

# Memo - 31 Ngongotaha road - Floodplain Mitigation

To: Campbell Brown Planning From: Mckenzie and Co Consultants

Cc: Watchman Capital

Date: 13/03/23

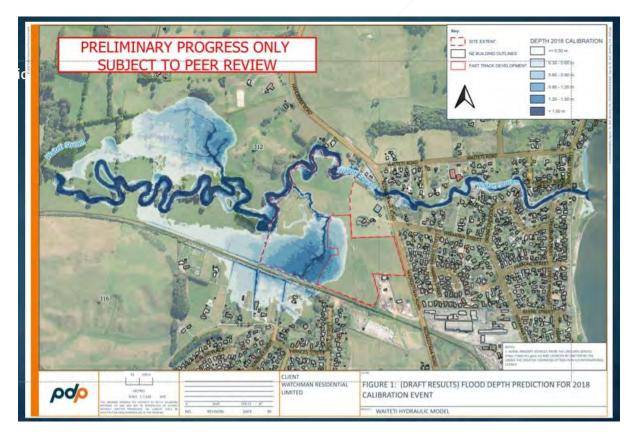
Re: 31 Ngongotaha Road, Floodplain Mitigation

To whom it may concern,

The below text clarifies the approach towards the proposed stormwater and flooding constraints/mitigation in relation to the stage 1 fast track application at 31 Ngongotaha Road, Ngongotaha.

#### Background.

The site has a known flood plain across parts of the site. The below image identifies the 1 in 100 year flood plain. As shown a portion of the stage 1 fast track application sits within the flood plain. It is important to note that a large parge of the stage 1 development area is located outside the Flood Plain



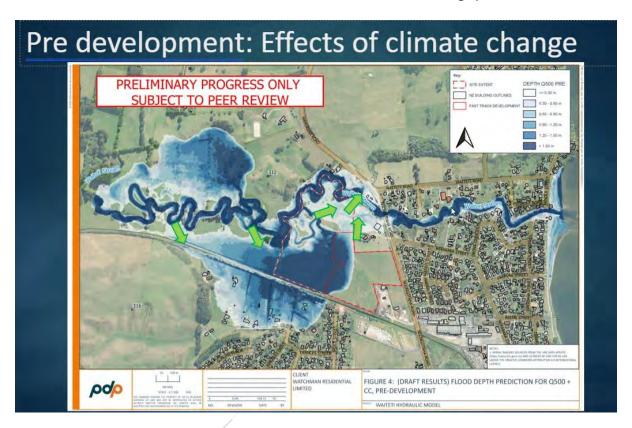
## **Proposal**

As part of the fast track application, it is proposed to carry out earthworks within the floodplain to provide the necessary freeboard to all residential dwellings within the stage 1 area. By carrying out



earthworks in the floodplain, there will be the requirement to mitigate any loss of floodplain storage and ensure there are no effects upstream or downstream of the site and also to accommodate the increased impervious coverage that will be generated as part of the proposal.

The appropriate climate change scenarios will be considered as part of the flood modelling. Below is an extract for a 1 in 500 year event based on predevelopment with climate change which is considered the baseline for floodplain mitigation. The climate change scenario allowed for in the flood model is the RCP8.5 which is considered the worst case climate change predictions.

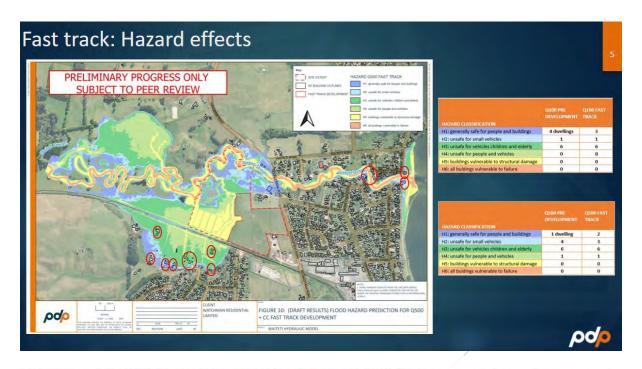


#### **Mitigation Measures**

To ensure there is no increase risk to upstream/downstream properties, a series of large wetlands will be created within the residual site that is also owned by MHUD, to offset any floodplain displacement and also provide attenuation for the increased impervious coverage.

A detailed flood model will be provided as part of the stage 2 consent application, which will be peer reviewed by an independent consultant.

All existing properties upstream/downstream of the development that currently sit within the 1 in 500 year floodplain will be identified and the flood model will show that there is no increased risk to these properties. Below is a draft extract from the flood model which allows for the stage 1 footprint and formation of wetlands within the development. By creating the large wetlands within the development, the draft model shows that the development sits outside the modified floodplain, there is no increase to downstream properties and a reduced risk to some of the upstream properties.





# **Streamworks**

As part of the fast track application, there are no works proposed within any of the streams. The application will include extensive restoration of the riparian margins of existing streams and the constructed wetlands will include extensive planting and the appropriate shared paths/trails will be created around the wetlands and streams which be a feature of the development.

## **Stormwater Treatment**

As part of the application the constructed wetlands will also provide stormwater quality treatment for runoff from impervious areas. There will also be additional stormwater devices within the stage 1



area that provide treatment such as private raingardens and treatment swales before discharging to soakage and/or discharging to the constructed wetlands. This will be in line with the local standards for stormwater quality treatment.

## **Conclusion**

Based on the current flood model all works within the flood plain within Stage 1 area can be offset by creating a series of large wetlands within the residual development site to mitigate any increase in impervious areas and also ensure there is no increased risk to any of the upstream/downstream properties. The flood model will be peer reviewed as part of the application and all stormwater quality measures will be adhered to.