



Our ref: 1776
Your ref: 21/00144/FULL

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SEPA email contact:
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By email only to: planning@clacks.gov.uk

Dear Grant,

**Town and Country Planning (Scotland) Acts
Planning Application reference: 21/00144/FULL
Residential Development Of 275 Houses With Associated Infrastructure Including Roads,
Footpaths, Landscaping, Drainage, Open Space And Associated Works
Land North And South Of A91 To The West Of Alva, Alva, Clackmannanshire**

Thank you for your consultation email which SEPA received on 8 October 2021.

Unfortunately, we **object in principle** to this proposal, and recommend that planning permission should be refused, because the proposed development is expected to put people or property at risk of flooding which is contrary to the flood risk principles of Scottish Planning Policy (SPP). Please note the details and advice provided below. We would be happy to review any future alternative application if forthcoming.

In the event that the planning authority proposes to grant planning permission contrary to this advice on flood risk, the Town and Country Planning (Notification of Applications) (Scotland) Direction 2009 provides criteria for the referral to the Scottish Ministers of such cases. You may therefore wish to consider if this proposal falls within the scope of this Direction.



Chairman
Bob Downes
Chief Executive
Terry A'Hearn

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Advice for the Planning Authority

1. Flood risk

Introduction

- 1.1 We reviewed the first Flood Risk Assessment (FRA) and advised of elements we required to be amended and re-run. We also made a couple of recommendations which would assist the Council. We are satisfied that higher design flows have now been used in line with our own analysis. We note however that one of the recommendations (i.e. running the model as if the access tracks were not there) has not been undertaken. We had hoped this recommendation would be acknowledged and carried out and we believe that the Council would also wish to see this modelling.
- 1.2 Note that in both in the 2015 and 2019 LDP consultations, we recommended that a FRA is required for this Greenfield allocation. Such advice does not mean that the site is definitely viable but advises that an FRA will be required to inform whether all of it, none of it (or only part of it) is developable.
- 1.3 We also note that the Council Local Development Plan Flooding Policy (Policy EA9) states: 'planning permission is normally not given for development on Greenfield sites' and that 'mitigation is acceptable on Brownfield sites only (along with meeting all other criteria listed).'
- 1.4 The flood risk principle of paragraph 255 of Scottish Planning Policy promotes a precautionary approach to flood risk and flood avoidance. Paragraph 256 further states "the planning system should prevent development which would have a significant probability of being affected by flooding or would increase the probability of flooding elsewhere. Piecemeal reduction of the functional floodplain should be avoided given the cumulative effects of reducing storage capacity".

Past Flooding

- 1.5 There is a notable history of flooding on this site (both the northern and southern parts) which we alluded to in our previous response. The Council flood protection team hold photographs of recent events in Aug 2020 and Dec 2020.

Design Hydrology

- 1.6 Design flows used for the Balquharn Burn and the Unnamed Burn are slightly lower than we requested to be run but are within an acceptable margin.
- 1.7 The application of 40% uplift to the flows used seem to be in error for the Unnamed Burn, i.e. the 200-yr flow (1.36 cumecs) is increased by 40% to 1.89 cumecs. For correctness, we advise that this higher value should actually be 1.904 cumecs.

Modelling of the Balquharn Burn

- 1.8 Modelling of the Balquharn Burn has now included blockage scenarios (as requested) which show that at least a third of the southern site is functional floodplain.
- 1.9 Interestingly the 200-year + CC (40%) is also showing the same flood extent as the A91 blockage scenario.
- 1.10 However, we consider the extent of flooding could be greater because the velocities shown in the output tables are unrealistically high (e.g., > 4 and 5 m/s). Higher velocities result in lower water levels and less inundation. Flood velocities in larger and steeper rivers rarely get above 3.5 m/s. As the Hydrometric Authority, we know this to be true from years of undertaking flood gaugings, where velocity is directly measured.
- 1.11 The reach modelled here is the natural alluvial fan, where velocities will drop off compared to the higher and steeper upstream section where the burn is contained within the Ochil Hills.
- 1.12 We therefore believe that the extent of inundation (the extent of the functional floodplain) to the southern section (and possibly to the northern section) is greater from the Balquharn Burn than shown.
- 1.13 We are also of the view that this would also be shown to be the case were the dirt track/ access roads removed from the analysis (as recommended) given that they are acting as informal flood barriers to both parts of the site.
- 1.14 Finally, we note that water is shown to flow onto the access tracks similar to it being shown to flow onto the A91 itself. However, despite this, it is not shown where this water goes and how it may affect the site. Note that the A91 slopes downhill towards Alva and any flood water getting on to the road at the culvert, will flow east towards the village and could also perhaps affect either or both the northern and southern sites, given the A91 is raised.

Modelling of the Unnamed Burn

- 1.15 A large part of the northern half of the site is functional floodplain. That is not in dispute and was clearly shown in the original FRA.
- 1.16 The proposal here is to mitigate this risk (in order to facilitate residential development) via de-culverting and the construction of a flood detention basin.

- 1.17 It is proposed from the modelling presented that this basin could alleviate flood risk for both the new proposed houses and the nearby existing homes, which have suffered flooding in the past.
- 1.18 This detention basin however requires significant engineering and is de facto a flood protection scheme.
- 1.19 We are aware that Clackmannanshire Council cannot adopt such structures and will only approve 'passive' mitigation measures. Therefore, a serious question remains over the long-term ownership and ongoing maintenance of this 'informal' flood basin, which is acting like a reservoir (i.e., ponding water above ground level). Storing water in this way creates an entirely different sort of flood risk.
- 1.20 Even if this structure was being promoted via the Flood Act by the Council (which it is not) it would still not adhere to our SEPA position and guidance on defended development, i.e., as proposed, the basin will only attenuate the 200-year event, whilst the design needs to be 200-year + 20% for Highly Vulnerable Uses like dwelling houses.
- 1.21 Moreover, SEPA cannot support new development (especially on Greenfield sites) that require new flood defences (whether formal or informal) unless they were formal defences that were part of carefully planned measures within a current flood risk management plan. That is not the case here. SPP, paragraph 263 states: "...medium to high risk...may be suitable for... residential, institutional, commercial and industrial development within built-up areas provided flood protection measures to the appropriate standard already exist and are maintained, are under construction, or are a planned measure in a current flood risk management plan".
- 1.22 Therefore, any perception of benefit to the existing houses at risk is not credible as the vehicle for delivering this (i.e., the flood basin) is not acceptable – it is not a formal flood defence constituted under the appropriate legislation; it does not meet SEPA's technical requirements and is not something that Clackmannanshire Council are prepared to adopt and maintain.
- 1.23 Indeed, over the long term, such an informal structure will only serve to increase the flood risk to the nearby existing homes, e.g., should the structure fail, the onset of flooding will be starting from a higher elevation than normal. Consequently, flooding will be more rapid and will extend further, likely causing greater damage. At present flooding of the existing homes starts from the ground up in a slower and more quiescent way. Paragraph 256 of SPP states: "... To achieve this the planning system should prevent development which would have a significant probability of being affected by flooding or would increase the probability of flooding elsewhere".

- 1.24 Overtopping under a Climate Change scenario is shown in Appendix A, and such a process could also lead to collapse of the basin embankment (similar to an earth-dam reservoir failure) where inundation of the existing homes would be even more significant.

Groundwater

- 1.25 Groundwater flood risk is not something that SEPA can object on, but we can provide advice.
- 1.26 There appears to be a real dearth of data to demonstrate exactly what the groundwater levels and groundwater flood risk here may be.
- 1.27 Historically, we believe that issues do exist, especially given the proximity to the River Devon, where lateral transition of fluvial river water leads to groundwater issues nearby – this is common in many similar floodplain areas of Scotland.
- 1.28 We note that the FRA proposes (on page 21) that the land simply be raised by 1.0m. We advise that such capping over may simply push the groundwater elsewhere and may increase flood risk to the existing homes adjacent to the southern half of the site.
- 1.29 Part of the site this proposal applies to is shown to be functional floodplain, so landraising would be unacceptable anyway (i.e., not an exception under SPP and no opportunity for compensatory storage).
- 1.30 For completeness, note that any landraising would have to be outwith any area of functional floodplain and would also necessitate appropriate waste license agreements with SEPA.

Concluding Remarks

- 1.31 The proposal as it stands is contrary to both SPP and SEPA guidance. Our advice to the Planning Authority is that it cannot be supported and indeed goes against their own policies and positions. Any development on this site would require the avoidance principle to be adhered to, whereby homes are located in areas clearly out with the functional floodplain, as the mitigation proposed is not acceptable. We would be happy to review any future alternative application if forthcoming.

2. Regulatory requirements

- 2.1 Details of regulatory requirements and good practice advice for the applicant can be found on the [Regulations section](#) of our website or by contacting waterpermitting@sepa.org.uk or wastepermitting@sepa.org.uk.

If you have any queries relating to this letter, please contact me by email at planning.se@sepa.org.uk.

Yours sincerely

Silvia Cagnoni
Senior Planning Officer
Planning Service

ECOPY
Grant Baxter – Clackmannanshire Council – gbaxter@clacks.gov.uk

Disclaimer

This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this time. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning or similar application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application or similar application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. For planning applications, if you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found on our [website planning pages](#)