Outstanding comments, concerns and questions

In November 2020, RSPB Insh Marshes and Cairngorms Connect began a conversation with communities surrounding RSPB Insh Marshes to look at possible options for the future of the floodplain.

The majority of those who answered were in support of the options, apart from option 2b (Naturalising river dynamics – removing the bank protection on the River Tromie) which was only supported by 48% of respondents. None of the options showed a majority of those responding saying that they didn't support the option, however the engagement events generated important conversations around the long-term sustainable management of RSPB Insh Marshes.

This document includes all comments, concerns and questions that we are currently unable to fully answer. A more comprehensive response to these questions will be presented as and when information becomes available.

Comments, concerns and questions raised	Response
• I am not sure about the proposal's possible effects on the flood risks of Lynchat and the Railway • I remain unconvinced that the removal of the embankment in compartments marked L and M referred to under Option 4b Removal at Lynchat and shown in Figure 4-5: Option 4b will have anything other than a detrimental effect on Lynchat. The existing embankment helps maintain the course and direction, within reason, of the river flow following periods of heavy rain when water levels rise. To remove this embankment will, as shown in the RSPB diagrams and references, result in water dispersing into area L and M which has already been identified in the report as having a flood depth of >1m, one of the highest levels within Insh Marshes. This is the area into which the Raitts burn flows, and which has been identified in the study as a potential problem. • There's likely to be a few problems you'll exacerbate by 'freeing up' the river in the environs of Lynchat. A few houses there are very low lying and stand alongside the old A9 which are prone to inundation. Also, there's a single house next to the railway line at Balavil Burn that's likely to be affected too. (Interestingly, the Lynchat and Balavil Burn properties were both built during the Victorian Era when the drainage engineers of the time were most active.) Not sure how you'd solve	A high-level flood risk assessment was undertaken as part of the 2016 feasibility study to help understand the changes to flooding at Potentially Vulnerable Receptors (PVRs) surrounding and downstream Insh Marshes. The PVRs included properties at Lynchat and the Highland Mainline railway. The modelling results for option 4b, embankment removal at Lynchat, showed the following changes: In flood events that occur 3 and 5 times a year (3 and 5 Peaks Over Threshold (POT) events), there is predicted to be an increase in the frequency and extent of flooding south of the railway line. However, these events will be of a shorter duration than those experienced at present. In addition, many of these more frequent flood events do not currently and will not reach a level close to Lynchat village in the future. In more extreme events, such as a 1 in 200-year flood event, the modelling shows that water will extend beyond the railway and north towards Lynchat, affecting the road and properties. With embankment removal and climate change, these floods will be no worse than current conditions; in fact, the removal of embankments at Lynchat causes a marginal improvement. For these more significant events that would approach Lynchat, the flood levels will not only be lower, but the water levels will also recede quicker.

the likely increased flooding issues in these instances. I guess the main London – Inverness Railway line may also suffer if the Spey is returned to its natural state. Some clever engineering may be required in all of the above cases • It is well documented that global warming will contribute to increased rainfall in the future. If this is the case then this particular area will flood more regularly contributing to increased saturation of the ground which, as a consequence, will raise the water table in the immediate surrounding area. When the Raitts Burn and the River Tromie are in spate the increased volume of water will flow into an already flooded and saturated area if the embankments are removed; this will only exacerbate the problem for Lynchat and result in flash flooding.	Increased benefits could also be delivered by the restoration of the Raitts Burn south of the railway, which will allow more flow to continue down the burn, rather than ponding above the road and railway, and spreading west towards Lynchat and east towards the house next to the railway line. As recent events have demonstrated, the railway is already at risk of disruption due to flood risk. The works to the Raitts Burn would directly reduce this flood risk to the railway line. Further work to develop the detail of the flood model around Lynchat is planned once the design work for the project has been completed. The flood modelling will use the latest available climate change information. We will share the finding from this work with the community in due course.
• Concerned about the implications of flooding at Kincraig in the future • Concerns that extreme, but possible, flooding at Kincraig poses risks to people and infrastructure. Such floods, increased by climate change, can result from simultaneous flooding on the Spey and Feshie. Reference was made to Kincraig Bridge, the B road from Kincraig post box to the Speyside Way, residental properties becoming flooded or residents marooned, the Shinty pitch, the rail and road network and associated travel links, and the impact on businesses from interrupted transport networks. • Concerns that access and properties at Coull maybe impacted • Need more info on impact of residential dwelling affected (possibly). • More detailed hydrological information if the River Tromie is to be affected	A high-level flood risk assessment was undertaken as part of the 2016 feasibility study to help understand the changes to flooding at Potentially Vulnerable Receptors (PVRs) surrounding and downstream of Insh Marshes. The assessment work results concluded that the floodplain's hydrology is large and complex. Given the complexity of how and where water is stored on the floodplain or conveyed downstream, care must be taken when implementing options, as improving flood risk in one area can have a negative impact elsewhere. Consequently, RSPB has discounted options that have a significant negative impact for flood risk at receptors surrounding or downstream of the reserve. We will undertake a more detailed flood risk assessment, where necessary, as we develop the detailed design work for the options. The model will focus the detail around any PVRs and assess the potential changes to flood risk as outlined in SEPA's planning guidance. We will update the community when the results of further modelling work are available.
• The present consultation process is not meaningful, because the Feasibility Study does not allow for 50% increase (not stated what this 50% is relative to) above 0.05% AED, and does not include the recurring flooding from the River Feshie that exacerbates flooding from the Spey. • The options do not increase flood protection for Loch Insh, Kincraig, and downstream, from the worst floods	The primary objective of the feasibility study and options appraisal was to identify and assess the options to restore and reconnect the river and floodplain where the historical modifications negatively impact the site morphology, hydrology and ecology. Designing a flood alleviation scheme was not a driver for the study, however, the options present opportunities for natural flood management by slowing the flow of floodwater as it passes through the floodplain and

we have seen so far, and not at all for wetter winters we expect from climate change. • Meaningful modelling and consultation would consider a 50% increase in the 1 in 200-year floods, resulting from climate change and including simultaneous flooding from the Spey and Feshie. • Climate change predications of higher rainfall this is extremely important to address.	providing more space for water upstream that will benefit some areas downstream of the options. Connecting the river back to the floodplain will allow water to spread out and lower water levels compared to conditions with embankments. The more considerable benefits at Kincraig will be observed for flood flows currently constrained by the embankments and do not spread out onto the Insh Marshes floodplain to any great extent. As flows become more extreme, such as the 1 in 200-year event, much of the floodplain becomes active, and the differences become more negligible. It must be noted that a 1 in 200 year return period flood is a very rare event and is used for planning purposes only. SEPA guidance has been further revised to recommend a 34% uplift to account for climate change. This figure is different from the 20% used in the original feasibility study, and it has been further revised since 50% stated at Community Engagement events. We committed to re-modelling the options at the engagement as design details are further developed. This work will look in closer detail at potentially vulnerable flood risk areas and use SEPAs latest guidance on climate change to ensure communities have the most up to date information before options that impact flood risk are implemented. We will update the community when the results of further modelling work are available.
• Mentioned issues specifically surrounding the River Feshie and the management of that area in regard to the impact it has on flooding. • We would be keen to put forward the case that any alterations to the manmade channelling of the Spey and rewilding of the Spey and its tributaries in general, must also consider the tributary with the greatest impact on flood events around Loch Insh and through Insh Marshes; the Feshie delta. • We can also see that other landowners would be potentially significantly worse affected, through lost grazing land or indeed the risk of property flooding, such as at Lynchat, but as we do not have any ownership interests in these lands I feel it more appropriate to simply register our support and sympathies for these individuals and the potential adverse impact these plans could have on their interests. We would suggest by way of compromise, that one way to mitigate any negative impact the removal of flood defences in the Insh Marshes might have on other proprietors interests, would be to give some guarantees to try and ensure the principal channel	One subject that reoccurred in the responses was the Feshie River and its dynamic nature. We have listened to the Community's concerns and have passed the questions to our Cairngorms Connect partner, Forestry and Land Scotland, who own land at the confluence, for their consideration. We will provide an updated response in due course.

and indeed flow of the Feshie as it joins the Spey at Spey bank will continue to follow the stream it currently occupies entering as it does now in a North Easterly direction. • We would very much like this Feshie delta and its impacts, to be similarly considered in your modelling, as by making some interventions to the west bank of the Feshie delta to the North East of Invereshie Farmhouse to ensure in peak flood the vast majority of waters from the Feshie flow North & North East, we could go a long way towards guaranteeing the peak water levels of any flood would not represent any adverse risk beyond the peak water levels currently experienced. • Not mentioned is the need to solve the problems arising from the Feshie confluence with the Spey • There were questions and comments at the pop-up shop and during the guided walk on land management and embankment maintenance on the lower river Feshie and how that influences the flooding in the area.	
• The A9 will encroach into the functional floodplain both during construction and operational phases, with disturbance and damage to the river banks and bed, changing the flow of water in the River Spey and the movement of sediments through the catchment area of Insh Marshes. All have the potential to affect the risk of flooding. • The situation may get even worse when work is completed on the new dual carriageway section to the north of the village where more road drains will be installed.	We understand concerns about the cumulative impacts of the A9. The information available from Transport Scotland indicates: "the predicted change in flood level downstream of the new A9 bridge is generally less than 5mm in the absence of mitigation "1. We will continue to work with Transport Scotland and their hydrology team to understand the cumulative impacts as and when further information and design refinement is undertaken. 1. https://www.transport.gov.scot/publication/exhibition-materials-public-drop-ins-april-2018-crubenmore-to-kincraig-a9-dualling/
• Concerns over the removal of man-made levees, which have been part of our landscape for the past 200+ years. • I would simply request that in leaving as much of the embankments as possible for their historical importance whilst appreciating the desire to remove significant parts of them to permit the floods and flow through the marsh. • Concerns over landscape impacts - Reconnecting the river and floodplain through Embankment Removal 'Option 1 & 2', if done aggressively and unsympathetically to the historical narrative of how these embankments came to be in the first place would, we feel, detract from an important narrative of where this place sits in Scottish and British history	The embankments are primarily constructed of alluvial material, such as sand, or more rarely, river stone. As such, they are prone to erosion and are easily breached by the river. Therefore, without intervention, it is likely that we will see a continued decline of these structures. Not all embankments will be removed; significant areas will be retained as removing 16km of material will not be feasible. Where we propose to remove embankments, we will create a record and document the current condition, extent, and construction details through maps and photography. We are working with the RSPB in house archaeologist to assess the cultural and historical importance of the old agricultural embankments; more information will be available in due course.

• Comments about the embankments as part of the area's cultural history	
• Riparian Woodland, including to provide ongoing supply of debris	We think creating riparian woodland would be a great addition to the floodplain restoration options at Insh Marshes, both in creating a long-term supply of deadwood but also shading the river to help reduce the impact of climate change. We will be looking for opportunities to develop additional riparian woodland as part of the project, either by riparian planting or excluding livestock to allow natural regeneration. We will update the Community as plans develop.
• They have the potential to provide important habitats for bio-diversity, although I fear that the RSPB management focuses on too narrow range of flora and fauna.	The project focuses on restoring ecosystem processes benefiting a wide range of species including: river shingle invertebrates such as the five-spot lady bird and northern silver stiletto fly, fish species, including Atlantic salmon, and trout, and vascular plants, such as string sedge and least yellow water lily. A range of other species including otter, freshwater pearl mussel and a wide range of bird species, will also benefit.
• Concerns over sediment deposition is changing in the Loch which is resulting in the loch infilling and increasing flooding	We are aware of the issue and will be discussing it further with various stakeholders during Autumn 2022.
• Questions about impacts to sewage systems and dilution of wastewater discharges. • Information of locations of boreholes and questions about impacts on these. • Questions on the impact of raising ground water and how this may impact low lying local properties.	The location of boreholes, private sewage systems and wastewater discharges have been noted on the project constraints map. The impact on the infrastructure will be considered as projects are taken forward during the design work. Projected impacts on groundwater will be more significant in lower-lying areas and closer to the river, which will be further away from properties and boreholes.