

Before the Expert Panel appointed under the Fast-track Approvals Act 2024

Under the Fast-track Approvals Act 2024 (FTAA)
In the matter of the Southern Link Inland Port

STATEMENT OF EVIDENCE BY BEN THROSSELL ON BEHALF OF DUNEDIN CITY COUNCIL
NATURAL HAZARDS (HYDROLOGY AND FLOODING)

11-September 2026

1. INTRODUCTION

- 1.1 My full name is Benjamin Graham Throssell.
- 1.2 I am water resources engineer employed by Beca with a Bachelor of Engineering (Hons) (Natural Resources Engineering) from the University of Canterbury. I have 14 years of experience specialising in water resources engineering, with expertise in assessing flood hazard and hydrology and hydraulics. I was involved in hydrological and hydraulic assessments for recovery investigations and work following both Cyclone Gabrielle (Esk Valley) and the Auckland Anniversary events.
- 1.3 This is my summary statement of evidence, responding to the statement of evidence of Andrew Craig dated 19 August 2026, filed on behalf of Southern Link Property Limited (SLPL). In addition, I have also reviewed Mr Craigs summary evidence, filed 10 September 2026.

Code of Conduct

- 1.4 I confirm that I have read the Code of Conduct for Expert Witnesses contained in section 9 of the Environment Court Practice Note 2023 and have complied with it in preparing this evidence. I confirm that the issues addressed in this evidence are within my area of expertise, and I have not omitted material facts known to me that might alter or detract from my evidence.

2. SCOPE

- 2.1 I have been engaged by the Dunedin City Council (DCC) to provide hydrology and flood hazard evidence in relation to the substantive application by Southern Link Property Limited (SLPL) for the Southern Link Inland Port (SLIP).
- 2.2 I have been instructed by the DCC to assess the proposal through the lens of the Dunedin Second Generation District Plan (2GP) Natural Hazards objectives, policies, and rules. It is through this planning framework that I evaluate the applicant's flood hazard assessment, proposed mitigations and effects.
- 2.3 My review and evidence focus strictly on flood hazard matters assessed through this lens. I have not reviewed stormwater management aspects of this application, or the potential impact of the proposal on the Lower Taieri Flood Protection Scheme, which is within Otago Regional Council control.

- 2.4 The site is located within two flood hazard overlays (1 and 1A). With respect to effects, the assessment guidance provided by the 2GP¹ for this activity within these overlays (Rule 11.7.2 - 1 - f - xi) states:

“The creation, transference or exacerbation of risk off-site by the proposed activity, or future proposed activities, for example risk from redirected floodwaters, or risk from landslide on another site will generally not be seen as appropriate”

I interpret this planning test as deliberately conservative meaning any off-site increase in flood level or risk should be negligible or zero.

3. REVIEW OF MR. CRAIG’S EVIDENCE ON CONDITION B.21

- 3.1 I have reviewed the Statement of Evidence of Mr. Andrew Craig (dated 19 August 2026). I will only discuss matters where there is an outstanding difference of opinion that is material to the application.

- 3.2 In his formal evidence (paragraphs 3.4–3.6), Mr. Craig proposed that Condition B.21 provide for a 20 mm threshold for commercial and rural buildings, but rejected tighter limits outside of buildings. Since Mr. Craig filed his evidence, the parties’ experts have continued to discuss potential refinements to Condition B.21. Additionally, I received Mr Craig’s summary evidence on 10 September 2026 which largely reflects the outcomes of those discussions. B.21 states:

“Prior to the commencement of construction of the Southern Link Inland Port, the Consent Holder must provide final detailed design plans and a report describing the associated hydraulic modelling to the Otago Regional Council that confirm that the following limits will not be exceeded as a direct result of the development of the Southern Link Inland Port in events up to 1% AEP with climate change for an assessment area extending 2000m downstream of the site:

- a) Existing habitable buildings in residential and rural zones: <10mm of increase in internal flood water depth;*
- b) Existing commercial buildings in commercial and industrial zones: <20mm of increase in internal flood water depth;*
- c) No more than 50mm increase in flood water depth outside of buildings, and*
- d) No more than 10mm at the downstream edge of the assessment area.”*

- 3.3 Mr Craig and I are in agreement on a) and b) of B.21 as set out above. However, in my opinion, a workable Condition B.21 would also need to address the following matters:

a) The hydraulic modelling report should be independently peer reviewed and submitted to DCC as well as ORC.

b) a 50 mm depth outside of buildings is not consistent with the assessment guidance provided by the 2GP (Section 2.4).

c) I consider a better metric for determining effect on flooding for habitable dwellings is water surface elevation measured at the building boundary (afflux), not internal flood water depth.

¹ <https://2gp.dunedin.govt.nz/plan/pages/plan/book.aspx?exhibit=DCC2GP>

I explain my concerns below, and propose an alternative B.21 which would satisfy these concerns.

4. OUTSTANDING ISSUES

4.1 Issue (a): Independent peer review and submission to DCC. The modelling report should be lodged with both DCC and ORC. In addition, an independent external peer review commissioned by council and funded by the consent holder should be completed to provide sufficient assurance to the consent authorities prior to construction commencing. In my experience, this is standard practice for projects of this scale and for sites with elevated flood vulnerability and is often done prior to the consent application stage.

4.2 Issue (b): Flood depths outside buildings. Mr Craig proposes looser thresholds outside buildings, citing 10–100 mm variability from the Otaki–North Levin highway project. In my opinion, that context is not directly comparable:

- I am considering this project within the context of the DCC rules (para 2.4). Tolerance for flood effects in this flood hazard zone is negligible to zero. While 2D models can exhibit numerical noise, this can be managed through sensitivity testing and reporting. Widening tolerances to manage effects of depression filling or modelling uncertainty risks masking genuine adverse effects.
- state highway projects involve major cross-drainage works over and through significant watercourses. Effects on these watercourses cannot be resolved until detailed design. Land development projects intercept overland flow paths and displace floodwater, the material effects are typically determinable at consent stage.

4.3 Issue (c): Determining flood impacts at buildings by comparing internal flood depths risks outcomes being driven by the chosen modelling methodology of the habitable dwellings. One approach is to ‘block’ buildings out of the model, preventing through flow. This is acceptable for evaluating absolute flood levels, but it produces no change in internal flood depth. Moreover, depths can be affected by the model mesh and the resolution of the underlying DEM. Whilst these should be consistent between pre- and post-development models, if for any reason they are not, using a depth metric will introduce additional uncertainty. Flood effects at buildings can instead be evaluated using Water Surface Elevation (WSE) at the building boundary.

5. FLOOR LEVELS

5.1 In paragraphs 4 and 5 of his Summary Statement, Mr. Craig states that the issue of finished floor levels has been resolved with the Otago Regional Council and they have agreed to defer this assessment to the building consent stage. Whilst I agree this assessment can be deferred, the mechanism governing the assessment should be confirmed now. For clarity, I suggest minor wording changes to the condition as follows:

“Finished floor levels shall be constructed at or above the 1% AEP plus climate change flood level, with 300 mm freeboard. This shall be determined by a suitably qualified and experienced person(s).”

6. PROPOSED CONDITION B.21

- 6.1 Rather than attempting to retrofit Mr. Craig's Condition B.21, I have updated my original draft condition (presented at paragraph [163] of the DCC comments). This reflects my own opinion and addresses the issues I raise above:

Prior to the commencement of any site works or construction of the Southern Link Inland Port, the Consent Holder must demonstrate, through 2D hydraulic modelling and external peer review by a Suitably Qualified and Experienced Person appointed by the Councils, that the proposal does not increase off-site flood effects for flood events up to and including the 1% AEP event with climate change beyond the following tolerances:

1. *Within 500 m of the site/parcel boundary:*

- *< 10 mm increase in Water Surface Elevation (WSE) at habitable dwellings (residential or rural zones);*
- *< 20 mm increase in WSE at any commercial or industrial building;*
- *< 50 mm increase in WSE on rurally zoned land; and*
- *< 20 mm elsewhere.*

2. *Beyond 500 and 2000 m of the site/parcel boundary:*

- *< 10 mm;*

- 6.2 I expect effects to diminish with distance from the property boundary, and if the conditions above can be satisfied then I expect effects beyond 2 km from the site/parcel boundary will be negligible.

Dated: 11 September 2026



Ben Throssell