

28 November 2022
Job No: 1089496.0000

Selwyn District Council
PO Box 90
Rolleston 7643

Attention: Emma Robertson and Justine Ashley

Dear Emma and Justine

461 Drain Road Doyleston: Comment on flood assessment

1 Introduction

Selwyn District Council (SDC) has engaged Tonkin and Taylor Ltd (T+T) to review certain aspects of information on surface water flooding prepared by Eliot Sinclair (ES) that has been provided in support of a Plan Change Submission (PCS) to the Selwyn District Plan. The PCS is to rezone 8.85 ha of land at 461 Drain Road Doyleston to enable residential subdivision.

The T+T scope of work comprises preparation of this letter setting out our expert opinion, based on information provided to us, as to the following:

- i Comment on the assessment outlined in the ES report as relates to the potential for surface water flooding pre and post development taking account of follow up communications with ES.
- ii Based on the ES report comment on the appropriateness of the land to be re-zoned with respect to surface water flooding taking account of follow up communications with ES.

Our assessment of the ES report is outlined in our 19 September 2022 report titled “461 Drain Road Doyleston, Comment on flood assessment”, our reference 1089496. Our 19 September report indicated that the ES report contained a number of information gaps and/or uncertainties. Therefore, clarification from ES of the information gaps and/or uncertainties was necessary for more specific comment to be made on the appropriateness of the land to be re-zoned regarding surface water flooding.

2 Further comments

Further to our 19 September 2022 report we offer the following additional comments that should be read in conjunction with our prior report:

- i We provided ES a copy of our report and their email from Cameron Mars of 18 October 2022 previously copied to you, provided their clarification on the points raised in the report. In summary, they acknowledge the points we had raised and confirm site specific modelling is required to understand potential flooding issues further. ES propose that these assessments

are undertaken at a subsequent project stage. We understand that this approach is consistent with SDC's view as outlined by Murray England. ES state that their work to inform the plan change process is suitable for a preliminary assessment of flooding impact at the site. We agree in principle with this view.

- ii Harrison Grierson have recently queried the potential for flooding just upstream and downstream of the proposed development. These issues were covered at ix. and x. of our 19 September report and those comments remain valid. We agree in principle that these matters could be issues. The actual extent can only be assessed further by further modelling and design. Further assessment cannot be undertaken of the ES work provided to T+T thus far. ES have noted that downstream channel upgrades can be implemented as a potential mitigation if required. Also, the channel capacity through the proposed PCS can be enhanced to mitigate the potential for upstream flooding. Another relevant factor influencing the potential for increased runoff from the development and/or the level of attenuation is the relative split of land for stormwater management and residential lots. At this stage, based on what we have seen, there are reasonable grounds to indicate that these issues can be managed, albeit subject to what is proposed at subsequent stages.
- iii Harrison Grierson have recently queried potential access to the PCS from Drain Road. We understand that the access points would need to cross an existing open channel. In principle vehicle access could be achieved if the crossings are properly engineered to provide adequate structural and hydraulic capacity to ensure an appropriate level of access and to avoid flooding. This would likely add quite a lot of cost if multiple crossings were required. If crossings were not properly engineered local flooding issues is one likely consequence.

3 Conclusion

We consider that some areas within the site at 461 Drain Road are likely suitable for urban development given the surface water issues we have considered. We also consider that aspects of the land encompassed within the PCS site at 461 Drain Road are not suitable for urban development in its present form having regard to the potential for inundation.

A likely outcome is that some of the site may be able to be developed for residential lots albeit that the relative portion of residential lots to stormwater basin is not clear and will depend on factors such as:

- What flooding can be accommodated in the domain.
- Leeston Road stormwater crossing.
- Downstream flooding.

At this stage there are reasonable grounds to indicate that the split on residential development and stormwater management areas could be like the present concept prepared by ES. If design work is to be progressed further, it is important that an appropriate stormwater model is developed taking proper account of the critical event, proposed finished ground levels, tail water conditions and existing/upgraded/new culverts and/or channels to confirm areas of the site to be developed. We suggest that this work informs an application for subdivision consent if it is not required by SDC to inform the PCS. We understand that the approach to undertake the further work at subsequent stages is consistent with SDC's view as outlined by Murray England.

4 Applicability

The sole purpose of this report and the associated services performed by Tonkin & Taylor Limited (T+T) is to undertake a limited review of, and comment on, the reports prepared by ES as listed in our 19 September 2022 report, together with related discussions (the Reports) in accordance with the scope of services set out in the Contract between SDC and T+T. That scope of services, as

described in this letter, was developed with SDC. No calculations and/or models have been checked by T+T as this is outside the scope of the agreed service.

T+T's review was a form of peer review, undertaken on a level-of-effort basis, to provide comment to assist SDC in its decision making in relation to the PCS. The responsibility for the Reports remains fully with ES and T+T's review does not constitute a means by which that responsibility can be passed on to T+T.

This letter has been prepared on behalf of, and for the exclusive use of SDC, and is subject to, and issued in accordance with, the provisions of the contract between T+T and SDC. T+T accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

Tonkin & Taylor Ltd

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