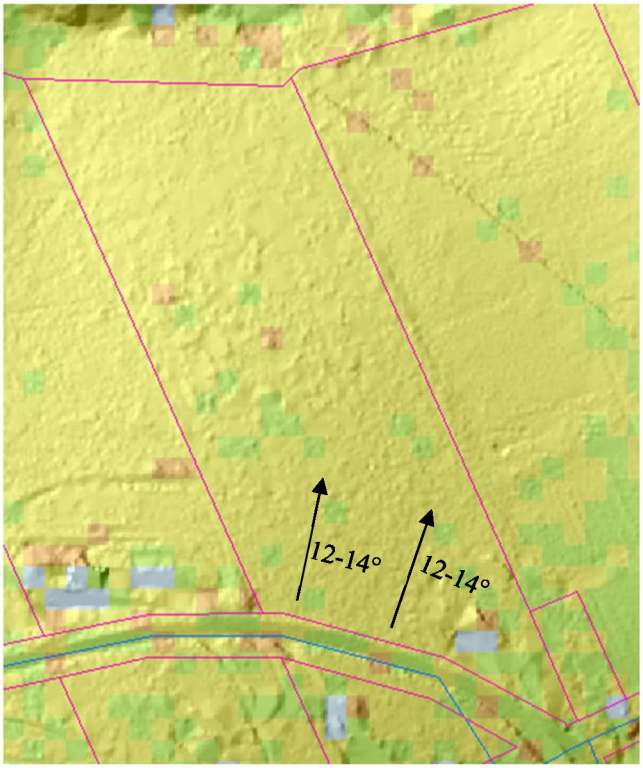
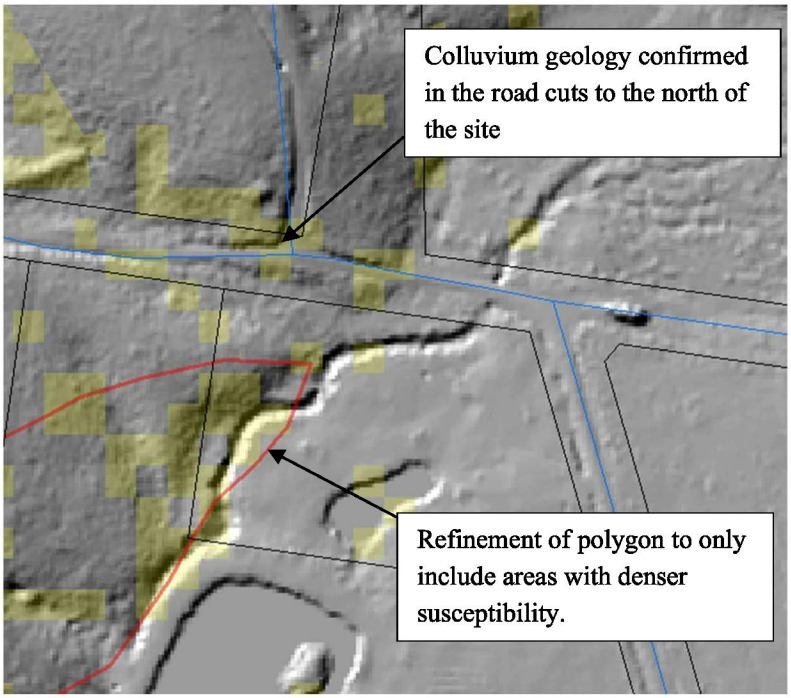
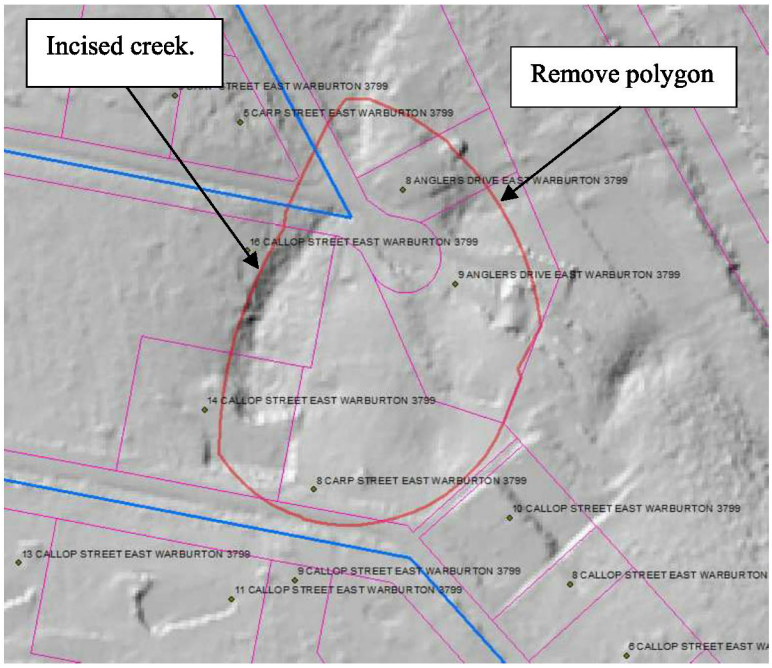
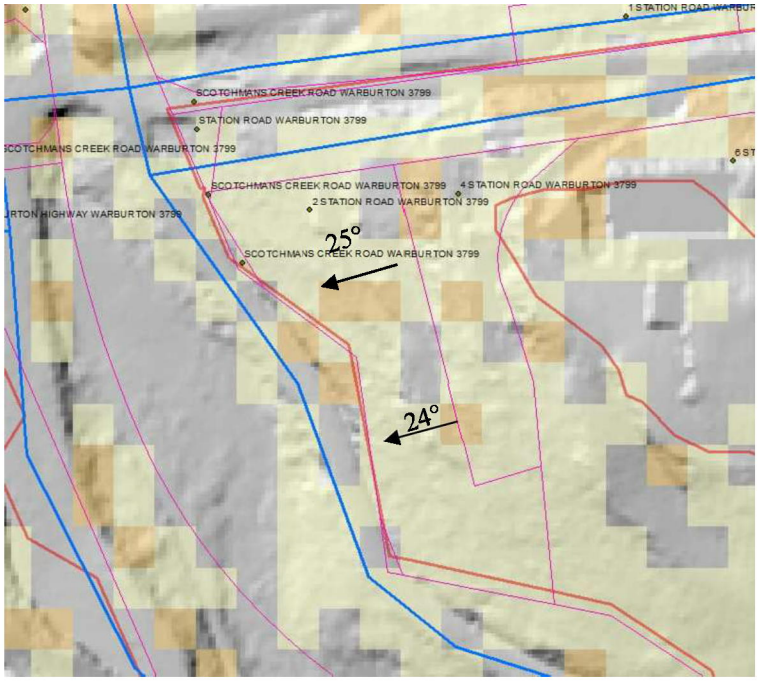
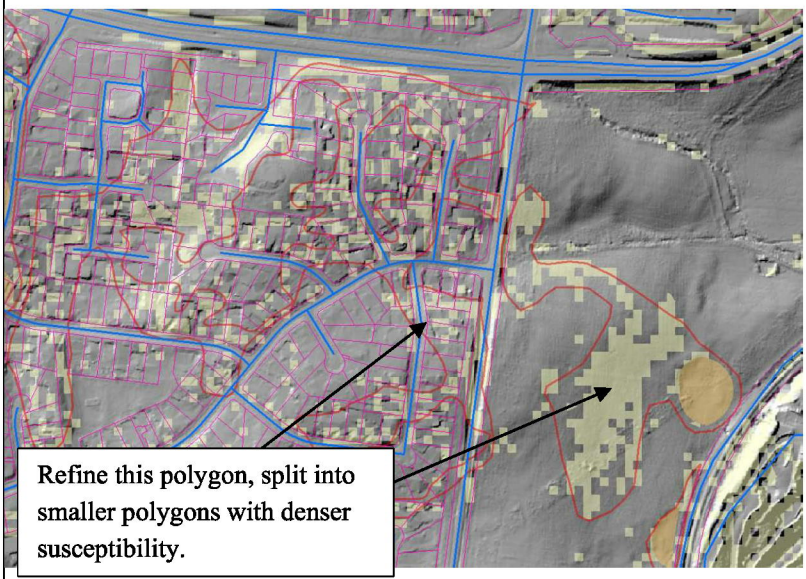
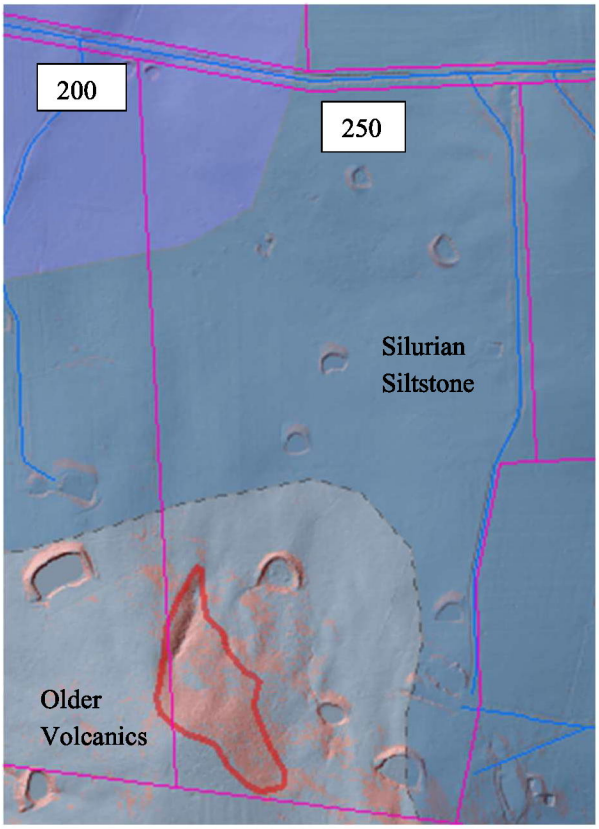
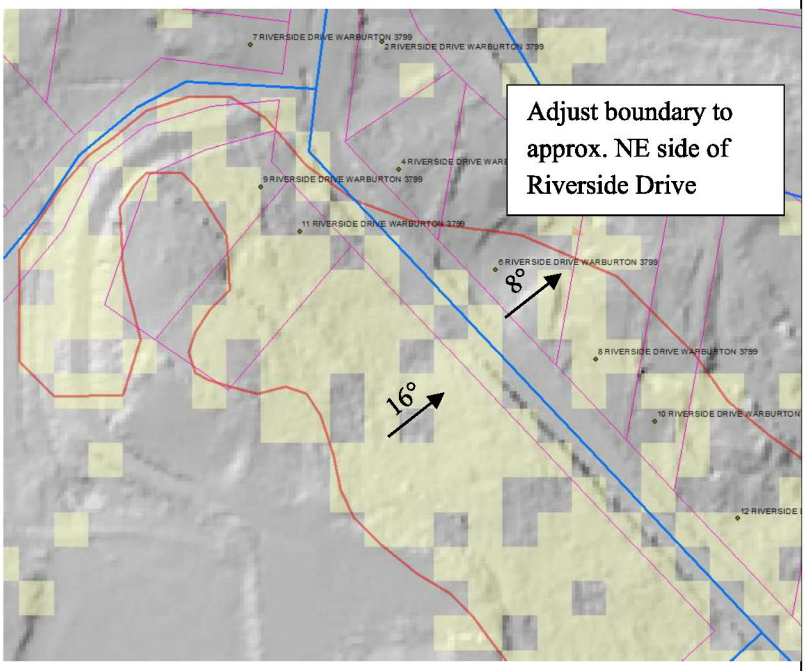
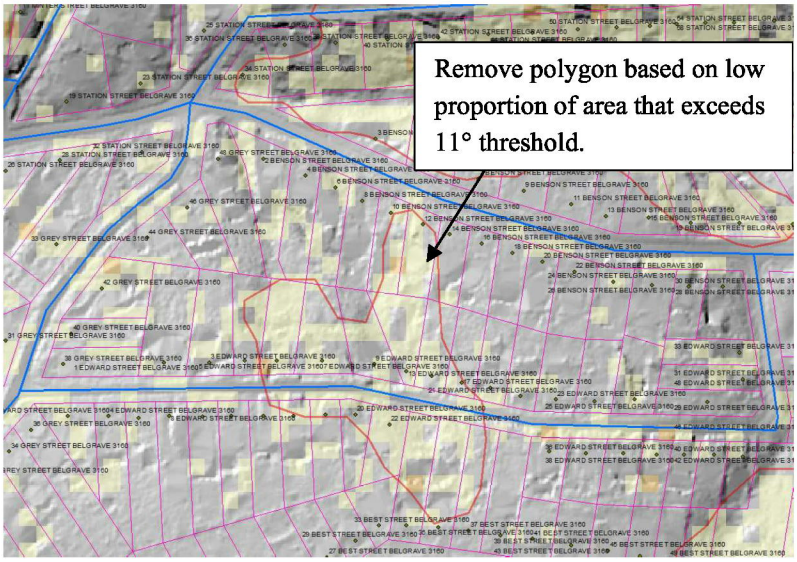
A.1 Summary of Field Observations

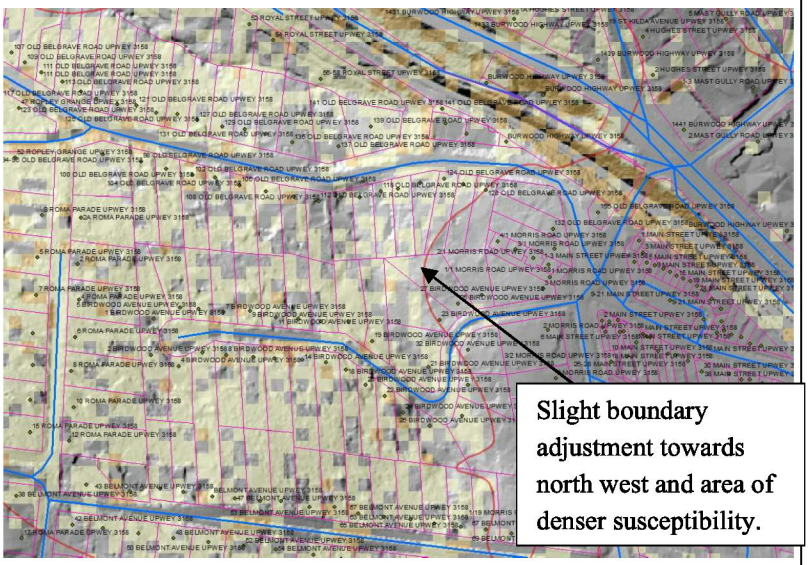
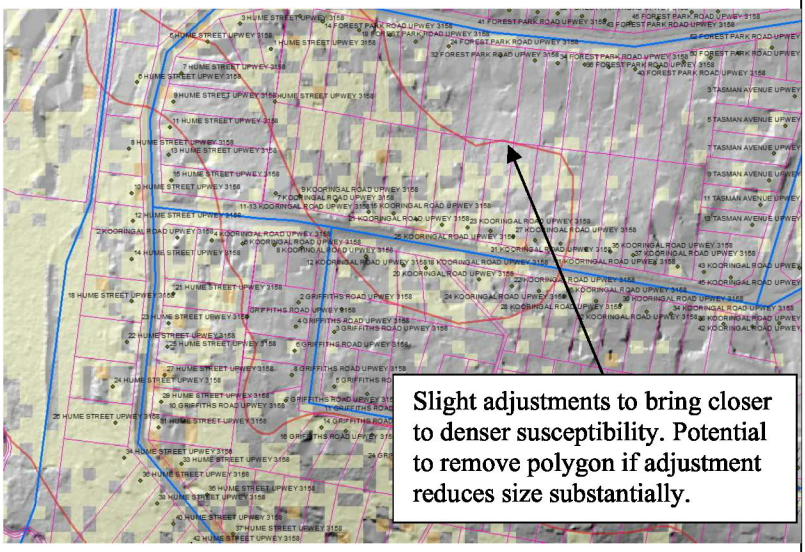
Submission 1	[redacted]
The average natural slope angle on the north side of Olinda-Monbulk Road was measured to be consistently 12° to 14°, which is above the 11° threshold for susceptibility in areas underlain by Ferny Creek Rhyodacite geology, such as this property. Slope angle information from LiDAR elevation data indicates that the property generally steepens to the north, which means that the property is generally above the slope angle threshold. The south east corner is flatter and there is scope for a slight adjustment to the boundary in this area.	
Submission 2	[redacted]
The areas indicated as susceptible to landslide (areas in yellow in the adjacent figure) could not be accessed in the field but are generally above the 11° slope angle threshold for the underlying mapped colluvium geology, based on LiDAR elevation data. Observations of the surface geological materials in the low cuts along Coopers Road to the north confirm that colluvium is present on the slopes in the area. Adjustment of the proposed EMO boundaries to only capture denser susceptibility areas is recommended.	

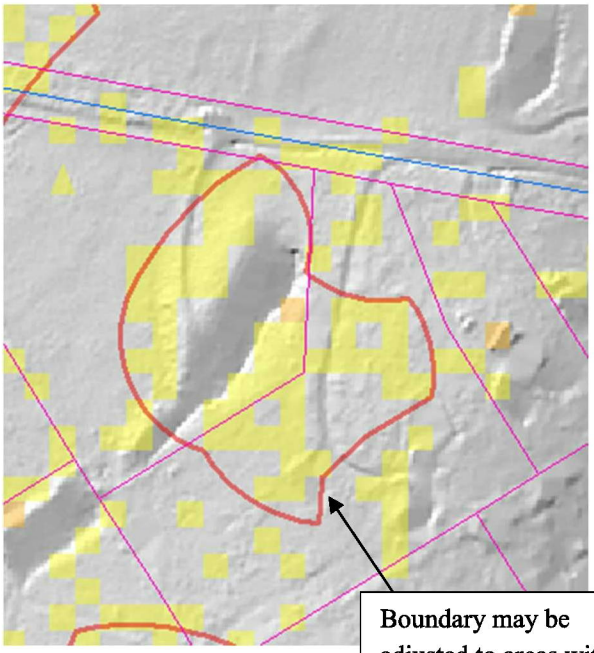
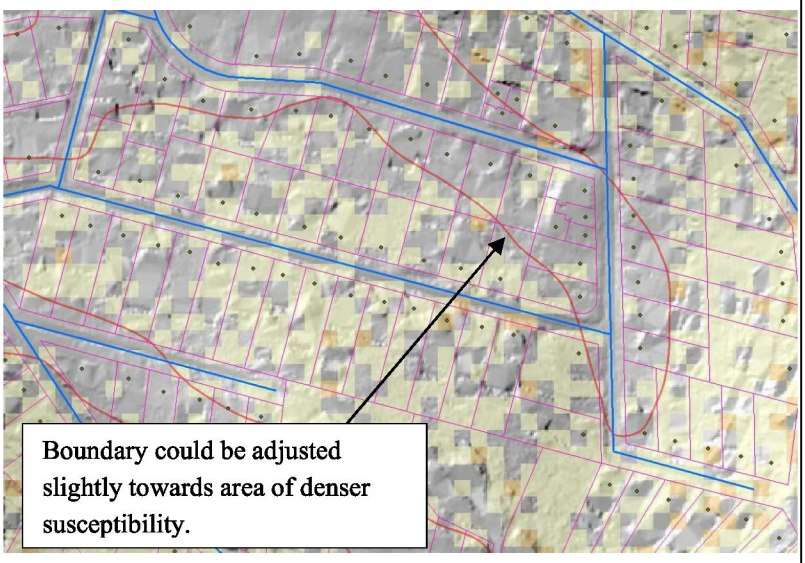
Submission 6	[redacted]
Some areas in the vicinity of the property meet the criteria for inclusion in the EMO (yellow) based on the slope angle (> 9°) and the underlying geology of Older Volcanics. Field slope measurements indicate the slopes are locally between 10° and 12° in these areas. It is recommended that refining the polygon be undertaken at a more detailed scale in this area.	
Submission 12	[redacted]
A feature was identified in LiDAR as indicative of a landslide feature. Field visits indicate the feature is likely fluvial, formed by a now abandoned river channel. Recommend removal of polygon indicating landslide.	

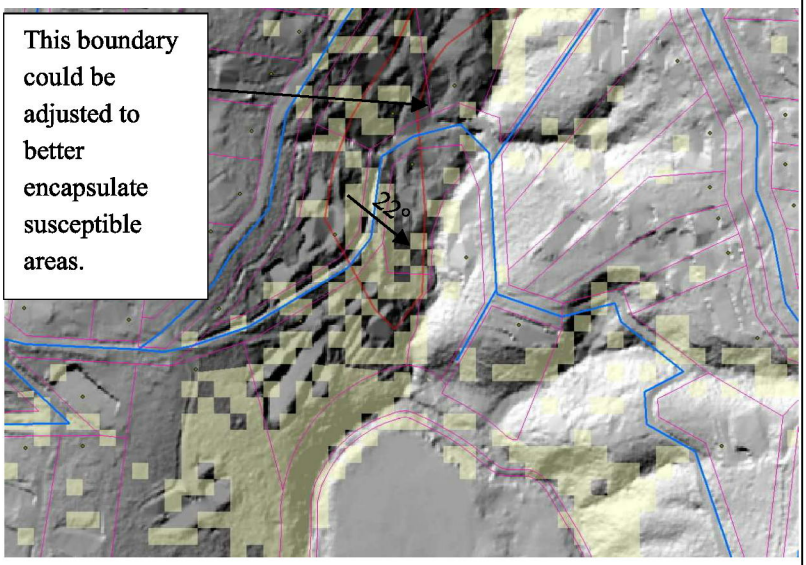
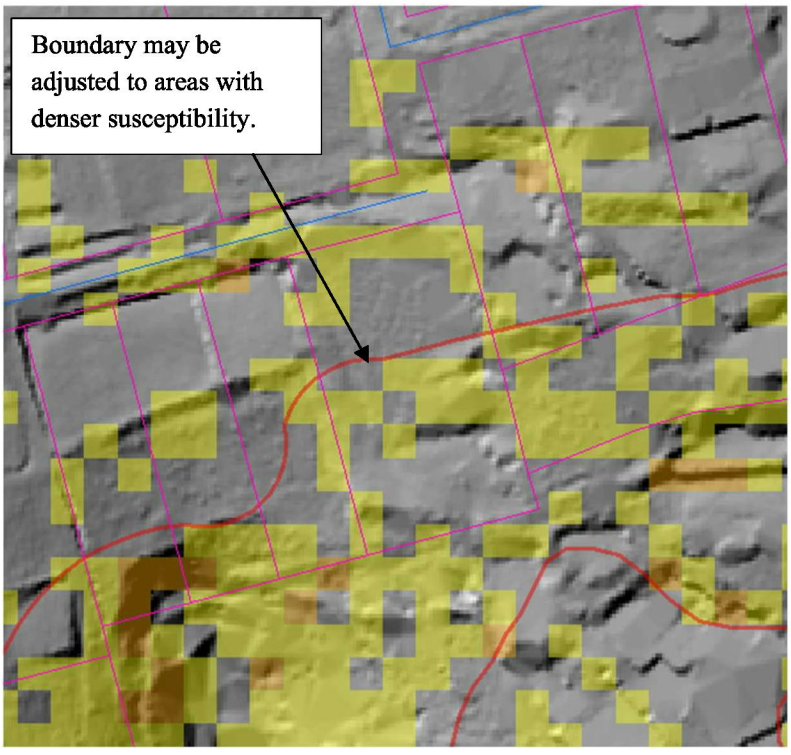
Submission 13	[redacted]
The average slope angle was measured to be 24° to 25° which exceeds the threshold for inclusion. Rock outcrops in Station Street and along Glenbrook Road were assessed and found to be consistent with geological map indications. No change to mapping recommended.	
Submission 16	[redacted]
Natural slope angles in the areas with denser mapped susceptibility were typically 9° or more, above the threshold for inclusion and within less dense areas typically less than 9° putting the two polygons in this area on the cusp of inclusion. The area is heavily impacted by earthworks. We recommend refining the polygon in this area by mapping at a finer scale and splitting it into smaller polygons encompassing denser mapped susceptibility.	

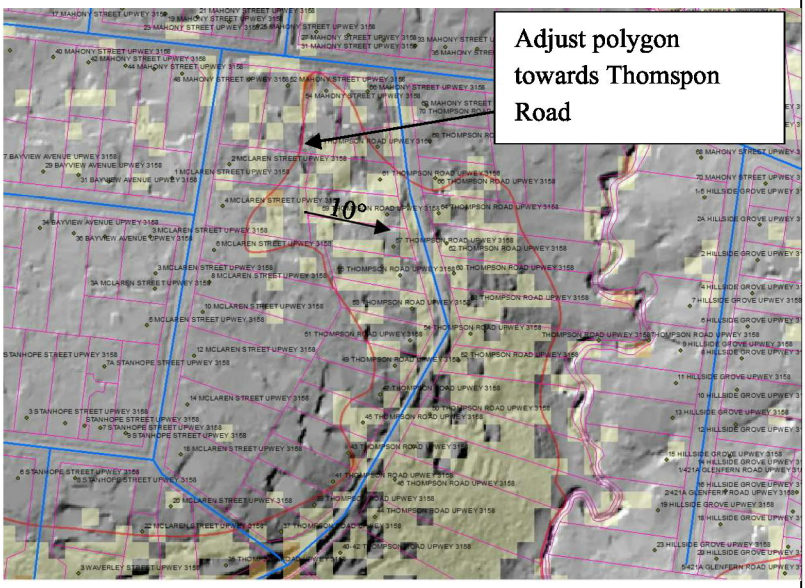
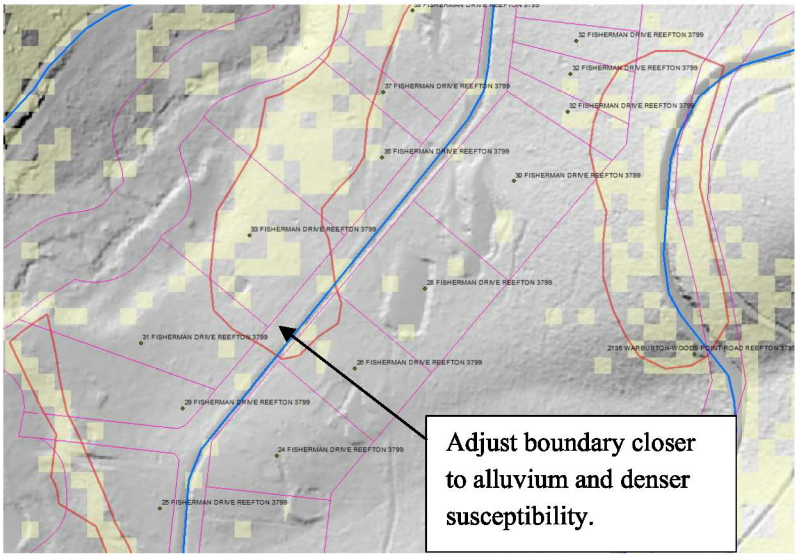
Submission 20	[redacted]
The area identified as susceptible generally has a slope angle of > 9° (areas in red in adjacent figure). Geomorphological desktop mapping and field observations nearby indicate that the ridge to the south and adjacent slopes, including the susceptible area, is underlain by a surface layer of Older Volcanics, which has been assessed to be susceptible to instability where slope angles are above 9°. The desktop mapping shows geomorphological signs of slope instability having occurred in the past on this slope.	
Submission 25	[redacted]
The natural slope on the north east side of Riverside Drive shallows to about 8°, below the 11° threshold. The mapped susceptible areas shown northeast of Riverside Drive are related to earthworks. Recommend adjusting the northeast EMO boundary in this area 20 m to 30 m towards Riverside Drive.	

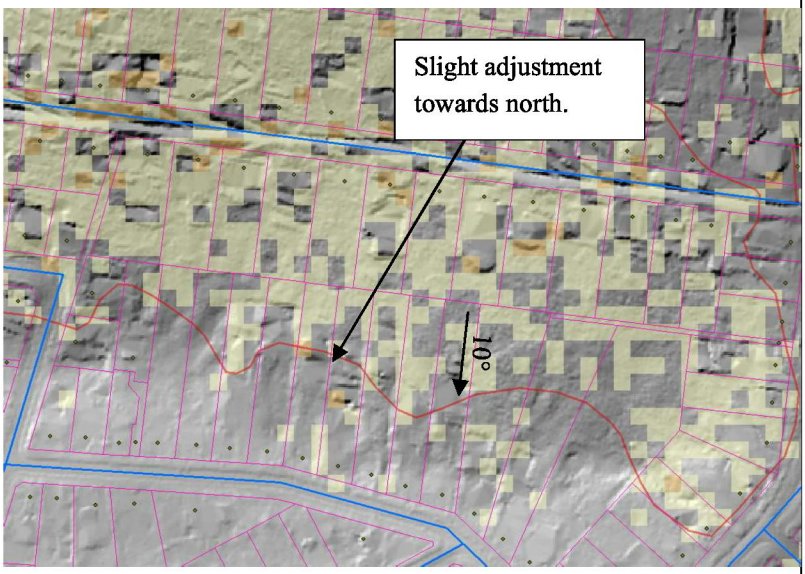
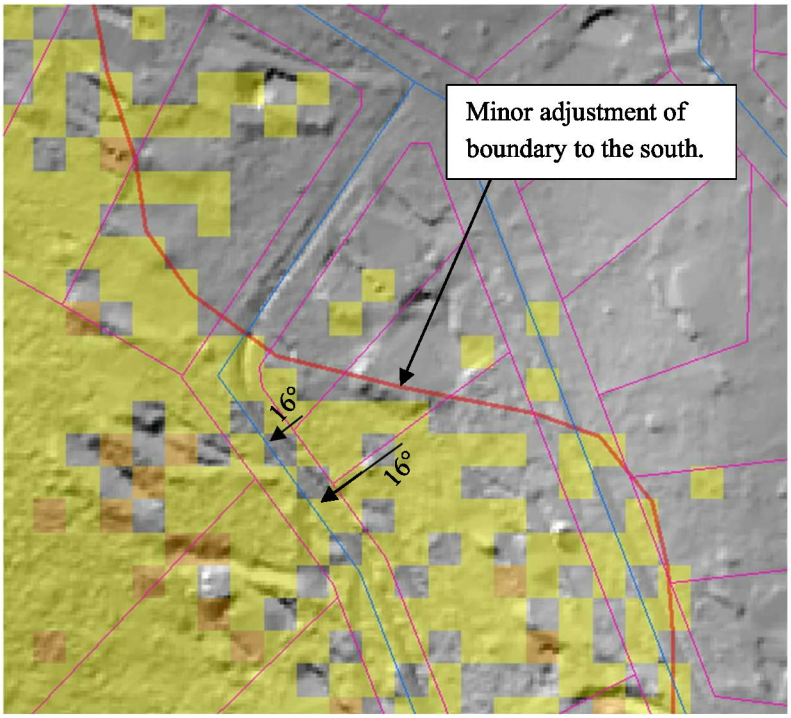
Submission 29	[redacted]
Natural slope angle between Laurie Avenue and Clifford Grove in this area is 9° to 10°, below the threshold of 11°. Mapped susceptible areas relate to earthworks. Recommend adjusting boundary about 30 m to the south west towards Laurie Avenue.	
Submission 30	[redacted]
The mapped susceptible area relates to what appears to be past filling on the area. Recommend removal of the polygon shown on the basis that the area has a natural slope angle of 10° to 12° Although in some parts of this polygon the natural slope angle exceeds the criteria for inclusion, these areas are too small to be delineated as a separate polygon. Recommend removal of this polygon.	

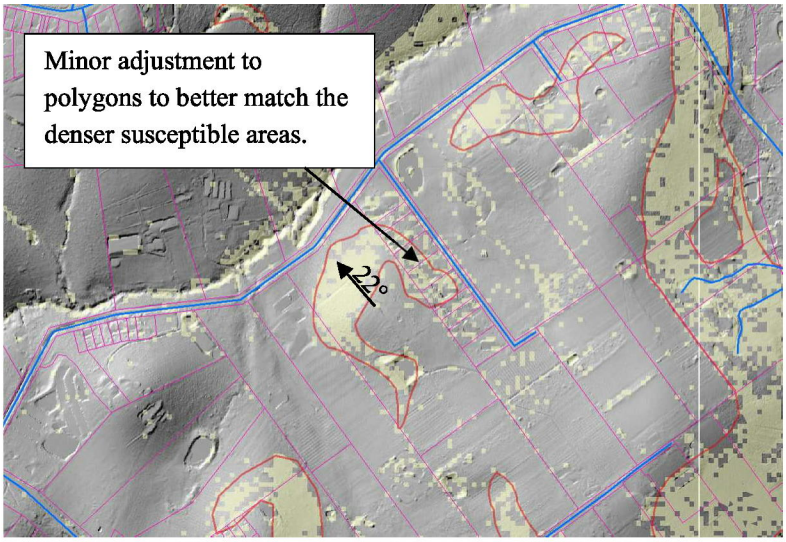
Submission 33	[redacted]
There is a gully through this area which meets the criteria for inclusion and some properties have placed fill up to the edge of the gully. The areas of less dense mapped susceptibility are related to earthworks. Recommend a slight boundary adjustment through here to shift the boundary closer to the areas of denser mapped susceptibility.	
Submission 39	[redacted]
Natural slopes were measured at 11° to 12° through this area, including on properties south of Kooringal Road in the vicinity of 16 Kooringal which is marginal for inclusion based on a threshold of >11°. The mapped susceptibility is also influenced by earthworks. Given the marginal slope angle, there is scope for a slight adjustment of the boundary of this polygon, in the order of 20 m to shift it closer to areas of denser mapped susceptibility.	

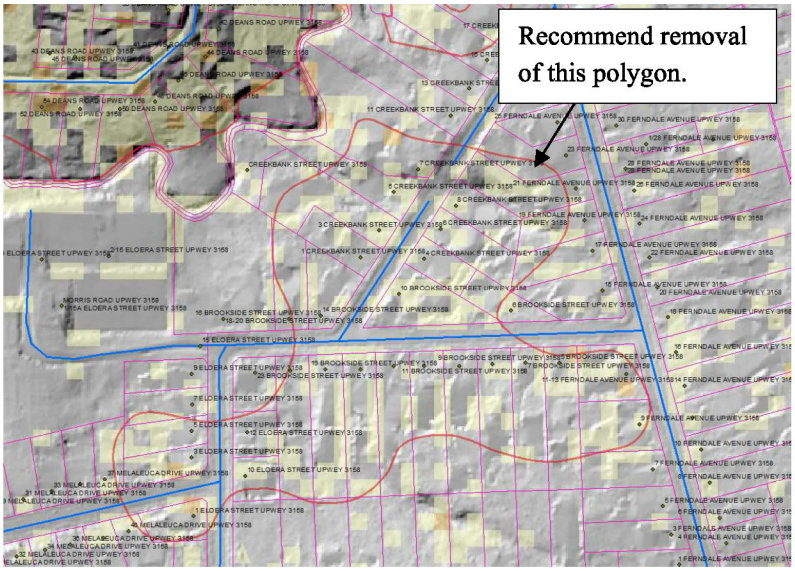
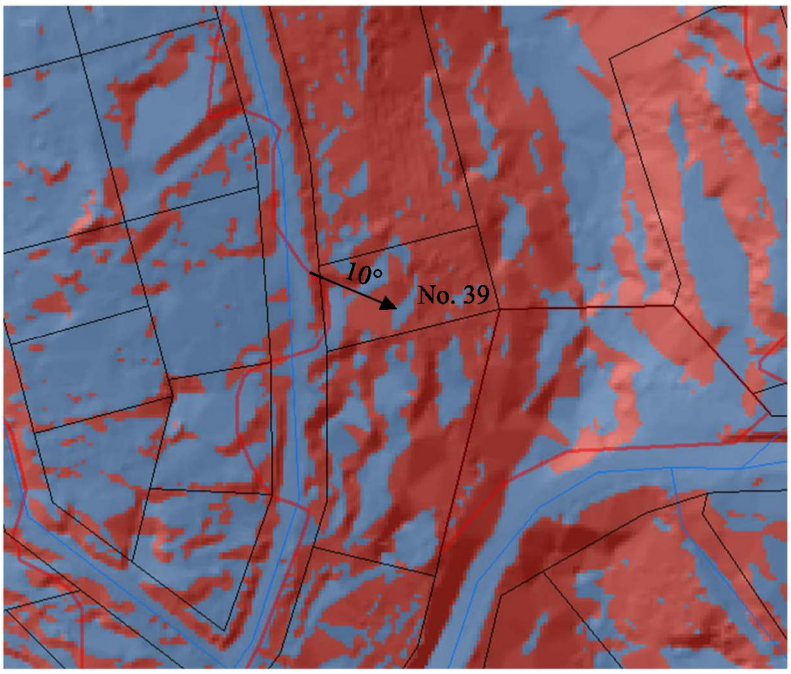
Submission 40	[redacted]
The measured natural slope angle at the north end of the property, adjacent to the road, was 14°, with the areas in the central part of the property assessed as susceptible (yellow) having generally not been affected by earthworks and having a similar slope angle based on LiDAR elevation data. There is some scope for fine adjustment of the area delineated as susceptible if mapped at a finer scale. Recommend finer mapping at 1:1000 to adjust these polygons.	
Submission 43	[redacted]
There is a gradual transition of the natural slope gradient through this area ranging from >11° in the southern portion of the polygon to less than 11° towards the north. The mapped susceptible areas near the boundary of the proposed EMO are influenced by earthworks. There is some scope to slightly adjust the boundary towards the south by 10 m to 20 m towards the area of denser mapped susceptibility.	

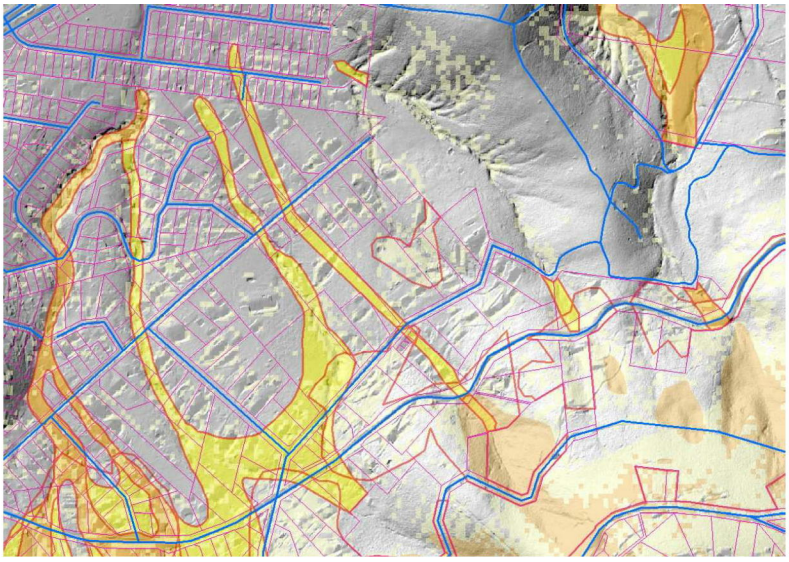
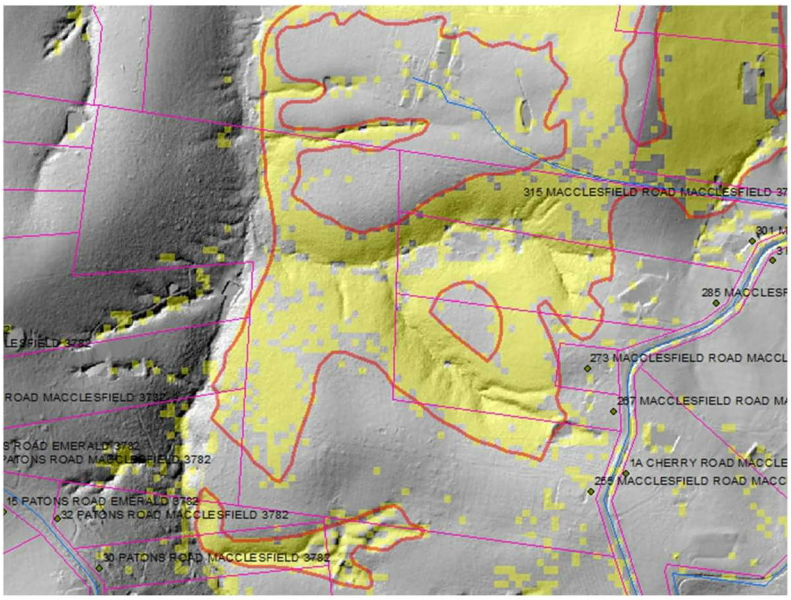
Submission 44	[redacted]
The measured natural slope angles in the area delineated as susceptible are >22° and therefore consistent with LiDAR indications. There is some scope for fine adjustment of the area delineated as susceptible if mapped at a finer scale. Recommend finer mapping at 1:1000 to adjust these polygons.	
Submission 45	[redacted]
The property slope conditions have been observed in the field from the northern boundary and appear to comprise some natural slopes and broad terraced areas where previous earthworks have occurred. The area assessed as susceptible that has been included in the EMO appears to contain both these conditions. There is some scope for fine adjustment of the area delineated as susceptible if mapped at a finer scale. Recommend finer mapping at 1:1000 to adjust these polygons.	

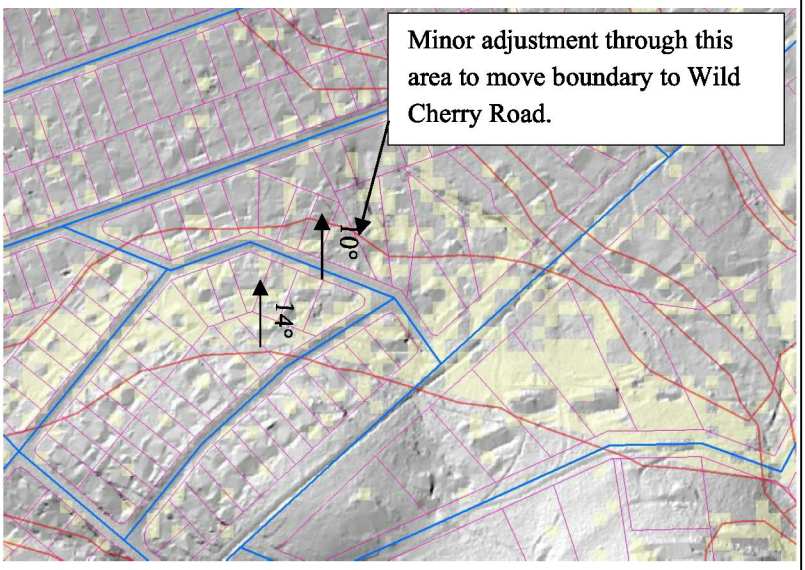
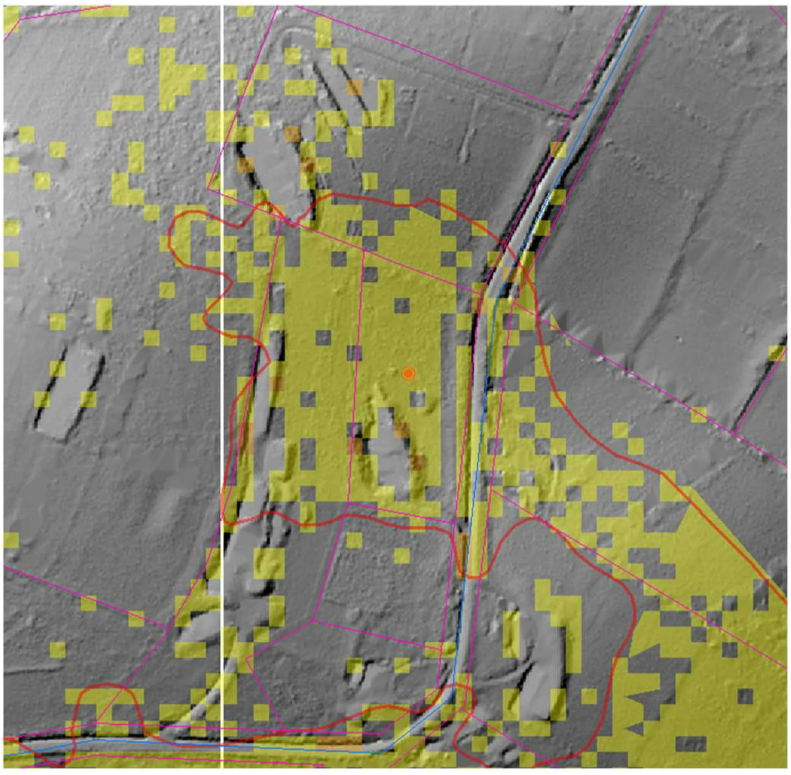
Submission 47	[redacted]
The natural slope angle was measured at 10° in areas to the west of Thompson Road, with the areas indicated as susceptible influenced by earthworks. Criteria for inclusion is 11°. Recommend adjustment of this polygon to move the western boundary further to the East.	
Submission 49	[redacted]
Note that this site was not visited, however LiDAR allows identification of the geological boundary of alluvium through this area, which differs from geological map indications. There is therefore a basis to adjust the geological boundary and adjust the EMO extent accordingly.	

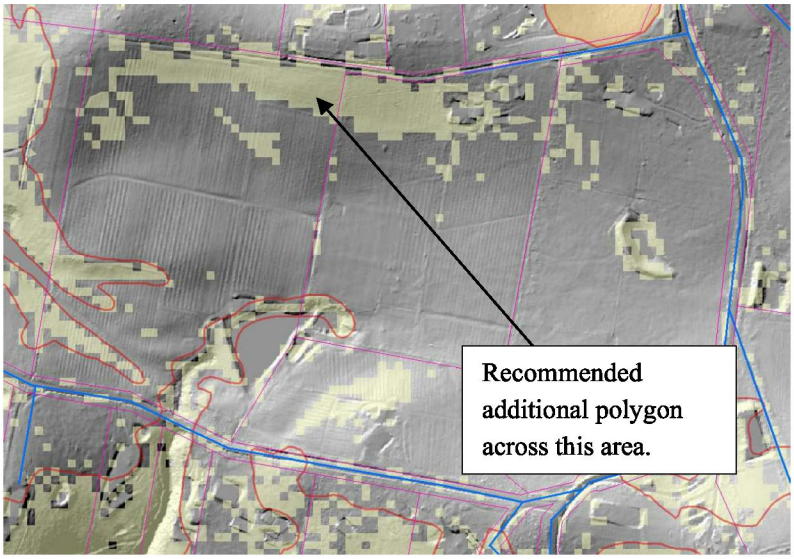
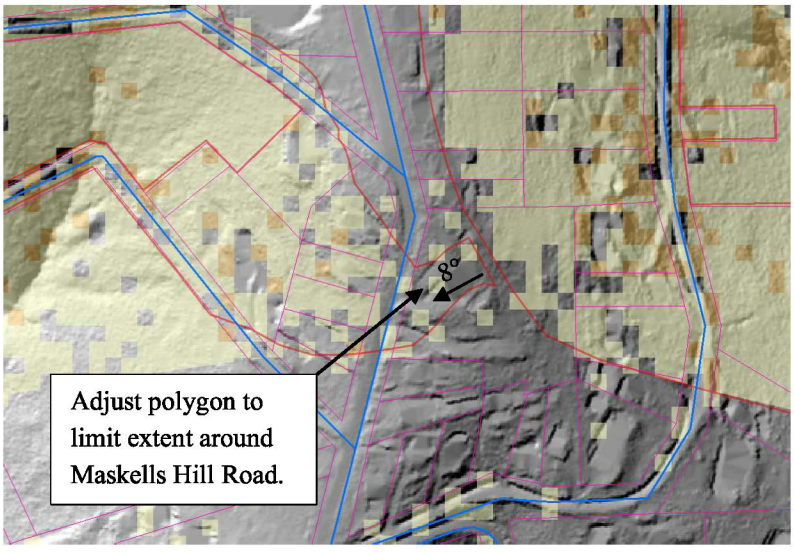
Submission 50	[redacted]
The natural slope angle near the southern boundary of the polygon increases gradually towards the north from 10° to greater than 11° which is the threshold for inclusion. Furthermore, the area is affected by dense earthworks. Recommend adjusting the boundary 10 m to 20 m north and smoothing out kinks. This approach can be applied to the broader Upwey area.	
Submission 51	[redacted]
The natural slope angles measured at the southern boundaries of the property were 16°, which is greater than the threshold for inclusion of 11°. There is some scope for minor adjustment of the boundary towards the south to align with areas of denser mapped susceptibility.	

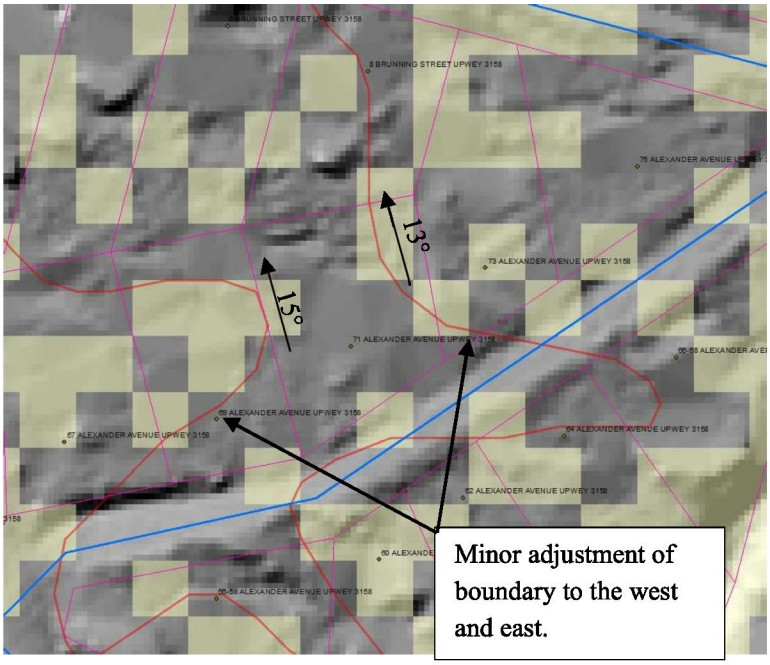
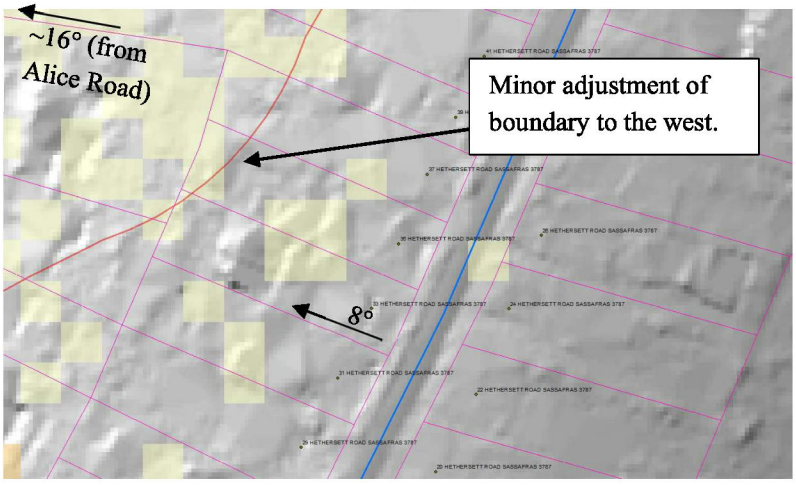
Submission 54	[redacted]
The slope angles measured in the mapped susceptible areas are marginal for inclusion at around 22° in Devonian Siltstone. Recommend slight adjustment to boundaries of polygons in this area to better encompass denser mapper susceptibility areas.	

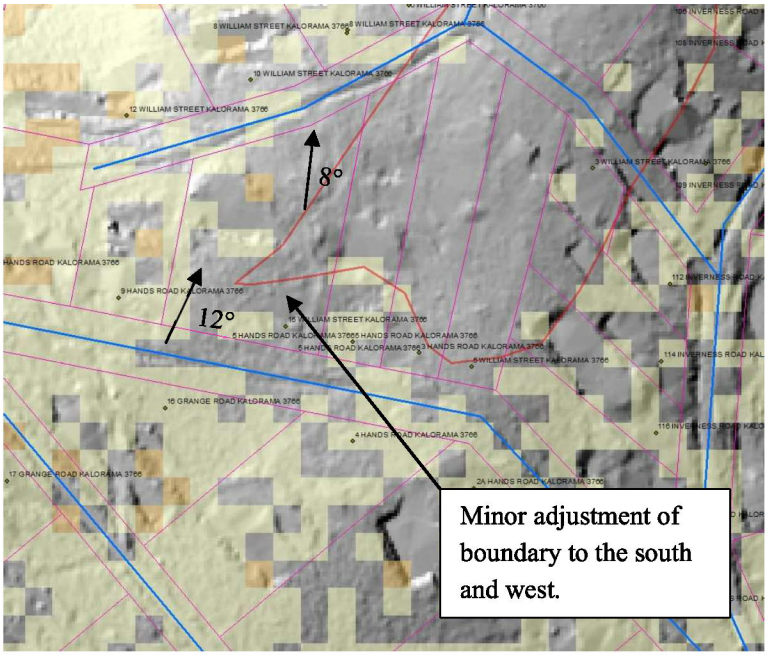
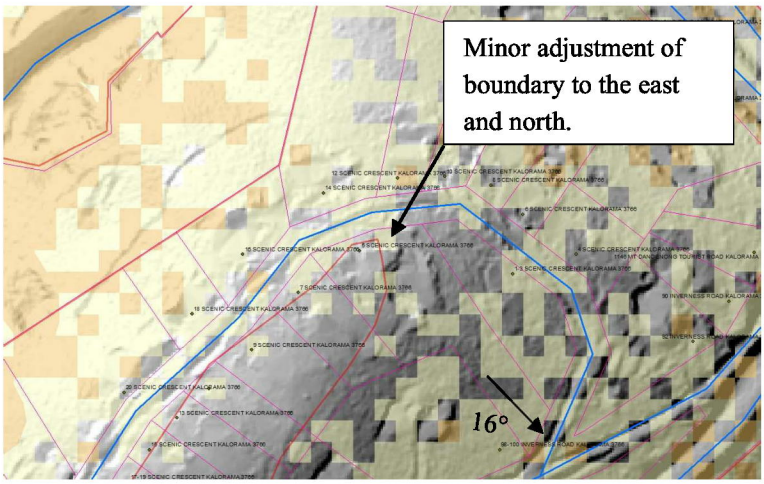
Submission 56	[redacted]
The natural slope angle of the polygon in this area varies through this area between 10° and 11°, but overall is around 11° or marginally lower, noting 11° is the threshold for inclusion. Recommend removal of this polygon.	
Submission 59	[redacted]
Natural slope angles measured at 10° in the western part of the site, in the vicinity of the house and driveway. Slope angles in the eastern part of the site are generally steeper and above 11° (areas in red in adjacent figure) based on LiDAR elevation data, which is the threshold for inclusion in the EMO where underlain by Ferny Creek Rhyodacite. Areas below the threshold are generally benched earthworks areas for the house and driveway. Some minor adjustment of the EMO boundaries may be possible to capture denser mapped susceptibility areas but part of the property would be included in the proposed EMO.	

Submission 63	[redacted]
There is a shallow gully, at some points buried directly downstream of a catchment area. The University of Melbourne modelling appears consistent with site observations. No change recommended through here.	
Submission 65	[redacted]
The areas indicated as susceptible to landslide (areas in yellow in adjacent figure) could not be accessed in the field but are generally above the 11° slope angle threshold for the underlying Ferny Creek Rhyodacite geology, based on LiDAR elevation data. Some minor adjustment of the proposed EMO boundaries may be possible to only capture denser mapped susceptibility areas.	

Submission 67	[redacted]
Natural slope angle downslope of Wild Cherry Road is about 10° and upslope is about 14°. Some minor adjustment of the proposed EMO boundaries may be possible to reflect the field observations and capture denser mapped susceptibility areas.	
Submission 68	[redacted]
The natural slope angles measured from the eastern boundaries of the property were generally >16°, which is steeper than the threshold for inclusion of 11° in the EMO for areas underlain by Ferny Creek Rhyodacite geology such as this property. It is also noted that a relatively minor landslip is recorded in the historic YRSC database as having occurred at the property. We recommend that no change occur to the proposed EMO boundaries in relation to this property.	

Submission 69	[redacted]
Creek area that is delineated as susceptible is a deeply incised steep sided creek. There is a mapped susceptible area near the crest of the slope which has not been included and is recommended for inclusion. No change recommended to the other proposed susceptibility mapping through this area.	
Submission 70	[redacted]
The natural slope angle in the eastern portion of the polygon was measured at 8°, below the threshold for inclusion. Recommend adjusting polygon to remove this portion.	

Submission 73	[redacted]
Natural slope angles are 13° to 15° adjacent to the house. Which exceeds the threshold for inclusion in the EMO. Mapping at a finer scale and some minor adjustment of the proposed EMO boundaries may be possible to better capture denser mapped susceptibility areas.	
Submission 74	[redacted]
The natural slope angle at the eastern end of the property is 8°, below the threshold for inclusion. The natural slope angles on the properties to the west of 35 Hethersett Road (16 to 20 Alice Road) were measured to be 14°to 20° which is above the threshold for inclusion. There is some scope to map in finer detail and to make minor adjustments to the boundary towards the west to align with areas of denser mapped susceptibility.	

Submission 76	[redacted]
Natural slope angles are 8° at the William Street end of the property, 10° in the south east corner and 12° to 13° at the south west corner of the property, adjacent to Hands Road. The slope in the south west corner of the property has a slope angle above property is below the threshold for inclusion in the EMO. There is scope to map at a finer scale and to make minor adjustments to the boundary on the south and west towestern side of the property to better align with areas of denser mapped susceptibility.	
Submission 77	[redacted]
Natural slope angles in the south east part of the property are 16°, which is above the threshold for landslide susceptibility. The north west area of the property becomes flat at the crest of the ridge. There is scope for more detailed mapping and minor adjustment of the boundary towards the east and north to align with areas of denser mapped susceptibility.	

Submission 78	[redacted]
The geological unit mapped in the susceptible area is alluvium. Based on the terrain at the site it is likely to be underlain by Anderson Creek Formation siltstone rather than alluvium. The susceptibility map could be adjusted to reflect the assessed underlying geology.