

Pinehaven

Flood Model Re-run Scope

The Pinehaven flood model will be re-run as follows:

1. The “with project” model should include:
 - a. The removal/addition/replacement of local access bridges proposed (as described in 25 March 2020 letter to the Councils);
 - b. Bank works at 54 and 56 Whitemans Road (if proposed);
 - c. Culvert roughness of $n=0.020$;
 - d. Climate change allowance of 20% increase in extreme rainfall events;
 - e. 20% blockage;
 - f. No allowance for freeboard. i.e. the reported results are the modelled water levels and flood extents, and dynamic freeboard has not been applied

2. The “without project” model should include:
 - a. No physical works or changes to the stream environment;
 - b. Culvert roughness values from the FMP model;
 - c. Climate change allowance of 20% increase in extreme rainfall event;
 - d. 20% blockage;
 - e. No allowance for freeboard.

3. The “with project” and “without project” models should both be run for the:
 - a. 1:10 year ARI event; and
 - b. 1:25 year ARI event; and
 - c. 1:100 year ARI event.

Output from the Flood Model re-run:

As per the email from James Beban dated 15 April 2020, the output from the Flood Model re-run will be as follows:

4. An updated flood hazard assessment which:
 - a. Describes the changes to the flood model, including how the removal, addition, or replacement of local access bridges is undertaken as this is a change in modelling approach reflecting the property-scale (rather than catchment-wide) nature of this use of the Pinehaven model.
 - b. Addresses the effects of the changes to the flood model (including maps showing flood levels and extents and assessment of the level of effects on all properties where there is an increase or decrease in flood level/extent) for the 1:25 year and 1:100 year ARI events. Where there is an increase in flood water depths, clarification on where on the properties this flooding occurs. If the increased in flood depths occurs around any respective dwelling, then property floor levels relative to flood depths should be provided to allow for the impacts on these dwellings to be determined.

Provision of the information described in 1 to 4 above, will provide the basis to be able to provide clarification to the following enquiries.

5. Confirmation on where the increased flood depths on 9 Birch Grove and 7 Pinehaven Road are occurring (for example, in the river channel or on the property) in the 1:100 year event and whether these increased depths affect the dwellings on these properties. If so, what are the resulting effects on the dwellings?
6. Clarification on where the increased flood depths on 54 and 56 Whitemans Road are occurring in the 1:100 year event and whether these increased depths affect the dwellings on these properties. Clarify what works at the top of these banks is occurring to protect these properties as reference in the flood hazard assessment. Will these have downstream effects? Do these require resource consent? Should they be included in the flood model?
7. If the modelling indicates increased flooding occurring on any other properties, the extent and depth of flooding will be reported, as will whether these increased depths affect the dwellings on these properties.
8. Present the 1:100 year flood information in the same table format as is the case for the 1:25 year event, namely flood levels. This allows for comparison between the events to be made. It would also allow for some explanation on what the increased flood depths occurring in the 1:100 year flood event are acceptable.
9. Comment on the results of the 1:10 year (including climate change) flood modelling in comparison to observed flooding resulting from the December 2019 flood event.
10. Confirmation on whether any discussions have occurred with the owners of 9 Birch Grove or 7 Pinehaven Road regarding their increased flood depths and what their comments were.