



## Memorandum

To	Tabitha Manderson
Copy	
From	Jack McConchie (Technical Principal (Hydrology))
Office	Wellington
Date	1 October 2021
File/Ref	
Subject	<b>Soul Friends Pet Crematorium</b> - Impact of proposed development on flooding

### Background

The applicant is proposing to develop the Soul Friends Pet Crematorium at 94 Mulgrave Street, Ashhurst. This property has been identified by Horizons Regional Council (Horizons) as potentially affected by flooding from overbank flows from a local tributary to the Manawatū River during a 0.5% AEP (200-year ARI) flood event (Figure 1 & attached site plan). The area is not affected by flooding from the Manawatū River as it is adjacent to a recently upgraded stopbank. It is noted that the 0.5% AEP (200-year ARI) flood event is a very extreme design event. Consequently, any flooding during smaller and more frequent events will be significantly less than indicated on Figure 1 and discussed in this memorandum.

The proposed crematorium is to be located towards the north-western end of the property (Figure 2) where the maximum depth of flooding is shown to be 0.5m; although much of this area is flooded to a depth of less than 0.2m (Figure 1 & attached site plan ).

Any effect of the proposed development on the existing flood hazard will only occur where the development raises the ground level and therefore displaces any flood water. Consequently, it is only the proposed building that may have any effect on the flood hazard.

The proposed crematorium will have a footprint of 27m by 15m, or an area of 405m<sup>2</sup>. Since the applicant's property is 4ha, the proposed building will cover only about 1% of the property.

Assuming that the entire footprint floods to a depth of 0.5m, which is very conservative as shown by Figure 1, the proposed building might displace a maximum of 203m<sup>3</sup> of flood water. If this water was redistributed across the applicant's property, and assuming there is no increase in the lateral extent of flooding, this could increase the depth of flooding on the applicant's property by a maximum of 5mm i.e. a 1% increase in the depth of flooding.

The actual increase in flooding, however, will be less than this because there would also be a slight increase in the lateral extent of flooding to the east of the proposed building; but still on the applicant's property. This would reduce any potential increase in the depth of flooding such that, in my opinion, it would be 'less than minor'. Any change would certainly not be able to be

measured. Again, it must be stressed that this increase in the depth of flooding would only occur during a very large design flood event (i.e. 0.5% AEP).

In my opinion therefore, I believe that the proposed development will have a 'less than minor' effect on the existing flood hazard in this area. There will be no effects outside of the applicant's property.

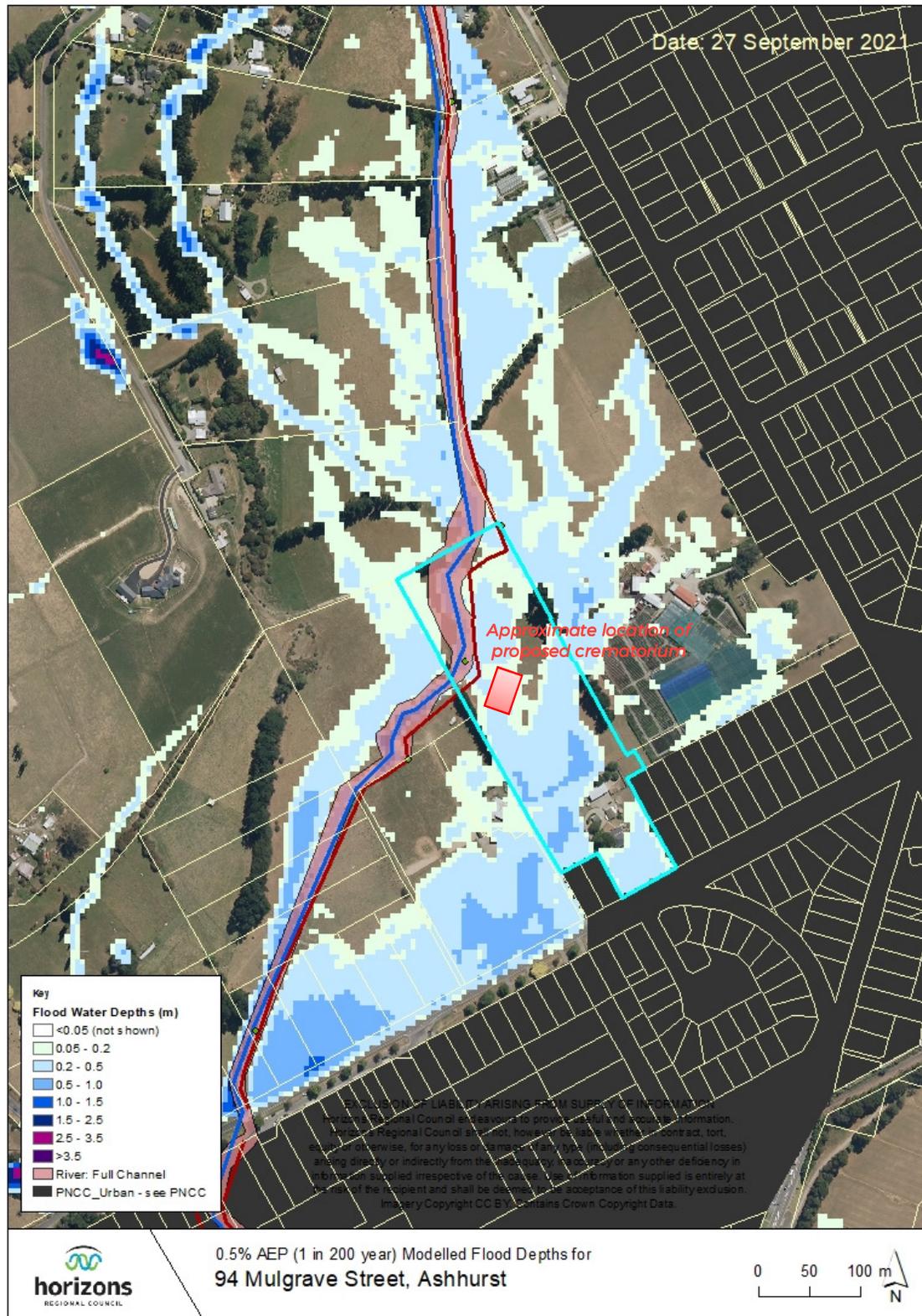


Figure 1: Depth of inundation during a 0.5% AEP (200-year ARI) flood event.

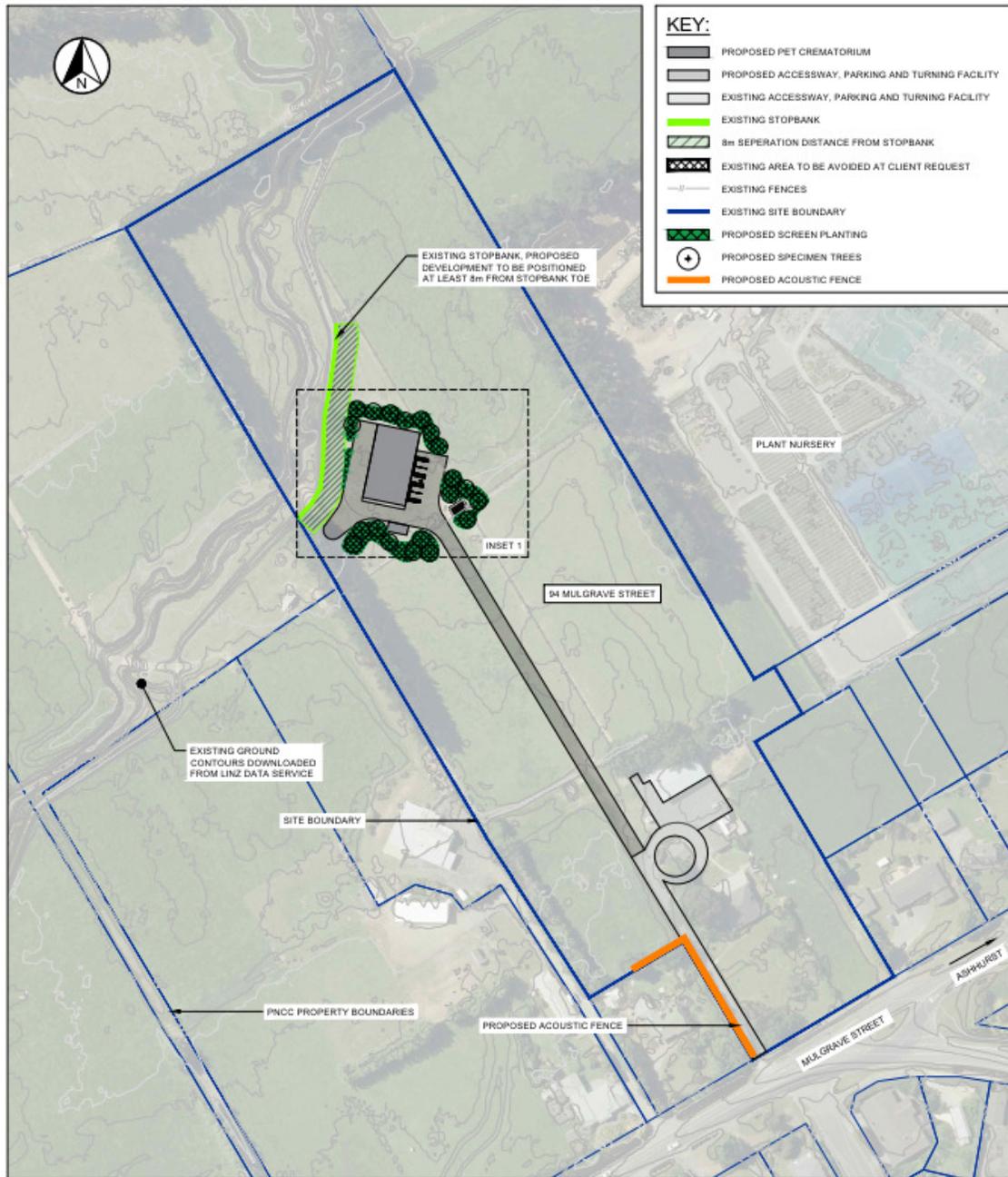


Figure 2: Location of the proposed development on the applicant's property.