide an appropriate level of protection against coastal erosion in Southshore.*

We have assumed this question relates to the rock revetment portions between Godwit Street and Kingfisher Lane and approximately 96A Rockinghorse Road to approximately 168 Rockinghorse Road (See Figure 3-2 of the Design Report, reproduced adjacent).



Figure 3-2. Southshore erosion protection extents

Across the project, a combination of rock revetment and cobble beach has been selected. Cobble beach was selected for areas where local conditions result in lower erosion risk. Rock revetment was selected for areas where there is greater evidence of erosion occurring. Additionally, rock revetment is proposed for sections where there are space constraints which could otherwise result in impacts on existing ecological habitats or the need for increased reclamation / encroachment into the coastal marine area.

It is worth noting more broadly that the project was not been conceived purely from a coastal process and hazard perspective, and there are often varied reasons for elements of any proposal. In this instance, other factors include:

1. The revetment allows the inundation bund to be located closer to the coast, reducing the impacts of overlook on neighbouring properties and preserving usable open space for the community on the landward side
2. The revetment encapsulates the ad hoc and crumbling coastal structures built by previous residents, protecting that material from entering the estuary
3. Revetment has been accepted as an erosion protection mechanism recently in several other locations, including at Main and Beachville Roads (Sumner, multiple sections) and to the west, south of Rat Island Reserve.

The community lobbied Council for many years, with the project as designed being the outcome sought. A cobble beach would be significantly more expensive to construct, and at odds with the community's desires who do not accept that it provides the same level of protection. It is therefore extremely unlikely to get funded. If the bund were set back and new erosion control structures avoided, then two outcomes could result:

1. Ongoing degradation of existing structures along the estuary edge and stranding of these structures in the estuary bed
2. Release of contaminants from the structures and land not owned by Council into the Estuary.

While the need for these structures may not be clear from one perspective, it was not the only driving factor behind the proposal. In this event, the actual impacts need to be assessed, and a response to the questions around impacts are provided elsewhere in this response.

It is worth further noting that many of the retaining structures are not legally in Council land, having been created by reclamation over decades by individual residents. If the revetment as described is not seen as a suitable solution, then we will need to return to this matter and agree a way forward with ECan, LINZ and other parties to determine who is

responsibility these structures and land are. For now, we are attempting to resolve it in a pragmatic manner that is best for all.

We have assumed rationale relating to the gabion baskets is accepted and these are not included in the 'harder' engineered approach.

The assessment is limited in directly assessing the impacts of climate change and sea level rise.

- d. *Please provide an assessment of the proposal on adaptation to changes caused by climate change effects and increased sea levels.*

The draft assessment was provided via email on Tuesday 8 October 2024. ECan have accepted the assessment as drafted. A copy is included as Attachment B, for completeness.

The separation of the coastal inundation hazard as is proposed at South New Brighton Park and the CRC expert considers that a similar approach could be taken for Southshore. The expert sees no justification from a coastal process or hazard perspective why these two hazards need to be linked together as they are along Southshore, particularly when there is land available.

- e. *Please provide justification from a coastal process and hazard perspective why the two hazards need to be linked together as they are along Southshore, particularly when there is land available on which the inundation bund could be constructed. No consideration of alternatives to these proposed works were appropriately considered as part of this application.*

The project scope has been defined in response to community consultation about the impacts of the Canterbury Earthquake Sequence, otherwise known as the 'earthquake legacy'. The 'legacy' relates to a broad range of concerns within the community, including, the consequences of depopulation and land clearance of the red zone. Prior to the earthquakes the edge location and overtopping risks were managed by the property owners along the edge, which provided a benefit to the wider community.

With the land damage and subsequent land clearance the community experienced repeated flooding and saw degradation of the assets along the estuary edge as they were no longer privately maintained. There were concerns raised about land level changes resulting from land clearance and challenges with historic construction of the private edge works.

The project has been formulated to minimise risk of mobilisation of contaminated materials into the estuary, maintain the newly enjoyed open space and reduce the risk of flooding.

From a coastal hazards perspective there are benefits in having the bund built closer to the estuary edge as:

1. The land generally falls away from the edge towards Rockinghorse Road so the bund will be slightly shorter built closer to the edge
2. The existing stormwater assets typically discharge at the road ends with a terminal manhole and outfall. If the bund were to be built landward of the terminal manhole then a new manhole structure would be required to provide for backflow prevention
3. Some minor additional flood storage is provided with the bund alignment at the edge in very extreme events
4. In scenarios of failure of the bund the increased separation distance between the bund and residential properties will reduce the chance of high velocity flows entering the properties.

The cost of realising these benefits is the need for estuary edge work. The estuary edge works also work to reduce wave action against the bund, reducing risk of overtopping.

f. Please provide an assessment on the alternatives to undertaking these works.

The response to Q3(e) provides the context of the project and legacy background along with the rationale for why the proposed options have been selected.

Design process considered a range of alternative options which have been through a thorough optioneering process with others being discounted as they would not achieve an acceptable outcome from environmental, social, economic and cultural reasons.

4. Reclamation Assessment

The applicant claims that 'new estuary habitat' will be created (i.e. declamation) by the landward movement of structures and removal of the existing earthquake- damaged structures in the intertidal area.

We do not consider that the area of declamation should be used to offset the areas of reclamation giving an overall net gain. Further, that these areas of declamation should not be included in the assessment of the overall area to be reclaimed.

a. Please provide an assessment on the above review comment of the proposal; and

Due to technical input required, this question will be addressed as part of the second response.

b. Please provide more detailed information about the existing structures within the project areas with the structures to be removed as proposed.

We assume that this query relates to the existing coastal protection structures. Attachment C supplies further detail, showing the exact extent of each existing edge structure. These plans relate to the 'Edge Structure Inventory' tables on the engineering set of drawings (C01-C08), which list each structure for either retention, encapsulation or removal/disposal.

5. Planning Assessment

The application discusses the re-use of contaminated material associated with the re-use of material that will form part of the proposed inundation bunds.

a. Please provide an assessment against Rules 5.98 – 5.100 for the re-use of contaminated material, associated with the re-use of material that forms part of the proposed bunds.

Please see Attachment D for the LWRP Rule Assessment against Rules 9.98, 5.99 and 5.100.

Additional matters

The following additional matters were emailed on 26 June 2024.

1. Vegetation Removal: Are you able to provide further details regarding the vegetation removal, the AEE is quite light on details. Are you also able to provide a Rule assessment against the relevant rules in the LWRP? I know this under a consent for NES-F but a LWRP assessment has not been included within the AEE.

Vegetation clearance will be required in some locations along the proposed alignment to enable construction of the bund and allow access to working areas. Vegetation to be cleared will generally be grass and small shrubs. Any trees requiring removal are subject to a separate CCC process which has been applied for as part of that Resource Consent. A wildlife permit has been recently issued by DOC, authorising the relocation of species, namely lizards, should this be required as part of the works.

It is unclear on the specific additional details being sought therefore we have done our best to provide anything additional.

It is unclear what set of vegetation clearance rules in the LWRP is referred to in the question above. Rule 5.163 to 5.166 inclusive, relate to vegetation in lake and riverbeds which is not applicable to this proposal. Rules 5.167 to 5.169 relate to earthworks and vegetation clearance in riparian areas which again, is not applicable to the project location. We have assumed the reference is in relation to Rules 5.170 and 5.171 of the LWRP.

Rule 5.170 lists permitted activities. The proposal is not consistent with the permitted activities listed. On this basis, assessment against Rule 5.171 is provided. The restricted discretionary matters listed under Rule 5.171 that are relevant to this proposal would be condition 3 – *“the actual and potential adverse environmental effects on areas of natural character, outstanding natural features or landscapes, areas of significant indigenous vegetation, indigenous biodiversity and significant habitats of indigenous fauna, mahinga kai areas or sites of importance to Tangata Whenua.”*

The actual and potential adverse environmental effects relating to matters set out in Condition 3 of Rule 5.171 have already been address within the application and various technical specialist reports. These matters are well addressed including outlining mitigation measures.

Condition 1, 2, 4, 5 and 6 of Rule 5.171 are not relevant to the proposal.

2. The application includes volumes of material to be excavated for earthworks. Can you please provide the depths of excavation within the CMA and landward of the CMA?

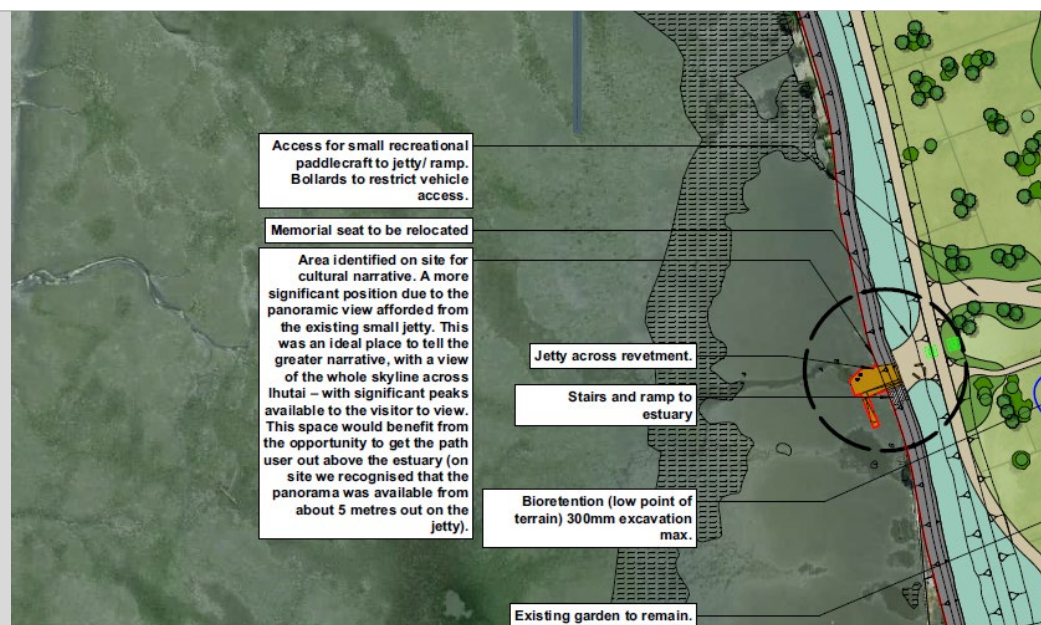
CMA Excavation Depths: design drawings indicate excavation depths in the CMA are consistently around 1 m at the toe. If a depth limitation is to be conditioned, we request some allowance is given to accommodate any areas where excavation may be required slightly deeper than anticipated. Deeper excavation may be required where existing structures prove difficult to remove or are not as expected. An additional 200 mm would be sufficient for this.

Landward excavation depths will be a minimum of 300 mm beneath the bund. Maximum excavation depths below the bund area are difficult to confirm as allowance needs to be provided for soft spots of land to be removed if encountered.

3. Can you please provide details on where the reclamation material will be sourced?

Reclamation material will be quarry run stone (rock revetment / cobble). Due to volume required, supply availability was checked with a local quarry (Oxford) during design development. Their indications were that this material can be provided, however the exact material source will be decided upon by the successful contractor.

4. Can you please provide further details on the boardwalk/viewing platform at Tern Street? The AEE is quite light on details. The below figure is the only one I can find within the application documents:



The boardwalk / viewing platform at Tern Street beyond the rock revetment has been removed from the application and will not be proceeding.

5. Can you please provide further details on the construction-phase stormwater discharge? Is the CCC Global Stormwater consent CRC231955 able to be utilised landward side of CMA?

Yes, global consent CRC231955 can be utilised for construction-phase stormwater.

Construction-phase stormwater will be directed towards the former residential properties and discharged to ground. An Erosion and Sediment Control Plan will be developed by the appointed contractor and provided as part of pre-start requirements to ECan for certification.

6. Written Approvals: Are you able to provide any written approvals for this proposal? I note that there are private landowners, South New Brighton Holiday Park, DOC, Runanga, Te Ihutai Ahu Whenua Trust amongst further potential parties to be consulted.

Written approvals are being actively sought. This process will continue now that confirmation has been provided from ECan regarding the written approval forms to be utilised.

Runanga have delegated mana whenua decision to Te Ihutai Whenua Trust.

Te Ihutai Ahu Whenua Trust	This is being actively progressed. Personnel changes have led to delays in this space.
Department of Conservation	This approval is dependent on Te Ihutai Ahu Whenua Trust.
Pleasant Point Yacht Club	Approval being actively sought.
South New Brighton Holiday Park	Approval being actively sought.

Landowners; specifically: • 44A Rockinghorse Road • 78 Rockinghorse Road • 168A Rockinghorse Road • 172D Rockinghorse Road • 184B Rockinghorse Road	Approval being actively sought.
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We note ECan also issued a s91 letter on 27 March 2024 advising resource consent under the Canterbury Air Regional Plan (CARP) is also required. A separate assessment has been provided to address the CARP matters. This is included as Attachment E.

To reconfirm, a further response will be provided as soon as possible to address the matters under question 2 and 4(a). We will keep you informed of estimated timelines.

We look forward to confirmation this letter and associate attachments have been received at your earliest convenience.

Kind regards,

Jess Bould

Senior Consultant, Environment and Planning

Copy to:

Dave Little

Red Zone Recovery Manager

Christchurch City Council

Attachments

- A Rational Email
- B Southshore Climate Change Assessment
- C Structures, footprint and property boundaries drawings
- D Rule 5.98 to 5.100 assessment
- E s91 Air Discharge Assessment