ADDENDUM TO STATEMENT OF EVIDENCE

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The PC56 coastal hazard overlay presents a single sea-level rise projection scenario:

- **SSP5-8.5 M** *at the year **2130***

The 2022 Interim guidance on the use of new sea-level rise projections recommends using five updated "medium confidence" scenarios for sea-level rise projections out to 2150, [for dynamic adaptive pathways planning (DAPP)]:

- **SSP1-2.6 M**
- **SSP2-4.5 M**
- **SSP3-7.0 M**
- **SSP5-8.5 H$^+$**

Table 3 of the Interim guidance on the use of new sea-level rise projections also provides minimum transitional allowances for sea-level rise in land-use planning, until a DAPP strategy is in place. These minimum transitional allowances form an initial planning/design response in the wider context of developing dynamic adaptive plans for communities and infrastructure along the coast. The minimum transitional allowances include three scenarios, to be applied across four decision categories:

A. **SSP5-8.5 H$^+$** ⇔ *out to the year **2130***

B. **SSP5-8.5 H$^+$** ⇔ *out to the year **2130***

C. **SSP5-8.5 M** ⇔ *out to the year **2130*** ⇔ presented as PC56 overlay

D. **SSP5-8.5 M** ⇔ *out to the year **2090***

Table 3 of the interim guidance describes these decision categories and is reproduced below.

NIWA mapped coastal flooding for four relative sea-level rise scenarios (Table 1) at the year 2130. The scenarios mapped by NIWA cover decision categories A – C of the minimum transitional allowances, but not category D, which has a shorter time horizon (year 2090). The scenarios mapped by NIWA also cover four of the five recommended scenarios for undertaking a DAPP (SSP3-7.0 M is not included because that scenario was not recommended by the 2017 guidance and the 2022 interim guidance was released after NIWA did the mapping).

Table 1: Summary of water levels used in coastal inundation mapping. Note: SSP = Shared Socio-economic pathways, RSLR = relative sea-level rise, VLM = vertical land movement, WVD-1953 = Wellington

vertical datum-1953 (local vertical datum), MSL = mean sea level (= 0.215 m WVD-53 for year 2020) and AEP = Annual Exceedance Probability. Totals shown in the final column have been rounded to 1 decimal place.

Mapping scenario	Sea level rise scenario	RSLR (m)	1% AEP storm-tide + wave setup (m)	MSL ~= +0.215 m WVD-53 for year 2020	ESL (WVD-53) (m)
1	Present-day (0 m SLR)	0 m	1.32	0.215	1.54 [= 1.32 + 0.215]
2	SSP1-2.6 (incl. VLM)	0.9 m, at year 2130	1.32	0.215	2.4 [= 0.875 + 1.32 + 0.215]
3	SSP2-4.5 (incl. VLM)	1.1 m, at year 2130	1.32	0.215	2.6 [= 1.075 + 1.32 + 0.215]
4	SSP5-8.5 (incl. VLM)	1.5 m, at year 2130	1.32	0.215	3.0[= 1.475 + 1.32 + 0.215]
5	SSP5-8.5H+ (incl. VLM)	1.9 m, at year 2130	1.32	0.215	3.4 [= 1.875 + 1.32 +0.215]

Table 3 of Interim guidance on the use of new sea-level rise projections: Recommended updates to the minimum transitional procedures or RSLR allowances

Category	Description	Transitional allowances in the 2017 coastal hazards guidance (s. 5.7.3) or table 2 of the Summary (Ministry for the Environment, 2017a)	Transitional allowances to use now, until the refresh of the coastal guidance
A	Coastal subdivision, greenfield developments, and major new infrastructure	*Avoid hazard risk by using sea-level rise over more than 100 years and the H+ scenario*	Avoid new hazard risk by using "medium confidence" sea-level rise out to **2130** for the SSP5-8.5 H+ (*83rd percentile SSP5-8.5 or p83)* scenario that includes the relevant VLM for the local/regional area (from table 1; typically 1.7 m rise in regional MSL before including VLM). Also, check the lifetime and utility of new developments using the median RSLR projections for the "low confidence" SSP scenarios out to 2150 and beyond.
B	Changes in land use and redevelopment (intensification)	*Adapt to hazards by conducting a risk assessment using the range of scenarios and the pathways approach*	Adapt to hazards by conducting a risk assessment using the range of updated "medium confidence" RSLR scenarios (including VLM) out to **2130** with the dynamic adaptive pathways planning approach; or if a more immediate decision is needed: • avoid new and increased hazard risk by using "medium confidence" sea-level rise out to **2130** and the SSP5-8.5 H+ (*83rd percentile SSP5-8.5 or p83*) scenario that includes the relevant VLM for the local/regional area (from table 1; typically 1.7 m rise in regional MSL before including VLM).

Category	Description	Transitional allowances in the 2017 coastal hazards guidance (s. 5.7.3) or table 2 of the Summary (Ministry for the Environment, 2017a)	Transitional allowances to use now, until the refresh of the coastal guidance
C	Land-use planning controls for existing coastal development and assets planning. Use of single values at local/district scale transitional until dynamic adaptive pathways planning is undertaken	*1.0 m sea-level rise*	Use the SSP5-8.5 M scenario out to **2130**, which includes the relevant VLM for the local/regional area (from table 1; typically 1.2 m rise in regional MSL before including VLM).
D	Non-habitable, short-lived assets with a functional need to be at the coast, and either low-consequences or readily adaptable (including services)	*0.65 m sea-level rise*	Use the SSP5-8.5 M scenario out to **2090** that includes the relevant VLM for the local/regional area (from table 1; typically 0.7 m rise in regional MSL before including VLM).

Notes for table 3: Recommended updates (last column) to the minimum transitional procedures or RSLR allowances, are for use in planning instruments while in transition towards a DAPP strategy. *VLM = vertical land movement; p83= 83rd percentile (top of shaded likely range).*