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Dear Sam,

RE: Lee Road Reserve, Nullaki – Flora and Vegetation Advice

Following is our assessment of the flora and vegetation in the unmade portion of the Lee Road road reserve on Reserve 17464.

Background

In 2018 PGV Environmental undertook a targeted Threatened Flora survey of a proposed new road through Reserve 17464, Nullkai, to connect Lot 9005 Rock Cliff Circle with the Lee Road cul-de-sac, a distance of approximately 720m. A Level 1 flora and vegetation survey of the same alignment was undertaken by Bio Diverse Solutions in 2017.

The proposed road alignment was located approximately 150m south of the current road reserve for Lee Road and measures approximately 640m long by 25m wide.

PGV Environmental has been requested to provide a desktop assessment of the flora and vegetation in the current road reserve. The following advice is based on the 2018 Threatened Flora survey, the results of the Bio Diverse Solutions 2017 survey and examination of aerial photography and other mapping.

Vegetation

Bio Diverse Solutions (2017) and PGV Environmental (2019) recorded three different vegetation types on the proposed road alignment through Reserve 17464 as follows:

- Open Heath on dry sand soils. Includes scatted Peppermint trees (*Agonis flexuosa*) sometimes in dense thickets. This was the main vegetation type over 80% of the alignment;
- Bullich-Agonis flexuosa Woodland over *Lepidosperma effusum* on lower-lying soils at the eastern end and abutting parts of the alignment to the north; and
- A small area of *Lepidosperma gladiatum* Sedgeland in a swale at the western end.

The topography of the proposed road alignment varied from around 3m AHD at the eastern end up to 12m AHD in near the western end. The majority of the proposed road was above 9m AHD.

Examination of aerial photography and surface contours (Google Earth, November 2017) indicates that the current road reserve through Reserve 17464 is relatively low-lying (between 3m and 7m AHD) and is highly likely to contain a dense Bullich-Agonis flexuosa Woodland over most of the alignment. The western half may contain small sections of slightly elevated ground containing Open Heath vegetation and Peppermint thickets.

The areas dominated by Bullich-Agonis Woodland are likely to be winter-wet. Small sections of Open Heath in the western half are likely to contain white sandy dry soils.

The condition of the vegetation in the proposed road alignment was mapped by Bio Diverse Solutions and confirmed by PGV Environmental as mostly Pristine with a small section of Very Good at the eastern end and Degraded along tracks.

Examination of aerial photography indicates that the condition of the vegetation in the current road reserve is likely to be similar, ie. Pristine over the majority of the alignment with a small section at the eastern end that is probably Degraded.

Threatened Flora

Table 1 lists the Threatened flora species identified in the 2018 Targeted Flora Survey that have been recorded or had the potential to occur within 5km of the proposed Lee Road alignment through Reserve 17464.

None of the species in Table 1 nor any other Threatened flora species were recorded in the Targeted flora survey.

Table 1 lists the potential for each species to occur in the current Lee Road road reserve, based on the species' preferred habitat and the landform/soil types that are considered to occur in the road reserve.

Table 1: List of Threatened Species Potentially Occurring in the Lee Road road Reserve.

Species	Habitat	Recorded in 2018 Survey of Proposed Alignment?	Potential to occur in current Lee Road Road Reserve
Calectasia cyanea	White, grey or yellow sand, gravel	No	Unlikely
Chordifex abortivus	Sand. Low rises and undulating areas	No	Highly Unlikely
Conostylis misera	White or grey sand, sandy loam. Winter-wet flat	No	Possible

Drakaea micrantha	White-grey sand	No	Unlikely
Isopogon uncinatus	Loam or sand on granite, peaty sand. Swampy depressions	No	Possible
Kennedia glabrata	Sandy soil pockets. Granite outcrops	No	No
Verticordia apecta	Sandy clay with loam and broken granite. Slopes	No	No

Two Threatened species, *Conostylis misera* and *Isopogon uncinatus*, occur on wetland soils and therefore have the potential to occur in the current road reserve. However, given that neither of these species was recorded in the 2018 targeted flora survey, the fact that they are Rare species, together with the small area of road reserve (estimated to be about 1.6ha), the likelihood that these or any other Threatened species occur in the current road reserve is considered Highly Unlikely.

Conclusion

The desktop assessment of the flora and vegetation in the Lee Road road reserve concludes the following:

- The vegetation in the road reserve is likely to be mostly Bullich-Agonis flexuosa Woodland on low-lying soils with small pockets of Open Heath on drier sandy soils;
- The condition of the vegetation in the road reserve is likely to be mostly Pristine; and
- None of the Threatened flora species identified in the database search are likely to occur on the site due to the results of the previous survey on similar land 150m to the south, the rarity of the species, and the small area (1.6ha) of road reserve.

These conclusions are based on a desktop assessment only. Verification of the desktop results would need a targeted flora survey of the road reserve.

Please contact me if you require any clarification of this advice.

Yours sincerely

Paul van der Moezel
Managing Director

References

Bio Diverse Solutions (2017). *Proposed Lee Road Alignment, Youngs Siding WA 6330. Level 1 Flora and Vegetation Survey Report.* Prepared for Graeme Robertson.

PGV Environmental (2018). *Lee Road Deviation and Lot 9005 Lime Pit, Nullaki. Targeted Threatened Flora Survey.* Report 2018-414, 16 November 2018. Prepared for Graeme Robertson.