

# Land management in Wallan – How to develop in an environmentally conscious way

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## **Overview**

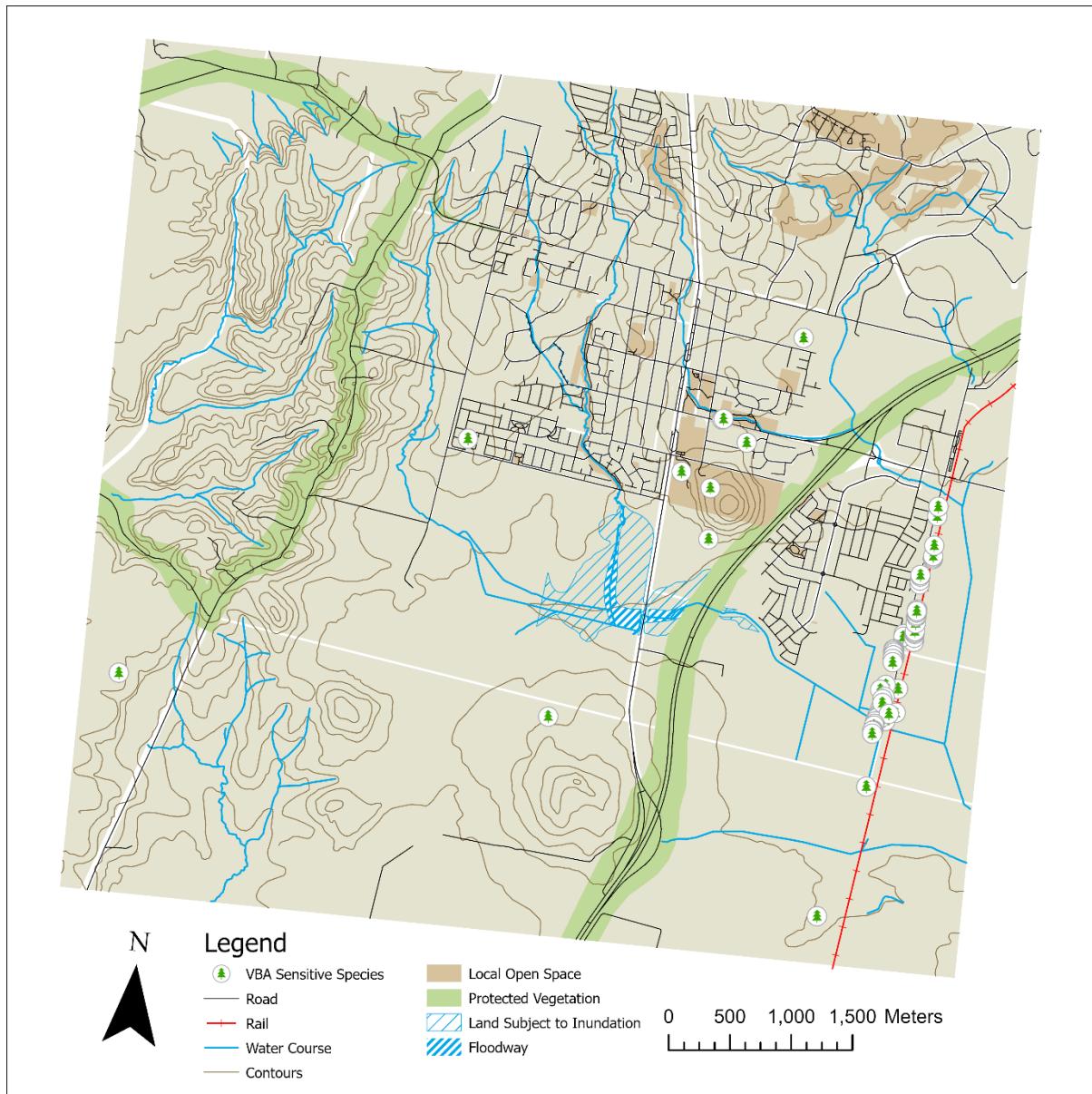
The Mitchel Shire is seeking recommendation that will enable them to further develop the township of Wallan as well as protecting as much of the local biodiversity and vegetation facing depletion. The council has requirements that relate to conservation, biodiversity, and environmentalism, and these requirements will be met through the utilization of publicly available spatial data, as well as the analysis of this data using GIS.

## **Vegetation Protection**

"Victoria is privileged to showcase some of the world's most breathtaking biodiversity" (The State of Victoria Department of Environment, Land, Water and Planning 2017). When developing land within Victoria, one must consider the effects such development will have on the surrounding environment, as several rules and regulations are in place to maintain and protect certain flora and fauna. *Planning For Biodiversity* (2017) is a publication from The State of Victoria Department of Environment, Land, Water and Planning which outlines a framework and guidelines for planning developments with Biodiversity in mind. The publication also explains to the reader why maintaining biodiversity around our developments is so crucial – "Biodiversity conservation is an essential component of responsible environmental and natural resource management. It is fundamental to our quality of life, and supports our environment, economy and community." Without biodiversity in and around our communities, the quality of our lives, economy and community will then suffer. Therefore, it is essential for planners and developers to ensure that they choose land to develop which will have minimal impact on the local flora and fauna.

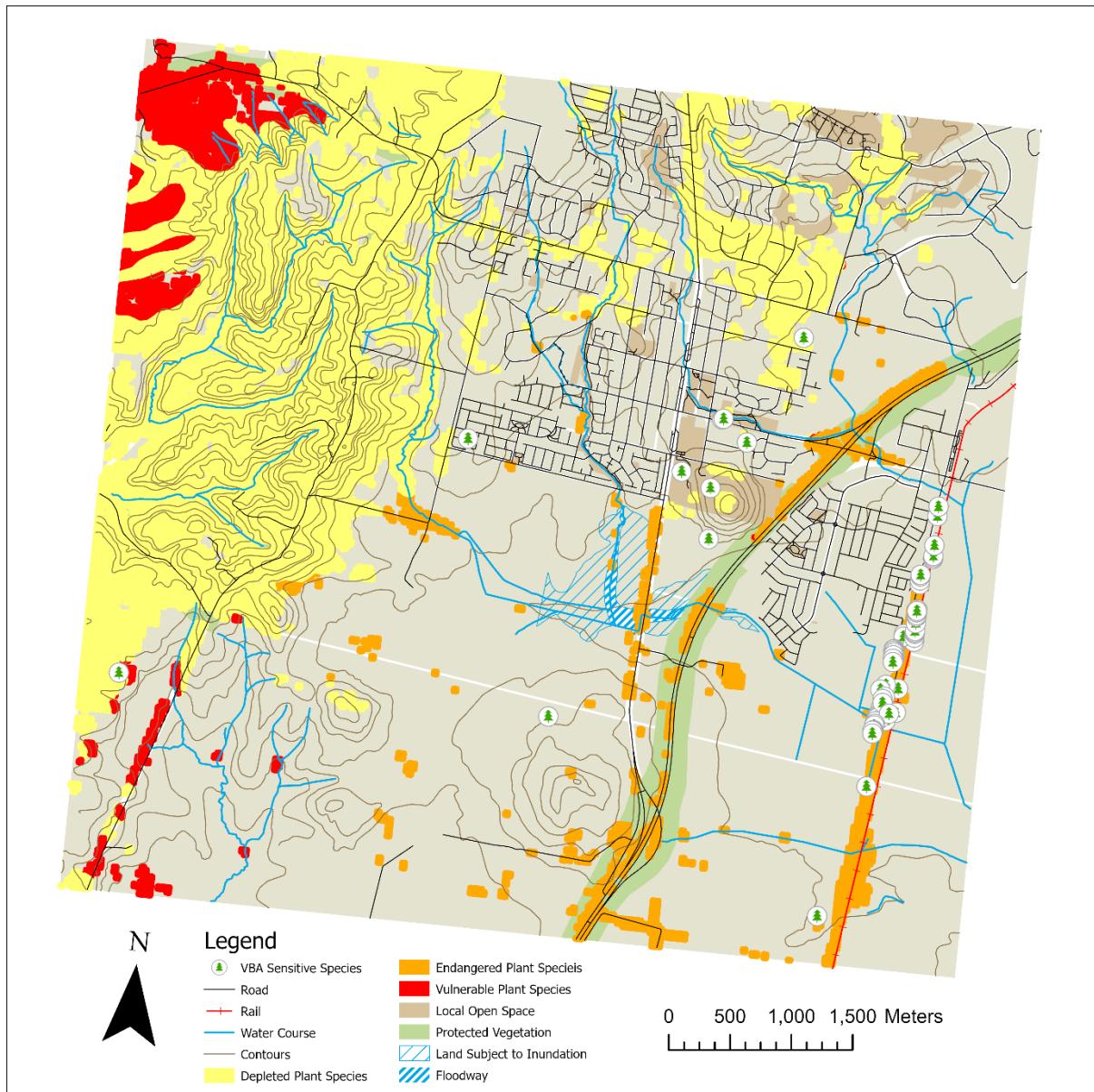
## **Analysis of the Land Around Wallan**

In order to make recommendations for the Mitchell Shire Council, one first had to gather and interpret the data relating to the land surrounding Wallan to meet the biodiversity expectations and requirements. As well as meeting the Mitchel Shire Council requirements to conserve at least 99% of regional vegetation that is currently classified as Endangered, 80% of vegetation currently classified as Vulnerable and 50% of vegetation classified as Depleted. Shown below are the maps created with the purpose of such analysis to be conducted, and what all recommendations for the Mitchel Shire Council are based on.



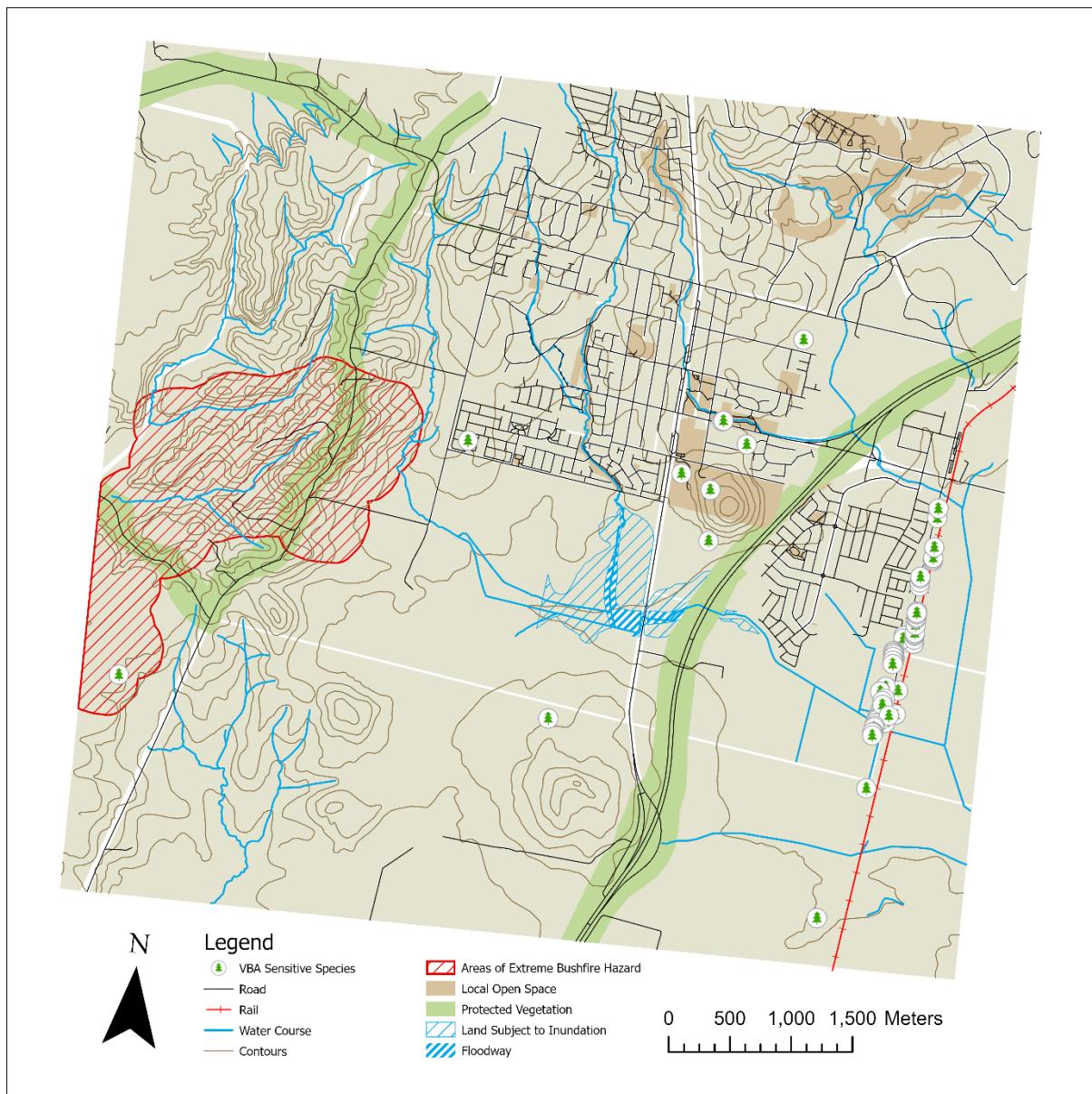
**Figure 1:**

The base map created which highlights existing public space, "VBA sensitive species", areas susceptible for flooding, and existing protected land. All other maps are built off of this one.



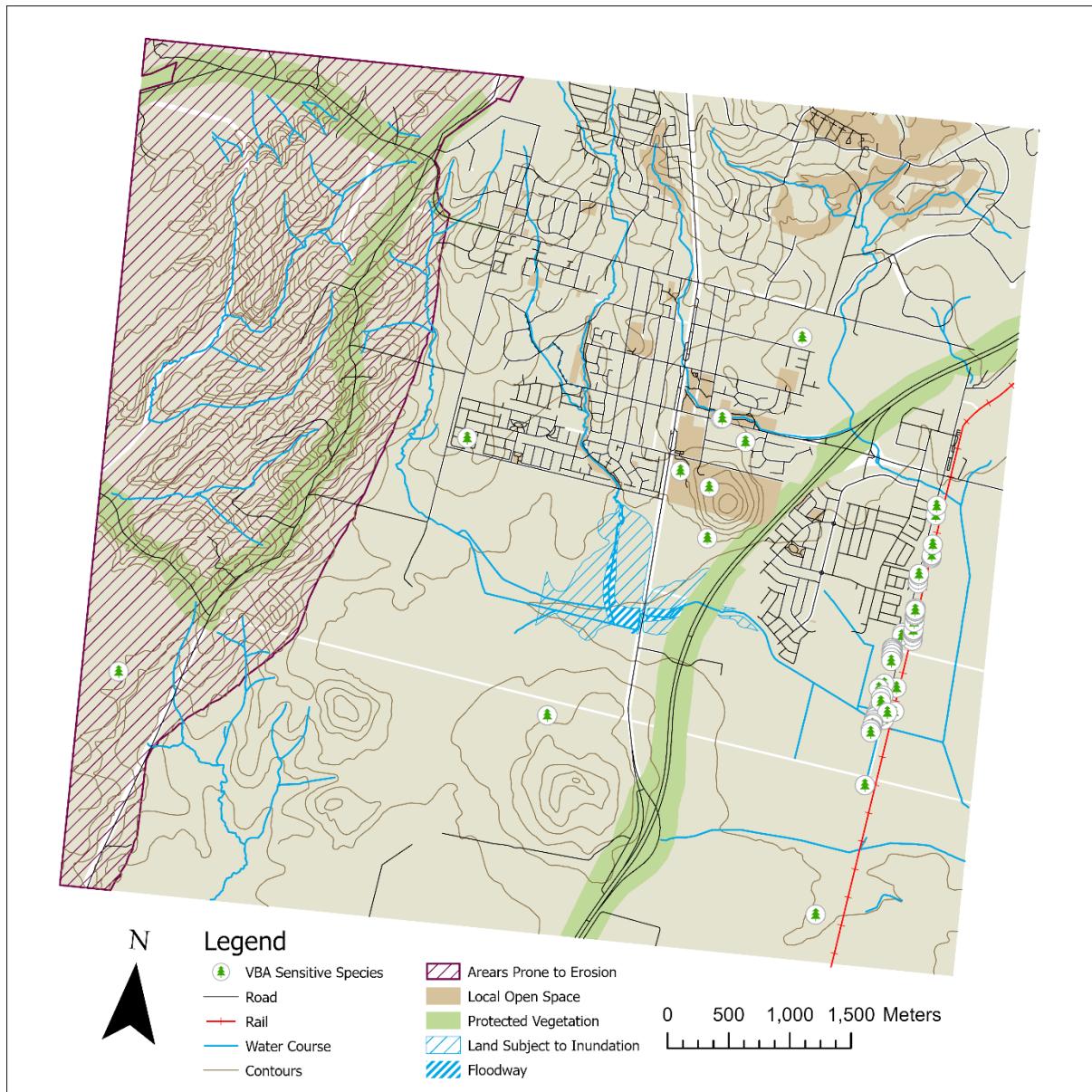
**Figure 2:**

A map showcasing the EVCs “Depleted”, “Endangered” or “Vulnerable” according to DELWP.



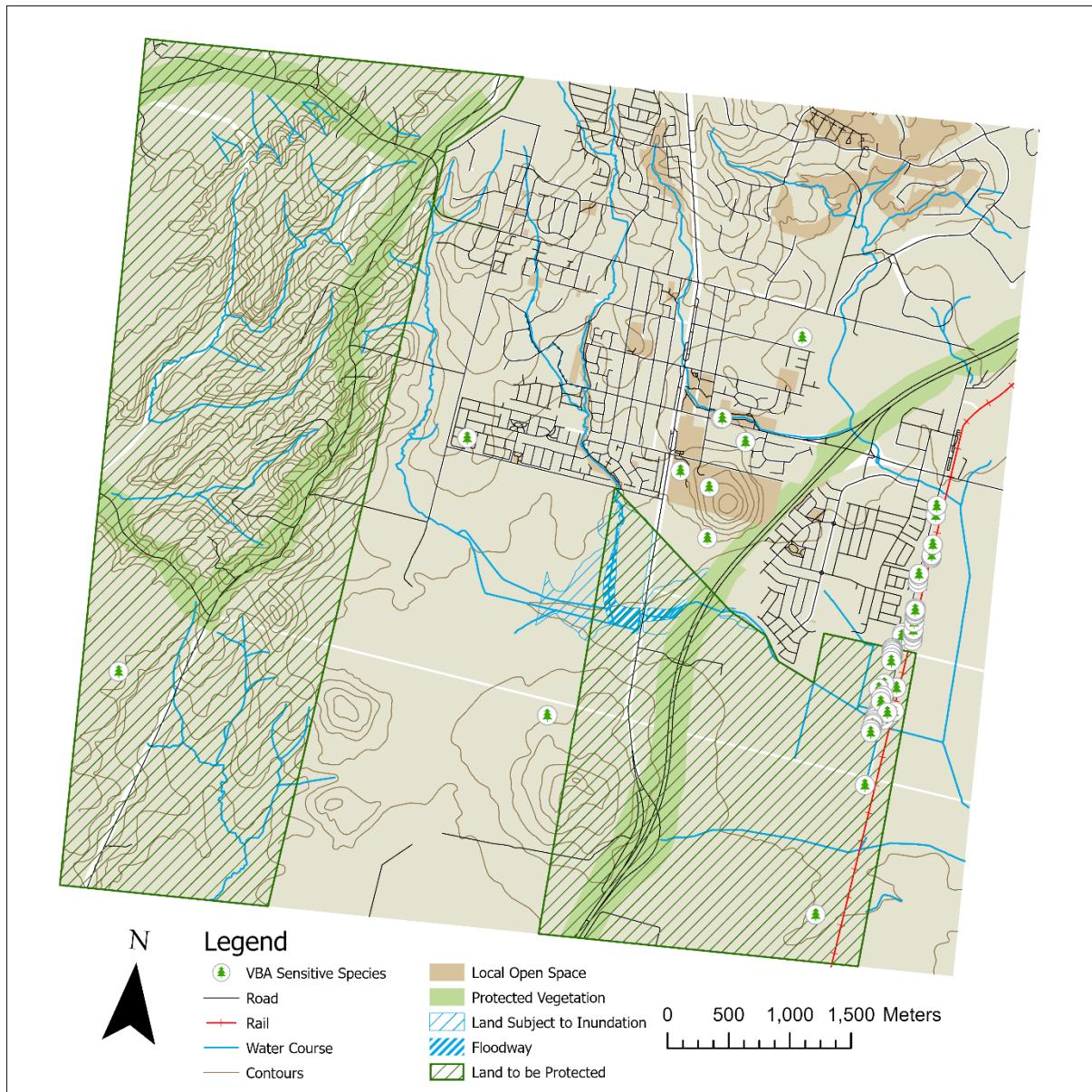
**Figure 3:**

Areas of extreme bushfire hazard.



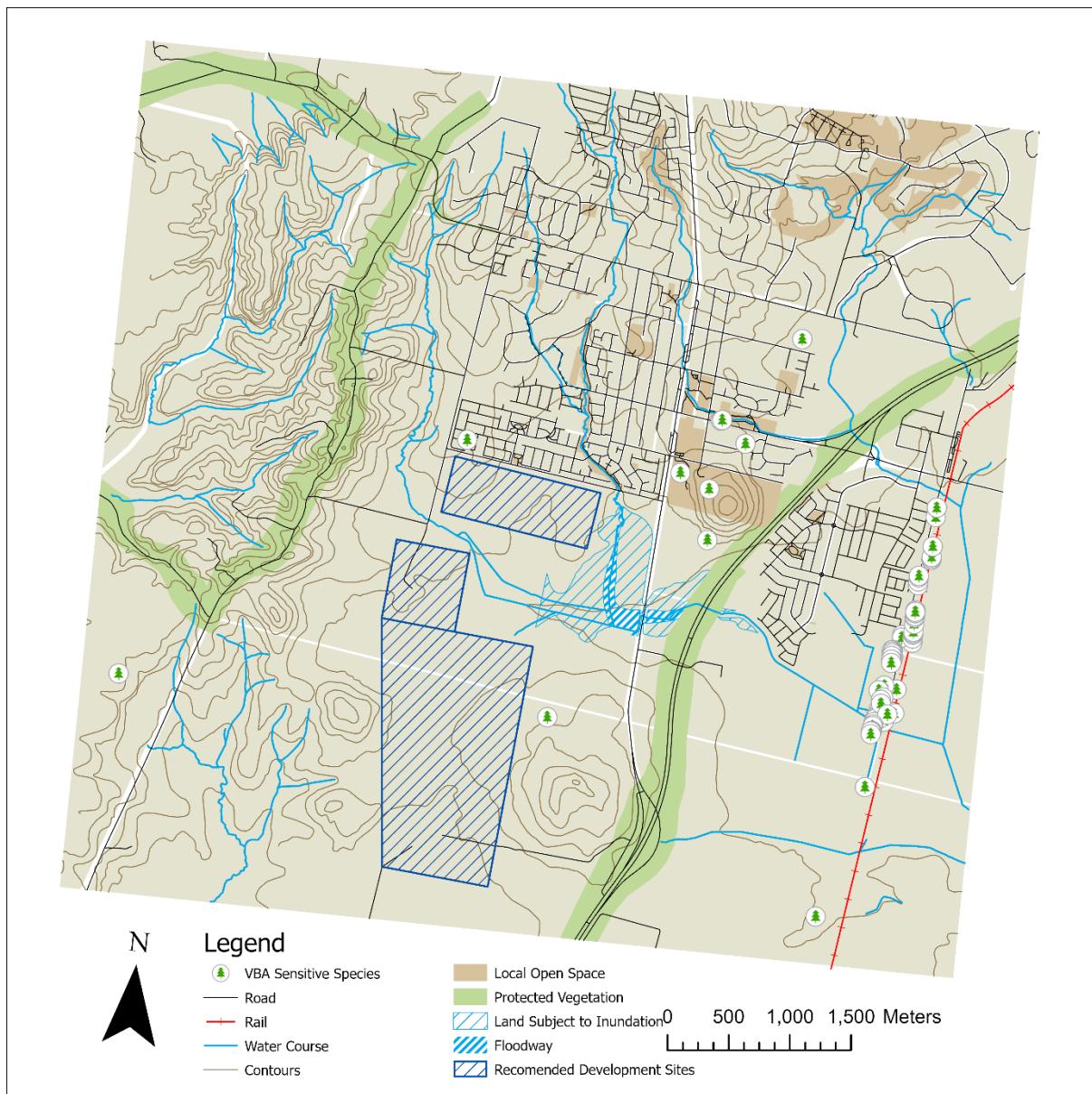
**Figure 4:**

Areas prone to erosion.



**Figure 5:**

Land which after analysis, should be protected.



**Figure 6:**

Land which after analysis, could be suitable for further development.

## **Recommendations**

Based on the Mitchel Shire Councils requests, the maps produced and shown above, and the analysis conducted on those maps; it is recommended that the lands highlighted in *Figure 5* should be protected. This is because this land includes at least 99% of the endangered vegetation within the area, and at least 50% of depleted vegetation within the area. It is worth noting that the area highlighted in *Figure 5* does not actually contain at least 80% of vulnerable vegetation within the area, however, this is allowable since the remainder of that 80% is already protected. The land highlighted in *Figure 5* was derived from the data shown in *Figure 2* (see the appendix)

It can also be recommended that if the Mitchell Shire Council decides to further develop the area or expand the township of Wallan, the lands highlighted in *Figure 6* should be chosen for such endeavors. *Figure 6* was created through analysis using the data shown in *Figure 2*, *Figure 3*, *Figure 4*, and *Figure 5* (see the appendix)

## **Appendix**

All map creation and data analysis were conducted using the computer program ArcGIS Pro. *Figure 1*, *Figure 2*, *Figure 3* and *Figure 4* were all simply created by overlaying relevant data provided.

*Figure 5* was created by creating a custom shaped polygon and measuring the percentage of the “endangered”, “vulnerable” and “Depleted” vegetation types which the polygon covers, then adjusting the polygons size and shape to meet the Mitchel Shire Councils requirements.

*Figure 6* was created by creating custom shaped polygons which avoided the data represented by *Figure 2*, *Figure 3*, *Figure 4*, and *Figure 5* as well as avoiding any watercourses, flood lands, “VBA protected species”, open spaces and areas where contour lines were close together. As this land would be the flattest, safest, and most environmentally conscious land to develop.

## References

- The State of Victoria Department of Environment, Land, Water and Planning 2017, *Protecting Victorias Environment – Biodiversity 2037*, Viewed 16 October 2021  
[https://www.environment.vic.gov.au/\\_data/assets/pdf\\_file/0022/51259/Protecting-Victorias-Environment-Biodiversity-2037.pdf](https://www.environment.vic.gov.au/_data/assets/pdf_file/0022/51259/Protecting-Victorias-Environment-Biodiversity-2037.pdf)
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[https://www.environment.vic.gov.au/\\_data/assets/pdf\\_file/0014/91220/Planning-for-biodiversity-Guidance.pdf](https://www.environment.vic.gov.au/_data/assets/pdf_file/0014/91220/Planning-for-biodiversity-Guidance.pdf)
- The State of Victoria Department of Environment, Land, Water and Planning 2021, *Bioregions and EVC benchmarks*, Viewed 16 October 2021  
<https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks>