

**IN THE HIGH COURT OF NEW ZEALAND
AUCKLAND REGISTRY**

**I TE KŌTI MATUA O AOTEAROA
TAMAKI MAKARAU**

CIV 2025-404-

UNDER

the *Judicial Review Procedure Act 2016*

IN THE MATTER

of an application for Judicial Review of the
defendant's decision on property
categorisation

BETWEEN

**BRENDON BRIAN DEACON &
STEPHANIE ALISON JESSOP** both of 30
Pinotage Place, Huapai, homeowners.

Applicants

AND

AUCKLAND COUNCIL a unitary territorial
authority established under the *Local
Government (Auckland Council) Act 2009*
with its headquarters at Manukau Civic
Building at 31-33 Manukau Station Road,
Manukau, Auckland

Respondent

STATEMENT OF CLAIM

Dated: 19th November 2025

**Judicial Officer:
Next Event Date:**

This document is filed by:

GRANT SHAND
Barristers and Solicitors
PO Box 137-243
Parnell
Auckland 1151
Telephone: (027) 434 5489
Email: grant@grantshand.co.nz
Web: www.grantshand.co.nz



Statement of claim
Wednesday the 19th day of November 2025

The applicants by their solicitor say:

Parties

- 1 The applicants are the registered proprietors of 30 Pinotage Place, Huapai being all the land comprised and described in CT NA 36C/42 (North Auckland Land Registration District) (“the property”).

- 2 The respondent, Auckland Council, is a unitary territorial authority established under the *Local Government (Auckland Council) Act 2009* (“the Act”) with its headquarters at Manukau Civic Building at 31-33 Manukau Station Road, Manukau, Auckland

Property

- 3 The property:
 - (1) Comprises low lying gently sloping land adjacent to the Kumeu River’s main channel;
 - (2) Is in a flood plain;
 - (3) Has local overland flow paths on both the Southern and Northern sides;
 - (4) Is within 50m of the Kumeu River main channel in the East;
 - (5) Sits between numbers 27 and 28 at the end of the cul-de-sac.

- 4 The house at the property comprises a single level weatherboard clad villa:
 - (1) With timber frame and plasterboard linings;
 - (2) With corrugated metal roofing;
 - (3) On a foundation of braced timber senton piles with open sub floor cladding.



2021 floods

- 5 On 31 August 2021 severe flooding occurred at the property.
- 6 In the August 2021 flood the floodwaters were adjacent to; and surrounded the house, and completely inundated the footprint of the building.
- 7 At 3am on 31 August 2021 the applicants and their young children, for personal safety, left the house and paddled away from it by kayak.
- 8 The next day the applicants watched the TV news as their only neighbours that were left were rescued by a surf live saving boat.
- 9 Little did the applicants know this was just the start, two years later, just as their confidence was coming back, they would see this same scenario happen multiple times over the space of a couple of weeks in January/February 2023.

2023 Flooding

- 10 On 27 January 2023:
 - (1) A storm event occurred in Auckland with continuous heavy rain throughout the day;
 - (2) 60% of urban Auckland experienced a rainfall event of 1% AEP, or greater, in magnitude.

- 11 In the January 2023 floods the floodwaters were adjacent to, and completely surrounded the house; inundating the building footprint
- 12 In the early afternoon of 27 January 2023 the applicants dropped their daughters at a grand parents' place in Hobsonville.
- 13 When leaving the house at this time the:
 - (1) Drain on Pinotage Place, Huapai was blocked;
 - (2) Road was starting to flood.
- 14 SA Jessop worked with the neighbours from 23 and 25 Pinotage Place to remove as much debris as they could from the drain which allowed some of the water to drain.
- 15 Later in the afternoon – around 3-4pm the water in the floodplain was rising quickly.
- 16 SA Jessop worked together with neighbours at 28 Pinotage Place, Huapai to:
 - (1) Bring things up from under the house;
 - (2) Place them on the deck.
- 17 The applicants moved important things like photo albums to high shelves – they knew it was going to be a big flood and weren't sure if water would get inside and if so, how high it would rise.
- 18 When BB Deacon arrived home on 27 January 2023 the water was already up to the garden path, so they packed overnight bags and headed off, knowing that they would be unable to return home that night.
- 19 Other neighbours on Pinotage Place, Huapai were also leaving for safer accommodation.
- 20 During the flood on 27 January 2023 the house was like an island with water over head height surrounding the house.
- 21 The flood water waters not only surrounded the property, but completely inundated the footprint of the building.

- 22 When the applicants returned to the property on 28 January 2023:
- (1) The water had started to recede;
 - (2) They were able to access the house.
- 23 On 28 January 2023 there was no power and the water tank had holes pushed through the top.
- 24 The applicants were unable to live in the house for about a week while they waited for:
- (1) Water tank cleaning and repairs;
 - (2) A replacement eco flow pump.
- 25 During that week they worked together with neighbours to:
- (1) Clean up sections from all the flood debris;
 - (2) Get properties safe for living in again.
- 26 When Cyclone Gabrielle hit again 2 weeks later they were able to pre plan and move into a parent's house for a few days (taking the cats this time).

Difference(s)

- 27 The differences between August 2021 and January/February 2023 were that:
- (1) The applicants' end of Pinotage Place, Huapai was deserted in 2023;
 - (2) No one was taking the risk of remaining in their homes;
 - (3) Many possessions were still lost as the water rose so quickly, but everyone left these to assure the safety of themselves and their families in 2023.

Government

- 28 Local Government is primarily responsible for:
- (1) Responding to natural hazards, such as the January/February 2023 extreme weather events;
 - (2) Mitigating natural hazard risks;
 - (3) Having regard to the effects of climate change.
- 29 A 31 March 2023 Cabinet Paper – *EWR-23-SUB-0044 Central Government funding support for property owners in severely affected locations* sets out the proposed policy framework and approach to provide Central Government

funding support for property owners severely affected by the 2023 Auckland flood events and Cyclone Gabrielle, within the context of a locally-led recovery.

- 30 In the paper in para 29 above Central Government indicated that its funding support would be calculated with reference to a particular valuation per property, for example 50% of the pre-event value of each Category 3 property local authorities make a buyout offer in respect of, with a cap per property (that would not constrain local government from offering a higher amount if it wished).
- 31 On 1 May 2023, the New Zealand Government, through the Cyclone Recovery Minister Grant Robertson, announced a three-tiered property risk categorisation framework for properties affected by the early 2023 weather events.
- 32 The framework, which classified properties as low risk (Category 1), medium risk (Category 2), or high risk (Category 3), provided a basis for implementing the recovery and buy-out schemes, with Category 3 properties identified as those where rebuilding was not safe.
- 33 The categorisation framework itself does not have a statutory basis.
- 34 It is/was for local authorities to determine the powers they used to undertake their local responses.
- 35 The categorisation framework was used to guide the Crown's agreed financial contribution to the cost of locally led responses, including in Auckland, Gisborne and Hawke's Bay, to the North Island Weather Events specifically, buyouts of severely affected residential properties.
- 36 For the purposes of Central Government and the respondent's response to the January/February 2023 severe weather events, it was determined that flood-affected properties would be eligible for consideration for buyout or subsidised risk mitigation where there is a high risk to life to vulnerable people in an existing Annual Exceedance Probability (AEP) 1% flood event.

Framework

- 37 The respondent purportedly uses a Property-level Flood Risk Assessment Framework to classify properties based on the risk to life in a 1% AEP flood event, using a Flood Danger Rating.
- 38 Key Aspects of the Framework are:
- (1) The framework is designed to assess the risk to life for people on a property, not just the property's structural damage, in a 1% AEP event;
 - (2) It is designed to address the highly variable, localised Pluvial flooding that is characteristic of Auckland's steep topography, a contrast to traditional approaches that focus on widespread fluvial or coastal flooding.
 - (3) This system classifies the flood hazard at a property based on water depth, flow velocity, and their combined effect, categorising risk;
 - (4) The framework considers human behaviour at the time of flooding and includes the vulnerability of people to physical exposure to floodwaters.
- 39 The framework is/was apparently based on international and local:
- (1) Research publications;
 - (2) Expert advice;
 - (3) Surveys.
- 40 Versions of the framework are below:
- (1) 0.1 8 September 2023 Initial WIP version;
 - (2) 0.2 16 November 2023 Substantial restructure and revision incorporating outcomes of various issue discussions and ongoing development;
 - (3) 1.0 24 November 2023 Further revision incorporating consensus Flood Danger Rating Schema of 23 November 2023;
 - (4) 1.1 29 November 2023 Further adjustment to the DR grades. Incorporating feedback from Expert Panel;
 - (5) 1.2 4 December 2023 Revised "split" DR schema;
 - (6) 1.3 5 December 2023 Further adjustment to the DR grades;
 - (7) 2.0 29 January 2024 Incorporated definitions content into Section 4 to reduce repetition. Improved framework overview and revised Danger Rating matrices. Added explanation of events to be assessed. Clarified definition of vulnerable people. Removed references to risk modelling. Provided explanation of what the Danger Rating means;

- (8) 2.1 13 February 2024 Updated following Expert Panel discussion 7 February 2024. Added discussion on definition of the 1% AEP event;
- (9) 2.2 12 April 2024 Updated discussion on definition of 1% AEP and added discussion on dealing with uncertainty in the assessments. Revisions to Section 4.5 to improve clarity. Various other minor edits and corrections;
- (10)2.3 25 June 2024 Amended Purpose and Scope section to clarify interpretation of recovery scheme eligibility criteria with respect to surface water vs non-surface water flooding. Amended Figure 1 to reverse steps 2 and 3 (i.e., Hazard Inside assessment should be step 2). Clarification to s.4.4.1 and Figure 2 regarding application of the building stability threshold. Clarification to s.4.4.3 and Figure 3 regarding application of the person stability threshold for low depth / high velocity scenarios. Amended paragraph 93 to include a note about treatment of contingent events and environmental factors. Updated section 5.3 to reflect approach reviewed by Expert Panel 7 June 2024;
- (11)2.4 23 October 2024 Revision and restructure of Sections 3 and 4 to incorporate the Building Stability assessment. New Building Stability Danger Rating Matrix added (Figure 5). Updated process and decision matrix for determining the property Flood Danger Rating now included as Figure 7. Various other consequential revisions, including revisions to Figures 1, 2, 3, and 6;
- (12)2.5 15 November 2024 Further amendments to address feedback on Building Stability assessment. Building Stability Danger Rating Matrix amended to include a "Not Determined" option;
- (13)3.0 6 June 2025 Updates to author titles; formatting changes before publishing on Recovery Office library;
- (14)v3.1 7 August 2025 Minor formatting changes and amendments. Minor amendments to Background Section.

41 Each framework version was prepared, approved and endorsed by purported experts.

Technical

42 According to the respondent, the hazard to people outside is assessed at the location(s) of maximum flood depth and velocity along the most likely egress evacuation route.

- 43 Outside the house, the stability of people in floodwaters is a function of their height, weight, and physical ability relative to the depth and velocity of flow where the most vulnerable are children and the elderly who are less stable in floodwaters.
- 44 To determine the level of risk to those outside the building, Depth is multiplied by Velocity (DxV) for various points along the egress route.
- 45 For outside the house high hazard flood water is defined as having either depth > 1.2m, velocity > 2m/s, or depth x velocity > 0.8m/s;
- 46 The respondent assesses hazard to building stability at the location/s of maximum flood depth and velocity adjacent to the building.
- 47 For building stability assessment(s) the thresholds for instability are $D \geq 2.0\text{m}$, or $V \geq 2.0\text{m/s}$, or $DxV \geq 1.0\text{m}^2/\text{s}$ for points adjacent to building.
- 48 For internal water:
- (1) Up to .5m is low hazard for all except infants and very young children;
 - (2) Between .5m and .85m is low hazard for able-bodied adults, high hazard for children, the elderly, and the mobility impaired;
 - (3) Between .85m to 1.2m is moderate hazard for able-bodied adults;
 - (4) Above 1.2m is high hazard for all.

Pinotage Place

- 49 The respondent finally assessed the houses/properties at 20, 24, 26, 27 & 28 Pinotage Place, Huapai as category 3.
- 50 Details of relevant information from the respondent's final written flood risk assessment reports for the properties in para 49 are at schedule 1.
- 51 The buildings on the properties in para 49 above are now demolished.
- 52 There are no houses built on 29 and 31 Pinotage Place as risk of flooding is/was too great due to flooding.

53 27 & 30 Pinotage Place had a similar restriction.

30 Pinotage Place

54 The applicants lodged an application with the respondent for their property to be categorised.

55 On about 7 September 2023 the respondent by itself and/or its agent Larry Shui visited the applicants' property to assess it.

56 In August/September 2023 the respondent by itself and/or its agent(s) also visited other properties in Kumeu/Huapai.

57 The respondent then did an assessment of the properties for categorisation purposes.

58 In October 2023 the respondent produced a list of properties in Kumeu/Huapai that it then considered were category 3.

59 By email 19 October 2023 Mr Shui emailed the list to Kevin Fan (Catchment Manager, Healthy Waters) and Richard Smedley (Principal – Network Planning, Auckland Council Healthy Waters and Flood Resilience) with an email entitled *“Kumeu Huapai No Brainer cat 3 list”*.

60 The property is on the list in para 58 & 59 above.

61 in early December 2023 the respondent then to reduce the number of category 3 properties altered the framework to remove properties where there is/was high water danger outside, and deep water surrounding the building, but no water above the habitable floor level.

62 The change in para 61 above is reflected in framework version 1.3 dated 5 December 2023 (schedule 4).

63 The respondent produced a flood review report/assessment dated 16 February 2024 for the property.

64 The relevant information from the report is in schedule 2.

- 65 By letter 9 April 2024 the respondent informed the applicants that the respondent had now categorised the property as category 1.
- 66 Despite multiple requests the respondent has refused to alter the categorisation of the property.
- 67 If the respondent had accurately applied the framework criteria in versions 0.1 to 1.2 (see schedule 3) then the property would be category 3.
- 68 The respondent's written report/assessment contains material factual errors:
- (1) It says that there are no visible debris line(s) when there is/are still visible line(s) on pole(s) on the ground level;
 - (2) It is not accurate to the actual egress route for the property as the route in the report does not take into account the actual entry point of the property (i.e. from the main access door instead of the front of the house where there is no door);
 - (3) It underestimates both flood depths and velocities along the egress route;
 - (4) It understates flood depth and velocity adjacent to the structure for the purposes of assessing building stability;
 - (5) The respondent's points of measurement do not take into account the entire footprint of property, and in particular the access stairway to the north of the house.
- 69 The categorisation of the property as category 1 is not consistent with:
- (1) The categorisation of:
 - (a) 27 Pinotage Place as category 3 that used depths and velocities from measurements further from the building than were used to categorise the property where if the property used similar points would be cat 3;
 - (b) 28 Pinotage Place that used a depth of 2.02m to be categorised as cat 3 when it categorised the property as cat 1 with relevant depths of 2.08m and 2.28m;
 - (c) 4A, 4B & 4C Rheingold Place as cat 3 based on a "push" factor to leave the property that would similarly apply to the property having originally categorised them as cat 1;
 - (2) Evidence and opinions expressed/referred to in frameworks 0.1 to 1.2 (schedule 3) to the effect that a property is cat 3 where egress has high danger and water is adjacent to the building;

- (3) AUP that requires a property to have both safe refuge and safe egress at 1% AEP to be habitable/legal;
- (4) Common sense given that the applicants would have no power, no running water, no sewage – no way to get out in any kind of emergency or need for food or water and would not be able to put a foot outside our house without being in high hazard for all flood waters;
- (5) What occurred in floods in August 2021 and January/February 2023;
- (6) Categorisation of the properties in schedule 5 as cat 3 where there is no risk on the ground floor and low depth on the egress route;
- (7) The push factor for evacuation;
- (8) Assessment of 86 Rosamund Rd and 12 Bellamy Place that had points taken almost every metre around the house and away from the building.

70 Using the actual egress route, a maximum depth of 2.15m occurs with velocities up to 0.6 m/s leading to the property being cat 3 under the later framework (schedule 4).

71 When using the same points with the correct data, at least one location at 2.08m deep is considered to be above the threshold of 2m for instability, meaning there is an intolerable risk to life at the property.

72 When assessing several points along the building footprint there are actually multiple locations (equating to 30%) where the building is considered to be unstable.

73 The respondent's flood risk assessment report states that the maximum flood depth along the egress route from the property is/was 1.77m which is erroneous as:

- (1) The respondent had not checked the specific characteristics of the property and had not confirmed the egress route at the time of the assessment;
- (2) That egress route is not an accurate representation of the egress route that would be taken to evacuate the property;
- (3) The route does not take into account the actual entry point of the property;
- (4) Using the actual egress route the maximum depths is/was 2.18m with another point being at 2.08m.

- 74 The respondent's flood risk assessment report states that the water depth immediately adjacent to the property is/was a maximum of 1.74m which is erroneous as:
- (1) The respondent's 5 measurement points do not take into account the entire footprint of property, and in particular the access stairway to the north of the house;
 - (2) There are multiple points immediately adjacent to the building structure where the depth is/was greater than 2m.
- 75 Under the framework if any point adjacent to the house is above the stability threshold, the house is deemed unstable – see 28 Pinotage Place.
- 76 Categorisation for properties that are contentious, should err on the side of caution.
- 77 If the residents needed to evacuate the property, there is an extremely high risk to life for all that is even more important in this case, as children live in the house.
- 78 Light, timber framed houses are at a higher risk for instability, and should instability occur during a flood event, the residents' lives would be at an intolerable risk.
- 79 There are no potential private and/or community solutions which could be applied in this case to mitigate the future risk, meaning that a Category 2 would be unsuitable in this case.
- 80 Decisions by the respondent about eligibility criteria for category 3 have been based on \$\$ budgeted from Central Government rather than on intolerable risk to life.
- 81 The respondent has assessed properties as category 3 (intolerable risk to life) where the egress route is very low and occupants can just walk out and eliminate the risk to life:
- (1) 18 May Road;
 - (2) 12 Bellamy Place;
 - (3) 40 Lyons Ave.

- 82 Residential properties in urban areas should have both safe refuge and safe evacuation in a 1% AEP flood event.
- 83 New and redeveloped sites within the 1% floodplain in urban areas designed to accommodate more vulnerable activities must provide safe evacuation routes (in addition to safe refuge).
- 84 Accepting Safe Refuge Only solutions under the current recovery scheme:
- (1) Leaves properties at unacceptable risk in the future or in a situation where landowners cannot comply with future planning rules, which would limit the landowner's ability to sell or develop the land;
 - (2) Would be a perverse outcome for both the landowner and the city and the optics on this would also be poor as the respondent could be accused of permitting a solution it knew to be unacceptable.
- 85 Safe Refuge Only is not a desirable outcome in urban areas because it leaves a residual behavioural risk that some people will try to evacuate through floodwaters even if their dwelling is above the floodplain.
- 86 The risk is now well-evidenced as a result of the Auckland floods that occurred in January and February 2023
- 87 in urban areas, only solutions which provide for Safe Refuge and Egress should be accepted for the purposes of property categorisation.
- 88 It would be inconsistent for Council to accept Safe Refuge Only solutions under the current recovery scheme when Council is actively seeking to render such solutions unacceptable through the future plan change.
- 89 Under this approach, some properties will end up as Category 3 even if a consentable Safe Refuge Only option is available, and this will have financial consequences for Council as Council will be obliged to offer to purchase those properties.

- 90 Versions of the framework until 1.3 on 5 December 2023 (schedule 3) provided that the outcome was high danger and cat 3 where there was high danger outside and flood waters touched the building footprint.
- 91 There is no rational basis to make the change and the evidence on which earlier versions were based had not changed.
- 92 The international literature suggests that the expressed and exhibited preference of most people is to evacuate (Thomas 2023a).
- 93 A WSP memo dated 15 September 2023 provided the advice to the defendant below:
Flood evacuation behaviour In an interactive simulated flood event in Lower Hutt, New Zealand, most people in the flood zone report that nothing would stop them leaving (Lamb, et al., 2012). 78%
- 94 Relevant extracts from Version 1.2 of the Framework dated 4 December 2023 are at schedule 3.
- 95 Relevant extracts from Version 1.3 of the Framework dated 5 December 2023 are at schedule 4.
- 96 Thus, if a safe refuge is not considered an acceptable solution, on its own, to mitigate the risk of flooding, it should not be relied upon as such when assessing the extant flood risk.
- 97 Anecdotal evidence from early assessments that people did evacuate during the Jan/Feb 2023 events even though they had a safe refuge available to them.
- 98 The international literature suggests that the expressed and exhibited preference of most people is to evacuate

Now

- 99 Every time it rains heavily and the river begins to flood the applicants feel anxious, now often staying somewhere else at these times and constantly checking weather maps for the next storm.

100 All of their neighbours have moved away – their houses are gone – because it is not safe to live there during a flood.

101 Losing their neighbourhood community has been the hardest part of the whole process.

102 They had all experienced the flooding together and supported each other during the clean up phase.

103 Not only do they now have no one to warn or help them during flooding but seeing empty, overgrown sections is a constant reminder of what we have lost.

Judicial Review

104 The conduct of the respondent in relation to categorisation of the property is susceptible to judicial review.

105 The respondent made material factual errors as in paras 68 to 74 above which facts:

- (1) Are unsupportable on the evidence;
- (2) Are wrong;
- (3) Played a material part in the respondent's decision on categorisation.

106 Inaccurate information formed the basis of the decision, so the decision is invalid.

107 The respondent failed to consider all relevant facts namely:

- (1) The effect on the applicants and their children of the demolition of neighbouring houses;
- (2) Depths and velocities;
- (3) The importance of the decision to those affected by it, in terms of its potential impact upon, or consequences for, them.

108 The respondent's decision on categorisation effectively closes down the community on Pinotage Place leaving the applicants in a desperate situation with a house with no value.

109 The cat 3 decision is unreasonable, irrational, and/or substantively unfair.

110 The respondent misinterpreted its voluntarily imposed framework amounting to error of law or unreasonableness.

111 The respondent erroneously took into account costs of acquisition in deciding about intolerable risk to life.

112 The respondent erroneously formulated a policy/framework that:

- (1) Lacked an evidential basis;
- (2) Was actually contrary to the evidence.

113 Without alteration in the supporting evidence the respondent changed its position on “island” houses as expressed in framework 0.1 to 1.2 (schedule 3) to 1.3 (schedule 4) to reduce number of cat 3 properties which is an improper purpose.

114 The respondent has treated people in similar circumstances in different ways

115 The applicants have been treated substantially differently from (not as well as) other claimants.

116 Something has gone wrong with the categorisation of a nature and degree that requires court intervention.

117 The category 1 decision so outrageous in its defiance of logic... that no sensible person who had applied his mind to the question to be decided could have arrived at it”:

Relief Sought

118 The applicants ask the Court to:

- (1) Allow the application for review;
- (2) Quash and/or set aside the categorisation decision;
- (3) Substitute a category 3 categorisation for the property;
- (4) Order the sale of the property to the respondent;
- (5) Extend the time for settlement of sale of property to the respondent;
- (6) Make further and/or alternative orders as the Court thinks fit;
- (7) Order the respondent to pay the applicants’ costs.

This statement of claim is filed by Grant Donald Richard Shand, Barrister and Solicitor whose address for service is 145 Torkar Road, Clarks Beach, Auckland 2122. Documents for service on the applicants may be:

- a) left at the address for service; or
- b) posted to the solicitor at PO BOX 137 – 243, Parnell, Auckland; or
- c) transmitted to the solicitor by email: grant@grantshand.co.nz

Schedule 1- Pinotage Place

20 Pinotage Place

Report 15 February 2024.

Two level with block basement garage.

Event

Depth outside 1.48m

Velocity .5

Stable

Egress route D.86m

Internal .13m

1% AEP

D .89m

V .13m

Stable

Egress route D .86m

Internal level .23m

Cat 3 by reason of 23cm in the basement block garage; notwithstanding that there was a habitable space above

24 Pinotage Place

Report 20 February 2024

Single level timber framed house on piles

Event

D .74m

V .22

Stable

Egress route D 1.23m

V .55

DV .68

Internal level .14m

1% AEP

D .82m

V .22

DV .17

Stable

Egress route D 1.31m
 V .55
 DV .35

High hazard for all

Internal level .22m

Cat 3 because high hazard outside and water level above habitable floor of 22cm

26 Pinotage Place

Report 16 February 2024

Single level timber framed house on piles

Event

D 1.39m

V .35

DV .49

Stable

Egress route D 1.44m

V .34

DV .49

Internal level .4m

1% AEP

D 1.37m

V .35

DV .29

Stable

Egress route

D 1.53m

V .25

DV .37

Internal level .49m

Cat 3 because high hazard outside and water level above habitable floor of 49cm

27 Pinotage Place

Report 15 February 2024

Single level with basement storage

Event –

D 1.7m

V .69

DV 1.21

Unstable

Egress route 1.52m

1% AEP

D 1.91m

V .69

DV 1.29

Unstable

Egress route 1.6m

No internal water

Cat 3 because unstable as DV greater than 1

28 Pinotage Place

Report 16 February 2024

Single level timber framed building elevated on piles with basement garage and storage

Event

D 1.94m

V .35

DV .36

stable

Egress D 1.54m

V .57

DV .43

High for all

No water inside

1% AEP

D 2.02m

V .35

DV .68

Unstable

Egress 1.54m

V .57

DV .43

High for all

No water inside

Cat 3 because unstable as water depth adjacent to house greater than 2m

Schedule 2- 30 Pinotage Place

Report 15 February 2024

Building surrounded by high hazard flood water

Event

D 1.46m

V .51

DV .74

stable

Egress D 1.57m

V .42

DV .66

High hazard for all

1% AEP

D 1.56m

V .51

DV .77

stable

Egress 1.67

V .42

DV .61

High hazard for all

Category 1

Schedule 334A Somerset Rd, Mt Roskill

Report July 2024

Cat 3

2 storey on concrete slab

Rumpus room, sewing room, bathroom and laundry on lower level

50cm flooding on ground floor in event

48cm on evacuation route

For event stable, low risk egress

For 1%

Depth outside 0

Depth on egress route

Zero inside

143 Whitney St

Report April 2024

Three-storey building. Includes a rumpus room (lower-level), main floor (upper level), and a bedroom is located above the upper level. There is also a detached garage located adjacent to the building

Event 90cm outside; egress depth 30cm;

1% - zeros

There was 0.52 m of internal flooding within the lower-level rumpus area above the habitable floor level

Cat 3

66 Girrahween Drive, Totara Vale

Report March 2025

3 storeys

Lower is basement/laundry

Event – 20cm in event in basement and 30cm on evacuation route

For event – depth outside 25cm and speed 1m/s

Egress route 30cm x 1

Inside 20cm

1% models 51cm inside basement

Building stable

Person stability high

Schedule 4

Framework – v1.2 4 December 2023

23. For a person who lives at a residential property² in Auckland, their exposure to flood hazard at that property will depend on:

- a. Whether the property is exposed to flood hazard: The location of the property relative to the flood hazard area (i.e., whether it is located in a floodplain, overland flow path, or flood prone area), the location of the dwelling³ on the property, and the elevation of the habitable floor(s)⁴ relative to the flood level.
- b. Occupancy: Whether the person is at home at the time the flooding occurs. This will depend on time of day and the personal circumstances of the individual.
- c. Whether and when they decide to evacuate: In a real flood people must make critical, time-sensitive judgements in a highly stressful, uncertain, and emergent situation without full knowledge of the ultimate event magnitude. Their decision to stay or evacuate is highly uncertain and influenced by a range of factors (see section 5.4.1).

24. Vulnerability is the propensity or predisposition of exposed elements, such as human beings, their livelihoods, and assets, to suffer adverse effects when impacted by hazard events. Vulnerability is a multifaceted characteristic of exposed people or groups and their situation that influences their capacity to anticipate, cope with, resist, and recover from the adverse effects of physical events. Vulnerability is highly variable and situation-specific and interacts with hazard to generate risk. (Cardona, et. al. 2012).

25. In terms of risk to life to an individual in a residential context, this framework considers vulnerability as primarily a function of the following factors:

- a. The stability of people: which is a function of flow depth and velocity relative to the person's physical characteristics (height and weight) and abilities.
- b. The stability of buildings: which is a function of flow depth and velocity relative to the nature of the building construction.
- c. The difficulty of the evacuation route: considering, for instance, severity of flood hazard, wading distance, nature of the terrain underfoot (slope, unevenness), and proximity to deep/dangerous floodwaters.
- d. Mortality rate: the likelihood of suffering serious injury or death given exposure to flood hazard.

Table 1. Summary of key inputs to the risk assessment

This is a summary only. Refer to the

separate Hazard Assessment

Guidance Note for the detailed inputs.

Dwelling Inputs

Dwelling inputs describe key features of the dwelling and property that influence the flood hazard and risk.

› Number of Levels in Dwelling

› Habitable Floor Levels (m RL)

› Egress points and evacuation routes identified

› Egress and Evacuation Route Levels (m RL)

Flood Event Inputs

Event inputs describe key features of the flood hazard for each flood event.

The framework may be applied to observed events, as well as modelled events, provided the AEP of the observed event can be reliably estimated.

› Event AEP

› Max flood depth inside dwelling footprint (m)

› Max flood depth adjacent to the dwelling footprint (m)

› Max flood velocity adjacent to the dwelling footprint (m/s)

› Maximum DxV adjacent to the dwelling footprint (m²/s)

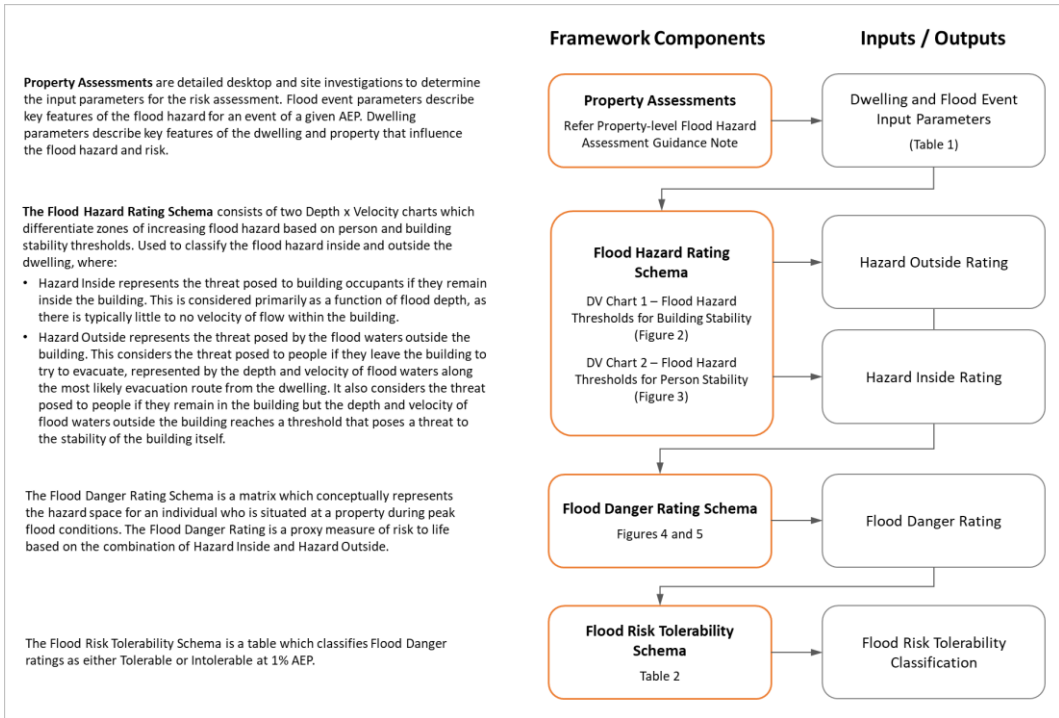
› % of dwelling footprint exposed to max DxV adjacent (%)

› Observed structural damage? (Y/N)

› Max flood depth along evacuation route(s) (m)

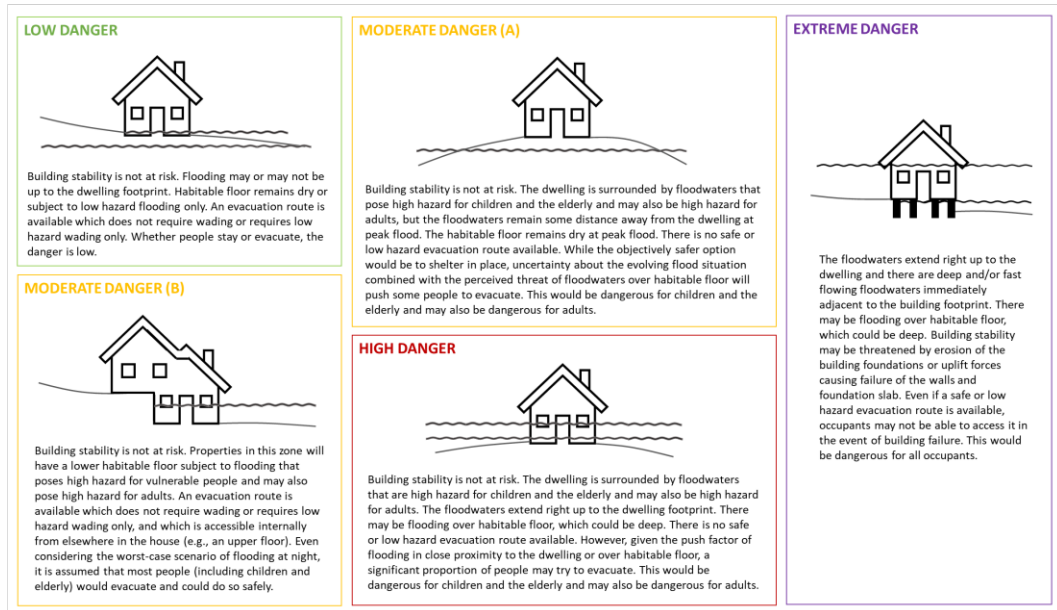
› Max flood velocity along evacuation route(s) (m/s)

› Max DxV along evacuation route(s) (m²/s)



Hazard		Hazard Outside							
		<small>Note: Hazard Outside is assessed in two locations.</small> Step 2. If building stability is NOT at risk, assess flood hazard along the most likely evacuation route using DV Chart 2. Select the most appropriate Hazard Outside Rating between Very Low to High.					Step 1. Assess flood hazard adjacent to building footprint using DV Chart 1.		
Conditions		Hazard Rating		An evacuation route is available and does not require wading	An evacuation route may be available but requires wading. Hazard is a function of depth and velocity of flooding along the evacuation route. Refer DV Chart 2.		If flood waters adjacent to building footprint pose a threat to building stability (refer DV Chart 1) then the Hazard Outside Rating is Extreme.		
		D & V Thresholds		Very Low	Low for all except infants and very young children	Low for adults / High for children and elderly	Moderate for adults	High for all	Extreme
				n/a	Refer DV Chart 2	Refer DV Chart 2	Refer DV Chart 2	Refer DV Chart 2	Refer DV Chart 1
Hazard Inside	Step 3. Assess flood hazard inside the dwelling based on depth over habitable floor (assuming V = 0 inside the building)	Habitable floor remains dry	Very Low	Floodwaters are NOT touching the building footprint. Nil depth over habitable floor.			Moderate Danger (A)		N/A. Determine Hazard Outside based on DV along evacuation route.
				Floodwaters are touching the building footprint. Nil depth over habitable floor.	Low Danger				
	Habitable floor is wet.	Low for all except infants and very young children	Depth (D) over habitable floor: 0 ≤ D < 0.5m						
		Low for adults / High for children and elderly	Depth (D) over habitable floor: 0.5 ≤ D < 0.85m				High Danger		Extreme Danger
	Moderate for adults	Depth (D) over habitable floor: 0.85 ≤ D < 1.2m							
	High for all	Depth (D) over habitable floor: D ≥ 1.2m							

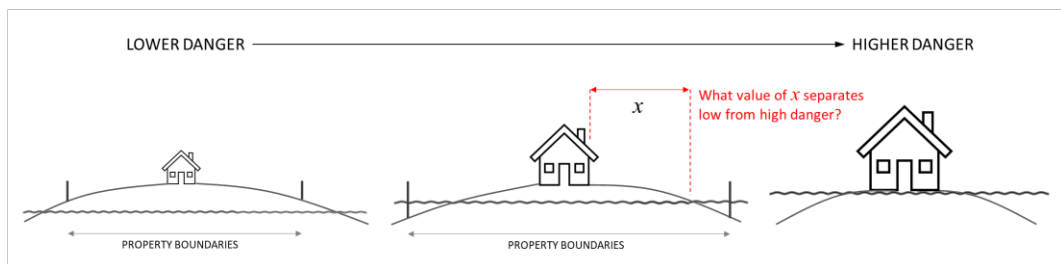
Intolerable Risk Threshold @ 1% AEP



72. However, there was discomfort amongst subject matter experts with treating island scenarios as lower risk, at least as a general rule. This discomfort stemmed from the perception that where floodwaters are immediately adjacent to the house or have already flooded a lower level, people will be more likely to try to evacuate (what is referred to in this document as the “push factor” of flooding in close proximity to the dwelling)¹⁰. Since this would mean those people could potentially be exposed to dangerous floodwaters, it was felt that these scenarios should be considered high risk.

73. It was also considered that treating “safe refuge” or “dwelling as an island” scenarios as low risk could lead to inconsistent outcomes. Policy 14 under s.E36.3 of the AUP requires that redevelopment of sites where existing more vulnerable activities are located within the 1% AEP floodplain must address the location of habitable rooms above flood levels routes or refuges. While there are past examples where development in the floodplain has been consented in the absence of a safe evacuation route, it is generally considered that the provision of a safe evacuation route is necessary to secure consent. Thus, simply adding a safe refuge or raising the habitable floor level of a house is not, on its own, a suitable solution to mitigate the flood risk. While it would provide an option of last resort in the event that the occupants become trapped in their house, it would not be consentable as it does not address the experienced flood hazard or the threat posed to people who might try to evacuate. ¹¹ as well as providing safe evacuation

74. However, not all island scenarios are necessarily dangerous. Scenarios where potentially dangerous flooding is present on part of a property or even outside the property boundary, but where the dwelling is otherwise unaffected by floodwaters, and, indeed, may be some distance from the floodwaters, clearly do not pose the same level of risk to the lives of the dwelling occupants as when dangerous floodwaters are immediately adjacent to and completely surrounding the dwelling. This distinction, which matters for the purposes of the property categorisation process, is a function of the proximity of the floodwaters to the dwelling (see Figure 7 below).



75. Scenarios where floodwaters are distant to the dwelling are arguably not high risk to life compared to scenarios where floodwaters are immediately adjacent to and completely surrounding the dwelling. The difference is the effect that floodwaters in close proximity to the dwelling is assumed to have on occupants' decision making. In other words, it is assumed that the closer the flood waters (and the faster they are rising) the more people are likely to try to evacuate, and therefore the higher the overall hazardousness of the situation.

76. The problem described by Figure 7 created a dilemma when determining the Danger Rating for scenarios described by the Hazard Inside + Hazard Outside combination of "dry floor inside + no safe or low hazard evacuation route" (this combination describes the island scenario). Rating this scenario as Moderate Danger resulted in the discomfort described above, while, conversely, rating it as High Danger would require either justifying the assumption that most people would evacuate in all the island scenarios shown in Figure 6 (which is dubious) or basing the Danger Rating only on the Hazard Outside (which would be inconsistent with the rest of the matrix).

77. This dilemma forced consideration of the question posed in Figure 7: how close do floodwaters have to be to the dwelling for the situation to be considered High

Schedule 5

Framework v 1.3 5 December 2023

23. For a person who lives at a residential property² in Auckland, their exposure to flood hazard at that property will depend on:

- a. Whether the property is exposed to flood hazard: The location of the property relative to the flood hazard area (i.e., whether it is located in a floodplain, overland flow path, or flood prone area), the location of the dwelling³ on the property, and the elevation of the habitable floor(s)⁴ relative to the flood level.
- b. Occupancy: Whether the person is at home at the time the flooding occurs. This will depend on time of day and the personal circumstances of the individual.
- c. Whether and when they decide to evacuate: In a real flood people must make critical, time-sensitive judgements in a highly stressful, uncertain, and emergent situation without full knowledge of the ultimate event magnitude. Their decision to stay or evacuate is highly uncertain and influenced by a range of factors (see section 5.4.1).

24. Vulnerability is the propensity or predisposition of exposed elements, such as human beings, their livelihoods, and assets, to suffer adverse effects when impacted by hazard events. Vulnerability is a multifaceted characteristic of exposed people or groups and their situation that influences their capacity to anticipate, cope with, resist, and recover from the adverse effects of physical events. Vulnerability is highly variable and situation-specific and interacts with hazard to generate risk. (Cardona, et. al. 2012).

25. In terms of risk to life to an individual in a residential context, this framework considers vulnerability as primarily a function of the following factors:

- a. The stability of people: which is a function of flow depth and velocity relative to the person's physical characteristics (height and weight) and abilities.
- b. The stability of buildings: which is a function of flow depth and velocity relative to the nature of the building construction.
- c. The difficulty of the evacuation route: considering, for instance, severity of flood hazard, wading distance, nature of the terrain underfoot (slope, unevenness), and proximity to deep/dangerous floodwaters.

d. Mortality rate: the likelihood of suffering serious injury or death given exposure to flood hazard.

Table 1. Summary of key inputs to the risk assessment

This is a summary only. Refer to the separate Hazard Assessment Guidance Note for the detailed inputs.

Dwelling Inputs

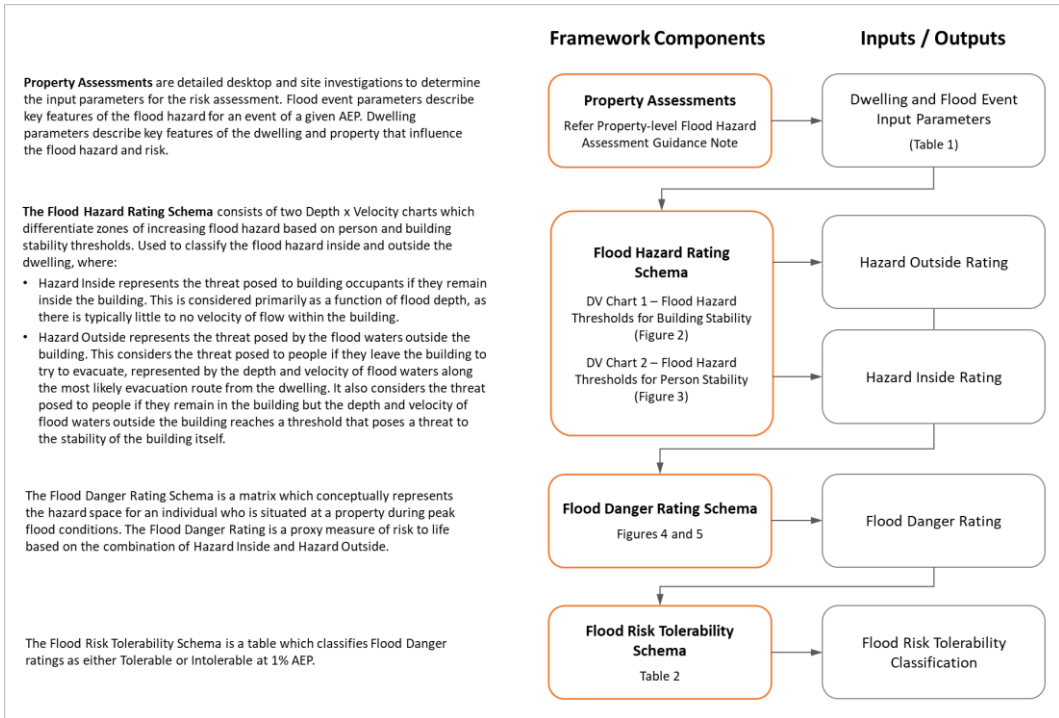
Dwelling inputs describe key features of the dwelling and property that influence the flood hazard and risk.

- › Number of Levels in Dwelling
- › Habitable Floor Levels (m RL)
- › Egress points and evacuation routes identified
- › Egress and Evacuation Route Levels (m RL)

Flood Event Inputs

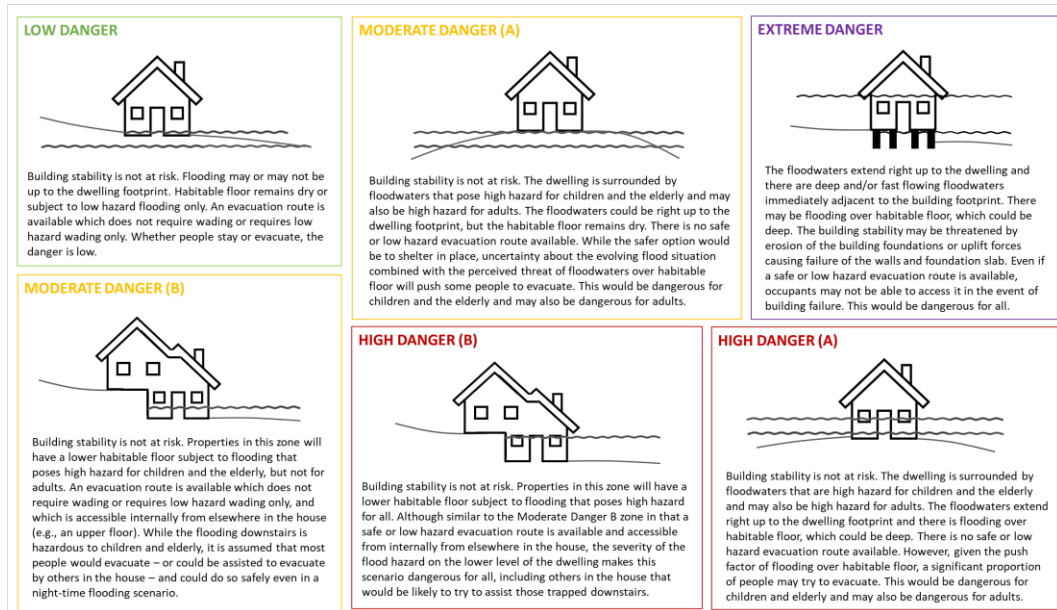
Event inputs describe key features of the flood hazard for each flood event. The framework may be applied to observed events, as well as modelled events, provided the AEP of the observed event can be reliably estimated.

- › Event AEP
- › Max flood depth inside dwelling footprint (m)
- › Max flood depth adjacent to the dwelling footprint (m)
- › Max flood velocity adjacent to the dwelling footprint (m/s)
- › Maximum DxV adjacent to the dwelling footprint (m²/s)
- › % of dwelling footprint exposed to max DxV adjacent (%)
- › Observed structural damage? (Y/N)
- › Max flood depth along evacuation route(s) (m)
- › Max flood velocity along evacuation route(s) (m/s)
- › Max DxV along evacuation route(s) (m²/s)



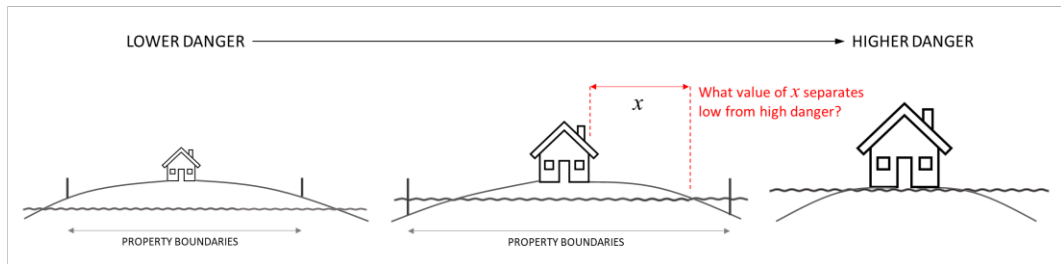
Hazard		Hazard Outside					
		<i>Note: Hazard Outside is assessed in two locations.</i> Step 2. If building stability is NOT at risk, assess flood hazard along the most likely evacuation route using DvV Chart 2. Select the most appropriate Hazard Outside Rating between Very Low to High.					
Conditions	Hazard Rating	An evacuation route is available and does not require wading		An evacuation route may be available but requires wading. Hazard is a function of depth and velocity of flooding along the evacuation route. Refer DvV Chart 2.			Step 1. Assess flood hazard adjacent to building footprint using DvV Chart 1. If flood waters adjacent to building footprint pose a threat to building stability (refer DvV Chart 1) then the Hazard Outside Rating is Extreme.
		Very Low	Low for all except infants and very young children	Low for adults / High for children and elderly	Moderate for adults	High for all	
	D & V Thresholds	n/a	Refer DV Chart 2	Refer DV Chart 2	Refer DV Chart 2	Refer DV Chart 2	Refer DV Chart 1
Hazard Inside	Habitatable floor remains dry	Very Low	Floodwaters are NOT touching the building footprint. Nil depth over habitable floor.			Moderate Danger (A)	N/A. Determine Hazard Outside based on DvV along evacuation route.
			Floodwaters are touching the building footprint. Nil depth over habitable floor.	Low Danger			
	Habitatable floor is wet.	Low for all except infants and very young children	Depth (D) over habitable floor: 0 ≤ D < 0.5m				
		Low for adults / High for children and elderly	Depth (D) over habitable floor: 0.5 ≤ D < 0.85m	Moderate Danger (B)		High Danger (A)	Extreme Danger
	Moderate for adults	Depth (D) over habitable floor: 0.85 ≤ D < 1.2m					
	High for all	Depth (D) over habitable floor: D ≥ 1.2m	High Danger (B)				

Intolerable risk threshold @ 1% AEP



72. There was, however, discomfort amongst subject matter experts with treating island scenarios as lower risk, at least as a general rule. This discomfort stemmed from the perception that where floodwaters are immediately adjacent to the house or have already flooded a lower level, people will be more likely to try to evacuate (what is referred to in this document as the “push factor” of flooding in close proximity to the dwelling)¹⁰. Since this would mean those people could potentially be exposed to dangerous floodwaters, it was felt by some that these scenarios should be considered high risk.

73. However, not all island scenarios are necessarily dangerous. Scenarios where potentially dangerous flooding is present on part of a property or even outside the property boundary, but where the dwelling is otherwise unaffected by floodwaters, and, indeed, may be some distance from the floodwaters, clearly do not pose the same level of risk to the lives of the dwelling occupants as when dangerous floodwaters are immediately adjacent to and completely surrounding the dwelling. This distinction, which matters for the purposes of the property categorisation process, is a function of the proximity of the floodwaters to the dwelling (see Figure 7 below). The difference is the effect that floodwaters in close proximity to the dwelling is assumed to have on occupants’ decision making. That is, how close do the floodwaters need to be to the house before most people would be likely to try to evacuate?



74. There is no simple answer to this question and there were divergent views amongst subject matter experts. One view is that if floodwaters are touching the building footprint, this would be a trigger for many people to evacuate. Another view is that there is a material and psychological difference between scenarios where the habitable floor floods and where it doesn't. Since flooding over habitable floor is considered to be a much stronger push factor for people to evacuate than proximity of flood waters to the dwelling, it was ultimately decided that scenarios where the lowest habitable floor of a dwelling remains dry should, as a general rule, be treated as lower risk compared to flooded floor scenarios. It was, however, noted that there could be unique circumstances on the ground (e.g., extremely fast water rise) which might need to be considered on a case-by-case basis.

75. It is worth noting that this treatment of island scenarios is driven by overarching risk reduction objective and policy settings of the severe weather-affected property assessments (see section 1). It does not imply that island scenarios are permissible or desirable in a planning context. Policy 14 under s.E36.3 of the AUP requires that redevelopment of sites where existing more vulnerable activities are located within the 1% AEP floodplain must address the location of habitable rooms above flood levels¹¹ as well as providing safe evacuation routes or refuges. While there are past examples where development in the floodplain has been consented in the absence of a safe evacuation route, it is generally considered that the provision of a safe evacuation route is necessary to secure consent for development in a flood plain.

- Flooding outside is a push factor viewed from the perspective of someone inside the dwelling who is unsure about how far the waters might rise. The closer the flood waters are to the dwelling (and the faster they are rising) the more people are likely to try to evacuate.

Hazard		Hazard Outside					Hazard Rating						
		300g. Hazard Outside is assessed in two locations.					Step 2. If building stability is NOT at risk, assess flood hazard along the most likely evacuation route using DW Chart 2. Select the most appropriate Hazard Outside Rating between Very Low to High.		Step 1. Assess flood hazard adjacent to building footprint using DW Chart 1.				
Conditions		An evacuation route is available and does not require wading		An evacuation route may be available but requires wading. Hazard is a function of depth and velocity of flooding using the evacuation route. Refer DW Chart 2.		Low for all except infants and very young children		Low for adults / High for children and elderly		Moderate for adults		High for all	
D & V Thresholds		n/a		Refer DW Chart 2		Refer DW Chart 2		Refer DW Chart 2		Refer DW Chart 2		Refer DW Chart 1	
Hazard Inside	Step 3. Assess flood hazard from the dwelling based on depth over habitable floor (assuming V > 0 inside the building).	habitable floor remains dry	Very low	Low Danger	Moderate Danger (A)	Extreme	N/A. Determine Hazard Outside based on DW chart evacuation route.						
		habitable floor is wet	Low for all except infants and very young children	Low for adults / High for children and elderly	Moderate Danger (B)	High Danger (A)	Extreme	Moderate to High Hazard (B) to (A)					
		Moderate for adults	High for all	High Danger (B)	High Danger (A)	Extreme							
		High for all	High for all	High Danger (B)	High Danger (A)	Extreme							
Low Danger	Building stability	Building stability is not at risk.	Moderate Danger (B)	Building stability	Building stability is not at risk.	High Danger (B)	Building stability	Building stability is not at risk.	Extreme Danger	Building stability	Building stability may be threatened by erosion of the building foundations or uplift forces causing failure of the walls and foundation slab.		
	Proximity of floodwaters to the dwelling	Flooding may or may not be up to the dwelling footprint. Habitable floor remains dry or subject to low hazard flooding only.		Proximity of floodwaters to the dwelling	Properties in this zone will have a lower habitable floor subject to flooding that poses high hazard for children and the elderly, but not for adults.		Proximity of floodwaters to the dwelling	Properties in this zone will have a lower habitable floor subject to flooding that poses high hazard for all.		Proximity of floodwaters to the dwelling	The floodwaters extend right up to the dwelling and there are deep and/or fast flowing floodwaters immediately adjacent to the building footprint. There may be flooding over habitable floor, which could be deep.		
	Evacuation	An evacuation route is available which does not require wading or requires low hazard wading only. Whether people stay or evacuate, the danger is low.		Evacuation	An evacuation route is available which does not require wading or requires low hazard wading only, and which is accessible internally from elsewhere in the house (e.g., an upper floor). While the flooding downstairs is hazardous to children and elderly, it is assumed that most people would evacuate – or could be assisted to evacuate by others in the house – and could do so safely even in a right-time flooding scenario.		Evacuation	Although similar to the Moderate Danger B zone in that a safe or low hazard evacuation route is available and accessible from internally from elsewhere in the house the severity of the flood hazard on the lower level of the dwelling makes this scenario dangerous for all, including others in the house that would be likely to try to assist those trapped downstairs.		Evacuation	Even if a safe or low hazard evacuation route is available, occupants may not be able to access it in the event of building failure. This would be dangerous for all.		

Flood Danger Rating Schema and Key Assumptions (based on SME consensus)

Moderate Danger (A)	Building stability	Building stability is not at risk.
	Proximity of floodwaters to the dwelling	The dwelling is surrounded by floodwaters that pose high hazard for children and the elderly and may also be high hazard for adults. The floodwaters could be right up to the dwelling footprint, but the habitable floor remains dry.
	Evacuation	There is no safe or low hazard evacuation route available. While the safer option would be to shelter in place, uncertainty about the evolving flood situation combined with the perceived threat of floodwaters over habitable floor will push some people to evacuate. This would be dangerous for children and the elderly and may also be dangerous for adults.
High Danger (A)	Building stability	Building stability is not at risk.
	Proximity of floodwaters to the dwelling	The dwelling is surrounded by floodwaters that are high hazard for children and the elderly and may also be high hazard for adults. The floodwaters extend right up to the dwelling footprint and there is flooding over habitable floor, which could be deep.
	Evacuation	There is no safe or low hazard evacuation route available. However, given the path factor of flooding over habitable floor, a significant proportion of people may try to evacuate. This would be dangerous for children and elderly and may also be dangerous for adults.

Low Danger	Building stability	Building stability is not at risk.	Moderate Danger (B)	Building stability	Building stability is not at risk.	High Danger (B)	Building stability	Building stability is not at risk.	Extreme Danger	Building stability	Building stability may be threatened by erosion of the building foundations or uplift forces causing failure of the walls and foundation slab.
	Proximity of floodwaters to the dwelling	Flooding may or may not be up to the dwelling footprint. Habitable floor remains dry or subject to low hazard flooding only.		Proximity of floodwaters to the dwelling	Properties in this zone will have a lower habitable floor subject to flooding that poses high hazard for children and the elderly, but not for adults.		Proximity of floodwaters to the dwelling	Properties in this zone will have a lower habitable floor subject to flooding that poses high hazard for all.		Proximity of floodwaters to the dwelling	The floodwaters extend right up to the dwelling and there are deep and/or fast flowing floodwaters immediately adjacent to the building footprint. There may be flooding over habitable floor, which could be deep.
	Evacuation	An evacuation route is available which does not require wading or requires low hazard wading only. Whether people stay or evacuate, the danger is low.		Evacuation	An evacuation route is available which does not require wading or requires low hazard wading only, and which is accessible internally from elsewhere in the house (e.g., an upper floor). While the flooding downstairs is hazardous to children and elderly, it is assumed that most people would evacuate – or could be assisted to evacuate by others in the house – and could do so safely even in a right-time flooding scenario.		Evacuation	Although similar to the Moderate Danger B zone in that a safe or low hazard evacuation route is available and accessible from internally from elsewhere in the house the severity of the flood hazard on the lower level of the dwelling makes this scenario dangerous for all, including others in the house that would be likely to try to assist those trapped downstairs.		Evacuation	Even if a safe or low hazard evacuation route is available, occupants may not be able to access it in the event of building failure. This would be dangerous for all.