To The Board of Inquiry into the McCrae Landslide

15 July 2025

The purpose of this correspondence is to address the issue of what could have been implemented during the 5th of January and the 14th of January 2025 to prevent the larger landslide at McCrae.

In my opinion several actions could have been taken to locate and eliminate all or some of the water that eventually made its way to the escarpment at View Point Rd.

After the first and smaller slip that happened on the 5th of January 2025 it was obvious that there was a flow of water running downhill from the cliff face. This flow of water was continuous and did not appear to fluctuate greatly in flow rate (and would continue to flow for approximately 4 months afterwards). In my opinion it would have been sensible to take number of actions to prevent that water from flowing and consequently may have prevented the larger slide that took place on the 14th of January 2025.

Firstly, it was known that continuous flow was evident at the intersections of Waller Plc and Charlesworth St and also at Charlesworth St and Coburn Road intersections. The groundwater saturation at these two points was so excessive that it caused road damage and flowed for 6 weeks prior.

I suggest that if excavations were carried out at these two locations perhaps 3 metres long by 3 metres wide and initially 5 metre deep (this could be increased if needed) . Pumps could then be placed in the excavation and discharge the water safely into the large stormwater drains that are located nearby. Water will flow to the area of less resistance. These excavations would provide engineers with an understanding about the depth and scale of the saturation in the local environment. We know saturation was substantial as the property number 1 Waller Plc was completely saturated as detailed in submitted documents that steel prodding rods sank easily through the soil without much resistance. There is also photo and video evidence of the excavations after the 15th of January near to the manhole in Charlesworth that shows excessive ground saturation to the point where the soil was collapsing during the excavation.

Secondly, spear dewatering could have been implemented in View Point Rd in several locations and perhaps even in Prospect Hill Rd.

South East Water (and its civil contractors) have extensive knowledge in this technology and it was used on the Mornington Peninsula in past years when installing gravity sewerage pipes in areas such as Rosebud that have a high water tables and sandy soils .

Placing Spears in View Point Rd was mentioned to council by residents in the very early days of the 15th Jan slide as we were unaware of the burst pipe up the hill at this stage. No action was taken.

These dewatering systems rely on pumps running 24 hours a day to keep water from interfering with deep trenches or excavations.

With the introduction of pressure sewerage technology by South East Water the requirement for such systems is now reduced.

Dewatering technology is well understood by civil engineers but perhaps council engineers were not

familiar with it. This technology is available throughout Australia.

The above focuses on the period between 5th Jan 2025 and 15th Jan 2025 but I stress my belief that if authorities knew of this issue in November dewatering and diversion of this excess water should have been implemented in November/December and it is possible that both landslides would have prevented altogether.

Pictures below show example of spear technology.

For noting, I sent the following paragraph to MERG members on 23 June 2025 after a member asked how much water had possibly flowed down the hill. Obviously this is an estimate but give us something to consider:-
"Let say we use 6LPM flows from the Scarp (I have used this figure as 12LPM at 7Jan and 0 LPM today - that's 167 days and say the rate of flow decrease per day was linear gives me 6LPM as an average). My equation is 1,442,880L have flowed down the hill towards Penny Lane."

Unrelated to the above, and looking towards the future, I recommend that South East Water consider renewing all water mains in the area with modern materials and installing trench stops (also known as trench breakers or bulkheads) within the water main trenches. These structures are designed to prevent or slow the movement of surface and groundwater, thereby protecting both the pipe trenches and their embedment from damage caused by erosion or water infiltration. Trench stops are especially important on sloped terrain such as McCrae and perhaps other at-risk suburbs.

Furthermore, all gravity sewers should be replaced with pressure sewerage systems (PPS) installed at each property in the immediate area. This approach offers numerous advantages, including the elimination of manholes, large gravity pipes, and extensive trenches, as trenchless technology utilising small bore pipes (63mm internal diameter) is employed. Full services can thus be provided to each lot without the need for conventional trenching. The system also allows for the detection of unauthorized connections (such as stormwater inflow), and the network can be pressure tested to ensure there are

no leaks. Each household unit is connected online and monitored for alarms, ensuring efficient and reliable service. The Mornington Peninsula has the thousands of these systems installed (Flinders, Sorrento, Blairgowrie, Rye etc) .

South East Water should also consider putting in dual (for redundancy) flow electromagnetic flow meters on its larger networks (i.e. tank to tank transfers) to ensure that flows outbound equal the same amount at the expected termination point. In critical applications, two or more “magmeters” can be installed in parallel, with the readings compared to ensure accuracy and reliability. This approach allows for seamless switching to a backup meter in case of failure.

Council should also consider putting trench stops in its drainage networks in these vulnerable areas and repairing the cracked kerbing.

Regards
Kevin Hutchings