

23 February 2018

Victorian Planning Authority
amendments@vpa.vic.gov.au

Dear Sir / Madam

**Re: Amendment C234 Cardinia Planning Scheme
Pakenham East Precinct
Submission by Earldean Pty Ltd and Auscare Commercial Pty Ltd**

I refer to Amendment C234 to the Cardinia Planning Scheme which has been placed on public exhibition in relation to the Pakenham East Precinct.

This submission is made on behalf of my client Submission by [REDACTED] [REDACTED] who are the owners of the land at [REDACTED]. The land is identified as [REDACTED] in the Pakenham East Precinct Structure Plan ("the PSP") and has an area of 24.7ha.

In principle my client supports Amendment C234 to the Cardinia Planning Scheme to the extent that it allows for the urban development of the land within the precinct. However, my client is extremely concerned at the amount of net developable land on their property under the PSP and seeks changes to Amendment C234 and the PSP to increase the amount of net developable land. It is noted that under the property specific land budget in Appendix A of the PSP, the overall percentage of net developable land is 69.33% of the total area of land in the precinct. My clients land has a total area of 24.7ha and the PSP designates 8.85ha as developable land, which is a net development area of 35.81%. A large proportion of the land lost to development is associated with the treatment of Deep Creek, and my client wishes to raise a number of objections / concerns in relation to the treatment of Deep Creek in the PSP.

Deep Creek Reserve

The PSP proposes a 100m reserve along the east side of Deep Creek which affects my client's land. It is not clear within the PSP documentation the purpose for which this 100m reserve is required. Indeed the plans within the PSP are inconsistent in relation to the purpose of the 100m reserve as shown in the table below:

Plan	Purpose of reserve	Comments
Plan 3 Future urban structure	Uncredited open space / drainage Watercourse	Note that conservation areas are separated defined on the plan
Plan 4 Land use budget	Waterway and drainage reserve	Note that conservation areas are separated defined on the plan
Plan 6 Open space	Waterway reserve	Note that conservation areas are

		separated defined on the plan
Plan 9 Integrated water management	Natural waterway corridor Stormwater quality treatment and drainage asset.	
Figure 6 Deep Creek concept plan	Drainage conservation area	

It is submitted that the PSP requires greater clarity in relation to the purpose of this 100m reserve.

As suggested in the majority of the plans above, the purpose of the 100m reserve is for waterway and drainage purposes. My client has engaged Water Technology Pty Ltd to review the PSP and associated background documents in relation to waterway and drainage management. Water Technology have concluded:

- Deep Creek is a highly modified waterway and its floodplains have limited natural values.
- It may be possible to modify the current 1% AEP Deep Creek channel, levees and floodplain to improve flood conveyance, reduce erosion within Deep Creek in the long-term and maximise the land within the PSP (increase Net Developable Area).
- Any modification to the Deep Creek riparian corridor would need to be supported by a detailed hydraulic study and, possibly, vegetation off-set.
- A 50 m corridor is likely to be sufficient, as this is what has been allowed for at the downstream end of Deep Creek within the PSP.

On this basis it is submitted that the 100m Deep Creek reserve should be reviewed.

Conservation Buffer Zone

Figure 6 Deep Creek Concept Plan and Requirement 57 in the PSP designate a 30m buffer zone around all edges of the Deep Creek Reserve. Requirement 57 states:

"A 30m buffer zone must be provided around all edges of the Deep Creek Conservation Reserve. The buffer zone must exclude buildings but may include roads, paths, nature strips, public open space and drainage infrastructure. A frontage road must be provided between the conservation area and adjacent development in accordance with the relevant cross section in Appendix C: Road Cross Sections and Intersections."

My client objects to the inclusion of the 30m buffer zone within the PSP.

There is no evidence that the 100m Deep Creek Reserve is in its entirety a conservation reserve. It is not designated as a conservation reserve in the majority of plans within the PSP, which only include parts of the 100m reserve as conservation areas. The background report Ecological Investigations for the Pakenham East Precinct Structure Plan January 2018 prepared by Ecology and Heritage Partners does not identify the need for a 100m reserve along Deep Creek or a 30m buffer zone for ecological purposes. Based on the principal plan with the PSP, Plan 3 Future Urban Structure, the 30m buffer is shown from uncredited open space / drainage and not from the conservation areas which are derived from the Ecology and Heritage Partners report.

Figure 6 shows the 30m buffer zone from the 100m Deep Creek Reserve and Wetland Reserve. This buffer creates further uncredited open space by stealth which is not reflected within the land budget within the PSP. Based on the plan below, my client will have to provide a 16m local road reserve adjoining the Deep Creek Reserve and then a further 14m of buffer zone which is irrational from an urban design perspective.



Rural Conservation Zone

It is noted that as part of Amendment C234, the land within the drainage reserve adjoining Deep Creek is included within a Rural Conservation Zone. My client objects to the inclusion of this land in its entirety within the Rural Conservation Zone as it provides no flexibility in relation to the boundary of the Deep Creek Reserve or adjoining developable land. This is inconsistent with the PSP and the background documents on which the PSP is based as shown in the table below:

PSP document / section	Statement
Proposed Drainage Strategy (Revision D) December 2017 prepared by Stormy Waters Solutions	All assets detailed in this report are at the strategy development / concept design stage. As such all proposals are subject to change as the planning and design process for the PSP continues.
Figure 6 Deep Creek Concept Plan	Extent of the conservation area to be confirmed.
Plan 9 Integrated Water Management	Stormwater quality treatment, drainage assets and waterway widths on this plan are subject to confirmation through detailed design to the satisfaction of Melbourne Water.
Requirement 93 within the PSP	Final design and boundaries of constructed waterways, waterway corridors, retarding

	basins, stormwater quality treatment infrastructure and associated paths, boardwalks, bridges and planting, must be to the satisfaction of Melbourne Water and the responsible authority.
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EPBC Act Referral and Biodiversity Conservation Strategy

The Explanatory Report for Amendment C234 includes a statement:

"A referral has been made to the Commonwealth Department of Environment and Energy under Part 7 of the Environment Protection and Biodiversity Conservation (EPBC) Act (1999). The outcome of the referral will determine the planning controls put in place on the land abutting Deep Creek within the PSP. The PSP and Scheme ordinance has been drafted to accommodate the potential conditions that may be required if the EPBC Act referral indicates a controlled action has been triggered. Measures include:

- *The land will be zoned Rural Conservation Zone (RCZ2);*
- *The drainage infrastructure includes the provision of growling grass frog habitat;*
- *Setbacks consistent with the Biodiversity Conservation Strategy from Deep Creek have been established; and*
- *A Conservation Area Concept Plan has been included in the PSP for the Deep Creek reserve."*

My client is extremely concerned at this statement and its implications for Amendment C234 and the PSP. If the outcome of the referral will determine the planning controls put in place on the land abutting Deep Creek within the PSP, why was the Amendment C234 exhibited without the outcome of the referral being known. It is more concerning that the PSP and Scheme ordinance has been drafted to accommodate the potential conditions that may be required if the EPBC Act referral indicates a controlled action has been triggered. We now know that the EPBC referral has determined that a controlled action has not been triggered, but are left wondering what requirements have unnecessarily been included in Amendment C234 and the PSP as a consequence of this. Similarly it notes that setbacks consistent with the Biodiversity Conservation Strategy from Deep Creek have been established, however the Ecological Investigations for the Pakenham East Precinct Structure Plan January 2018 prepared by Ecology and Heritage Partners clearly states that the Biodiversity Conservation Strategy does not apply.

Native Vegetation Conservation and Local Open Space

It is noted that there are a number of isolated pockets of native vegetation on my client's property which are identified for retention in the Native Vegetation Precinct Plan. These pockets of native vegetation are shown as Conservation Reserves on Figure 3 Future Urban Structure. From this it is assumed that it is expected these pockets of vegetation will be retained in local reserves, and the land budget in Appendix A indicates that 6.15ha of local conservation reserves

are required which are described as uncredited open space. My client strenuously objects the to this approach to the treatment of pockets of native vegetation.



In relation to the PSP, it is unclear how it is expected that remnant trees 354, 355 and 359 will be treated. Little though appears to be given from an urban design perspective to the retention of these trees which are large eucalypts. One solution would be to redesign the local park to the south east by moving it slightly further to the north allowing for the incorporation of at least trees 354 and 355 into the local park. This would also allow an open space credit to be provided for the section of the local park containing the trees.



In relation to the patch of swampy woodland shown as SW6 in the Native Vegetation Precinct Plan, it is interesting to note that the shape of the local conservation reserve in the PSP varies from the shape of the vegetation in the Native Vegetation Precinct Plan. While some may argue that this is insignificant, my clients lose another .5ha of developable land with no credit provide for the land lost which we say is unfair. It is submitted that the main body of the swamp scrub should be retained, but that the eastern finger of vegetation should be shown as being removed, and the western finger should be reviewed in light of the outcomes of the final width of the Deep Creek Drainage Reserve.



In relation to the patch of swampy woodland shown as SW6 in the Native Vegetation Precinct Plan, it is submitted that this patch should be shown as being removed. The patch is proximate to a much larger parcel being retained, and would be difficult from an urban design perspective to retain given the constrained site at the southern end of the Canty Lane property. It is noted that this area is within the walkable catchment of the local activity centre to the south where increased housing densities should be encouraged. It is also submitted that local conservation reserve comprising Swamp Scrub parcels SW8 and SW8 should form part of the adjoining local park to the west and should be credited as being local open space.

My client also believe that a significant amount of the vegetation on the property is planted vegetation, and we seek a review of the Native Vegetation Precinct Plan to ensure the pockets to be protected are remnant vegetation and not planted vegetation.

Conclusion

In principle my client supports Amendment C234 to the Cardinia Planning Scheme to the extent that it allows for the urban development of the land within the precinct. However, my client is extremely concerned at the amount of net developable land on their property under the PSP and seeks changes to Amendment C234 and the PSP to increase the amount of net developable land as set out in this submission.

My client seeks the opportunity to be heard at any panel hearing convened to consider submissions in relation to Amendment C234 and reserves the right to elaborate and expand on the issues raised in this submission. My client would welcome the opportunity to further discuss the concerns raised with the Victorian Planning Authority and Cardinia Shire Council if this assists in facilitating a mutually acceptable outcome.

Should any other submissions be received in relation to Amendment C234 which affect my clients land, my client expects to be notified of and provided with such submissions so they can make a response to ensure their interests are protected.

Yours faithfully



Phil Walton
XWB Consulting

23 February 2018

FAO Ben Hawkins
Victorian Planning Authority
c/- Pakenham East PSP
Level 25, 35 Collins Street
Melbourne 3000

Dear Ben,

Our ref: 5742-01_L1v03.docx

Pakenham East PSP – Preliminary Drainage Advice

Water Technology has been engaged by [REDACTED] in respect of the Cardinia Shire Council Planning Scheme Amendment C234. This planning amendment and associated Precinct Structure Plan (PSP) seeks to rezone land to facilitate residential development for approximately 630 hectares of land generally bounded by Deep Creek and Ryan Road to the west, Mount Ararat Road North and South to the east, a line just north of the main Electricity Transmission line from the Latrobe Valley to the North, and the Princes Freeway to the south.

Whilst not opposing the future development of this land, our clients have questioned the extent of the proposed waterway corridor within their property (PSP Property No. 28). This submission has been prepared on behalf of Earlden Pty Ltd and Auscare Commercial Pty Ltd to address this question. It considers surface water management implications of the proposed Cardinia Shire Council Planning Scheme Amendment C234, as it relates to the proponent's land along Deep Creek and downstream of the Princes Highway referred to herein as the Subject Site.

1 PROPOSED DRAINAGE STRATEGY

The proposed drainage strategy (Stormy Water Solutions, Dec 2017) for the Pakenham East PSP provides initially for a 100m corridor along Deep Creek (east bank) within the site reducing to a 50 m corridor near Canty Lane. We understand, based on correspondence from Melbourne Water, that the proposed waterway corridor setback has been determined by flood flows and flood levels within the 1% AEP floodplain.

We consider the proposed 100 m corridor is not warranted and it may be possible to modify the extent of the 1% AEP floodplain and therefore, reduce the waterway corridor. We note that modifications within the proposed waterway corridor are already suggested however, these are only proposed within the floodplain. I understand that earthworks are proposed within the waterway corridor to build a swale, which will convey local runoff from future development to the east and excess flow from Deep Creek. Whilst we understand that any changes to the Deep Creek channel and adjacent levees may result in loss of native vegetation (which would need to be off-set), it may also provide an opportunity to:

- reinstate a more natural channel and floodplain connectivity;
- improve flood conveyance;



- reduce erosion within Deep Creek in the long-term;
- maximise the land within the PSP.

We note that the Deep Creek reach within the Subject Site has a Strahler stream order of 2, which has, according to the Melbourne Water Waterway Corridors - Guidelines for greenfield development areas (2013):

- a minimum setback of 20m from top of bank on both banks; and
- incorporates a 10 m wide vegetated buffer immediately adjacent and parallel to the core riparian zone (10 m).

Melbourne Water has advised that the corridor is greater than the above setback to accommodate the entire 1% AEP flood extent. This is generally a reasonable position to take and is consistent with the guidelines above. However, the Deep Creek waterway and floodplain is highly modified. This is evident from the limited extent of riparian vegetation along the creek (Native Vegetation Precinct Plan, Ecology & Heritage Partners, Dec 2017) and low-lying pasture prevalent across its floodplain (Pakenham East Precinct Landscape Assessment, Hansen, May 2013).

Amendment C51 of the Wyndham Planning Scheme in 2005 addressed a similar issue regarding the waterway corridors in that municipality. The Panel supported the use of the 1% AEP floodplain as a basis for further investigation to assess the extent and nature of the waterway corridor but acknowledged that “a more detailed level of analysis would be required to comprehensively identify environmental values”. In the Panel’s view, “how a waterway might be defined is less important than identifying the values that need to be protected”.

The Planning Hearing Panel for Amendment C51 of the Wyndham Planning Scheme also recognised that “situations may arise where it is appropriate to modify the extent of the 1:100 year floodplain”, provided that the proponent demonstrates that the “environmental values of the waterway will not be compromised”. We consider that past and current agricultural land use have altered the natural values of the floodplain land. As a result, we consider that the riparian buffer width should be dependent on values to be protected as determined from environmental studies.

As currently detailed in the Native Vegetation Precinct Plan (Ecology & Heritage Partners, Dec 2017), the vegetation to be retained within the proposed 100m corridor is limited to the existing riparian zone. This suggests that the proposed waterway corridor does not need to match the current 1% AEP extent to meet floodplain or environmental management best practice objectives. Existing planning controls (i.e. Floodway Overlay) are already in place, ensuring new developments consider overland flows and flooding.

It is considered that a 50 m corridor is likely to be sufficient to ensure waterway objectives are satisfied. This is also consistent with what has been allowed for at the downstream end of Deep Creek within the PSP. It may therefore be possible to reduce the waterway corridor to 50 m, as is currently proposed near Canty Lane. It is also noted that a 50 m easement either side of the creek was considered sufficient for the approval of a 1990’s low density subdivision located on the western side of the creek downstream of Princes Highway.

1.1 Adopted Modelling Methodology

The width and extent of the corridor was assessed using the one-dimensional version of Hec Ras however, there would be additional value in modelling the flooding behaviour of Deep Creek using a two-dimensional (2D) model hydrodynamic model. We consider that a 2D model is likely to provide a more accurate representation of the hydraulic behaviour of Deep Creek and its floodplain. We also note that:

- Separate Hec Ras models were constructed to assess three reaches of Deep Creek within the PSP. Culvert influence on flood levels were assessed separately, to inform boundary conditions within each mode. It is possible to model these reaches in one consolidated hydraulic model. We consider that this would provide a more accurate representation of interactions between the three reaches and influence from culverts;



- Whilst Hec Ras is still currently used, there are 2D software packages available that are more appropriate to capture and reproduce floodplain interactions. Melbourne Water generally recommends 2D models to be used for hydraulic impact assessment. A 2D hydraulic modelling approach would have been readily available in 2014 when the drainage scheme was developed.

1.2 30m Conservation Buffer

I understand that a 30 m buffer zone must also be provided around all edges of the Deep Creek Conservation Reserve and must exclude buildings but may include roads, paths, nature strips, public open space and drainage infrastructure (R57). As aforementioned, the Planning Hearing Panel for Amendment C51 of the Wyndham Planning Scheme recognised that “situations may arise where is it appropriate to modify the extent of the 1:100 year floodplain”, provided that the proponent demonstrates that the “environmental values of the waterway will not be compromised”. The areas within the proposed 30 m conservation buffer for Pakenham East PSP generally have minimal vegetation to be retained, as shown in the Native Vegetation Precinct Plan (Ecology & Heritage Partners, Dec 2017). This buffer, if in addition to the 100m water corridor, should be determined and based on existing environmental values.



2 SUMMARY AND CONCLUSION

Having reviewed the exhibited documentation pertaining to the proposed Amendment C234 to the Cardinia Planning Scheme, we consider that the 100 m waterway corridor is not warranted. The main conclusions from our review, described above, are as follows:

- Deep Creek is a highly modified waterway and its floodplains have limited natural values;
- It may be possible to modify the current 1% AEP Deep Creek channel, levees and floodplain to:
 - improve flood conveyance;
 - reduce erosion within Deep Creek in the long-term;
 - maximise the land within the PSP (increase Net Developable Area).
- Any modification to the Deep Creek riparian corridor would need to be supported by a detailed hydraulic study and, possibly, vegetation off-set; and
- A 50 m corridor is likely to be sufficient, as this is what has been allowed for at the downstream end of Deep Creek within the PSP.

We trust that the information provided as part of this submission includes sufficient details and supporting evidence. Should you have any queries following review of our submission by the Victorian planning Authority, please do not hesitate to contact me on 03 8526 0800 to discuss further.

Yours sincerely

Bertrand Salmi
Senior Engineer

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WATER TECHNOLOGY PTY LTD