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| Item 2: Ecological Values                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| <p><b>Question 2(a) &amp; (d):</b> The technical expert states that they disagree with the continued use of the EcIA matrix to determine ecological value and the overall level of effect is not consistent with Policy 11 of the NZCPS. The applicant has proposed the temporary removal and reinstatement of small patches of seagrass or individual plants where excavation cannot be avoided. They have assessed this to result in no loss of seagrass and that the disturbance will be temporary and small in scale. The technical expert states that the excavation and subsequent replanting or transplantation of intact ‘clods’ of seagrass (which includes rhizomes, leaf blades, roots and soil) has had mixed rates of success overseas and in New Zealand (Clark &amp; Berthelsen, 2021). A study in the Avon-Heathcote Estuary/Ihutai by Gibson &amp; Marden (2016; as cited in Clark &amp; Berthelsen, 2021) reported that only 4 out of the 15 clods survived after three months. Furthermore, excavating the clod may cause physical disturbance to the remaining seagrass patch or bed which could potentially inhibit natural regrowth, and make the remaining bed susceptible to disease (Clark &amp; Berthelsen, 2021). Therefore, the technical expert states that it is likely that the removal and reinstatement of small patches of seagrass could result in those seagrass patches dying.</p> <p>The second technical expert adds that they agree with the first technical expert’s response and state that beyond the 20-year timeframe considered by the applicant, NIWA modelling shows there will be a reduction in extent of intertidal habitats and increase in water depth along parts of the estuary adjoining the propose works area. Adverse impacts of sea level rise and coastal squeeze will be high for intertidal estuary habitats (vegetated and unvegetated mudflats/sandflats) and therefore also the bird populations that depend on these habitats for roosting and feeding. These adverse effects are not recognised or acknowledged by the applicant and no mitigation is offered.</p> | <p>The design has responded to the areas where seagrass is close to the existing structures, by locating the revetment further inland in these locations (notably CH900 - 1140 and CH1210 - 1380). The toe of the new revetment will be a minimum of 5m from any seagrass, meaning that impacts will be limited to removal of the existing structures and any soil behind these. In order to avoid disturbance, construction methodology is proposed to require works to be undertaken from the landward side only in these areas.</p> <p>The alternative would be to leave the coastal structures in place, with the revetment constructed behind them. For a number of reasons, including landscape and visual, health and safety and the ongoing risk of contaminated material entering the estuary, this is not our recommended solution.</p> <p>The seagrass is around 4-5m from the coastal structures between CH900 – 1140, but it comes right up to the edge of the structures at CH 1260-1270 and CH 1310-1370.</p> <p>Mitigation is offered in the form of a condition of consent restricting removal of these structures to the landward side only, with an ecologist standover for the sections where the seagrass abuts the walls..</p> <p>The condition is proposed as follows:</p> <p><i>All work associated with the removal of existing structures where seagrass is within 10 m of the structure, will be undertaken in accordance with the following requirements:</i></p> <ul style="list-style-type: none"> <li><i>a) Development of a Seagrass Management Plan, to be prepared and provided to ECan for certification a minimum of 10 working days prior to the commencement of works near seagrass habitats.</i></li> <li><i>b) A detailed methodology for demolition of the structures shall be prepared and provided to ECan for certification 10 working days prior to the commencement of their removal. The methodology shall be developed with the involvement of a Suitably Qualified and Experienced (SQE) Ecologist, to avoid disturbance of seagrass during demolition and removal of the existing structures.</i></li> <li><i>c) A SQE ecologist shall be present during works, in a ‘standover’ capacity, for the works between CH1260-1270 and 1310-1370, where seagrass abuts the structures..</i></li> <li><i>d) Demolition works shall only occur from the landward side. Machinery is not permitted to enter the estuary for the purpose of removing structures.</i></li> <li><i>e) Physical removal of the structures is to be done manually, including removal of footings where possible without disturbance to the seagrass. In areas where footings cannot be removed without disturbance of seagrass, footings below 10 mm of the estuary bed may be left in situ</i></li> </ul> <p>To provide further information on proposed methodology, the Applicant proposes that the ‘land’ behind the structure would first be excavated using a digger from the landward side. The blockwork walls and other structures would then be manually broken out by sledgehammer or similar tool, working from the landward side. Any re-bar would then be ground out at the base once all the blockwork has been removed.</p> <p>Given the need to avoid impacts on the seagrass, there is no possible way to remove the buried footings in these sections however these will be flush or below the surface of the estuary, so will not present a barrier to expansion of the seagrass landward.</p> <p>The scope of this resource consent is for a 20-year period and addressing the earthquake legacy issues. We have been clear in the fact that this application is limited to a 20-year period for specific matters and that there is further engagement with the community about what scenarios occur beyond 20 years.</p> <p>Mitigation is offered in the form of a resource consent condition offered requiring the Applicant to remove structures authorised by this resource consent package at the end of the resource consent duration or alternatively, a new resource consent will be sought if that is the outcome of future engagement. Any future resource consent would likely need to assess this as part of that application, should it be made.</p> |

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| <b>Question 2(b) &amp; (h):</b> The technical expert states that they agree with the NIWA assessment of different SLR predictions on the width of the intertidal area to determine whether activities will affect seagrass beds and contribute to “coastal squeeze”. They agree with the assessment that SLR over the next 20 years is unlikely to impact the seagrass beds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Question resolved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Question 2(c):</b> As per the response to Item 4 below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Refer to response on Item 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Question 2(e):</b> This item has been satisfactorily answered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Question resolved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>Question 2(f):</b> The technical expert states that they accept the explanation of how the cobble material will be removed from the mudflat habitat and reinstated after being dislodged.</p> <p>Providing that the removal of dislodged material is undertaken by hand and no machinery is used, as well as a condition of consent requiring a visual survey to check for dislodged material following storm events, then they would consider that the impacts from dislodged material on benthic fauna and substrate composition to be very low.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Question resolved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>Question 2(g):</b> The s92 further information provided by the applicant states that the estuary is already easily accessed by dogs, people and motorised vehicles and a photograph was included of a person on a motorbike driving through the estuary. The applicant then goes on to say that the new proposed structures will continue to allow easy access even in the absence of stepped facilities. The technical expert states although while they agree that people may still access the estuary by climbing down the proposed structures, these do not encourage people to access the estuary which is what a stepped facility will do. Most of the stepped facilities are near seagrass beds and trampling, dogs, and motorised vehicles which have been shown to damage seagrass beds and macrofaunal assemblages. The technical expert states that the further information provided by the applicant has not changed their original opinion and the photograph provided supports it further.</p> <p>The second technical expert states that the applicant’s response is that there is already a disturbance effect, and this won’t change is disingenuous. The level of disturbance effect can clearly be anticipated to change as a result of proposed works; increased public use and ease of access to the estuary are key project objectives. For example, the installation of access steps and ramps across rock revetments into the estuary are intended to encourage and facilitate public recreational use (including small watercraft such as kite surfers and kayaks) of this sensitive environmental area. Increased recreational access and use resulting from proposed works will disturb and displace sizeable bird populations, including protected species, threatened and at-risk species and taonga species, and will lead to inferior bird feeding and roosting habitat. The expert states, again these adverse effects are not recognised by the applicant (who chose not to seek advice on these matters from their own in-house experts in the CCC Parks team), and no avoidance or mitigation measures are offered.</p> | <p>There are currently around 29 formed access points into the estuary between Ebbitide Street and the southern limit of the project, many of these being ramps. The project as lodged would remove most of these, while creating some new ones at road ends to allow kayaks and paddleboards to be launched. The resultant total would restrict access to 9 points, all of which had steps, so would restrict quad bikes and other motorised vehicles.</p> <p>In light of the concerns raised in this question, we have reviewed the access points against the mapped seagrass locations and propose a condition to further reduce access points to 4, all of which are in areas where the seagrass is around 30-40m out, and will not be affected by the launching of minor water craft.</p> <p>The condition is proposed as follows:</p> <p><i>During Detailed Design, the drawings will be revised to reflect a reduction in access points, with these to be supplied to ECan for review. The access points shall be located at points where the seagrass is a minimum of 30m from the end of the structure and are nominally to be:</i></p> <ul style="list-style-type: none"> <li>• <i>The corner of Ebbitide and Caspian St</i></li> <li>• <i>Chainage 40</i></li> <li>• <i>Chainage 730</i></li> <li>• <i>Chainage 1430</i></li> </ul> <p>It is worth noting that the community have specifically requested access points as part of extensive engagement, and would find ways to launch boats regardless of access points being provided, potentially in a less controlled manner.</p> <p>We would like to bring attention to the conflict this matter brings in relation to another of ECan’s technical specialists, who has indicated cobble beach is a more appropriate structure for this area. Adoption of a cobble beach along the entire length would result in open access (including quad bikes) along the entire alignment. This directly conflicts with the opinion of ECan’s technical specialists for this question. A full-length cobble beach has been deemed inappropriate for a number of other reasons set out under Item 3, below.</p> <p>The Applicant is trying to balance the requests of various technical specialists and honour community feedback.</p> |

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| <b>Item 3: Coastal Processes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| <b>Question 3(a):</b> This question was partially worded incorrectly by referring to the inundation bund and was supposed to refer to the erosion protection works. However, the expert considers the response to this question is appropriate for the question as it is written.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| <p><b>Question 3(c):</b> The assessment provided does not in their opinion include justification or further information from a coastal hazard or processes perspective for the use of the comparatively ‘harder’ rock revetment along Southshore. One reason given for the use of the cobble beach along Southshore was this option “... was selected for areas where local conditions result in lower erosion risk:.</p> <p>In their analysis of the information that has been provided in the application, he believes that up to 11m of erosion of the shoreline between Ebbitide and Plover Streets may potentially occur through to 2050 if 0.2m of relative sea level rise occurs, and up to 5m of erosion of the shoreline from Ebbitide to Plover Streets and see no reason for a coastal hazard and processes perspective why a ‘harder’ rock revetment structure is required for the coastline south of Plover Street where the likelihood and amount of potential future coastal erosion is lower.</p> <p>Furthermore, as a cobble beach has been considered by the applicants to be an appropriate form of erosion protection between the area between Ebbitide and Plover Streets where the risk or likelihood and amount of potential future coastal erosion is comparatively higher, he also sees no reason from a coastal process perspective why a cobble beach built with the proposed materials and to the proposed levels and designs would not provide appropriate protection against coastal erosion for the remainder of the shoreline in this area. The reasons given for the use of the rock revetment along the Southshore included “... <i>areas where there is greater evidence of erosion occurring</i>” and “...<i>is proposed for sections were (sic) 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</i>”. From a brief comparison of historical aerial photos of the area with the Condition Inventory maps shown in Attachment C, he notes that many of the areas that show evidence of erosion area areas which were previously the bed or margins of the estuary, and which were subsequently reclaimed during the development of the Southshore Spit from approximately the 1950s onwards. The erosion of these reclaimed areas since the CES essentially represents a return to a more ‘natural’ shoreline position that he considers is highly likely to have occurred had the reclamation not taken place. He also considers that as almost all of the Southshore coastline south of Ebbitide Street is now free of dwellings, he believes that there is now space for the previously stated calculated amounts of potential future erosion to generally occur without impacting on any adjacent properties or pieces of significant infrastructure or requiring reclamation of further encroachment into the estuary to occur.</p> <p>Many of the reasons and justifications for the protection works stated in this part of the response and which were factored into the proposal design are mainly to do with considerations and factors other than coastal hazards and processes. It is his opinion that if the existing structures were removed and the natural coastal processes were allowed to occur, there is generally space along the Southshore estuary coast for the projected amounts of future coastal erosion to occur over the next 25 years without resulting in significant impacts on any adjacent properties, dwellings, or pieces of significant infrastructure. If erosion protection works are deemed necessary, he also concludes that a cobble beach built to the designed levels and with the proposed materials would be appropriate as coastal protection for the Southshore estuary coast and particularly, for the comparatively lower risk area of coastline south of Plover Street.</p> | <p>The original project Options Report provides more detail on the rationale behind breaking the project into four different erosion control approaches, and why the cobble beach was preferred for ‘Unit 2’ (CH 450-800), while revetment was preferred to ‘Unit 3’ (CH800-1450).</p> <p>The Multi Criteria Assessment (MCA, Appendix J of that report) determined that a cobble beach was the most suitable for Unit 2, however it was rated below revetment for Unit 3, particularly on the design/performance factors. Accordingly, revetment proceeded as the preferred option in this area.</p> <p>Following our post-lodgement discussions, the project team met to update the original MCA and this update is also attached. We have excluded the gabion option from the original MCA as it scored significantly lower and was never seen as suitable to explore. In carrying out this reassessment, we have considered only matters that have changed since the original assessment – ie we have not altered original scoring unless there has been a material change in either the design, or our understanding of the planning environment. For clarity, the following changes have been applied:</p> <ul style="list-style-type: none"><li>• The existing (unconsented) coastal structures have been removed from consideration, this primarily affected the landscape and visual ratings</li><li>• Access to the estuary has been swapped from a positive to a negative (refer question 2g above)</li><li>• Mana whenua approval for the project has been gained, setting this aspect to neutral</li><li>• The ‘cobble beach’ option, which was initially designed and assessed as encapsulating the existing coastal structures and extending out into the estuary (reclamation) has been assumed to be constructed landward instead, with the structures removed.</li></ul> <p>The updated MCA includes notes explaining the rational where ratings have changed, and the result is that revetment is more significantly preferred to cobble beach than it was in the original MCA – mostly due to changes in the ‘social factors’ section.Further to this, and outside of the MCA specifically:</p> <ul style="list-style-type: none"><li>• Providing cobble beach along the entire length would conflict with the previous technical specialist comments relating to the level of access to the estuary and potential impact on ecological values.</li><li>• The cobble beach would require full removal of all coastal structures and some 5500m<sup>3</sup> of soil behind these. Our estimate of costs to remove this material is around \$2m, along with around 11000T of carbon emissions in trucking it to Kate Valley.</li><li>• This would significantly increase construction impacts for the community, truck movements and broader impacts on flora and fauna.</li></ul> <p>Given the lower MCA rating, the increased costs and emissions and the broader impacts, the cobble beach remains a less preferred option and we have sought to close out all other impacts via the other questions.</p> |
| <p><b>Question 3(d):</b> The information provided as Attachment B is considered to be appropriate and relevant, and he generally agrees with the conclusions that have been reached.</p> <p>However, there is one sentence that he is unable to get his head around in the discussion of the amount of sea level rise “<i>For comparison, the p83 low confidence SSP-8.5 figure for 2024 is approximately 0.35 m, representing a low likelihood scenario</i>”. He states that he is unable to recreate this value for the amount of SLR on the Takiwā page pf</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| <p>the NZ SeaRise project website using either of the SSP5-8.5 scenarios at the same site as has been used and is therefore unsure how the value of 0.35m in 2024 was reached.</p> <p>This isn't a big deal overall as the rest of the information contained in the document is useful from both a coastal inundation and coastal erosion perspective, as the amount of relative sea level rise given is also applicable in calculating the potential amounts of erosion over the next 25 years.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p><b>Question 3(e):</b> The response to this question does not provide justification from a coastal process or hazard perspective for the inundation works to be linked together. Many of the reasons given in this response are in his opinion to do with stormwater and flooding issues rather than coastal processes and hazards and which are outside his area of expertise.</p> <p>The height of the inundation bund is proposed to be constructed to a fixed height of 11.5 CDD to provide a continuous level of flood protection to the community, and as mentioned in the response to Q3(c), the location of the inundation bund has been positioned closer to the estuary edge to reduce the impacts of overlook by users of the walkway into the neighbouring properties. These two constraints appear to have determined the position of the inundation bund along Southshore, and the accompanying requirements for protection of the inundation bund also appear to have determined the location and tupe of the erosion protection structures at the estuary edge. If this is the case, then the reasons for linking the two protection structures together are primarily for reasons other than coastal processes or hazards.</p> <p>From a coastal hazard perspective, he sees no reason why the inundation bund and the erosion protection works need to be linked together in this area. If a coastal hazard-based design approach was taken which took into account the calculated potential future amount of coastal erosion shown in the response to Q3(c), he considers that the inundation bund could be located sufficiently further landward than in the current proposed location without requiring the need for the erosion protection works to be installed. In such a scenario, a consistent level of inundation protection would be provided to the community.</p> | <p>See response to 3 c)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p><b>Question 3(f):</b> While he understands the rationale for this project and the reasons for the proposed option being selected, the response to this question does not provide an assessment of alternative options.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>Please refer to the original project MCA attached and the response to Q 3c).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p><b><u>Item 4: Reclamation Assessment</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>The technical ecology expert states they agree with the coastal processes technical advice provided.</p> <p>They add that the NZCPS provides clear direction that effects on seagrass should be avoided (Policy 11a) and where there is land available that no reclamation of the estuary should occur (Policy 10(a)). They state that if reclamation is going to occur, the form and design of the structures should be considered over the climate change predictions of 100 years (Policy 10(2)). It is their opinion that a review of the erosion protection structures design along Southshore should be undertaken, given that technical advice from coastal processes is that the 'harder engineered' structures are not needed to provide erosion protection and that a 'softer' cobble beach is sufficient. A change in design may then avoid the need to reclaim the area of intertidal habitats and excavate the seagrass beds for the toe of the rock wall revetment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>The plans as lodged assumed that declamation of the existing structures and land behind it could be included in the calculations, leading to a 'net positive' area of estuary from the current situation for the project. From discussions with ECan we understand that declamation of unconsented structures is not to be taken into account, and propose design changes and an updated set of reclamation/declamation plans as below.</p> <p>The condition is proposed as follows:</p> <p><i>During Detailed Design, the drawings will be revised to reflect a 'net zero' or better reclamation of the estuary, with these to be supplied to ECan for review. The calculations will exclude any declamation associated to unconsented structures.</i></p> <p>There is 1827 m<sup>2</sup> of reclamation shown on the original submitted drawings. Indicatively, this is how we intend to address this matter and obtain a 'net zero' across the project:</p> <ul style="list-style-type: none"><li>• There is planned 560 m<sup>2</sup> declamation of existing reno mattresses at South New Brighton Park, which are consented and form part of the consented environment. These will remain included.</li><li>• Between CH200 and CH420 of the South New Brighton Park section, there is a cobble beach that was planned to be built out beyond an erosion scarp, resulting in 880 m<sup>2</sup> of reclamation. We intend to pull this back by around 7m and re-route some of the tracks. This will remove the reclamation, turning it instead to approximately 400 m<sup>2</sup> of declamation.</li></ul> <p>■</p> |

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|                                                                                                                                                                                                                                                                                             | This revision to design gives effect to the avoid directive as set out in Policy 10a of the NZCPS, while taking into account that some minor and transitory effects are allowed for within the application of Policy 10a of the NZCPS.                                                                          |
| <p><b><u>Item 10: Construction-phase Stormwater Discharge</u></b></p> <p>As you be utilising the CCC Global CRC231955, we need to see that the potential discharges from this application have been approved by the CCC Stormwater approvals to accept the discharges under the global.</p> | <p>This has been sought. Brian Norton is now away until 2025 and the automatic response from the Stormwater Approvals email is a 5 working day delay with an indication this is likely to be longer over the holiday period.</p> <p>We will continue to seek this approval and provide as soon as possible.</p> |