Allowing Infill Subdivision on Floodplain and Implications of RMA

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ABSTRACT

The flood modelling work that is being carried out in New Zealand is mainly to assist territorial authorities meeting their obligations set out in the Resource Management Act (RMA)[1].

According to RMA, territorial authorities must:

- implement policies and methods to ensure that there is sufficient development capacity in respect of housing and business land to meet the expected demands;
- control of any actual or potential effects of the use and development of land for purposes of avoidance or mitigation of natural hazards and prevention or mitigation of any adverse effects of the development, or subdivision.

Meeting both of these objectives at the same time in land constrained cities like Wellington, that are also prone to flooding, is not a trivial matter. How should this be implemented with respect to a subdivision proposal within an area predicted to flood during a 100 year flood? In a scenario where there is some flow across a site, it can be expected that the new structure would impede or divert flow which may potentially exacerbate flooding effects at neighboring sites as illustrated in Figure 1.

[1] Resource Management Act 1991, Section 31

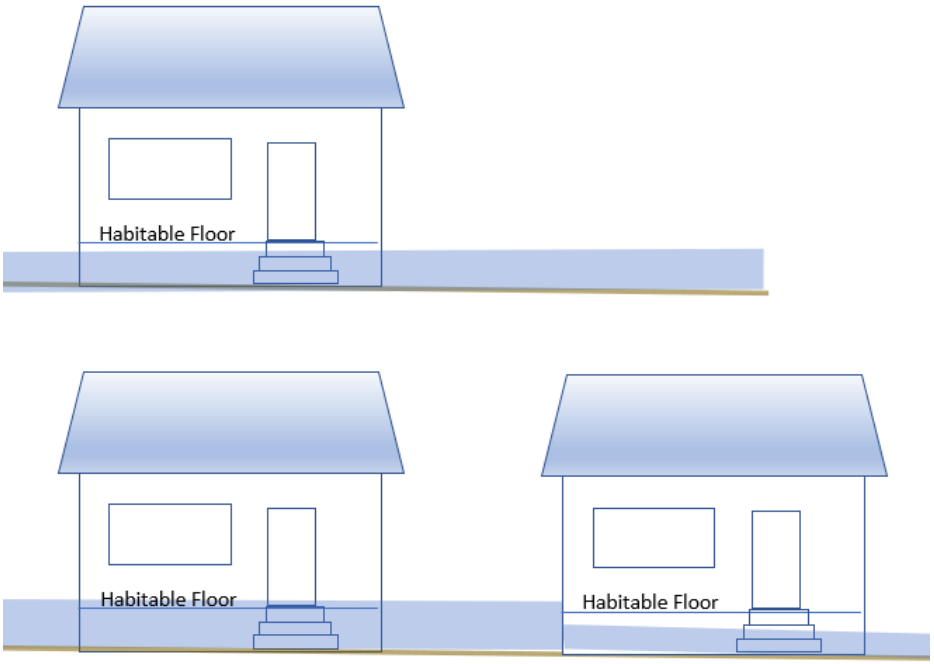

Figure 1 – Potential offsite effects resulting from subdevelopment

In the case of large developments, the developer can be expected to engage professionals to carryout assessment of effects as evidence for the consent. However, historically, it has been deemed unreasonable to require the same level of assessment for small subdivisions.

To facilitate infill subdivisions, Wellington Water generally works on the following assumptions:

i. building in areas predicted to inundated during 100 year flood and where flow velocity <0.2 m/s is of low risk and can be permitted without special conditions.
ii. where flow velocity > 0.2 m/s building can be permitted, without further investigations,on a condition that construction is done on piles and care taken to avoid obstruction of flow with cladding. This assumption implies that a building on piles would facilitate unobstructed flow through building footprint.

During the model development stage the above assumptions were considered acceptable. However, with more model results available and critical evaluation of these assumptions, it became clear that these assumptions are unsubstantiated.

To assess validity of the first assumption, a project - ASSESSMENT ON IMPACTS OF BUILDING WITHIN FLOODPLAINS was carried out with the help from Awa Environmental. The project has shown that while in many instances flow velocity of 0.2 m/s did not cause noticeable offsite effects, it could not be used as a blanket rule as there were significant number of exceptions where adding a building created noticeable flood depth increases at neighboring properties.

This finding means that unless the developer wants to carryout investigation to prove that proposed building/s would have insignificant offsite effects, proposed development could only be constructed on piles.

There is a significant uncertainty of the outcome of building on piles on flooding too. While it can be assumed that this construction method would facilitate unobstructed flow, currently there is no enforcement mechanism to ensure that owners of the house don't put cladding or use space under the house for storage and impede flow, making the (ii) assumption also invalid.

This presentation will explore how territorial authorities can meet their obligations set out in the RMA by presenting the work that has been undertaken to investigate the impacts of infill building within the floodplain.