



Inquiry into the McCrae Landslide - Joint report arising from Expert Conclave on Remediation and Mitigation

Conclave held at via Audio Visual Link

14 August 2025 9:00 to 11:15

In attendance:

Name	Company	Title	On behalf of
Darren Paul	WSP	Technical Director – Engineering Geology	Board of Inquiry
Dane Pope	PSM	Principal Geotechnical Engineer	Mornington Peninsula Shire Council
Tim Whelan	Whelans	Director of Major Projects and Engineering	Board of Inquiry

Definitions:

The following definitions apply to the works described in this joint report:

Remediation/Reinstatement – Refers to works undertaken to return the landform to its condition prior to the landslide to the extent practical. The WSP design has a focus on remediation.

Mitigation – Refers to works undertaken to reduce risk from further landslide. The PSM design has a focus on mitigation.

Approach

The following summarises the different design approaches put forward for remediation and mitigation and provides commentary on each. A comparison between the different design approaches is provided subsequently.

PSM Design - Fibreglass soil nails with stainless steel mesh and shotcrete facing below headscarp at 6 View Point Road

This design includes:

- Up to 1000 m² of mesh and nails across the areas affected by both the 2022 and 2025 landslides.
- Approximately 50 m² of shotcrete facing.



- One row of closely spaced inclined drains (No. 31) installed into the colluvium and associated pipework directed to a Legal Point of Discharge at the toe of the slope.
- The crest of escarpment is cut back which will impact the existing levelled area at 10-12 View Point Road (current vegetable garden area) and some of the paved area at 6 View Point Road.

Considerations for this design include:

- Provides mitigation against further landslides in the areas over which slope support is installed.
- The design responds to the current landform which will remain similar to the current post landslide form.
- A balustrade would be needed on 6 View Point Road at crest of remediated slope given the steep slope below.
- Requires inspection and maintenance, for example 5 year period similar to recommendations for systems near roads. Requires enforcement of inspection and implementation of maintenance as necessary – e.g. cleaning out of slope drains, clearance of material that accumulates behind the mesh beyond the design intent and as necessary.
- Grasses and shrubs can be re-established on the slope. Trees need to be removed if they start to establish because they can grow through and damage the mesh.
- Requires means to protect the support system from future development, for example future foundation penetrating through soil nails. Means of enforcing this would need to be put in place.
- Temporary erosion protection – e.g. biodegradable coir matting is required under mesh to provide erosion protection until vegetation can establish.
- One contractor has indicated design is constructable (not priced at this stage).
- The design is concept only and requires detailed design to confirm nail/drain length and spacing. Mr Pope does not expect major changes to occur during this process.

WSP Design – Rockfill buttress

This design includes:

- The removal of debris from the toe of and on the slope.
- Placement of erosion protection and drainage on the slope, for example a geo-fabric.



- The placement of interlocking, free draining rockfill from the bottom up to replace the material that was displaced by the landslide.
- The construction of a piled ground beam at the toe of the rock abutment to prevent displacement of the rock downslope.
- The construction of a gabion wall (rock filled baskets) along Penny Lane as a barrier to protect houses on Point Nepean Road from landslide debris.
- The installation of wells in View Point Road to provide access for dewatering in the event that high groundwater levels are detected in the future.

Considerations for this design include:

- The design is intended to remediate/reinstate slope to return the landform as far practical to its pre-landslide landform.
- Requires little structure (piled ground beam at toe) low maintenance and inspection requirements, although some inspection would be required. For example to inspect behind and clear out behind the gabion wall system.
- Water that collects in the rockfill needs to be collected at the base of rockfill and directed to a legal point of discharge. This may require drainage at the base of the rockfill to manage risks of internal erosion (erosion of the soils over which the rockfill is placed).
- Wells are intended to provide access for dewatering. They do not need a permanent pump installed. This would require monitoring and then if necessary pump is brought to site to lower groundwater pressures. Wells on are on public land and a permit would be required from Southern Rural Water for their installation.
- Bottom up construction carries some safety risk – safety will need to be managed through design. This could be achieved with measures such as maintaining bench width, monitoring movement and having safe egress and evacuation routes.
- Replacement of the filled and levelled area at 10-12 View Point Road (behind the retaining wall) could be seen as betterment.

Comparison of key differences between the designs

The key difference between the two design approaches are:

- One offers reinstatement, the other mitigation.
- The WSP design is for reinstatement. Mr Pope's design is proposed to mitigate the hazards resulting from the 2022 and 2025 Landslides and does not include



reinstatement of the pre-failure geometry. In Mr Pope's experience, costs for mitigation should be significantly less than costs for reinstatement. Both should be assessed by an experienced Quantity Surveyor.

- Revegetation is constrained for both options, but not impossible, some vegetation can be established.
- Structural assessment will be required for foundations at 6 View Point Road. There is some potential that underpinning of the property at 6 View Point Road will be needed.
- Inspection and maintenance requirements are higher for an engineered slope support system such as soil nails compared to a rockfill buttress. For example, inspections every 5 years are typically recommended for soil nail supported slopes on a road network .
- Constraints on further site development – impact to soil nails needs to be avoided and controls put in place to manage/enforce. For example, pile footings could not be installed at 10-12 View Point Road that might impact the soil nails.
- This is a difficult access site, both options have constructability challenges.

Signatures

Name	Signature	Date
Darren Paul	Irrelevant & Sensitive	14 August 2025
Dane Pope	Irrelevant & Sensitive	14 August 2025
Tim Whelan	Irrelevant & Sensitive	14 August 2025