AMENDMENT C188 TO THE WHITTLESEA PLANNING SCHEME

EXPERT WITNESS STATEMENT OF MALCOLM WRIGHT

Stockland

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1. WITNESS INFORMATION

1.1. Expert witness information

Malcolm David Wright
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Mal Wright has extensive expertise in terrestrial ecology and related legislation and policies. His qualifications and experience are summarised in Appendix 1.

1.2. Declaration

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Tribunal.

Signed:

Malcolm David Wright
Senior Ecologist
Brett Lane & Associates Pty Ltd
Suite 5, 61–63 Camberwell Road
Hawthorn East VIC 3123

2nd February 2016

2. WORK UNDERTAKEN

Brett Lane & Associates Pty Ltd undertook a desktop investigation of the potential to locate proposed stormwater treatment asset 'WLE' (or part of this asset) within a mapped Growling Grass Frog conservation area at 10A Bindts Road, Wollert – also known as Property 7 – in the Quarry Hills Precinct Structure Plan (PSP).

This investigation was undertaken at the request of King and Wood Malleson on behalf of Stockland, the Proponent. The property is covered by proposed Amendment C188 to the Whittlesea Planning Scheme which relates to the Quarry Hills PSP.

2.1. Scope of assessments

The scope of this assessment is described as follows.

- A review of existing information, including:
    - Literature and existing reporting on the potential to collocate certain stormwater management features with Growling Grass Frog habitat;
    - Draft Development Services Strategy (DSS) for the PSP prepared by the Metropolitan Planning Authority (MPA);
    - Guidance note: Implementing the Biodiversity Conservation Strategy for Melbourne's Growth Corridors (DELWP – February 2015);
    - Design and construction standards for Growling Grass Frog habitat (August 2015 working document for comment only) prepared by Biosis;
    - Riverdale Precinct Structure Plan (September 2014); and
    - Quarry Hills PSP Integrated Water Management Strategy (CPG 2012).
- A site inspection to gain an appreciation of the existing conditions and topography of the land immediately north of Harvest Home Road east of Darebin Creek – the proposed location of a retarding basin and wetland notated as 'WLE' in the draft DSS.

3. RESULTS OF INVESTIGATION

3.1. Desktop review

3.1.1. Growling Grass Frog conservation in Melbourne's growth corridors

The draft Quarry Hills PSP and DSS identify several stormwater treatment assets both in, and adjacent to, Growling Grass Frog Conservation Area 34 (CA34) along Darebin Creek. This conservation area is identified in the Biodiversity Conservation Strategy (BCS)(DEPI2013) in place under the Melbourne Strategic Assessment agreement governing impacts in Melbourne's growth areas on Matters of National Environmental Significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Conservation Area 34 is one of five Growling Grass Frog conservation areas in the growth areas, two of which are located in the northern growth corridor. The key rationale for these conservation areas under the BCS is that they "protect important populations of Growling Grass Frog and ensures connectivity between populations within the northern growth corridor".

The draft DSS for Quarry Hills shows the location of two wetlands (WLB & WLG) within CA34. This is consistent with another Growling Grass Frog Conservation Area Concept Plan prepared for Conservation Area 14 in the western growth corridor – the gazetted Riverdale PSP (MPA 2014). This concept plan allows for stormwater Water Management Zones within CA14.

The Riverdale PSP provides an example of a precedent within the Melbourne Strategic Assessment area where agreement has been reached between all regulatory stakeholders to locate some stormwater treatment assets within Growling Grass Frog conservation areas.

3.1.2. Stormwater management and waterways

Where a waterway supports high ecological values, it is considered important to ensure measures are in place to maintain the ecological characteristics and features of that waterway for the biodiversity values present. Lewis *et al.* (2010) prepared a comprehensive study of landscape and ecological values within stormwater management systems in relation to waterway and wetland ecosystem functioning. The key features of such systems were that they:

- Maintain the natural aquatic character;
- Incorporate characteristics which maintain water quality;
- Ensure adequate proximity to other wetland habitats; and
- Support a variety of vegetation species, and varied wetland structure to encourage the creation of microhabitats.

These principles should be considered in the ongoing design of wetlands associated with the drainage and stormwater management system for the Quarry Hills PSP.

The reach of Darebin Creek at the location of 'WLE' currently lacks many of the important ecological components and functions of an ecologically intact waterway. This is a consequence of a long history of agricultural uses in its catchment and has resulted in a

modified (channelised) creek channel dominated by non-native plants, with a comparatively low cover of indigenous plant species on its fringes.

The ecological function and habitat value of the Growling Grass Frog Conservation Area would be enhanced by the inclusion of a variety of off-line waterbodies (i.e. separated from the creek channel) in the broad, shallow riparian zone adjacent to the creek near Harvest Home Road, as well as a variety of vegetation types, forms and densities. The advent of such wetlands and vegetation in the Darebin Creek riparian zone would significantly enhance its natural character and provide additional habitat for the Growling Grass Frog.

The construction of a number of stormwater management wetlands would create a much more diverse range of microhabitats for wetland flora and fauna compared with the current simple creek channel. This approach is consistent with the draft design and construction standards for Growling Grass Frog habitat in the growth areas, discussed in the next section.

The objectives of the Biodiversity Conservation Strategy and the associated Growling Grass Frog sub-regional strategy are to have functioning sustainable populations of the species with connectivity between populations and protection and enhancement of important populations.

These two objectives could be met within the conservation area through the incorporation of large 'end-of-chain' stormwater treatment wetlands representing permanent wetland features as part of the variety of habitats required for the species. This would result in an improvement in the availability of potential habitat for the Growling Grass Frog within this reach of the Darebin Creek.

Stormwater management design should be undertaken with reference to Melbourne Water's final draft *Design, construction and establishment of constructed wetlands: design manual* available at www.melbournewater.com.au.

3.1.3. Growling Grass Frog habitat draft design and construction standards

In August 2015 the draft *Design and construction standards for Growling Grass Frog habitat* was released for comment. These standards (Biosis 2015), prepared in partnership with DELWP, aim to ensure that constructed habitat is designed to incorporate habitat features of known high value for the species. These draft standards reflect the principles outlined in the previous section of:

- Maintaining a 'semi-natural' character to wetland and habitat design;
- Ensuring water quality is of a high standard to promote the viability of populations in constructed habitat;
- Ensuring wetlands and other habitat features are located in close proximity to each other; and
- Supporting a variety of vegetation communities and wetland types required by the species.

These standards will apply to wetlands constructed to provide breeding habitat for Growling Grass Frog and terrestrial habitat up to 100 metres from such wetlands. While they do not apply to wetlands constructed primarily for stormwater management or other purposes, these standards do provide guidance on the location of 'stormwater

management assets' as part of the mosaic of habitats to be made available for the species in conservation areas.

The draft standards point to the fact that "one of the most common types of wetlands that will be constructed for Growling Grass Frogs is a 'semi-natural' permanent design" (p.8). One of the key design features outlined in the draft standards for this wetland type is size – larger wetlands have been found to be more likely to support Growling Grass Frogs (Heard and Scroggie 2009).

The draft standards identify that these permanent wetlands created for Growling Grass Frogs should incorporate the following [with paraphrasing by the author]:

- *Be as large and deep as practicable;*
- *Be in close proximity to other wetlands that are suitable for occupation by the species;*
- *Have a long hydroperiod (but have seasonal fluctuations in water level);*
- *Have a high cover of aquatic vegetation;*
- *Be relatively saline but within the species' tolerances* [given the available evidence that higher salinity can reduce the incidence of chytrid fungus, a deleterious fungus which affects the persistence of Growling Grass Frog populations]; *and*
- *Have [areas of] surface water temperatures that are relatively high and stable.*

It is the opinion of the author that there is sufficient scope in the design of a stormwater management asset for a large 'end-of-chain' deep wetland to provide the function of a 'semi-natural' permanent wetland for Growling Grass Frog, provided this is feasible hydrologically. The draft standards identify stormwater as one of several potential water sources for such ponds and notes that stormwater is a reliable source for permanent wetlands.

The use of a deep stormwater wetland as Growling Grass Frog habitat is contingent on adequate treatment of stormwater 'higher up' in the treatment chain. This treatment would need to satisfy the following attributes (with reference to Melbourne Water guidelines):

- Filter out gross pollutants using gross pollutant traps;
- Remove suspended solids which reduce the access of submerged vegetation to light using sediment ponds;
- Filter out heavy metals and chemical pollutants;
- Accommodate fluctuations in levels of nutrients and pollutants so as to avoid algal blooms or the proliferation of undesirable plants; and
- Exclude predatory fish which prey on eggs and tadpoles of the target species.

This treatment could be provided, as appropriate, by a combination of raingardens close to the point of runoff from paved areas, followed by bio-swales and gravel/reed-beds closer to the wetland system.

3.2. Conclusions for 'WLE' – Quarry Hills PSP

The draft Quarry Hills DSS (4520) circulated by the MPA in January 2016 depicts a long, narrow, north–south wetland ('WLE') within a larger retarding basin of similar shape, apparently abutting the boundary of the conservation area.

The results of this desktop review, provided in the previous section, would suggest that wetland 'WLE' could be amended so as to be partly located within CA34 and provide a dual role of a stormwater management asset and Growling Grass Frog 'semi-natural' permanent wetland. This would be contingent on adequate treatment of stormwater to ensure no adverse effects on a population which may use the wetland and provided wetland design follows DELWP's design and construction standards.

The reach of Darebin Creek near 'WLE' currently lacks many of the important ecological components and functions of an ecologically intact waterway. The construction of a permanent stormwater wetland at this location would provide an important habitat component as part of a diverse range of microhabitats required for Growling Grass Frog compared with the current simple creek channel.

It is noted that the concept plan for another Growling Grass Frog conservation area within a similar creek corridor – CA14 on Davis Creek in the Riverdale PSP – and the draft Quarry Hills DSS both provide opportunities for stormwater treatment wetlands to be located (at least in part) within the conservation area boundary. It is therefore considered that 'WLE' should be treated no differently.

It is also noted that the Integrated Water Management Strategy preliminary designs (CPG 2012) show a 4,000 m^2 wetland which straddles the conservation area boundary at this location, occurring partly inside and partly outside CA34. This would indicate that the topography at this location would lend itself to the creation of such a wetland without interacting with the hydrology of the Darebin Creek channel.

4. REFERENCES

Biosis 2015, *Design and construction standards for Growling Grass Frog habitat* (DRAFT), prepared for the Department of Environment, Land, Water and Planning, East Melbourne.

CPG 2012, *Quarry Hills PSP Integrated Water Management Strategy*, prepared by CPG, South Melbourne.

1 August 2012

DEPI 2013, *Biodiversity Conservation Strategy for Melbourne's Growth Corridors*, Victorian Government Department of Environment and Primary Industries, East Melbourne.

Heard, G. W and Scroggie, M.P, Assessing the Impacts of Urbanisation on Growling Grass Frog Metapopulations, Wildlife Ecology, Arthur Rylah Institute for Environmental Research, Heidelberg.

MPA 2014, *Riverdale Precinct Structure Plan* (gazetted under Amendment 3176 to the Wyndham Planning Scheme in November 2014), Metropolitan Planning Authority, Melbourne.

Appendix 1: Qualifications and experience of Mal Wright

BL&A Brett Lane & Associates Pty. Ltd.
Ecological Research & Management

Mal Wright
Senior Ecologist and Project Manager

Profile

Mal is an experienced terrestrial ecologist, project manager and conservation officer specialising in the assessment and management of native vegetation and the application of permitted clearing regulations in Victoria, in particular within Melbourne's Growth Areas. He has extensive experience managing a range of projects for the private and government sectors, including impact assessments, monitoring and research, offset planning, peer review and regulatory facilitation. His work to date also includes advising landholders on how to manage land for conservation.

Biography

Working in industry since 2005

Qualifications

BHort (Dux), *University of Melbourne*

Certificates and Licenses

DSE Certificate of Competency (Vegetation Quality Assessments)
Construction Induction 'White Card'

Employment History

2012 – Present
Senior Ecologist & Project Manager, *BL&A, Melbourne*
2009 – 2012
Conservation Officer, *Trust for Nature, Victoria*
2005 – 2009
Senior Ecologist & Project Manager, *BL&A, Melbourne*

Key Skills

- Project Manager including budgeting, staffing, client liaison, production of high quality technical reports
- Negotiation with regulators, and referral authorities including local councils, the Victorian Department of Environment, Land, Water and Planning, the Commonwealth Department of the Environment and CFA
- Flora assessments
- Terrestrial fauna assessments
- Habitat hectare and net gain assessment
- Targeted surveys for listed flora and fauna species
- Desktop assessments
- Management plan preparation for listed fauna and flora values and offset sites
- Salvage protocol preparation and implementation
- Project design recommendation
- Preparation of mitigation measures
- EPBC Act Referrals
- EPBC Act Referral external training
- Offset site selection
- Offset Plan preparation

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Ecological Research & Management

Project Examples

Property Development

The Grove, Tarneit: Facilitation and management of investigations and reporting required under the Melbourne Strategic Assessment regulatory framework

Riverdale Precinct Structure Plan, Tarneit, Victoria: Preparation of background reporting and witness statement for a planning panel hearing

Westbrook Estate, Victoria: Facilitation and management of investigations and reporting required under the Melbourne Strategic Assessment regulatory framework

Modeina Estate, Victoria: Preparation of EPBC Act Preliminary Documentation, offset facilitation (2013 to present)

Truganina Industrial Development, Victoria: Flora and fauna assessments, threatened flora targeted surveys, Striped Legless Lizard salvage (2012 to present)

Eynesbury Residential Development, Victoria: Flora and fauna assessments, targeted surveys (2006 to present)

Laurimar Estate, Doreen, Victoria: Flora and fauna assessments, Net Gain analysis (2007 to 2009)

Renewable Energy

Ararat Wind Farm, Ararat, Victoria: Flora and Fauna Assessment of the Wind Farm and Transmission Line, Offset Plan, Native Vegetation and Pest Plans (2007 – present)

Stockyard Hill Wind Farm, Stockyard Hill, Victoria: Infrastructure micrositing, Flora and Fauna Assessment, habitat hectare assessment and Net Gain analysis (2008)

Crowlands Wind Farm, Crowlands, Victoria: Flora and Fauna Assessment, including targeted flora surveys, habitat hectare assessment and Net Gain analysis (2008)

Mortlake Wind Farm, Mortlake, Victoria: Flora and Fauna Assessment (2009)

Dundonnell Wind Farm, Dundonnell, Victoria: Flora and Fauna Assessment, EES and EPBC Act Referral (2010 – present)

Cherry Tree Wind Farm, Seymour, Victoria: Flora and Fauna Assessment (2010 – present)

Road and Rail Infrastructure

Murray River Crossing – Swan Hill, Victoria (and New South Wales): Flora and Fauna Assessment, including targeted flora and fauna surveys, habitat hectare assessment and Net Gain analysis (2007)

Gheringhap to Mildura Rail Freight Upgrade – John Holland Group. Assessment and mapping of 'go' areas for construction 'laydown' and 'no-go' areas (2008).

Melbourne to Albury Railway Passing Lanes Project – South Improvement Alliance. Flora and native vegetation assessment and mapping (2006)

Lang Lang Bypass – Cardinia Shire Council. Native vegetation mapping and assessment, threatened flora and fauna targeted surveys, offset plan preparation (2006—present)

Water and Pipeline Infrastructure

Proposed Gas Pipeline, Golden Beach, Gippsland Lakes, Victoria: Native vegetation mapping and assessment, Net Gain reporting (2003)

Mining Sector

Bowen Basin Coal Project, Glenden, Queensland: Terrestrial Ecology Environmental Impact Assessment (2012 to present)

Ecosystem Monitoring and Management

Wimmera River Monitoring Project, Wimmera River, Horsham Region, Victoria: Monitoring of River Red-gum and River health (2008 – 2009).