

Review of a previous habitat hectare assessment of land at 100 Vineyard Road, Sunbury, Victoria

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Our project reference: 5745

Background

This letter is written in response to a request to review a previous habitat hectare assessment of remnant vegetation located at 100 Vineyard Road, Sunbury, Victoria (herein referred to as the 'study area') (Figure 1). The study area has previously been assessed on numerous occasions and a large number of reports pertain to the site including GAGIN Pty Ltd (2005; 2009; 2010). Ecology and Heritage Partners Pty Ltd conducted a rapid site assessment on 22 December 2011 and provided a brief review of the GAGIN (2010) Net Gain report (Ecology and Heritage Partners 2012). Following this advice, Urban Design and Management Pty Ltd commissioned a full habitat hectare review of the study area and the previous report by GAGIN (2010). The following letter report summarises the findings of the habitat hectare review. This letter report should be read in conjunction with the previous report by GAGIN (2010) and the most recent development plan (Rosenthal Estate Development Plan, Ref: UDM01 dated March 2013).

Methods

A site survey was conducted by a qualified botanist on 5th December 2012. All vascular plants were recorded and a habitat hectare assessment and Net Gain analysis was conducted following the guidelines of the *Framework* (NRE 2002) and the *Vegetation Quality Assessment* methodology (DSE 2004). Note: since this time, Victoria's Planning Provisions have undergone significant reforms (Amendment VC105), including changes to Clause 52.17 with regard to Native Vegetation Clearance Regulations. Net Gain calculations have therefore been omitted as part of this report update and all requirements are now based on the Biodiversity Assessment Guidelines (DEPI 2013).

Limitations

The timing of the Net Gain review survey was conducted at a slightly sub-optimal time of year (early summer versus spring) for the identification of all vascular plant species. Further surveys at different times of the year, may potentially identify a small number of additional plant species, such as annual herbs and grasses or those subsisting via underground tubers (e.g. orchids).

Nevertheless, terrestrial flora data collected during the field survey was considered sufficient to meet the overall objectives of the Net Gain review. In addition, the timing of the current survey differed substantially to that of GAGIN (2010) who conducted their survey in June 2010 (i.e. early winter), which is a sub-optimal survey period.

Additional notes relevant to the study area

Several additional points are worthy of note with respect to the study area:

- 1) Consistent with previous surveys, areas of vegetation within the southern half of the study area were not included within the assessment as they have been historically ploughed and contain no scattered or embedded rock and very little native vegetation. An earlier agreement was reached between DSE and the proponent that formerly ploughed areas would not need to be considered as part of the planning permit application (Tom Milinkovic UDM pers. comm.);
- 2) In line with advice from the Department of Environment, Water Heritage and the Arts (now Department of Environment), no assessment of the EPBC Act listed ecological vegetation community Natural Temperate Grassland of the Victorian Volcanic Plain was conducted, as the study is exempt from legislation relating to this listing (DEWHA, 11th July 2008);
- 3) The definition of Degraded Treeless Vegetation (DTV) was previously altered under the Framework and defined into two categories (DSE 2010):
 - Minor Treeless Vegetation – Vegetation comprising less than 25% native understorey cover. No offset or habitat hectare assessment is required.
 - Modified Treeless Vegetation – Vegetation comprising greater than 25% native understorey cover that does not support habitat for rare or threatened species, and the native species present are unlikely to have originally dominated the site. No offset or habitat hectare assessment is required.

However, under the new Biodiversity Assessment Guidelines, areas formerly qualifying as Modified Treeless Vegetation are now considered as a remnant patch (irrespective of species composition) and must be included as part of the data submission to the DEPI native vegetation support team for the generation of a Biodiversity Assessment Report and inclusion in overall offset targets.

Results

For the sake of clarity and consistency, the results provided below summarise the findings of the habitat hectare review by adopting the habitat zone identification labels used by GAGIN (2010). The only exception to this rule is the inclusion of labels PG5a and PG5b to identify areas assessed as Modified Treeless Vegetation. A short summary of differences between the current results and previous findings are provided in order to highlight the reasons behind any discrepancies.

All habitat scores are provided in Table 1. Vegetation throughout the study area ranges from poor to good condition. A relatively high number of native grasses are present throughout the study area, however, the diversity of native herbaceous species is fairly poor. Weed cover is very high in parts and several weeds of national significance (WONS) occur consistently throughout the entire site including Chilean Needle-grass *Nassella neesiana* and Serrated Tussock *N. trichotoma*.

Overall findings

Ecological Vegetation Classes (EVCs) documented in the current assessment are consistent with those of GAGIN (2010) and include *Heavier Soils - Plains Grassland* (EVC 132_61) and *Creekline Tussock Grassland* (EVC 654). The current findings indicate that the study area contains a total of 37.06 hectares of remnant vegetation in comparison to 34.7 hectares documented by GAGIN (2010). This total consists of approximately 2.53 hectares of *Creekline Tussock Grassland* (CT) and 34.53 hectares of *Plains Grassland* (PG) (Figure 2). Note: the total area of *Plains Grassland* contains 6.38 hectares of what would formerly have been identified as *Modified Treeless Vegetation* (MTV) as the area contains no scattered rock, the vegetation is species poor and not representative of the pre-1750 flora cohort. The study area also contains nine scattered indigenous trees, predominantly large *River Red-gums*, of which one is earmarked for removal. One state significant grass species, *Rye Beetle-grass* *Tripogon loliiformis*, listed as rare under the *Advisory List of Rare or Threatened Plants in Victoria* (DSE 2005) was also located during the field assessment.

Habitat Zone PG1a

Habitat Zone PG1a consists of *Plains Grassland* (EVC 132_61) in moderate to good condition (Plate 1). The remnant patch is located in the north-east section of the study area and is approximately 5.58 hectares in size (Figure 2). The size of the habitat zone is slightly larger than that documented by GAGIN (2010) as an additional area on the north-western corner of the patch was found to meet the condition thresholds to qualify as remnant vegetation under either the *Framework or Biodiversity Assessment Guidelines*.

Although the patch size within the current assessment is slightly larger, the habitat hectare score is lower (41/100 compared to 57/100) (Table 1). The different habitat score, however, does not alter the *Bioregional Conservation Significance* of the patch, which remains *Very High* as the habitat score is greater than 40 for an EVC with a *Bioregional Conservation Status* of *Endangered*. Differences in the habitat scores are in part explained by lower weed and recruitment scores though largely result from previous incorrect habitat hectare calculations with respect to understorey lifeforms. Discrepancies within the GAGIN (2010) report include:

- One *Large Herb* species is shown in the PG1a habitat hectare assessment sheet (p. 38) yet no *Large Herbs* are apparent in the PG1a species list given on p. 15. This lifeform category should therefore be absent;

- Three Medium Herb species are shown in the PG1a habitat hectare assessment sheet (p. 38) with a cover of 1%, meaning that the lifeform category is absent, yet the species list for PG1a (p.15) shows six Medium Herbs, therefore the lifeform category is likely to be present yet modified;
- One Small Herb species is shown in the PG1a habitat hectare assessment sheet (p. 38) yet the species list for PG1a (p. 15) shows three Small Herbs, therefore the lifeform category should be shown as present and not modified;
- One Medium Tufted Graminoid species is shown in the PG1a habitat hectare assessment sheet (p. 38) yet the species list for PG1a (p. 15) contains five Medium Tufted Graminoids. Although this is a large discrepancy it does not alter the status of the lifeform category as it remains present but modified; and,
- All seven lifeform categories would need to be present in order to achieve an understorey score of 20, and only six of the seven lifeform categories for Plains grassland are listed as present.



Plate 1: Remnant vegetation in Habitat Zone PG1a

Habitat Zone PG1b

Habitat Zone PG1b consists of Plains Grassland (EVC 132_61) in relatively poor condition (Plate 2). The remnant patch is located midway along the north-eastern arm of the study area on a north facing slope and is approximately 1.75 hectares in size (Figure 2). The size of the habitat zone is slightly larger than that documented by GAGIN (2010). A small section in the middle of

the rectangular shaped patch contains almost 100% weeds, mainly Chilean Needle-grass and as such has been removed from the patch (Figure 2).

The reviewed habitat hectare score for remnant patch PG1b is lower (25/100 compared to 50/100) (Table 1). The different habitat score alters the Bioregional Conservation Significance of the patch, from Very High to High as the habitat score is less than 40 for an EVC with a Bioregional Conservation Status of Endangered. However, one threatened flora species, *Tripogon loliiformis* Rye Beetle-grass was located within Habitat Zone PG1b during the current assessment, therefore, the Bioregional Conservation Significance of the patch is raised from High to Very High as a result of the threatened species rating (Table 1). Rye Beetle-grass is listed as rare under the Victorian Advisory List of Rare or Threatened flora species (DSE 2005).

Differences in the habitat hectare review are in part explained by lower understorey lifeform, recruitment and organic litter scores, though largely result from the current assessment assigning a lack of weeds score of zero as the remnant patch has greater than 50% cover of weeds, the majority of which are high threat. Discrepancies within the GAGIN (2010) report include:

- One Large Herb species is shown in the PG1b habitat hectare assessment sheet (p. 40) yet no Large Herbs are apparent in the PG1b species list given on p. 17. This lifeform category should therefore be absent;
- Three Medium Herb species are shown in the PG1b habitat hectare assessment sheet (p. 40) with a cover of 1%, meaning that the lifeform category is absent, yet the species list for PG1b (p. 17) contains four Medium Herbs;
- Three Large Tufted Graminoid species are shown in the PG1b habitat hectare assessment sheet (p. 40) yet the species list for PG1b (p. 17) contains only two Large Tufted Graminoids;
- One Medium Tufted Graminoid species is shown in the PG1b habitat hectare assessment sheet (p. 40) yet the species list for PG1b (p. 17) contains three Medium Tufted Graminoids; and,
- One Medium Non-tufted Graminoid species is shown in the PG1b habitat hectare assessment sheet (p. 40) yet the species list for PG1b (p. 17) contains no Medium Non-tufted Graminoids, therefore this lifeform category should be absent.



Plate 2: Remnant vegetation in Habitat Zone PG1b

Habitat Zone CT₁

Habitat Zone CT1 consists of Creekline Tussock Grassland (EVC 654) in relatively poor condition (Plate 3). The remnant patch is located midway along the north-eastern arm of the study area in a drainage line and is approximately 0.7 hectares in size (Figure 2). The size of the habitat zone is approximately the same as that documented by GAGIN (2010).

The reviewed habitat hectare score for remnant patch CT1 is slightly lower (28/100 compared to 31/100) (Table 1). Despite the different habitat score the Bioregional Conservation Significance of the patch remains High as both habitat scores are less than 40 for an EVC with a Bioregional Conservation Status of Endangered. Differences in the habitat scores result from the current assessment assigning a lower lack of weeds score as the remnant patch has greater than 50% cover of weeds. Several discrepancies within the GAGIN (2010) report include:

- Two Medium Herb species are shown in the CT1 habitat hectare assessment sheet (p. 42) with a cover of 1%, meaning that the lifeform category is present and modified, yet the understorey lifeforms table states that this category is absent; and,
- No Small Herb species are shown in the CT1 habitat hectare assessment sheet (p. 42) or the relevant species list (p. 19) yet this lifeform category is designated as present and modified.



Plate 3: Remnant vegetation within Habitat Zone CT1

Habitat Zone PG4

Habitat Zone PG4 consists of Plains Grassland (EVC 132_61) in moderate to good condition (Plate 4). Habitat Zone PG4 is made up of two remnant patches located in the north-western arm of the study area with a combined total of approximately 20.81 hectares (Figure 2). The size of the habitat zone is approximately two hectares smaller than that documented by GAGIN (2010) as vegetation bordering the drainage line to the north and around the old homestead area was considered too weedy to qualify as a remnant patch¹.

Although the reviewed patch size is smaller, the habitat hectare score is approximately the same (57/100 compared to 55/100) (Table 1). The Bioregional Conservation Significance of the patch therefore remains Very High as the habitat score is greater than 40 for an EVC with a Bioregional Conservation Status of Endangered. Although of no consequence, several discrepancies are apparent within the GAGIN (2010) report including:

- Five Small Herb species are shown in the PG4 habitat hectare assessment sheet (p. 44) yet the species list for PG4 (p. 21) contains only three Small Herbs;
- Seven Medium Tufted Graminoid species are shown in the PG4 habitat hectare assessment sheet (p. 44) yet the species list for PG4 (p. 21) contains eight Medium Tufted Graminoids; and,
- All seven understorey lifeform categories are listed as present, with four of the seven categories modified, therefore the understorey score should read 20 and not 15.

¹ A remnant patch is defined as an area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native



Plate 4: Remnant vegetation and scattered rock within Habitat Zone PG4

Habitat Zone CT2

Habitat Zone CT2 consists of a narrow strip of Creekline Tussock Grassland (EVC 654) in moderate condition, despite being heavily invaded and surrounded by weeds in many places (Plates 5a & 5b). The remnant patch is located in the north-western arm of the study area in a drainage line that runs in a southward arc towards a dam/wetland associated with the old homestead area and is approximately 1.83 hectares in size (Figure 2). The size of the habitat zone is slightly larger than that documented by GAGIN (2010).

The reviewed habitat hectare score for remnant patch CT2 is slightly higher (38/100 compared to 35/100) (Table 1). Despite the different habitat score the Bioregional Conservation Significance of the patch remains High as both habitat scores are less than 40 for an EVC with a Bioregional Conservation Status of Endangered. Discrepancies within the GAGIN (2010) report include:

- The species list for CT2 given by GAGIN (2010) has almost no resemblance to the species present at the time of survey and includes only six natives, whereas the current survey identified 25 native species;
- Three Medium Herb species are shown in the CT2 habitat hectare assessment sheet (p. 46) with a cover of 2%, meaning that the lifeform category is present and modified, yet the understorey lifeform table states that this category is absent; and,
- No Small Herb species are shown in the CT2 habitat hectare assessment sheet (p. 46) or relevant species list (p. 23) yet this lifeform category is designated as present and modified.



Plates 5a and 5b: Remnant vegetation within Habitat Zone CT2

Habitat Zones PG5a and PG5b

Habitat Zones PG5a and PG5b do not appear in GAGIN (2010). In 2012, Habitat Zones PG5a and PG5b were recorded as Modified Treeless Vegetation (MTV) by Ecology and Heritage Partners Pty Ltd (early Draft report version – not released). However, under the new Biodiversity Assessment Guidelines areas of MTV must be included as part of the data submission to DEPI to complete the Biodiversity Assessment Report and offset analysis.

Both Habitat Zones consist of Plains Grassland (EVC 132_61) in poor condition as they are dominated by Chilean Needle-grass and scattered Serrated Tussock (Plate 6). Habitat Zone PG5a is approximately 1.08 hectares and occurs midway along the eastern arm of the study area, while PG5b is approximately 5.3 hectares and covers the northern tip of the eastern arm of the study area (Figure 2).



Plate 6: Poor quality Plains Grassland dominated by Chilean Needle-grass (former MTV)

Scattered Indigenous Trees

The study area contains eight scattered indigenous trees along the western border of the old homestead site between Habitat Zones PG4 and PG2 (Figure 2). All scattered trees are River Red-gum *Eucalyptus camaldulensis*. Six of the River Red-gums qualify as Large Old Trees (LOT) as they have Diameter at Breast Height (DBH) measurements of greater than 80 centimetres, while the remaining two trees are classified as Small Trees (ST) as their DBH measurements are less than 60 centimetres². All eight trees are proposed to be retained as part of an interface between the western conservation reserve and the future housing Lots.

Figure 2 also shows one small Yellow Box *Eucalyptus melliodora* adjacent to Mitchell's Lane in the northern portion of Habitat Zone PG4. Although this tree is earmarked for removal, as it occurs within a remnant patch it is not included as part of the scattered tree total or within any offset accounting.

Habitat Hectares

The habitat hectare results are presented in Table 1 and are based on the most up to date development plan provided by the proponent (Rosenthal Estate Development Plan, Ref: UDM01 dated March 2013) (Figure 3). The total amount of remnant native vegetation proposed for removal (in hectares) includes all native vegetation within the development footprint, as well as the nominated Open Space areas. This option assumes that all remnant native vegetation within the Conservation Areas will be retained as part of the proposed development.

The total area of both conservation reserves is equal to 12.51 hectares (1.47 hectares in the eastern conservation reserve and 11.04 hectares in the western conservation reserve). However, the total amount of remnant vegetation in each reserve is slightly less than the overall area of each reserve. Approximately 0.26 hectares of the eastern conservation reserve (shown as Management Zone A on Figure 2) is considered too weedy to constitute a patch, thereby reducing the total amount of remnant vegetation in the eastern reserve to approximately 1.21 hectares of Plains Grassland. A narrow strip (~0.39 hectares) within the north-eastern boundary of the western conservation reserve is also considered too weedy to qualify as a remnant patch. The total amount of vegetation within the western conservation reserve is therefore approximately 10.65 hectares. If any further remnant native vegetation within the nominated Conservation Area boundaries is proposed for removal, an amendment to the offset targets will be required.

² DBH size classes are based on the Plains Grassy Woodland EVC benchmark for a LOT which is set at 80cm.

Table 1. Quantity, quality and significance of native vegetation within the study area.

Study Area Option		VRd	VRd	VRd	VRd	VRd	VRd	VRd
Habitat Zone		PG1a	PG1b	PG4	PG5a	PG5b	CT1	CT2
Bioregion		VVP	VVP	VVP	VVP	VVP	VVP	VVP
EVC Name		PG(HS)	PG(HS)	PG(HS)	PG(HS)	PG(HS)	CTG	CTG
EVC Number		132_61	132_61	132_61	132_61	132_61	654	654
	Max Score	Score	Score	Score	Score	Score	Score	Score
Site Condition	Large Old Trees	10	N/A	N/A	N/A	N/A	N/A	N/A
	Canopy Cover	5	N/A	N/A	N/A	N/A	N/A	N/A
	Under storey	25	15	10	20	5	5	10
	Lack of Weeds	15	4	0	6	0	0	2
	Recruitment	10	3	3	3	3	3	3
	Organic Matter	5	5	4	5	4	4	4
	Logs	5	N/A	N/A	N/A	N/A	N/A	N/A
Treeless EVC Multiplier	Multiplier	1.36	1.36	1.36	1.36	1.36	1.36	1.36
	Subtotal =	36.72	23.12	46.24	16.32	16.32	25.84	34
Landscape context score	25	4	2	11	4	8	2	4
Habitat points out of 100	100	40.72	25.12	57.24	20.32	24.32	27.84	38
Habitat Score (habitat points/100)		0.41	0.25	0.57	0.20	0.24	0.28	0.38
Total Area of Habitat Zone within the Study Area (ha)		5.58	1.75	20.81	1.08	5.3	0.70	1.83
Area (ha) proposed to be removed		4.44	1.75	10.16	1.08	5.23	0.70	1.83
Area (ha) proposed to be retained		1.14	0.00	10.65	0.00	0.07	0.00	0.00
Total habitat hectares within the Study Area		2.29	0.44	11.86	0.22	1.27	0.2	0.7
Habitat hectares to be removed		1.82	0.44	5.79	0.22	1.25	0.2	0.7
Habitat hectares to be retained		0.47	0.00	6.07	0.00	0.02	0.00	0.00
EVC Conservation Status		En	En	En	En	En	En	En
Conservation Significance	Conservation status x Habitat Score	V. High	High	V. High	High	High	High	High
	Threatened Species	N/A	V. High	N/A	N/A	N/A	N/A	N/A
	Other Site Attributes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Overall (highest rating)	V. High	V. High	V. High	High	High	High	High
Large Old Trees	No. in Study Area	0	0	0	0	0	0	0
	No. to be Removed	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	No. to be Retained	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: VRd-Vineyard Road, Sunbury; PG(HS)-Heavier Soils Plains Grassland; CTG-Creekline Tussock Grassland; EVC-Ecological vegetation Class; VVP-Victorian Volcanic Plain; N/A-Not Applicable.

Habitat Hectare Summary

The study area contains a total of **16.98 habitat hectares** of remnant native vegetation (Table 1). This total is comprised of:

- 14.59 habitat hectares (28.14 hectares) of Very High conservation significance Plains Grassland;
- 1.49 habitat hectares (6.38 hectares) of High conservation significance Plains Grassland; and,
- 0.9 habitat hectares (2.53 hectares) of High conservation significance Creekline Tussock Grassland within the Victorian Volcanic Plain bioregion.

There are no LOTs occurring in habitat zones (Table 1).

Based on the revised data and the most up to date development plan (Rosenthal Estate Development Plan, Ref: UDM01 dated March 2013), a total of **10.42 habitat hectares** of remnant vegetation is earmarked for removal (Table 1). This total is comprised of:

- 8.05 habitat hectares (16.35 hectares) of Very High conservation significance Plains Grassland;
- 1.47 habitat hectares (6.31 hectares) of High conservation significance Plains Grassland; and,
- 0.9 habitat hectares (2.53 hectares) of High conservation significance Creekline Tussock Grassland within the Victorian Volcanic Plain bioregion.

Offset Requirements

According to the Biodiversity Interactive map, the proposed development occurs predominantly within an area of Location A (Blue – Low Risk) (Appendix 1). However a cluster of Location B (Purple – Moderate Risk) polygons are present in the centre of the western arm of the study area and several Location C (Orange – High Risk) polygons are also present in the northern tip of the western arm, as well as single polygon in the tip of the eastern arm. The presence of orange High Risk polygons immediately raises the risk based pathway of the study area to High.

All relevant data and shape files are therefore required to be submitted to DEPI for assessment under the Biodiversity Assessment Guidelines for the generation of a Biodiversity Assessment Report (BAR) that will detail the specific and general offset requirements for the proposed development. Under this system the loss of one scattered indigenous tree will be treated as a single polygon of 0.07 hectares and assigned a habitat score of 0.2.

Conclusion

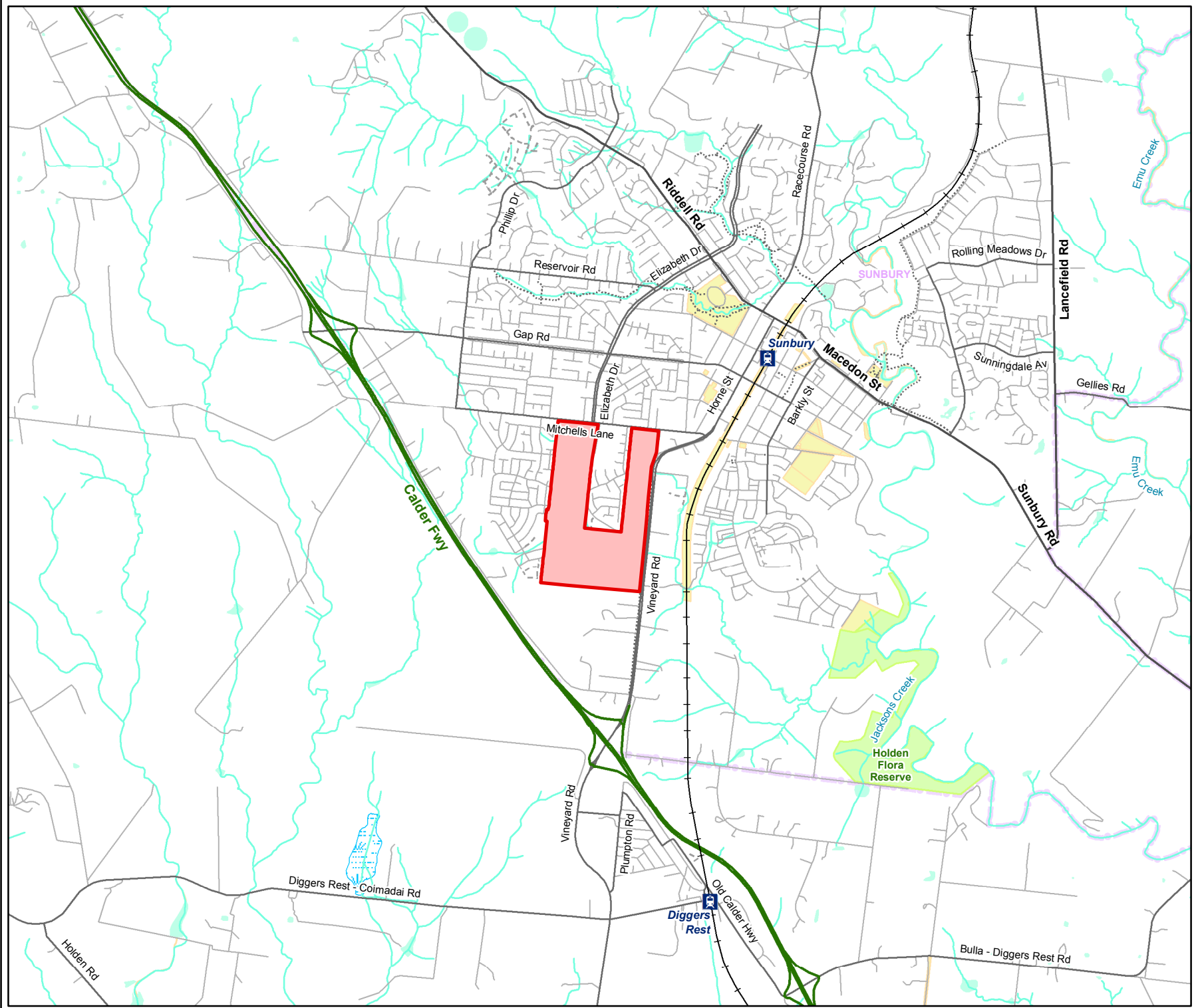
A number of discrepancies exist between the current habitat hectare assessment and the previous GAGIN (2010) assessment with regard to the extent of remnant native vegetation within the study area. With the inclusion of areas formerly defined as Modified Treeless Vegetation as remnant patches, the total amount of remnant vegetation considered present within the study area has increased to 37.06 hectares compared to the 34.7 hectares documented by GAGIN (2010). Other discrepancies result from differences in the interpretation and application of the Vegetation Quality Assessment method, which led to variations for each habitat quality score, as well as minor differences in the size of patches.

In summary, a total of 16.98 habitat hectares of remnant native vegetation is present within the study area, compared to 16.59 habitat hectares calculated by GAGIN. This equates to a difference of 0.39 habitat hectares. Based on the revised data and the most up to date development plan (Rosenthal Estate Development Plan, Ref: UDM01 dated March 2013), a total of 10.42 habitat hectares of remnant vegetation is earmarked for removal.

The study area falls within the High Risk (Location C) pathway, therefore all data relating to remnant patches and scattered trees will be submitted to DEPI for the generation of a Biodiversity Assessment Report, which will outline the required general and specific offsets for all State matters.

References

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- GAGIN 2010. *Habitat Hectare Assessment of Non-Ploughed Vegetation, 100 Vineyard Road, Sunbury*. Unpublished report by Greybox and Grasslands Indigenous Nursery & Ecological Consulting on behalf of Keith Altmann & Associates.
- NRE 2002. *Victoria's Native Vegetation Management: A Framework for Action*. Department of Natural Resources and Environment, Victoria.
- PPWCMA 2006. *Port Phillip and Westernport Native Vegetation Plan*, Port Phillip and Western Port Catchment Management Authority, Frankston, Victoria.



- Legend**
- Study Area
 - Freeway
 - Major Road
 - Collector Road
 - Minor Road
 - Proposed Road
 - Walking Track
 - Minor Watercourse
 - Permanent Waterbody
 - Land Subject to Inundation
 - Wetland/Swamp
 - Parks and Reserves
 - Crown Land
 - Localities

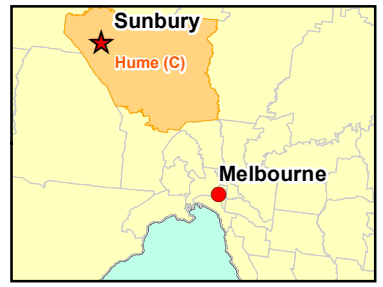
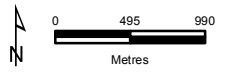
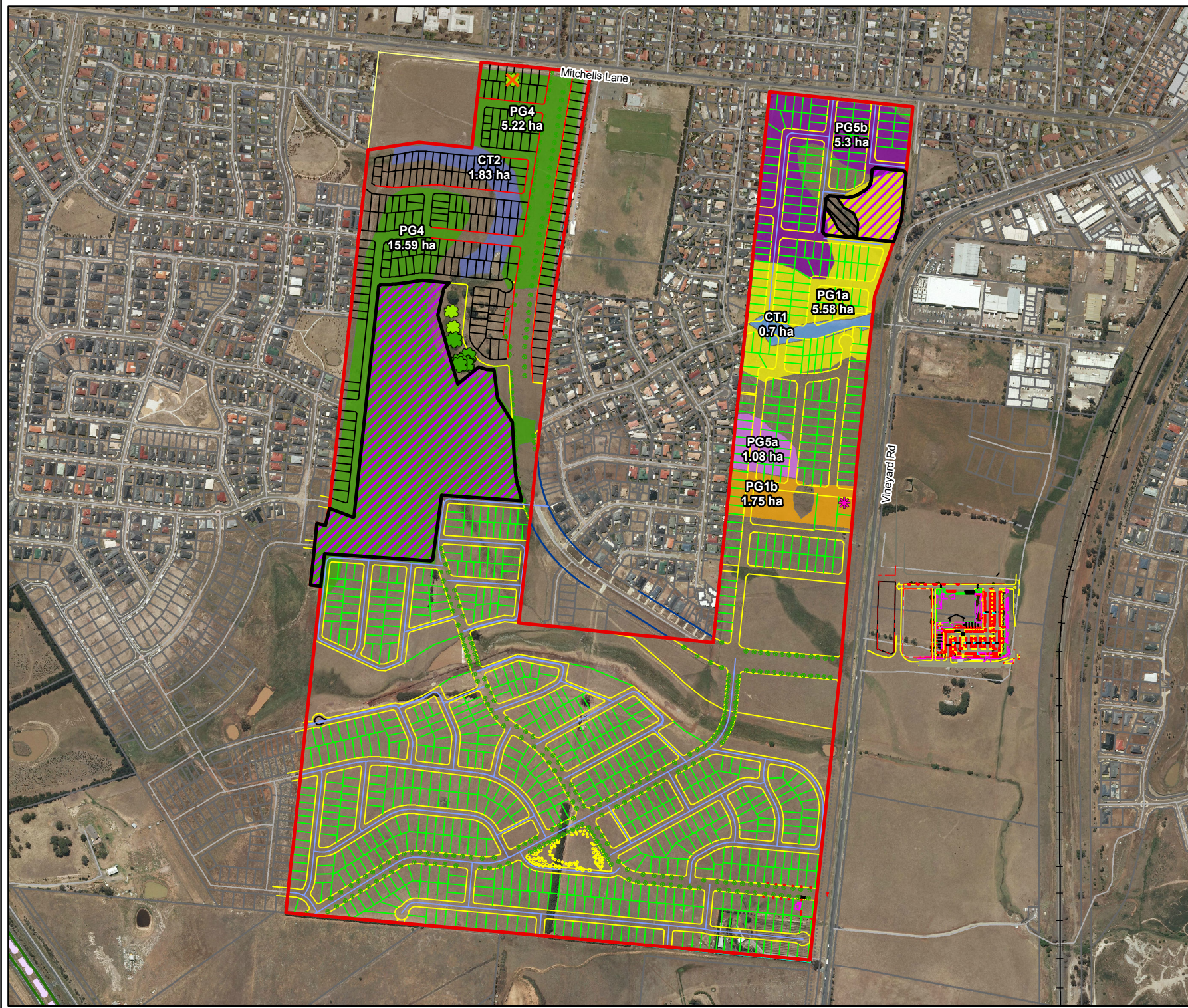


Figure 1
Location of the study area
Rosenthal Estate, Sunbury



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3641_Fig01_StudyArea 6/02/2013 melsley

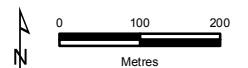


Legend

- Study Area
- ✱ Rye Beetle-grass
- Vegetation**
- Plains Grassland - PG1a
- Plains Grassland - PG1b
- Plains Grassland - PG4
- Plains Grassland, PG5a
- Plains Grassland, PG5b
- Creeklime Tussock Grassland - CT1
- Creeklime Tussock Grassland - CT2
- Scattered Trees**
- ✪ Large Old Tree
- ✪ Small Tree
- ✕ Tree to be removed
- Management Zone A (0.26ha)
- Management Zone B (12.25ha)
- Fenceline of offset sites



Figure 2
Ecological features,
Management Areas and
Development Plan
Rosenthal Estate, Sunbury



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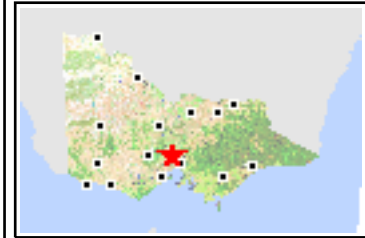
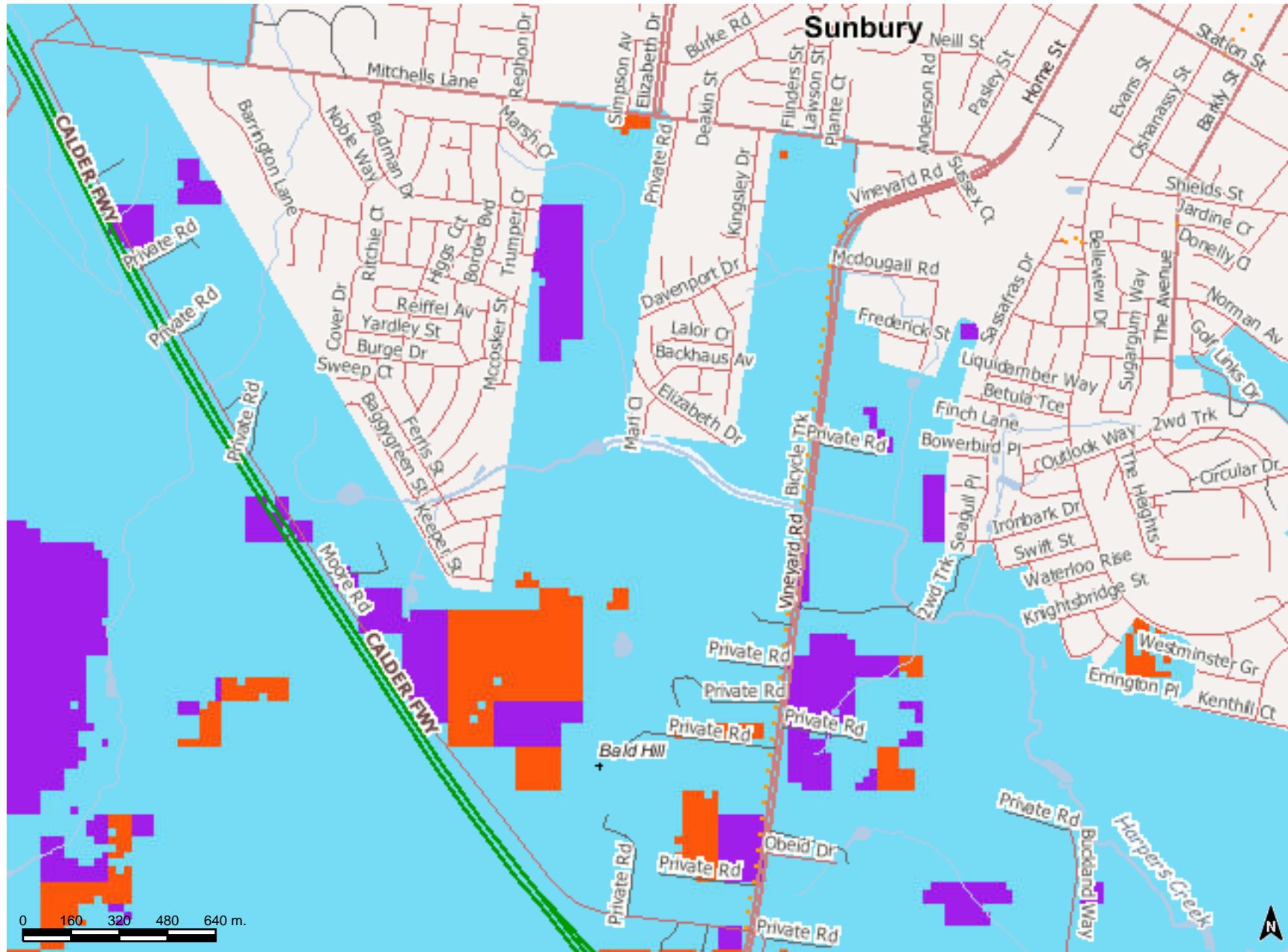
Figure 3: Vineyard Rd DP

Date: Mar 2013
Ref: UDM01
Opt: 1 Rev: 3

Scale 1:5000 @A3

0 50 100 150





- ROADS**
- Freeway
- Highway
- Main Road
- Secondary Road
- Local Road
- 2WD (Unsealed)
- 4WD Only
- Walking or Cycle Track
- WATERCOURSES**
- UNNAMED DRAINAGE LINES
- WATERBODIES**
- Watercourse Area
- Permanent Waterbody
- Wetland Area
- Inundation Area
- BUILT UP AREAS

Appendix 1:
Location Risk map