



Determination 2018/057

Regarding the decision to grant a building consent subject to notification under section 73 for building work on land subject to natural hazards at 177 Fitzherbert East Road, Aokautere



Summary

This determination considers an authority's decision to grant building consent subject to a section 73 notice requiring a notice to be placed on the land title identifying the land as being subject to natural hazards - being erosion and inundation. The subject property is adjacent to a river located in a rural setting.

1. The matter to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ ("the Act") made under due authorisation by me, Katie Gordon, Manager Determinations, Ministry of Business, Innovation and Employment ("the Ministry"), for and on behalf of the Chief Executive of the Ministry.

1.2 The parties to the determination are:

- the owner of the property, C M Davidson ("the applicant"), acting through an agent ("the agent")
- Palmerston North City Council ("the authority"), carrying out its duties as a territorial authority or building consent authority

1.3 This determination arises from the authority's decision to grant building consent for the construction of a house subject to a section 73² notice, on the grounds that the land on which the house is to be built is subject to natural hazards (erosion and inundation). The applicant is of the view that the land is not subject to natural hazards, and accordingly the provisions in sections 71 to 73 do not apply.

¹ The Building Act, Building Code, Acceptable Solutions and Verification Methods, past determinations and guidance documents issued by the Ministry are all available at www.building.govt.nz or by contacting the Ministry on 0800 242 243.

² Unless otherwise stated all references to sections are to sections of the Act and all references to clauses are to clauses of the Building Code. The relevant sections of the Act are set out in Appendix A.

- 1.4 The matter to be determined³ is therefore the authority's exercise of its powers in granting the building consent under section 72 of the Act making it subject to notification under section 73. In making this decision I must consider whether section 71 of the Act applies.
- 1.5 In making my decision, I have considered the submissions of the parties, the report of the independent expert commissioned by the Ministry to advise on this dispute ("the expert") and the other evidence in this matter.
- 1.6 There appears to be no dispute between the parties that the consented building work complies with the Building Code; I do not consider compliance with the Building Code further in this determination.

2. The building work

- 2.1 The applicant's property lies between Fitzherbert East Road and the Manawatu River. The site is located on the outside (true left looking downstream) of a meander in the Manawatu River. The majority of the site is at a level of between RL⁴ 41m to 42m ("the upper terrace"), which is around 14m higher than the Manawatu River. The upper terrace measures between 42 and 105m wide, between the roadside boundary and the crest of the upper terrace. It is in this area that the applicant's house is being built. The site is shown on Figure 1 below.
- 2.2 Towards the river side of the property there is a lower terrace, measuring between 10 and 5m wide, with an approximate RL of 36m, making it around 8m higher than the river ("the lower terrace"). From the crest of the lower terrace (which is also the river bank crest⁵), the ground then drops steeply down to the Manawatu River at a level of approximately RL 28m. An intermediate terrace has recently been excavated across part of the slope from the upper terrace down onto the lower terrace, in preparation for future landscaping activities ("the intermediate terrace").
- 2.3 At the base of the riverbank, immediately adjacent to the river, a strip of protective riprap has been placed that comprises large chunks of concrete construction rubble (I understand from the demolition of a bridge and civic building). It was placed along the outside edge of the river meander, alongside the applicant's and neighbouring properties, by Horizons Regional Council ("the regional council"), between 1991 and 1994, and again in 1996. The riprap was intended to address concerns about the stability of the riverbank, following the cessation of a sand and gravel extraction operation on the river's opposite bank. Sometime over the past 5 to 10 years, the applicant has covered the riprap with a layer of soil, allowing vegetation to become established on it, so that the riprap is now largely no longer visible.
- 2.4 The applicant's property was formed as part of a subdivision in 2003. The survey completed for the subdivision established that the riverside boundary of the applicant's property was a natural boundary⁶ formed by the river bank crest. During the subdivision, an esplanade strip was created along the riverbank, measuring 20m wide from the riverbank crest, and encompassing all of the lower terrace (including most of the intermediate terrace). The strip was recorded on the certificate of title. The subdivision survey also established an area along the riverbank crest, including the esplanade strip and lower terrace, where building couldn't occur, as it was

³ Under sections 177(1)(b) and 177(2)(a) of the Act.

⁴ Reduced level – the vertical distance between survey points and with reference to a common assumed datum.

⁵ The river bank crest denotes the notional boundary between the 'river channel' and the 'adjacent flood plain'

⁶ "Natural boundary" is included in the definition of "Water boundary" in Clause 2 of the Rules for Cadastral Survey (2010) as "a boundary set at the landward margin of: (a) a river bed or a stream bed, ... and includes a natural boundary where this term is used in enactments to refer to a boundary at a water margin".

deemed unsafe due to the potential risk of erosion and inundation in this area. The restrictions on the use of this area was recorded in the resource consent notice for the subdivisions. No restrictions were placed in the notice relating to the remainder of the applicant's property.



Figure 1: The site plan taken from the expert's report showing the river and terraces, the property boundary and the approximate location of the house (not to scale)

- 2.5 The applicant is currently constructing a house under building consent No. BC 170138, which was issued by the authority on 14 November 2017. The house is single-storey, with a concrete slab on grade floors, strip foundations plus some piles, timber framing and cedar weatherboard cladding. The house is located adjacent to the middle of the upper terrace; it is set back 18m⁷ from the crest of the upper terrace and approximately 40m from the river bank crest.
- 2.6 In issuing the building consent for the house, the authority accepted the proposed work was compliant. However, the authority issued the consent with a condition attached to it, to the effect that, as the building consent related to building work on land that was subject to a natural hazard (erosion and inundation), the Registrar-General of Land would be notified of the building consent under section 73 of the Act. It is this notification, and the applicant's objection to it, that is the subject of this determination.

3. Background

- 3.1 The applicant initially applied for building consent to construct a house on the property in 2004. The plans for the house showed it was to be situated 2m⁸ back from the crest of the upper terrace. The authority was not satisfied that the building

⁷ The setback is 18m to a substantial raised reinforced concrete apron that runs the around three elevations of the house. The closest wall of the house is setback 23m from the upper terrace.

⁸ This was later accepted by the owner as a 5m setback and the first determination considered the stability of the site with respect to the 5m distance.

work complied with clauses B1 Structure and B2 Durability of the Building Code, and refused to grant a building consent.

- 3.2 The applicant applied for a determination about the authority's decision, and a determination on the matter was made in November 2006⁹ ("the first determination").
- 3.3 The first determination confirmed the authority's decision, on the grounds (in summary) that the decision-maker could not be satisfied on reasonable grounds that the building work would comply with Clause B1. This was due to potential issues associated with soil stability and erosion in the area where the house was planned to be built. The first determination did not consider the application of section 71 to 73 of the Act, as these provisions only apply when a building consent is to be granted.
- 3.4 The applicant again applied for building consent to construct a house in 2017 (the current house); this application related to the house described in paragraph 2 which is set back further than the previous application.
- 3.5 On 12 September 2017, the authority requested further information in relation to the application. The request related to several matters, but with respect to sections 71 to 73 of the Act, the authority asked for:

...information to show that the land intimately connected with the building will meet the requirements of building code clause B1.

The location of this steeply terraced site is on the outside bend of the Manawatu river, and may be likely to be subject to a number of Natural Hazards (erosion, slippage, inundation).

The authority went on to say that any evidence should 'address the issue of natural hazards' and to draw the applicant's attention to the first determination, as relevant to this site.

3.6 The applicant's consultant's report

- 3.6.1 In response to the authority's request for further information, the applicant provided a report by a company of engineering surveyors ("the applicant's consultant") dated 24 October 2017. In the report, the applicant's consultant addressed 'the three potential natural hazards' present on the applicant's property, namely erosion inundation, and land instability.
- 3.6.2 With respect to flooding, the applicant's consultant noted the elevation of the proposed building site, and the lower levels of the flood plains on the opposite bank of the river ('at least 2.5m lower'), which flood waters would spread over before they reached the level of the house. He attached flood mapping data from the regional council showing that during a 0.5% (200-year) flood event the site of the proposed house would be 'clear of flood waters'. The consultant concluded:
- The proposed dwelling site will not be subject to flooding in a 0.5% AEP¹⁰ (200-year) flood event.
- 3.6.3 With respect to erosion, the applicant's consultant referred to 'extensive investigations' that he had carried out in 2004 and 2005 in relation to the first determination. This included aerial photography of the river taken at intervals between 1942 to 2005, which established that the riverbank had not eroded over this time. In fact, since 1991 because of the protective riprap placed along the base of the riverbank, the bank appears to have accreted, rather than eroded. The consultant

⁹ Determination 2006/112 Stability of a house on a riverside site at 177 Fitzherbert East Road, RD1, Palmerston North (22 November 2016)

¹⁰ Annual exceedance probability. A 0.5% AEP means an event having a 0.5 percent probability of occurring annually - also referred to as a 200-year event.

stated that a site inspection showed that the riprap had not moved since it was placed at the base of the river bank in the 1990s, despite a major (70 year) flood event in 2004. The consultant concluded that:

Whilst it is possible that some minor erosion to the riverbank adjacent to the proposed development site, may occur, the extent of any such erosion will not affect the site with[in] the life of the dwelling at that site.

- 3.6.4 With respect to land stability, the applicant's consultant referred to geotechnical engineering reports produced in relation to the first determination, which analysed the stability of the site for the house that was proposed to be set 2m back from the crest of the upper terrace, and concluded that a set-back of at least 3.8m to 4m should be used. The consultant noted that the proposed set-back for the current building work was 18m (by his calculation) from the crest of the upper terrace at its closest point, which was 'more than sufficient' and further geotechnical investigation was not warranted. The consultant concluded that:

The proposed dwelling site is sufficiently far back from the top edge of the terrace to ensure that any stability concerns with the riverbank and terrace edge will not put the proposed new dwelling at risk.

- 3.6.5 Overall, the applicant's consultant concluded that;

The proposed building site:

- Will not be subject to flooding in a 0.5% AEP flood event;
- Will not be at risk from erosion of the Manawatu River bank; and
- Will not be at risk from land instability

OVERALL CONCLUSION

Even though parts of the property on which the proposed new dwelling will be constructed are at risk from the potential flood, erosion, and stability natural hazards, the proposed building site is sufficiently remote from these natural hazards, it is my opinion that the [authority] could grant a building consent for the proposed house at 177 Fitzherbert East Road in accordance with Section 71(2) of the Building Act 2004.

3.7 The consent

- 3.7.1 On 14 November 2017, the authority issued building consent No. BC 170138 for a 'New 2 bedroom plus office and attached three car garage dwelling' on the applicant's property. The consent was issued subject to conditions, including with respect to natural hazards, the condition that:

As the building is on land subject to a natural hazard specifically (erosion & inundation), the Building Consent Authority will on issue of the building consent, notify the consent to the Registrar-General of Land in accordance with under Section 72 of the Building Act 2004.

- 3.7.2 The applicant did not agree with the authority's decision to place a section 73 notification against the title of the property, and applied for a determination about the matter. This was received by the Ministry on 12 April 2018. I note that the application was originally phrased as relating to compliance of the building work, but after discussion with the Ministry the applicant confirmed the matter at issue is the authority's decision to place a section 73 notification against the title.
- 3.7.3 I note also that work has subsequently started on the construction of the applicant's house, pursuant to the building consent. I am not sure what stage this work is up to, but the fact that it is under construction does not, in any event, affect the outcome of this determination.

4. The submissions and the draft determination

4.1 The initial submissions

4.1.1 The applicant did not make a submission with the application for a determination, but enclosed copies of:

- the consented plans for the building work
- the first determination
- the authority's request for information dated 12 September 2017
- the applicant's consultant's report dated 24 October 2017.

4.1.2 The authority did not make a submission in response to the application for a determination, but provided a copy of the building consent documentation. However, in response to a request by the Ministry for further information, the authority advised in an email dated 17 May 2018 that:

- it agreed with the applicant's consultant about the 'the stability of the building site itself, and accepted that the building site meets the requirements of B1 and B2 for a minimum of 50 years'; this was why it had granted a building consent on 'land subject to natural hazard'
- the applicant's consultant's report 'confirms that the site (*land*) is subject to erosion' (the authority's emphasis)
- the authority disagrees with the applicant's consultant's report in the following regards:

The ... land is currently in the river along the boundary, and so the ... land is subject to permanent inundation (in part).

A site visit and photos established that the bank adjacent to the river is eroding.

- aerial photographs show that the path of the river has changed; 'The path used to have the main river flow away from the bank, whereas now the whole river is flowing against the bank on an outside bend'
- in considering the application of section 73, the authority had taken into account future owners of the title for '50 years into the future', who will be 'notified of the natural hazard through the notice on the title'.

4.1.3 In summary, the authority stated that:

The land (being the whole title/parcel) on which building work is to be carried out is subject to inundation and erosion. Adequate provision has not been made to protect the land from inundation or erosion.

Adequate provision has been made to protect the building work as the site/location where the building will be constructed has adequate setback distance from the river.

The building work will not cause or result in natural hazard on other property.

The authority concluded that because the land was subject to one or more natural hazards, and no provision had been made to protect the land from these hazards, section 71(2) does not apply. Accordingly, the consent was granted under section 72, which required it to register a notice against the title under section 73.

4.1.4 In a further email dated 23 May 2018, the authority provided photos of the applicant's property and riverbank taken during a site visit on 19 September 2017. The authority noted with respect to the photos that:

- ‘There was very little visible evidence of the concrete RipRap material remaining on the bank. The bank was mostly trees, grass, and river debris.’
- several photos ‘show deep cracks opening up approximately 3m back from the edge of the river and fresh slippage’
- one photo shows ‘the lay of the river hard against the bank along the property’.

4.1.5 The agent responded to the points raised by the authority in emails dated 25 May 2018 and 24 June 2018. The agent advised:

- the riprap has been covered with soil, as part of the landscaping for the site and because the exposed concrete was dangerous. The riprap remains in place beneath the soil, and was inspected by the applicant’s consultant before the soil was added, who ‘confirmed that little or no sign of erosion had occurred’
- the erosion shown in the authority’s photos had been inspected by the applicant’s consultant, who concluded that although he anticipated ‘some minor erosion’ this would not affect the building site
- the cause of the ‘minor slip’ shown in the photo was a stormwater discharge pipe, which had since been redirected.

4.2 The draft determination and submissions received in response

4.2.1 A draft of this determination was issued to the parties for comment on 10 September 2018. The applicant accepted the draft without comment on 16 September 2018.

4.2.2 The authority responded on 24 September 2018 saying that it did not accept the draft. The authority made a detailed submission as summarised below:

The natural boundary

- The authority questioned the statement attributed to the expert in paragraph 5.6 of the draft determination and it provided the opinion of a licensed surveyor. The surveyor noted “If the boundary is subject to the doctrine of accretion and erosion, the boundary of the subject property can at appropriate times, be amended to accommodate such changes to the boundary but has to be supported by survey and accepted by [LINZ¹¹]....”

The application of sections 71 to 73

- “Section 71-[73] does not allow for assessment of "merit", "low probability" or "low risk". If a site is subject to inundation, a notice is required.” “There is no grey area or ability to risk-assess the application of a notice under the Act.” Clarification was sought about how to apply a section 73 notice.
- the submission sought changes to the natural hazards decision tree (in Appendix B.)

The existence of the hazards

- “This area is distinctly identified as being subject to erosion and inundation by several reliable sources” being the first determination, the subdivision and zoning process, and the district plan.

¹¹ Land Information New Zealand
Ministry of Business,
Innovation and Employment

- The expert noted two areas of surface erosion during his site visit, which confirmed the authority's decision in relation to the notice.
- The expert says the lower terrace is subject to a "low flood hazard" which confirms that the property is subject to inundation.

The lower terrace

- the agent has referred to the lower terrace being developed "with retaining walls, gardens, and outdoor amenity spaces. These spaces are intimately connected to the dwelling...". The determination "should clearly state that the lower terrace should not be developed, as the lower terrace has clearly been identified as subject to inundation."

4.2.3 The applicant responded to the authority's submission in an email also dated 24 September 2018. The applicant noted that the opinion from the authority's surveyor had been forwarded to another surveyor who advised:

The river boundary is a natural boundary subject to accretion and erosion. The boundary is different to a normal title boundary as natural boundaries can and do move continuously by erosion and accretion. The boundary is not fixed and the title only depicts the boundary as it was at the time of the survey. This is the reason why re-surveys of boundaries are purely an updating of the boundaries.

4.2.4 On 26 and 29 October 2018 the Ministry clarified with the expert and the parties, the statements made by the expert with respect to which of two boundaries the owner's surveyor was referring to as 'the natural boundary' as recorded in the draft determination. The owner's surveyor confirmed this was the boundary at crest of the lower terrace (the river bank crest), and not the boundary that corresponds approximately with the crest of the upper terrace (at the top of the river bank).

5. The expert's report

- 5.1 As mentioned in paragraph 1.5, I engaged an independent expert to assist me in this matter ("the expert"). The expert is a technical specialist in hydrology and geomorphology, with more than 40 years' expertise in these fields, including slope stability, slope and water hydrology, flood-risk assessment, landscape evolution and natural hazards.
- 5.2 The expert provided a report dated 31 July 2018. A copy of the expert's report was provided to the parties for comment on 13 August 2018. In preparing the report, the expert assessed the available documentation, conducted a site visit at the applicant's property on 19 July 2018, and held discussions with the parties, the regional council and the applicant's consultant.
- 5.3 In the report, the expert recorded observations about the characteristics of the applicant's property, including its various levels, geology and likely formation. (The description of the site and relative levels are detailed in paragraphs 2.1 to 2.3 and Figure 1.) The expert considered the fluvial processes at work in the river and the impact of these on the riverbank, and the geomorphic changes that had occurred to the riverbank over time.
- 5.4 With respect to the various photos provided by the parties the expert noted that they 'not only provide an indication of the natural behaviour of the river, but also how the system has responded to human influences such as the use of riprap and willows for bank protection.' The expert concluded that the photos show that 'the form of the true left bank remains stable and unchanged' since 1956.

- 5.5 The expert then went on to consider the two specific natural hazards identified by the authority as being of concern, namely inundation and erosion.
- 5.6 The expert received informal advice from the agent's surveyor about the natural boundary that runs along the river bank crest¹² at the lower terrace. The agent's surveyor said "the river is the natural property boundary. This means that wherever the riverbank is, then that is the property boundary".
- 5.7 For the purposes of section 71 to 73, previous determinations had established that the 'test' for whether a property would be subject to inundation was whether it would be inundated during a 1% AEP (100-year) flooding event.
- 5.8 The expert referred to empirical evidence and hydraulic modelling for the Manawatu River, and noted that during the 70-year flooding event in 2004, the bottom terrace of the applicant's property was observed to have 100mm of slow-moving water overlying it. The expert considered that this level of inundation would not be too much different from that which would be experienced during a 100-year flood event, and noted that the level of the flood water was still 5m to 6m lower and approximately 30m distant from the upper terrace where the applicant's house is being constructed.

The expert concluded:

The inundation hazard to this property is low, and does not merit specific recognition on the title. While there is always a risk of inundation adjacent to large rivers, in my opinion the risk of inundation to the subject property does not justify a section 73 notice.

- 5.9 With respect to the erosion hazard, the expert noted that the data available for the applicant's property indicated that it had remained stable for the past 75 years, and that, 'The edge of the river i.e, the top of the bank, has remained in approximately the same position since the earliest aerial photographs taken in 1942'. There was also 'general agreement' that 'the slope adjacent to the river has remained stable since riprap was added in the early 1990s', including during the large (70-year) flood in 2004. The erosion noted by the authority in its photos was caused by the unconsolidated fill, which the applicant had used to cover the riprap, and a 'poorly designed' surface water drain from the upper terrace. 'Neither of these examples of erosion was caused by the interaction of the site with the Manawatu River' and the erosion was largely a function of 'poor site management'. Accordingly, the expert concluded:

The risk of erosion and slope instability to this property is therefore low, and certainly not sufficiently high to merit specific recognition on the title. In my opinion, the risk of erosion and slope instability to the subject property does not justify a Section 73 notice.

- 5.10 The expert further concluded that 'adequate provision had been made to protect the land from the risk of erosion', in the form of the riprap, which continued to function effectively.

¹² There are two boundary lines to the north of the property: a fixed surveyed boundary that corresponds approximately with the crest of the upper terrace, and a natural boundary at or near the river's edge. The expert had misinterpreted the applicant's surveyor's advice that the boundary at the top of the river back was the natural boundary. The correct interpretation is applied here.

6. Discussion

6.1 The legislation

6.1.1 The provisions relating to the construction of a building on land that is subject to natural hazards, are found in sections 71 to 74 of the Act (see Appendix A.1).

6.1.2 Under section 71(1):

- (1) A building consent authority must refuse to grant a building consent for construction of a building, or major alterations to a building, if –
 - a) the land on which the building work is to be carried out is subject or is likely to be subject to 1 or more natural hazards; or
 - b) the building work is likely to accelerate, worsen, or result in a natural hazard on that land or any other property.

6.1.3 The circumstances in which building consent authorities will be required to consider the application of the natural hazard provisions will vary, and authorities should turn their minds to both subsections 71(1)(a) and (b), although in some cases only one of these will be relevant. Authorities may also need to consider more than one natural hazard.

6.1.4 Section 71(2) provides that if certain conditions are satisfied, section 71(1) does not apply:

- (2) Subsection (1) does not apply if the building consent authority is satisfied that adequate provision has been or will be made to—
 - (a) protect the land, building work, or other property referred to in that subsection from the natural hazard or hazards; or
 - (b) restore any damage to that land or other property as a result of the building work.

6.1.5 Section 71(3) details the types of natural hazards that section 71 to 74 apply to, and these include erosion and inundation.

6.1.6 Section 72 sets out the circumstances in which a building consent authority must still grant a building consent for building work, even though the land on which the work is to occur is subject to one or more natural hazards.

6.1.7 Section 73 sets out the conditions that building consent authorities must include in a building consent when it is issued under section 72, including notification of the consent to the Registrar General of Land.

6.1.8 Section 74 describes the steps that must be taken after notification, including in circumstances where the building consent authority determines that a notification is no longer required.

6.1.9 An important purpose of the natural hazard provisions within sections 71 to 74 is to ensure consideration is given to how building work affects natural hazards and impacts on the land or other property. The provisions do not prevent building work even where land is subject to natural hazards, unless the building work will accelerate, worsen or result in a natural hazard on the land which the building work is to be carried out or to any other property.

6.1.10 Where building work is undertaken on land that is subject to a natural hazard and the building work will not accelerate or worsen the natural hazard, the purposes of the provisions are to:

- notify of the existence of natural hazards by placing a notice on the title
- ensure the building work is protected from the natural hazard

- confirm that the building consent authority has considered the natural hazard when granting the building consent
- give an authority certain protections from liability, under section 392(3) of the Act, relating to its decision to grant a building consent notwithstanding the natural hazard.

6.1.11 To put it another way, the natural hazard provisions exist so that the risk to land and other property can be recognised, the effect of the building work considered, and steps taken to mitigate those risks and effects. Where the risks and effects cannot be sufficiently mitigated but the land is still subject to a natural hazard then the provisions recognise that it may nevertheless be acceptable to build on the land and require notification of the risk on the title to the land and provide regulatory authorities with protection from liability (on the basis that the owner is knowingly building on land affected by the natural hazard). Placing a notice on the title ensures that future purchasers and other interested parties are aware that the land is subject to a natural hazard.

6.2 The application of the provisions in this case

6.2.1 In order to consider whether the authority correctly exercised its powers when it granted a building consent subject to notification under section 73, I have to first to consider whether section 71(1) applies in this case.

6.2.2 There are a number of steps to consider in section 71(1):

- whether construction is a new building or major alterations (in this case it is the construction of a new building)
- whether a natural hazard is likely to occur, and
- whether the natural hazard occurs on the land on which the building work is to be carried out, or
- whether the building work is likely to accelerate, worsen, or result in a natural hazard on that land or any other property.

6.2.3 The building work concerns the construction of a new building, and the authority has accepted that section 71(1)(b) does not apply i.e. the building work will not accelerate, worsen, or result in a natural hazard on the land on which it is situated or any other property. Therefore I consider only whether there is a natural hazard and whether that natural hazard occurs on the land on which the building work is to be carried out; that is the two criteria in section 71(1)(a).

Is there a natural hazard?

6.2.4 Turning first to the likelihood of a natural hazard occurring, the authority has identified the two natural hazards that it considers the applicant's property is subject to as erosion and inundation. It has stated that the land that is subject to these hazards is the whole title or parcel, i.e., the entirety of the applicant's property.

6.2.5 In *Logan v Auckland City Council*¹³, the Court of Appeal noted that some judgment is required in determining when land will be subject to a natural hazard, that the provisions do not require the elimination of all hazards, and that such judgments involve 'a sensible assessment involving considerations of fact and degree'.

¹³ *Logan v Auckland City Council* (2000) 4 NZ ConvC 193, 184 (CA)

- 6.2.6 The approach in previous determinations¹⁴ has been that section 71 requires an assessment of whether the effect of a natural hazard will be more than minimal or trivial, and with respect to the likelihood of a given natural hazard occurring.
- 6.2.7 Section 71(3)(a) to (e) defines a natural hazard by the event occurring (in this case inundation and erosion) but does not give an indication of the extent of that event. Previous determinations¹⁵ have taken the approach that a 100-year flood event (or 1% AEP) is appropriate in relation to inundation and the “likelihood” test in section 71(1) and I maintain that view.
- 6.2.8 In regards to whether inundation is more than minimal or trivial, this was considered in Determination 2013/047¹⁶ which concerned a site likely to be subject to inundation in a 1% AEP and where inundation would occur over a large area of the site on which a garage was being constructed. Paragraph 6.3.1 of Determination 2013/047 concluded the inundation was not a natural hazard for the purpose of section 71 because:
- it would be of temporary and minimal effect, and
 - it had no potential for affecting the land, the proposed building work or other property in such a way as to require protection, and
 - it did not have the potential for causing damage that will need to be restored.
- 6.2.9 In the current case, the expert has expressed the opinion that even in the event of a 100-year flooding event, the degree of inundation likely to be experienced on the applicant’s property will not be much more than 100mm, and that these flood waters are likely to be slow-moving and some 5 to 6m lower than the area where the applicant’s house is being built.
- 6.2.10 With respect to erosion, being the other potential hazard identified by the authority, in my opinion the evidence shows that there is minimal risk that the applicant’s property will be subject to erosion at the riverside boundary. I accept the evidence of both the applicant’s consultant and the expert in this regard, that the line of the river bank on the applicant’s property has remained essentially unchanged since 1942. In fact, in more recent years the bank has been accreting, due to the presence of the riprap. This demonstrates the effectiveness of this measure to protect the land from erosion caused by the river.
- 6.2.11 Taking account of the factors above, I am of the opinion that the likely inundation on this site is minimal or trivial and that the site is not subject to erosion; and therefore neither constitutes a natural hazard.
- 6.2.12 I accept also that the examples of erosion that the authority has expressed concern about, as shown in its 2017 photo, are not related to the action of the river on the land, but are the result of landscaping and drainage works that the applicant has undertaken on the property. I note that with respect to the drainage, the applicant advises that this has now been addressed, and the cracks in the ground caused by the consolidation of the soil will not have an adverse effect on the river’s natural bank in the future.

¹⁴ For example, Determination 2013/081 Regarding the issue of a building consent subject to a section 73 notice for a house on land subject to inundation (23 December 2013), and Determination 2017/048 Regarding the decision to grant a building consent subject to notification under section 73 for building work on land subject to a natural hazard (30 June 2017)

¹⁵ See for example Determination 2008/082 Building consent for a storage shed on land subject to inundation (5 September 2008)

¹⁶ Determination 2013/047 Regarding the refusal to grant building consent without a section 73 notice for a garage on land subject to inundation (20 August 2013)

The land on which the building work is to be carried out

- 6.2.13 Although I am of the opinion that the likely inundation in this site does not constitute a natural hazard, for completeness I have also turned my mind to the question of whether ‘the land on which the building work is to be carried out’ is the land that could potentially be subject to natural hazards.
- 6.2.14 The meaning of the word land in this context was considered by the High Court in the case of *Auckland City Council v Logan*¹⁷. (The case considered section 36 of the Building Act 1991, which is the equivalent of sections 71 to 73 of the current Act.) In relation to natural hazards, the court stated that the meaning of ‘land’ can be different depending on the circumstances of the case. It should, however, relate to the protection of “the site itself where...the building and the site are intimately connected”. This comment has since been interpreted as meaning that for the purpose of section 71 the ‘land’ in question is that land which is ‘intimately connected’ with the building work.
- 6.2.15 That interpretation has been applied in several previous determinations, and I consider it still to be relevant and applicable in the current case. Whether the land on which the building work is to be carried out is subject to a natural hazard shall take into account:
- the size of the property relative to the area occupied by the building work
 - the position of the building work on the property relative to the hazard
 - the extent of the property affected by the hazard in relation to both the building site and the property as a whole.
- 6.2.16 The applicant’s property is moderately substantial in size at 1.172 hectares and the majority of this area forms the upper terrace on which the house is located. The expert has noted that in a 1% AEP flood event, the inundation will be restricted to the lower terrace and would be some 5 to 6m lower than the area where the house is being built. The location of the site where the applicant’s house is being constructed is 18m away from the crest of the upper terrace, at its closest point, and a further (approx.) 9m to the area of the lower terrace subject to inundation.
- 6.2.17 I accept the expert’s assessment that any flooding, should it occur, is likely to be restricted to this area of the property. I have also concluded there is minimal risk of the applicant’s property being subject to erosion (refer paragraph 6.2.10), however, for the sake of argument, if this did occur it would be at the riverside boundary.
- 6.2.18 Notwithstanding the conclusion I have reached that there is no natural hazard likely to occur, the areas of the applicant’s property that could potentially be subject to natural hazards (if either were to occur) are limited to those areas encompassed within the lower terrace in the esplanade strip. There has been no suggestion or evidence from either the authority or the applicants that either erosion or the inundation are likely to extend beyond this area.
- 6.2.19 In the interests of completeness, I note that the authority has stated that the applicant’s property is subject to permanent inundation as the riverside boundary is located in the river. I consider this is incorrect. The natural boundary is located at landward margin of the river and is adjusted from time to time as that margin is eroded and accreted by the river. During times of normal flow, the river will not inundate the applicant’s land to any significant degree - if at all.

¹⁷ *Auckland City Council v Logan* HC Auckland AP77/99, 1 October 1999

- 6.2.20 In my opinion, the area of the applicant's property that may be subject to a natural hazard cannot be considered to be intimately connected with the land where the building work is taking place.
- 6.2.21 I note that the authority has referred to the agent's intention to develop the lower terrace (in the form of retaining walls, gardens, and outdoor amenity spaces) stating that this area is "intimately connected to the dwelling" (refer paragraph 4.2.2). As noted above, I do not consider that the lower terrace is an area that is intimately connected with the land on which the consented building work is taking place. This part of the site also falls within the esplanade strip where building¹⁸ is not to occur and restrictions on the use of the area is also recorded in the resource consent for the site (refer paragraph 2.4). However, I acknowledge that care should be taken with any development below the upper terrace, of the type described above, to ensure it does not have any adverse effect on the stability of this part of the site.

6.3 Using the natural hazards decision tree

- 6.3.1 In the course of preparing several past determinations, a natural hazards decision tree has been developed to clarify the steps involved in applying the natural hazard provisions of sections 71 to 73. I have appended it to this determination (see Appendix B) with appropriate annotations relevant to this particular case as outlined in paragraphs 6.2.1 to 6.2.20 and summarised below. I emphasise that the natural hazards decision tree is a simplified tool and there are a number of factors to consider at each step of the process.
- 6.3.2 Applying the steps set out in the natural hazards decision tree in this case (also refer to the annotation using the same numbering convention in Appendix B):
1. The authority has granted a building consent for the building work; the building work complies with the Building Code if there is no natural hazard.
 2. The building work comprises the construction of a new building.
 3. The building work will not accelerate, worsen, or result in a natural hazard on the subject property or other property.
 4. The land on which the building work is being carried out is not subject or is not likely to be subject to a natural hazard:
 - the effect of the natural hazard will not be more than minimal or trivial
 - the area of the applicant's property that may be subject to a natural hazard is not intimately connected with the land where the building work is taking place.

6.4 Conclusion and next steps

- 6.4.1 Based on the information provided to me, I have concluded:
- the relatively shallow, slow-moving and ponded nature of any flooding that may occur does not constitute a natural hazard, and
 - the land on which the building work is to occur will not be subject to inundation or erosion.

¹⁸ It is noted that the term "building" in this context is defined by legal instruments other than section 7 of the Act.

- 6.4.2 I do not consider that the criteria in section 71(1)(a) have been met and as a result this subsection does not apply. In other words, the land on which the applicant's house is being constructed is not likely to be subject to one or more natural hazards. As the authority has accepted that section 71(1)(b) also does not apply, then the natural hazard provisions in the Act do not apply to in relation to this consent.
- 6.4.3 However, it is noted this position is based on the work as described in the building consent, and the following is noted:
- There is no dispute between the parties that the consented work is compliant by virtue of the 18m set-back, at its closed point, from the crest of the upper terrace. There is no outstanding issue with respect to the building's foundations and the building platform which support it, being in full compliance with Clauses B1 Structure and B2 Durability.
 - In the first determination the then proposed building was located 2m (later 5m) back from the crest of the upper terrace and the determination considered the stability of the river bank in detail.
 - Had the building that is the subject of this determination been located in a similar position, a more rigorous assessment of the building's compliance with Clause B1 would have been necessary and the determination may have reached a different conclusion in this respect.
 - I accept the expert's conclusions in respect of the long-term stability of the bank in that the site has been stable for the past 75 years and the only change has been the buttressing effect of the riprap which has improved stability. If no changes are proposed to the loading of the site, its past behaviour can be taken as indicative of ongoing stability.
- 6.4.4 The authority should now:
- issue an amended building consent without the condition relating to building on land that is subject to natural hazards in it
 - apply to the Registrar-General under section 74 of the Act to have the section 73 notification removed from the certificate of title for the applicant's property if that notification has already been made.

7. The decision

- 7.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the authority incorrectly granted the building consent subject to a section 73 notice. Accordingly, I modify the authority's decision to grant the building consent as described in paragraph 6.4.4 of this determination.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 22 November 2018.

Katie Gordon
Manager Determinations

Appendix A

A.1 The relevant sections of the Building Act 2004 include:

71 Building on land subject to natural hazards

- (1) A building consent authority must refuse to grant a building consent for construction of a building, or major alterations to a building, if—
 - (a) the land on which the building work is to be carried out is subject or is likely to be subject to 1 or more natural hazards; or
 - (b) the building work is likely to accelerate, worsen, or result in a natural hazard on that land or any other property.
- (2) Subsection (1) does not apply if the building consent authority is satisfied that adequate provision has been or will be made to—
 - (a) protect the land, building work, or other property referred to in that subsection from the natural hazard or hazards; or
 - (b) restore any damage to that land or other property as a result of the building work.
- (3) In this section and sections 72 to 74, natural hazard means any of the following:
 - (a) erosion (including coastal erosion, bank erosion, and sheet erosion):
 - ...
 - (c) subsidence:
 - (d) inundation (including flooding, overland flow, storm surge, tidal effects, and ponding):
 - (e) slippage.

72 Building consent for building on land subject to natural hazards must be granted in certain cases

Despite section 71, a building consent authority that is a territorial authority must grant a building consent if the building consent authority considers that—

- (a) the building work to which an application for a building consent relates will not accelerate, worsen, or result in a natural hazard on the land on which the building work is to be carried out or any other property; and
- (b) the land is subject or is likely to be subject to 1 or more natural hazards; and
- (c) it is reasonable to grant a waiver or modification of the building code in respect of the natural hazard concerned.

73 Conditions on building consents granted under section 72

- (1) A building consent authority that is a territorial authority that grants a building consent under section 72 must include, as a condition of the consent, that the building consent authority will, on issuing the consent, notify the consent to,—
 - ...
 - (c) in any other case, the Registrar-General of Land.

74 Steps after notification

- (1) On receiving a notification under section 73,—
 - (a) the Surveyor-General or the Registrar of the Maori Land Court, as the case may be, must enter in his or her records the particulars of the notification together with a copy of any project information memorandum that accompanied the notification:

- (b) the Registrar-General of Land must record, as an entry on the certificate of title to the land on which the building work is carried out,—
 - (i) that a building consent has been granted under section 72; and
 - (ii) particulars that identify the natural hazard concerned.
- (2) If an entry has been recorded on a duplicate of the certificate of title referred to in subsection (1)(b) under section 641A of the Local Government Act 1974 or section 36 of the former Act, the Registrar-General of Land does not need to record another entry on the duplicate.
- (3) Subsection (4) applies if a building consent authority determines that any of the following entries is no longer required:
 - (a) an entry referred to in subsection (1)(b):
 - (b) an entry under section 641A of the Local Government Act 1974:
 - (c) an entry under section 36 of the former Act.
- (4) The building consent authority must notify the Surveyor-General, the Registrar of the Maori Land Court, or the Registrar-General of Land, as the case may be, who must amend his or her records or remove the entry from the certificate of title.

A.2 The sections of the Building Act 1991 referred to in this determination:

Limitations and Restrictions on Building Consents

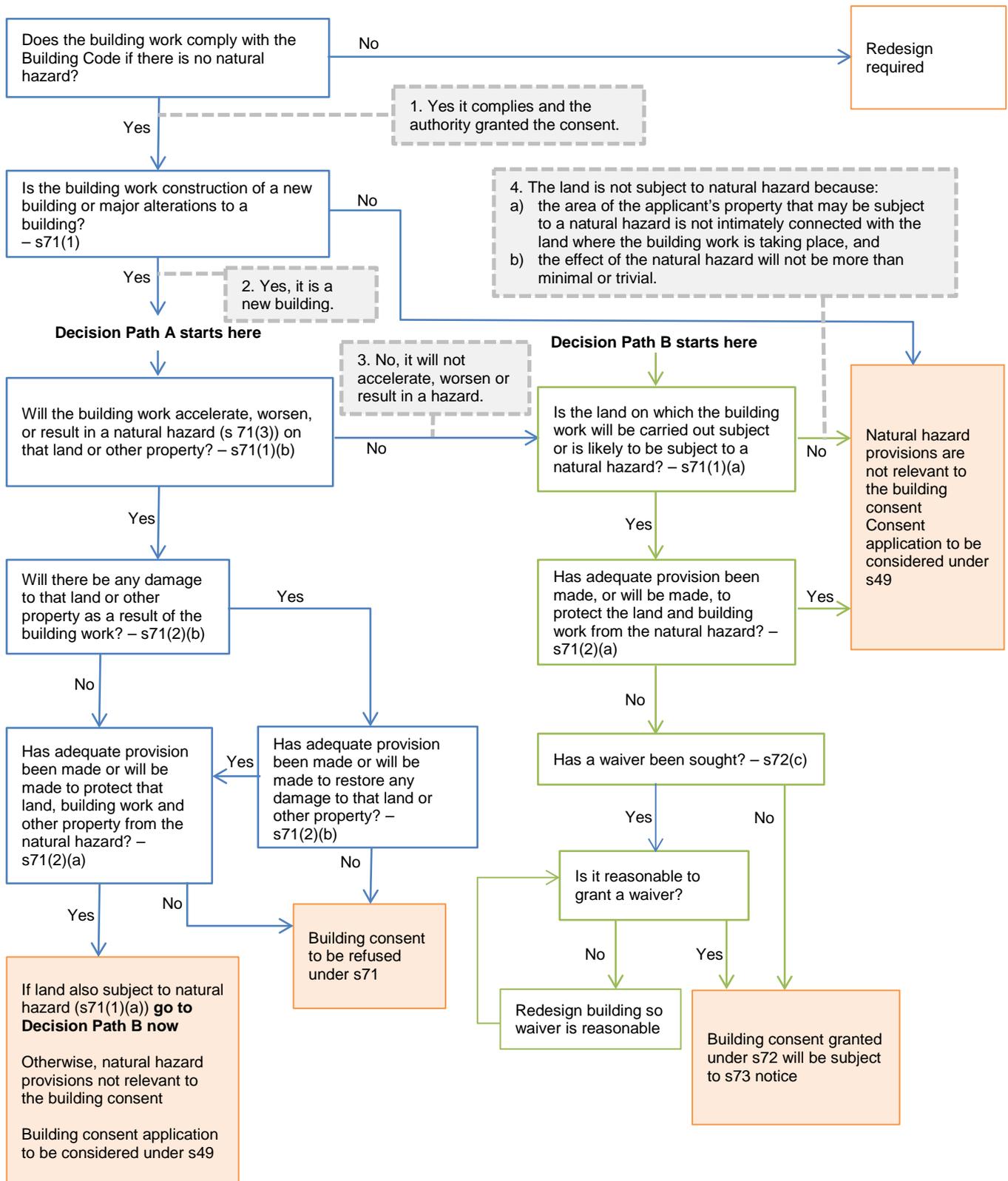
36 Building on land subject to erosion, etc. ---

- (1) Except as provided for in subsection (2) of this section, a territorial authority shall refuse to grant a building consent involving construction of a building or major alterations to a building if –
 - (a) The land on which the building work is to take place is subject to, or is likely to be subject to, erosion, avulsion, alluvion, falling debris, subsidence, inundation, or slippage; or
 - (b) The building work itself is likely to accelerate, worsen, or result in erosion, avulsion, alluvion, falling debris, subsidence, inundation, or slippage of that land or any other property –

unless the territorial authority is satisfied that adequate provision has been or will be made to –

 - (c) Protect the land or building work or that other property concerned from erosion, avulsion, alluvion, falling debris, subsidence, inundation, or slippage; or
 - (d) Restore any damage to the land or that other property concerned as a result of the building work.

Appendix B: Natural Hazards Decision Tree¹⁹ (with annotations specific to this determination)



¹⁹ Note: this is a simplified tool developed to clarify the steps in applying the natural hazard provisions of sections 71 to 73 of the Act and there are a number of factors to consider at each step of the process.