

To	[REDACTED]	From	[REDACTED]
Project	Beleura Creek Path, Mornington	Date	24 January 2023
Subject	Access to Beleura Cliff Top Path for maintenance	Ref No.	V220152Letter02.1

1 INTRODUCTION

It is understood that the friends of the path have requested access to sections of the Beleura Cliff Top Path to conduct maintenance and planting activities.

At your request an inspection of the path was conducted on 20 January 2023 to assess the potential risks associated with the path in its current condition and whether or not the risk was sufficiently low to allow access for maintenance purposes.

During the inspection it was clear that different sections of the path are currently at different levels of risk. In order to best identify what is required for the different sections of path, the length of the path has been separated into 5 zones as indicated below.

- Upper Path
- Upper Landslide
- Middle Path
- Lower Landslide
- Lower Path



2 UPPER PATH

The upper path runs from the commencement of the path at Caraar Creek Lane down to the upper landslide. Along this section of the path there appears to have been minimal movement with cracking in the path appearing similar to that observed over the past 12 months.

It is considered that the risk in this area is acceptable for access for maintenance and vegetation purposes. However, while the risk in this area is relatively low there is a concern that if this section of the path is fully opened then members of the public who walk down the path will be less deterred from entering the zones of higher risk. As such it is recommended that the fencing at Caraar Creek Lane remain in place but that a secure gate be installed. The friends group could then be given the key to the gate so that they can freely access the area for maintenance purposes, provided that they keep the gate closed and restrict public access while they are working in the area.

The friends group should also be aware that there is an active landslide and debris flow on the escarpment to the north of this area. However, provided that the friends group remain at least 5m away from this area the risk is minimal. If not already installed, flagging should be installed in the vicinity of this slip to make it clear which area should not be entered.

3 UPPER LANDSLIDE

The upper landslide occurred progressively between October and December last year eventually resulting in undermining of the path. Some minor seepage was observed in the scarp in the inspection this week.

It is possible that further collapses of the path will occur during or soon after significant rainfall events. Furthermore, there is some potential that cumulative foot traffic may result in some collapses of the path. As such it is recommended that this section of the path remains closed at this stage.

Considering the size of the scarp and location of the failure it is not considered practical to reinstate the path in its current location. However, considering that the land up slope of the path is 'relatively' flat it is considered likely that an appropriate alternative location for the path can be found that would allow access between the upper and middle sections of the path. It is recommended that discussions between the Shire, the friends group and the landowners be held to identify the best place for this alternate route. As it is likely that there will be ongoing collapses and erosion of the existing failure, a location that is as far as practical from the existing failure would be the most prudent.

4 MIDDLE PATH

The middle path runs between the upper landslide and the lower landslide. It has been observed that along this section of the path there are cracks that are gradually widening such that in some areas cracks that were previously hairline are now up to 5mm wide. This movement is most likely due to continued seepage from upslope due to the high rainfall season that occurred last year. It is likely that the cracking will continue to widen in some areas and possible that failures of the path may occur in localised areas. However, the movement and failures would most likely occur during or in the 24 hours following rainfall events. The area is likely to be relatively stable otherwise.

It is considered that open access to this area should be minimised but that limited access should be allowed for maintenance and to provide access to areas that are to be vegetated.

It is recommended that the following methodology be undertaken to allow access to the Middle Path area.

1. No access to the Middle Path area should be allowed through the Upper Landslide or Lower Landslide areas. The fencing between these areas should be strengthened and maintaining the integrity of these fences should be part of the permission process for accessing the Middle Path area.
2. Access to the Middle Path area should be only allowed through the properties that have gated access. These gates should be locked when maintenance activities are not occurring.
3. No access to the Middle Path area should occur during or within 72 hours after rainfall events of more than 5mm over a 24 hour period.
4. All access events should be planned in advance and notification should be provided to the Shire to identify that an event is going to occur.
5. Prior to each access event a walkover should be conducted by a Shire officer to identify if any failures may have occurred and then identify if there are any areas considered to be no-go.
6. Access along the path should generally be transitory.
7. All work within this area should be conducted in pairs or groups. This will allow people to act as spotters or buddies for each other in case a minor collapse or trip occurs.

5 LOWER LANDSLIDE

The lower landslide occurred progressively between October and December last year eventually resulting in complete demolition of the path. It appears that water flow still occurs in this area especially after rainfall events. Ongoing regression of the landslide further up slope and also widening of the landslide is possible.

In order to determine an appropriate alternative path in this area a detailed geotechnical investigation and engineered solution is required. This section of the path should remain closed until an appropriate engineered solution has been implemented.

6 LOWER PATH

The lower section of the path appears to be relatively stable.

It is considered that the risk in this area is acceptable for access for maintenance and vegetation purposes. However, while the risk in this area is relatively low there is a concern that if this section of the path is fully opened then members of the public who walk up the path will be less deterred from entering the zones of higher risk. As such it is recommended that the fencing at the beach remain in place but that a secure gate be installed. The friends group could then be given the key to the gate so that they can freely access the area for maintenance purposes, provided that they keep the gate closed and restrict public access while they are working in the area.

There is a rough access track from the beach to the path about 50m up slope from the beach entrance (*). This area should be more securely fenced as it currently allows access and it is clear that members of the public have been entering the site through here.

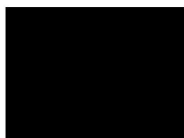
It should be noted that while access to the site is allowable for maintenance purposes, the area is a cliff and that by its nature there will always be localised areas of instability. Due care is required by all people who access the area, even for maintenance, especially if they move off the path onto the slope to conduct maintenance activities.

TECHNICAL
MEMORANDUM



We trust that the above information assists in allowing limited access for maintenance purposes while at the same time limiting the risk to the public from the ongoing slope stability issues on the site.

Yours sincerely,



Senior Principal Geotechnical Engineer for Stantec

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