

2 AMENDMENT C234 - PAKENHAM EAST PRECINCT STRUCTURE PLAN

FILE REFERENCE INT1990764

RESPONSIBLE GENERAL MANAGER Tracey Parker

AUTHOR Marcelle Bell

RECOMMENDATION

Council endorse a submission to the proposed changes to Amendment C234 by the Minister for Planning, by requesting:

1. The four parcels of land intersected by the electricity transmission easement remain as part of Amendment C234 and the Pakenham East Precinct Structure Plan.
2. The four parcels of land intersected by the electricity transmission easement remain as Urban Growth Zone and the Pakenham East Precinct Structure Plan provides the opportunity and guidance in the design and development of the land, as per the discussions in this report and
3. If the land is to be designated as Farming Zone, Council respectfully requests the Minister for Planning modifies the location of the urban growth boundary to demonstrate the four parcels of land are located outside the urban growth boundary within green wedge land to provide greater certainty on its future use and development.
4. Assurance from the Victorian Planning Authority that the Infrastructure Contributions Plan is a standard levy and there is still a surplus in the Infrastructure Contributions Plan associated with Amendment C234.

Attachments

1	Minister for Planning Notification and Plans of Proposed Changes	10 Pages
2	Victorian Planning Authority Background Report January 2018	27 Pages
3	SMEC Urban Design Response Options for the Transmission Easement 2013	21 Pages
4	Confidential Attachment - Circulated to Councillors only	6 Pages

EXECUTIVE SUMMARY

The Minister for Planning is proposing to remove land within the urban growth boundary (UGB) from the Pakenham East Precinct Structure Plan (the PSP) area, due to the development constraints resulting from the electricity transmission easement that encumbers the northern section of the precinct and approximately half of the developable area of four parcels of land.

BACKGROUND

The Victorian Planning Authority (VPA) adopted Amendment C234, including the Pakenham East Precinct Structure Plan (PSP) and Native Vegetation Precinct Plan (NVVP) at its board meeting on the 10th October 2018. Following submission of the Amendment to the Minister for Planning for approval, the Minister for Planning is seeking the views on proposed changes to the Amendment under Section 33 of the Planning and Environment Act 1987 (the Act).

The Minister for Planning is proposing to remove the following four parcels of land located within the urban growth boundary from the Pakenham East Precinct Structure Plan:

- 155 Dore Road Pakenham
- 365 Seymour Road, Nar Nar Goon North
- 325 Seymour Road Nar Nar Goon North and
- 85 Mount Ararat North Road Nar Nar Goon North

The removal of the land from the precinct structure plan area will require consequential changes to the Amendment documentation, including the following changes to the precinct structure plan and proposed rezoning of land:

- The four parcels of land proposed to be removed from the precinct structure plan will be zoned Farming Zone instead of Urban Growth Zone.
- The location of the urban growth boundary will not change.
- The precinct structure plan will be revised to remove the four lots from all associated plans in the precinct structure plan.
- Realign the 'interface housing area 1' to revise northern boundary (Plan 5)
- Realign the bushfire interface and edge road to the revised northern boundary of the precinct structure plan as shown on Plan 6 and 7. It is noted an additional bridge over Hancock's Bridge is demonstrated.
- Rezone the portion of the precinct structure plan parcel 14 that is encumbered by the electricity transmission easement to Urban Growth Zone Schedule 5 (UGZ5) rather than to Special Use Zone Schedule 8 (SUZ8), to be consistent with the zoning of the balance of parcel 14 and other land in the precinct structure plan. This change will have the effect of making the easement land in parcel 14 liable for a Growth Areas Infrastructure Contributions (GAIC), in the same way that other UGZ5 will be liable for GAIC.

A complete list of changes to all affected plans, requirements, guidelines and figures are shown in Attachment 1.

Should the Minister approve Amendment C234 with these changes, the four parcels of land will no longer form part of the Amendment and will remain under the Farming Zone (FZ). Any future development of these parcels would be subject to a separate Planning Scheme Amendment process.

RELEVANT HISTORIC SUBMISSIONS BY COUNCIL

2011 Council Submission Logical Inclusion Process:

In May 2011, the Minister for Planning (Matthew Guy MP) established an independent Logical Inclusions Advisory Committee to review and advise the Minister on the logical inclusion of land into the urban growth boundary of Metropolitan Melbourne. The Growth Area Authority (now known as the Victorian Planning Authority) released a Preliminary Assessment Report South East August 2011 and sought feedback from landowners and relevant state agencies on four areas in Cardinia Shire, proposed to be included within the urban growth boundary, known as Area 1, Area 2, Area 3 (which included 3A, Area 3B, Area 3C) and Area 4. Please refer to Figure 1 (Logical Inclusion Investigation Areas) for the investigation areas. All submissions were forwarded to the Logical Inclusions Advisory Committee for review.

Insight Planning Consultants on behalf of Cardinia Shire Council made a submission to the Logical Inclusion Process. The Pakenham East area formed part of

- Area 2 and
- Area 3 (3A and 3B)

Below is a summary of Councils submission relevant to Pakenham East Precinct Structure Plan:

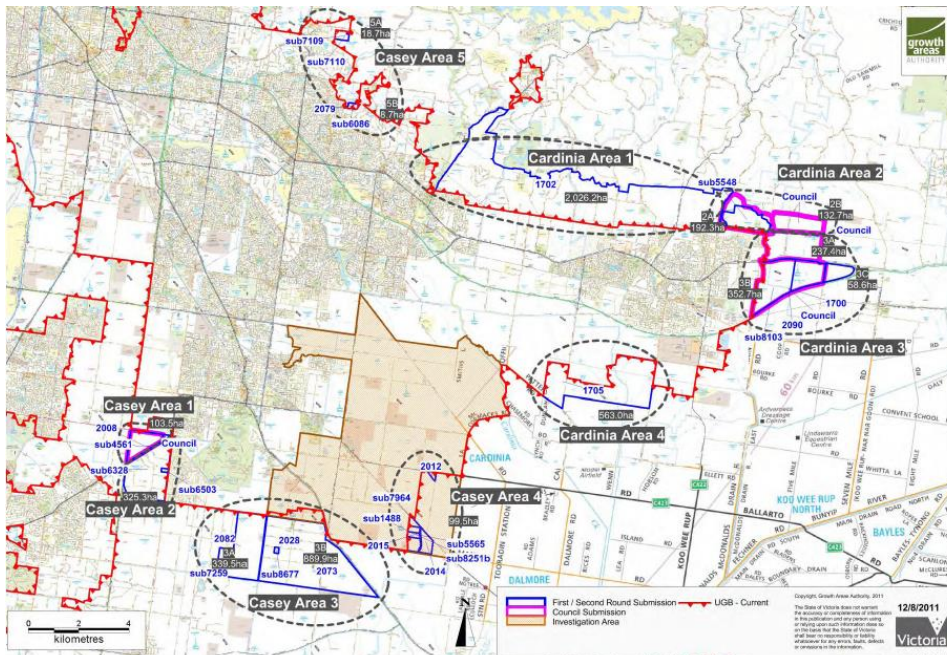
Council's response to proposed Area 2:

- Area 2 comprised of 225.2 ha north of the electricity transmission easement between Army Road in Pakenham and Mount Ararat Road, Nar Nar Goon (which forms part of Pakenham East)
- Council's view was that this land should be part of a future urban growth boundary review rather than the logical inclusion process and further analysis would be necessary to determine the best form of residential development within this area. Council stated there was merit increasing the diversity of housing in the growth area through the provision of lower density housing north of the electricity transmission easement in a number of defined pockets where relevant environmental constraints and servicing issues could be addressed.
- Council recommended land within Area 2 should not be included within the urban growth boundary until further detailed investigations were undertaken to understand the impacts of varying densities of development.
- Council sought support from the Advisory Committee to note that subject to 'further detailed assessment' Area 2 may be suitable for a diverse form of housing that provides an option to the standard form of housing that is currently being delivered in the growth area. Large lot sizes were seen to provide the opportunity for those seeking a lifestyle change or large executive housing that isn't a catered form in growth area planning.

Council's response to proposed Area 3 (3A and 3B):

- Area 3 (3A and 3B) comprised generally of the Pakenham East area.
- The land characteristics in Pakenham East varies somewhat on each side of the transmission easement and therefore Council's view was that the land to the south of the transmission easement between Deep Creek and Mount Ararat Road should be developed for conventional residential development whilst the land to the north of the transmission easement should be developed for less intense forms of development and provide a development interface between the core urban area and the environmental rural areas to the north.
- **Council recommended land within Area 3 (3A and 3B) to be included within the urban growth boundary as part of the 'Logical Inclusion Process'.**

The Pakenham East Precinct Structure Plan area was included within the Urban Growth Boundary in 2012, through the State Government's 'Logical Inclusion Process' and included land to the north of the electricity transmission easement. The Pakenham East area was subsequently identified in the South-East Growth Corridor Plan (August 2012) as the location for residential use and development.

Figure 1. Logical Inclusion Investigation Areas

Source: Growth Areas Authority, 2011

2018 Council Submission to exhibited Amendment C234

Amendment C234 (Pakenham East Precinct Structure Plan Dec 2017) was formally placed on public exhibition for six weeks from the 15 January 2018 until the 23 February 2018. The proposed Precinct Structure Plan demonstrated the four parcels of land north of the electricity transmission easement as part of the Amendment and forming part of Interface Housing Area 3.

Interface Housing Area 3 required under Requirement R15:

- A building envelope to address the ridgeline and electricity line easement
- That the application will achieve an average minimum lot size of 2000 square metres
- Rural fencing that is low scale and visually permeable to facilitate the rural lifestyle character of this area and
- Maximise side setbacks and create openness between the dwellings.

Council's submission to Amendment C234 did not object to these four parcels of land being included within the urban growth boundary or precinct structure plan but requested consideration to larger lot sizes greater than 2000 sqm as the size of the land outside of the electricity easement was not considered large enough to assist landowners to build appropriate sheds or ancillary buildings for this type of lifestyle topology proposed, as no buildings can be built on the electricity easement. Council also submitted that it was important for Interface Housing Area 2 to remain within the precinct structure plan north of the transmission easement to provide an appropriate transition from urban development to rural land.

The release of the Planning Panel Report (10 September 2018) for Amendment C234 (Pakenham East Precinct Structure Plan) noted the following:

Pakenham East is bound by the urban growth boundary to the north, east and south which effectively defines the limits of metropolitan Melbourne. The south boundary of the PSP is defined by the Princes Freeway. The land to the northeast is within a Green Wedge Zone. These interface areas within the PSP mark the transition from urban to non-urban uses. In the Panel's view, it is appropriate that the development of this land recognises this change. The interface areas are intended to provide a transition from the urban residential development of Pakenham East to the

rural areas outside of the UGB. The initial proposal by the VPA was to achieve this by a combination of minimum lot sizes and front setbacks. Ryan Road is different because it interfaces with an existing urban area with a Low Density Residential Zone which nevertheless, is a lower density than proposed for the bulk of Pakenham East.

The Panel accepts the submissions of Lendlease and Bauernort that interface housing requirements should provide the flexibility for the development to respond to design criteria and not be limited by a lot size. In this respect the Panel supports the view of the VPA that the front setback of interface housing should be sufficient to accommodate a canopy tree.

The Panel agrees that the changes proposed by the VPA address most of the concerns expressed in submissions. The Panel accepts the view expressed by the VPA that land in Pakenham East is a finite and valuable resource and it is particularly inappropriate to lock that land into lot sizes of 2,000 square metres or larger lots along the interface with Ryan Road. In the Panel's view, design criteria can more effectively ensure that an appropriate transition between Pakenham East and the surrounding area is created.

Council staff supported the Panel recommendations that design criteria can more effectively ensure an appropriate transition from urban development to rural land than locking in a specific lot size.

Proposed changes to Amendment C234

The Minister for Planning is proposing to remove the four parcels of land intersected by the electricity transmission easement from Amendment C234 and the precinct structure plan. Should the Minister approve Amendment C234 with these changes, the four parcels of land will no longer form part of the Amendment and will remain under the Farming Zone (FZ). Any future development of these parcels would be subject to a separate planning scheme amendment. In response to the Minister's proposed changes, the following considerations are relevant:

1. Previous Council position on the four parcels of land

Council has made previous submissions to the Logical Inclusion Process and Amendment C234 and did not object to these four parcels of land being included within the Urban Growth Boundary. It is acknowledged that Council previously recommended during the Logical Inclusion Process that land to the north of the electricity easement should not be included within the urban growth boundary until further detailed investigations were undertaken to understand the impacts of varying densities of development (Note, these assessment have now been completed). Council also sought support from the Advisory Committee to note that subject to 'further detailed assessment' Area 2 may be suitable for a diverse form of housing that provides an option for low density residential housing in comparison to the standard form of housing that is currently being delivered in the growth area.

2. Is development of these four parcels of land possible?

The total land area of each four lots located within the urban growth boundary is approximately between 8 to 12 hectares. The electricity transmission easement reduces the Net Developable Area of these four lots to approximately 6 to 8 hectares each. Council staff consider the remaining land size area sufficient for housing development to occur.

The four lots have been subject to a variety of detailed technical reports which have informed the future urban form of the Pakenham East Precinct Structure Plan and demonstrates that

development of the four lots is possible. A summary of all background reports is available in Attachment 2 (Victorian Planning Authority Background Report January 2018), with the following information of utmost relevance to the four lots:

- The gradient of the land has been assessed. The four lots generally demonstrate 10-15 percent land slope and analysis of the slope and possible slope design responses has occurred during the development of the 'Guidelines for Slope Management in Subdivisions Dec 2017'. The four lots do not demonstrate a slope greater than 20 per cent as per the slope analysis plan. A Slope Management Plan is required to be submitted for any land with a pre-development slope greater than 10 per cent to demonstrate that subdivision, as well as the subsequent development on lots created by the subdivision will respond to and respect the natural topography of the land, as per the 'Guidelines for Slope Management in Subdivisions December 2017'. It is considered development of the land is not hindered by slope.
- Detailed ecological investigations have been completed for the precinct. The Native Vegetation Precinct Plan (December 2017) identified the four lots as having low biodiversity values as the land has continued to be grazed and there is limited native vegetation on site. The Native Vegetation Precinct Plan (December 2017) indicates what native vegetation must be protected and what native vegetation can be removed, destroyed or lopped. There are nine scattered native trees proposed to be retained and two dead stags proposed to be retained within the four lots. It is considered development of the land is not hindered by existing flora and fauna values.
- Aboriginal cultural heritage values have been investigated. Three of the four sites have been identified as having no cultural heritage sensitivity present, as identified by the Aboriginal Heritage Regulations 2007 and a proponent is not legally required by the Aboriginal Heritage Act 2006 to prepare a Cultural Heritage Management Plan. One site will be required to complete a mandatory cultural heritage management plan during the approval process for a planning permit.
- There are no post contact heritage sites identified within the four lots and no Heritage Overlay proposed. It is considered development of the land is not hindered by post contact heritage values.
- The subject area has access to connect to all necessary infrastructure services, when available.
- The precinct structure plan incorporates an extensive road and trail network that links with the four lots and a bus network will be developed to provide appropriate public transport to residents within the precinct.
- A bushfire assessment for the precinct has been completed by Terramatrix on behalf of the Victorian Planning Authority for the panel hearing associated with Amendment C234. The report assessed the bushfire hazard in and around the precinct in accordance with Clause 13.02 (Bushfire) of the Cardinia Planning Scheme. All of the precinct is currently designated as a Bushfire Prone Area (BPA) but no part of the precinct is affected by a Bushfire Management Overlay (BMO). The landscape has been identified as of low bushfire risk and accordingly it is considered that the risk can be mitigated to an acceptable level and that development in the precinct is appropriate, if dwellings are separated from hazardous vegetation to allow a BAL rating of 12.5 construction, in accordance with the building regulations and Clause 13.02 (bushfire). It is considered development of the land is not hindered by bushfire risks.
- Council in 2013 appointed SMEC Urban to design and test development options for the electricity transmission easement. Please refer to Attachment 3 for the SMEC Urban Design response options for the Transmission Easement 2013 report. The report investigated five development options which included:
 - Option 1 - full development north and south of the transmission easement

- Option 2 - development with linear trail along transmission easement
- Option 3 - development and public use of easement as open space
- Option 4 - no development north of electricity transmission easement and
- Option 5 - rural lots only

Each option provides information on the possible development outcomes, including preliminary land budget and site yields. Overall, what the report demonstrates is that a development solution (Option 1, Option 4 and Option 5) is possible for these four parcels of land.

Based on the technical assessments undertaken for the Pakenham East Precinct Structure Plan, development of the four lots has been demonstrated to be possible. The four parcels of land are considered to be of an appropriate size, even with the encumbrance of the electricity transmission easement and demonstrate limited constraints/issues to hinder development. Based on this, Council staff recommend the four parcels of land should remain within the urban growth boundary and the merits of any future planning permit application, with appropriate guidance from the Pakenham East Precinct Structure Plan should determine the integration with the wider precinct structure plan and respond to the electricity transmission easement, topography, native vegetation, bushfire risk, access to each site and transition to the rural landscape.

3. Is development under an electricity transmission easement possible?

Based on the technical assessments undertaken for the Pakenham East Precinct Structure Plan, specifically the SMEC Urban Design response options for the Transmission Easement 2013 report (Attachment 3) development of the four lots has been demonstrated to be possible.

In 2018, the Victorian Planning Authority exhibited Amendment C234 and proposed to utilise the land within the electricity transmission easement as large lots (2000sqm minimum average) that could be attractive to people desiring a large home and hobby farm. Land encumbered by the transmission easement was proposed to be private property and used as a hobby farm with grazing animals, while to the north and south of the transmission easement residential development would be possible as per Figure 2 Transmission Concept Plan.

The use of the electricity transmission easement is not dissimilar to what has occurred along Mullane Road in Pakenham, as shown in Figure 3 (Aerial photo). Given the undulating topography and larger rural allotments along the transmission easement and proposed design criteria to provide interface housing north of the transmission easement, this use and development located in between standard residential development and rural land was generally considered appropriate by Council staff.

Figure 2. Transmission Concept Plan**Figure 3. Aerial photo of land along Mullane Road Pakenham adjacent to Transmission Easement**

4. Is development of these four parcels of land feasible?

Bauenort representing 155 Dore Road Pakenham have undertaken a feasibility assessment to determine if development of their parcel of land is commercially viable. Please refer to Attachment 4 (In confidence and distributed to Councillors only) for a full cost breakdown. Development of land along the electricity transmission easement is commercially viable on the basis standard densities are applied to the land outside of the electricity transmission easement, enabling the developer to deliver affordable product to the market in line with purchasers expectations and budget constraints. This feasibility assessment has considered GAIC, the ICP and other levies applicable. Unfortunately, Council staff are not aware of any other feasibility assessments for the other parcels of land to provide relevant feedback on this matter.

One of the biggest challenges for the four parcels of land are the fees associated with:

- The growth area infrastructure contribution (GAIC) was established to help provide infrastructure in Melbourne's expanding fringe suburbs. It is a one off contribution payable on certain events usually associated with urban property development. These are usually buying, subdividing and applying for a building permit on large block of land. GAIC is applicable to these four parcels of land.

- Metropolitan Planning Levy is a levy paid at the planning permit stage to develop land in metropolitan Melbourne. The levy is used to fund the Victorian Planning Authority and Plan Melbourne initiatives. The Metropolitan Planning Levy is applicable to these four parcels of land.
- Infrastructure Contributions Plan. Establishes the statutory mechanism for developers to make a financial contribution towards the cost of infrastructure projects in a precinct structure plan. The ICP is applicable to these four parcels of land.

As per previous discussions Council has identified from the SMEC Urban, Design Response Options for the Transmission Easement 2013 report, a development solution (Option 1, Option 4 and Option 5) is possible for these four parcels of land. The feasibility of development as per Bauenort assessment is reliant on standard lot sizes outside of the electricity transmission easement. Council staff supported the Panel recommendations that design criteria can more effectively ensure an appropriate transition from urban development to rural land rather than locking in a specific lot size.

5. Does Council have any concerns with the proposed Farming Zone?

Clause 35.07 (Farming Zone) preamble states the Farming Zone is:

- To implement the Municipal Planning Strategy and Planning Policy Framework
- To provide for the use of land for agriculture
- To encourage the retention of productive agricultural land
- To ensure that non- agricultural uses, including dwellings, do not adversely affect the use of the land for agriculture
- To encourage use and development of land based on comprehensive and sustainable land management practises and infrastructure provision
- To provide for the use and development of land for specific purposes identified in a schedule to this zone the use of the land

The Farming Zone in the Cardinia Shire Planning Scheme is generally a planning tool utilised as a holding zone, whereby a landowner and/or Council can apply in the future for a Planning Scheme Amendment to rezone the land for urban purposes. Allocating the four parcels of land as Farming Zone creates the following implications:

- Designates Council to be responsible to administer, assess and potentially fund a future planning scheme amendment for four parcels of land that are located within the urban growth boundary, that have already undergone a review as part of the Logical Inclusion process and Planning Scheme Amendment C234 process.
- Does not provide certainty on the future use and development of the four parcels of land intersected by the transmission easement, which creates implementation risks and integration issues with the proposed Pakenham East Precinct Structure Plan. For example: the capacity of infrastructure south of the electricity transmission easement may not consider the future development of the four parcels of land if the four parcels of land are zoned as Farming Zone. This could result in an additional cost for the four parcels of land if development is allowed in the future and infrastructure requirements were not holistically assessed from the start.
- Council staff question the rationale of the proposed location of the temporary Interface Housing Area 2 and the Bushfire Risk Interface, south of the Farming Zone, as shown on Plan 5 (Image and Character, Housing and Community) and Plan 6 (Open space). Interface Housing generally demonstrates larger lots. If land in the Farming Zone has the ability in the future to be rezoned for urban purposes, the location of the temporary Interface Housing Area 2 and bushfire risk interface also changes. This situation creates

impacts on the development yield of land located within the existing Pakenham East Precinct Structure Plan, which influences the overall design of the precinct and the ratios for the provision of open space, community services etc. The proposed Farming Zone does not provide certainty and creates ad hoc planning and creates implementation risks in the future for Council.

- The precinct structure plan has been developed based on the four parcels of land included within the urban growth boundary which has influenced the population figures and the ratios for the provision of open space, community services, infrastructure, traffic movements and drainage. There is an expectation if the four parcels of land are not included as part of the Amendment, Council's evidence for the provision of open space, community services, drainage etc. for the remaining precinct structure plan could be challenged at the Victorian Civil Administrative Tribunal in the future. This is an unreasonable risk for Council.

Council staff would prefer to have a clearer and stronger understanding of the future of the four parcels of land to assist with the future implementation of the precinct structure plan. Council staff would prefer to know if the four parcels of land are located within the precinct structure plan and development is possible or the land is located outside of the precinct structure plan and no future development is possible. The Farming Zone as a holding zone is unclear and creates uncertainty. Therefore, if the land is to be designated as Farming Zone, Council respectfully requests the Minister for Planning modifies the location of the urban growth boundary to demonstrate the four parcels of land are located outside the urban growth boundary within green wedge land to provide greater certainty on its future use and development.

6. The land is located in two zones. Is this an issue?

No. The four parcels of land are presently located within two zones, Green Wedge and Farming Zone. If the provision of this scheme provides that a permit is required to subdivide land and the land is in more than one zone a permit may be granted even if one of the lots does not comply with the minimum lot size requirements of the zone.

POLICY IMPLICATIONS

Amendment C234 (Pakenham East Precinct Structure Plan) has been prepared with guidance from key Commonwealth, State, and Local Planning policies.

Key policy documents utilised include:

- Commonwealth Policy and Legislation:
 - Environmental Protection and Biodiversity Conservation (EPBC) Act 1999
- State Policy and Legislation
 - Fauna and Flora Guarantee Act (1988)
 - Planning and Environment Act (1987)
 - Victoria Planning Provisions
 - Plan Melbourne (2017-2050)
 - South East Growth Corridor Plan (August 2012)
 - Precinct Structure Planning Guidelines
 - Transport Integration Act (2010)
 - Biodiversity Assessment Guidelines for the Permitted Clearing of Native Vegetation (2013)

- Local Policies:
 - The preparation of the PSP will implement provisions of the Cardinia Municipal Strategic Statement (MSS) and align with a variety of Council policies.

Council is concerned the utilisation of the Farming Zone contradicts the planning objectives specified in existing State Government policies (Plan Melbourne 2017-50; South East Growth Corridor Plans and Council's Municipal Strategic Statement), as the land is located within an urban growth boundary and has been identified for future change for residential development.

RELEVANCE TO COUNCIL PLAN

The Council Plan seeks to balance the needs of development, the community and the environment. This balance has been a key consideration in the preparation of Pakenham East Precinct Structure Plan. The precinct structure plan responds to the main principles of Councils Plan:

Our Environment

- The delivery of the PSP will develop transport networks that incorporate effective public transport, pedestrian and cycling facilities.
- The delivery of the PSP will manage water resources in an integrated manner, and protect and enhance biodiversity.
- The PSP will provide a built environment that supports health and wellbeing and protect natural environments.

Our Community

- Balanced needs of development, the community and the environment.
- The PSP will plan for the development of complementary land uses required to meet the needs of the future community in a sustainable manner.

Our Economy

- The PSP will plan for the provision of local services that support the wellbeing of our communities.
- A local economy supporting the improved health and wellbeing of our communities.

CONSULTATION/COMMUNICATION

The Minister for Planning proposed changes to Amendment C234 were placed on public exhibition with notices sent to specific landowners and relevant state agencies for five weeks from the 1 October 2019 until the 31 October 2019.

The Minister may refer any written submissions to an independent planning panel. Should a panel hearing occur, all submitters will have the opportunity to make a submission before the panel. The Minister may also decide to make a decision on the amendment after considering the written submissions.

FINANCIAL AND RESOURCE IMPLICATIONS

Infrastructure Contributions Plan

Local infrastructure for the Pakenham East Precinct Structure Plan will be facilitated through an Infrastructure Contributions Plan (ICP).

An Infrastructure Contributions Plan:

- Establishes the statutory mechanism for developers to make a financial contribution towards the cost of infrastructure projects;
- Confirms what funds will be collected through a standard levy; and
- Resolves what credits will be funded back to landowners who partly funded the preparation of the Precinct Structure Plan

Based on the four parcels of land being removed from the precinct structure plan Council has estimated that approximately 9.1 million dollars of ICP funds will not be collected from the four parcels of land. Council is concerned with the ICP and seek assurance from Department of Environment, Land, Water and Planning and the Victorian Planning Authority that the ICP is still a standard levy and there is still a surplus in the Infrastructure Contributions Plan.

Council has considered the anticipated contributions of the residential and employment areas and estimated costings for the delivery of listed transport, recreation and community infrastructure categories and is concerned that the Infrastructure Contributions Plan will provide insufficient funding, specifically for the recreation and community category.

Development Services Scheme

Council also seeks advice from Melbourne Water and the Victorian Planning Authority on the impact of removing the four parcels of land from both the Dore Road and Hancock's Gully Development Services Scheme and confirmation on what the financial burden is for the remaining land located within the Pakenham East Precinct Structure Plan, as the shared costs of the Development Services Scheme has been reduced.

CONCLUSION

Based on the matters raised in this report, Council is requested to endorse a submission to the proposed changes to Amendment C234 by the Minister for Planning, by requesting:

1. The four parcels of land intersected by the electricity transmission easement remain as part of Amendment C234 and the Pakenham East Precinct Structure Plan.
2. The four parcels of land intersected by the electricity transmission easement remain as Urban Growth Zone and the Pakenham East Precinct Structure Plan provides the opportunity and flexible guidance in the design and development of the land, as per the discussions in this report and
3. If the land is to be designated as Farming Zone, Council respectfully requests the Minister for Planning modifies the location of the urban growth boundary to demonstrate the four parcels of land are located outside the urban growth boundary within green wedge land to provide greater certainty on its future use and development.
4. Assurance from the Victorian Planning Authority that the Infrastructure Contributions Plan is a standard levy and there is still a surplus in the Infrastructure Contributions Plan associated with Amendment C234.

1 October 2019

Doc No: COR/19/7556

Ms Carol Jeffs
Chief Executive Officer
Cardinia Shire Council
PO Box 7
Pakenham VIC 3810

Dear Sir/Madam,

Notification of changes the Minister for Planning proposes to make to Amendment C234 to the Cardinia Planning Scheme

(Pakenham East Precinct Structure Plan & Pakenham East Native Vegetation Precinct Plan)

The Victorian Planning Authority (VPA) adopted Amendment C234, including the Pakenham East Precinct Structure Plan (PSP) and Native Vegetation Precinct Plan (NVPP) at its Board meeting on 10 October 2018. Following submission of the amendment to the Minister for Planning for approval, the VPA has been directed by the Minister for Planning to seek your views on proposed changes to the amendment under Section 33 of the *Planning & Environment Act 1987* (the Act).

The Minister for Planning is proposing to remove part of the land at **155 Dore Road, Pakenham, 365 Seymour Road, Nar Nar Goon North, 325 Seymour Road, Nar Nar Goon North, and 85 Mount Ararat North Road, Nar Nar Goon North**, within the Urban Growth Boundary (UGB), from the Pakenham East Precinct Structure Plan (the PSP) area due to the development constraints resulting from the electricity transmission easement that encumbers approximately half of the developable area of these parcels.

The abovementioned land is identified as parcels 1, 2, 3, 4 on the attached plan. The removal of the land from the PSP area will require consequential changes to the amendment documentation, including the following changes to the PSP and proposed zoning of land:

- Revise the northern boundary of the PSP to remove lots 1, 2, 3 & 4 from all associated plans in the PSP
- Realign the 'interface housing area 1' to revised northern boundary (Plan 5)
- Realign the bushfire interface and edge road to the revised northern boundary of the PSP as shown on Plan 6 and Plan 7.
- Rezone the portion of PSP parcel 14 that is encumbered by the electricity transmission easement to Urban Growth Zone Schedule 5 (UGZ5) rather than to Special Use Zone Schedule 8 (SUZ8), to be consistent with the zoning of the balance of parcel 14 and other land in the PSP. This change will have the effect of making the 'easement' land in parcel 14 liable for a Growth Areas Infrastructure Contribution (GAIC), in the same way that other UGZ5 land will be liable for GAIC.

A complete list of changes to all affected plans, requirements, guidelines and figures is attached.

Should the Minister approve Amendment C234 with these changes, parcels 1, 2, 3 and 4 will no longer form part of the amendment and will remain under the Farming Zone (FZ). Any future development of the parcels would be subject to a separate planning process.

Pursuant to section 34(1) of the Act, any person affected by the change to the amendment may make a submission to the Minister on the change within the notice period.

Please provide any written submission to the address below by 31 October 2019:

Hon Richard Wynne MP
Minister for Planning
c/- State Planning Services
Department of Environment, Land, Water and Planning
Level 8, 8 Nicholson Street
EAST MELBOURNE VIC 3002

or by email to stateplanning.services@delwp.vic.gov.au

The Minister for Planning will only be considering written submissions relating to the proposed changes of Amendment C234 outlined in this letter and associated attachments.

The Minister may refer any written submissions to an independent planning panel. Should a panel hearing occur, all submitters will have the opportunity to make a submission before the panel. The Minister may also decide to make a decision on the amendment after considering the written submissions.

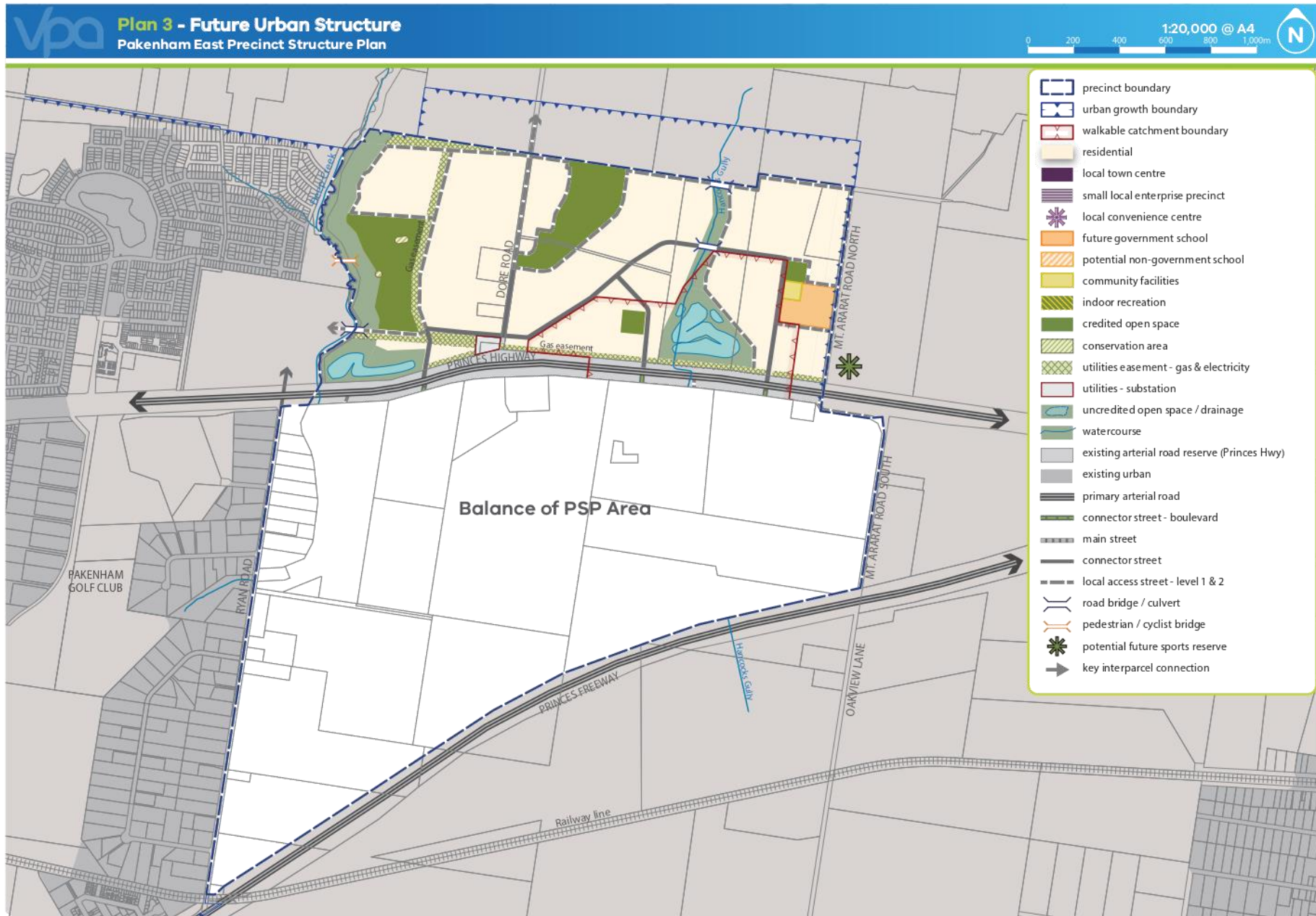
Should you wish to discuss the content of this letter please contact Hayley Presnell, Planner, Planning Services (DELWP) on 9637 8865.

Yours sincerely,

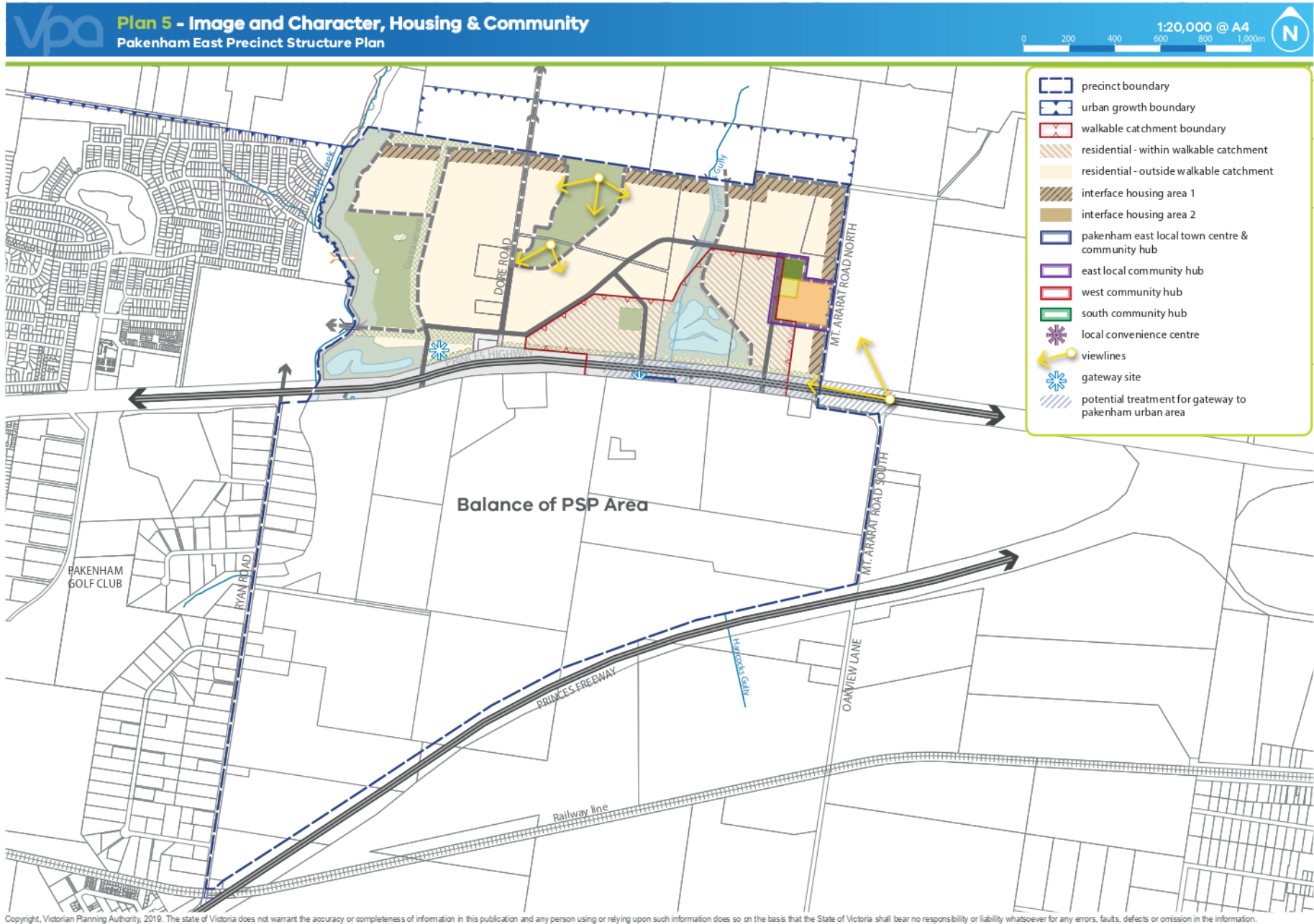


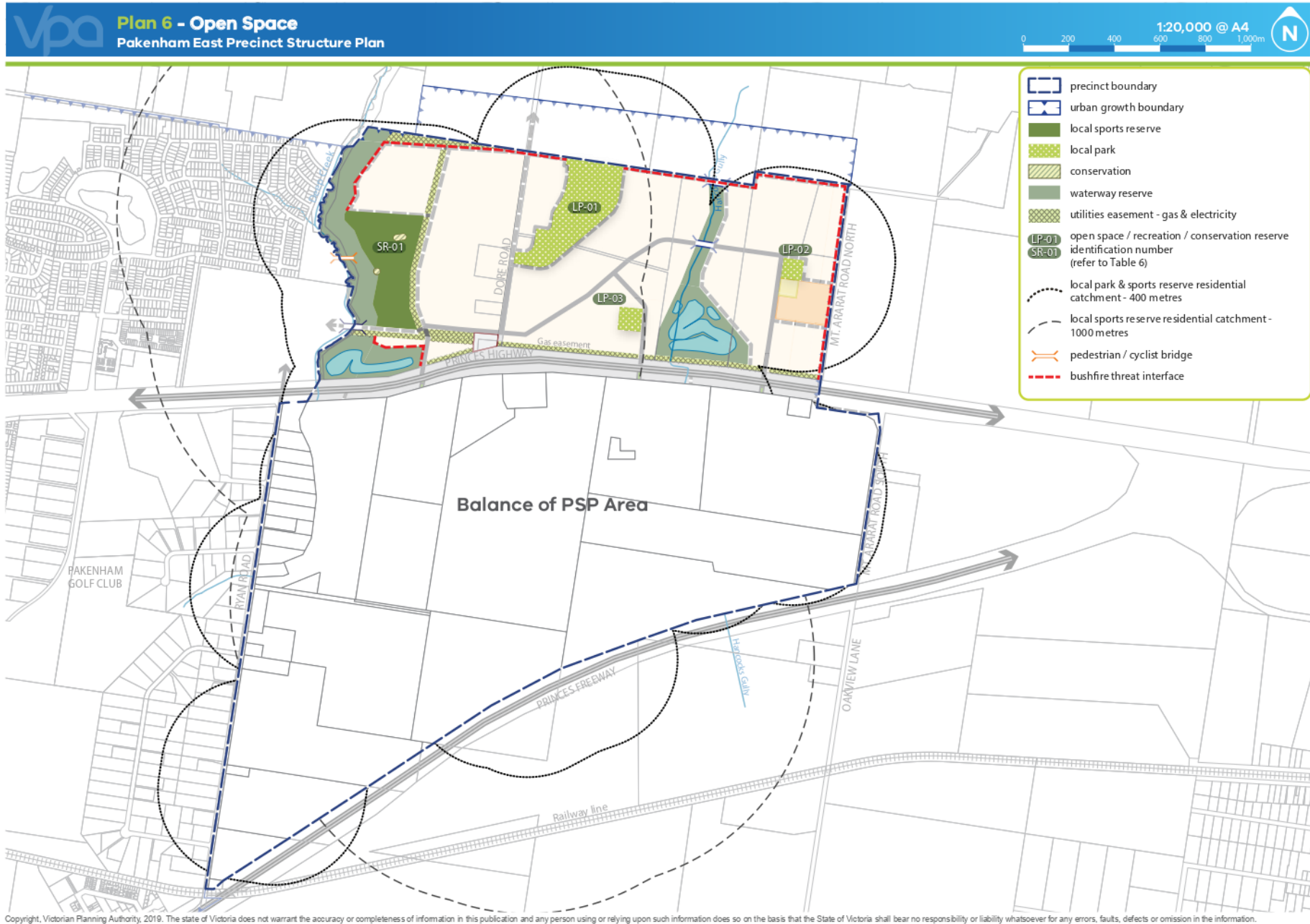
Alix Rhodes
EXECUTIVE DIRECTOR, OUTER MELBOURNE

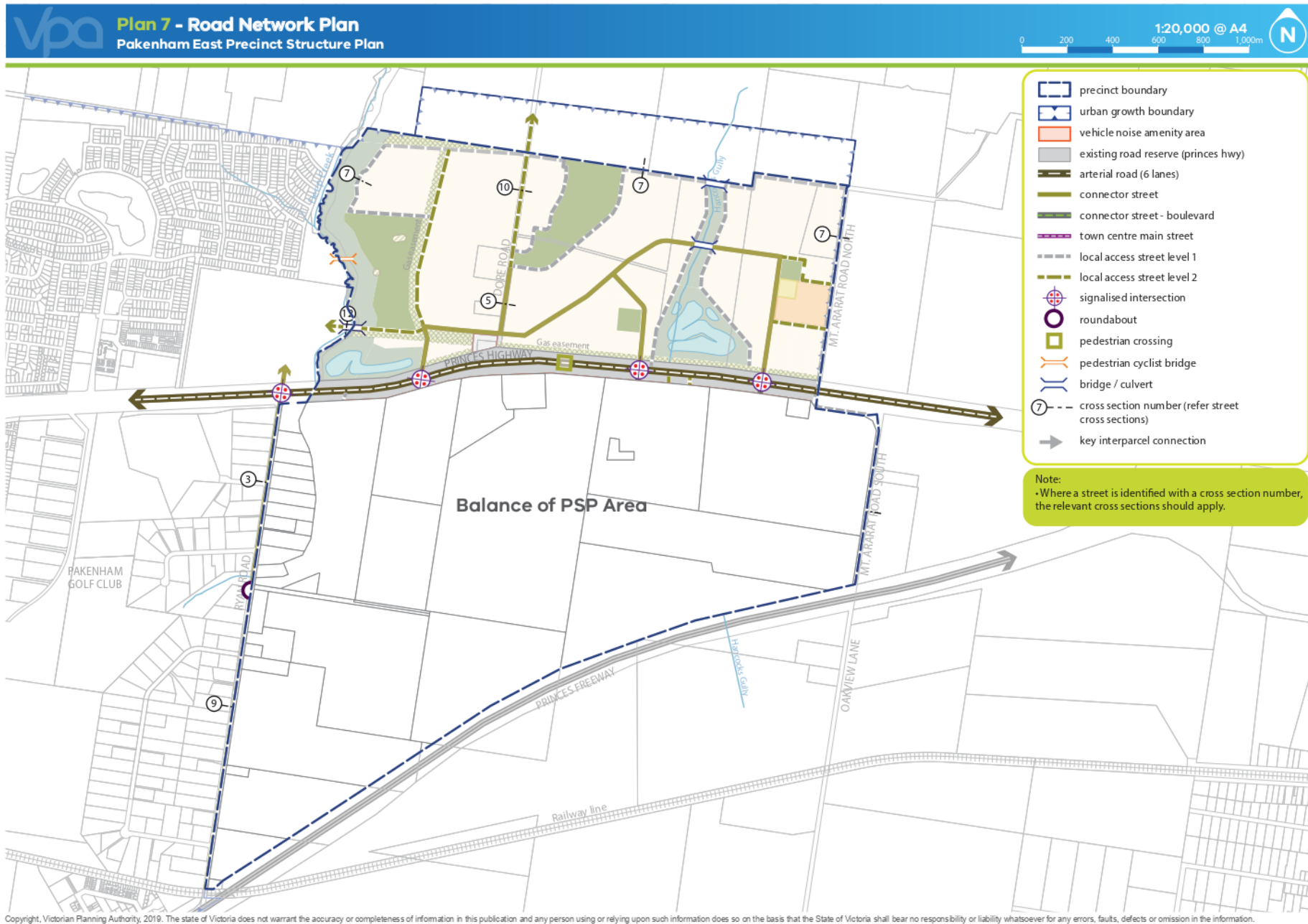
Enclosed: Pakenham East PSP proposed revised plans and list of changes



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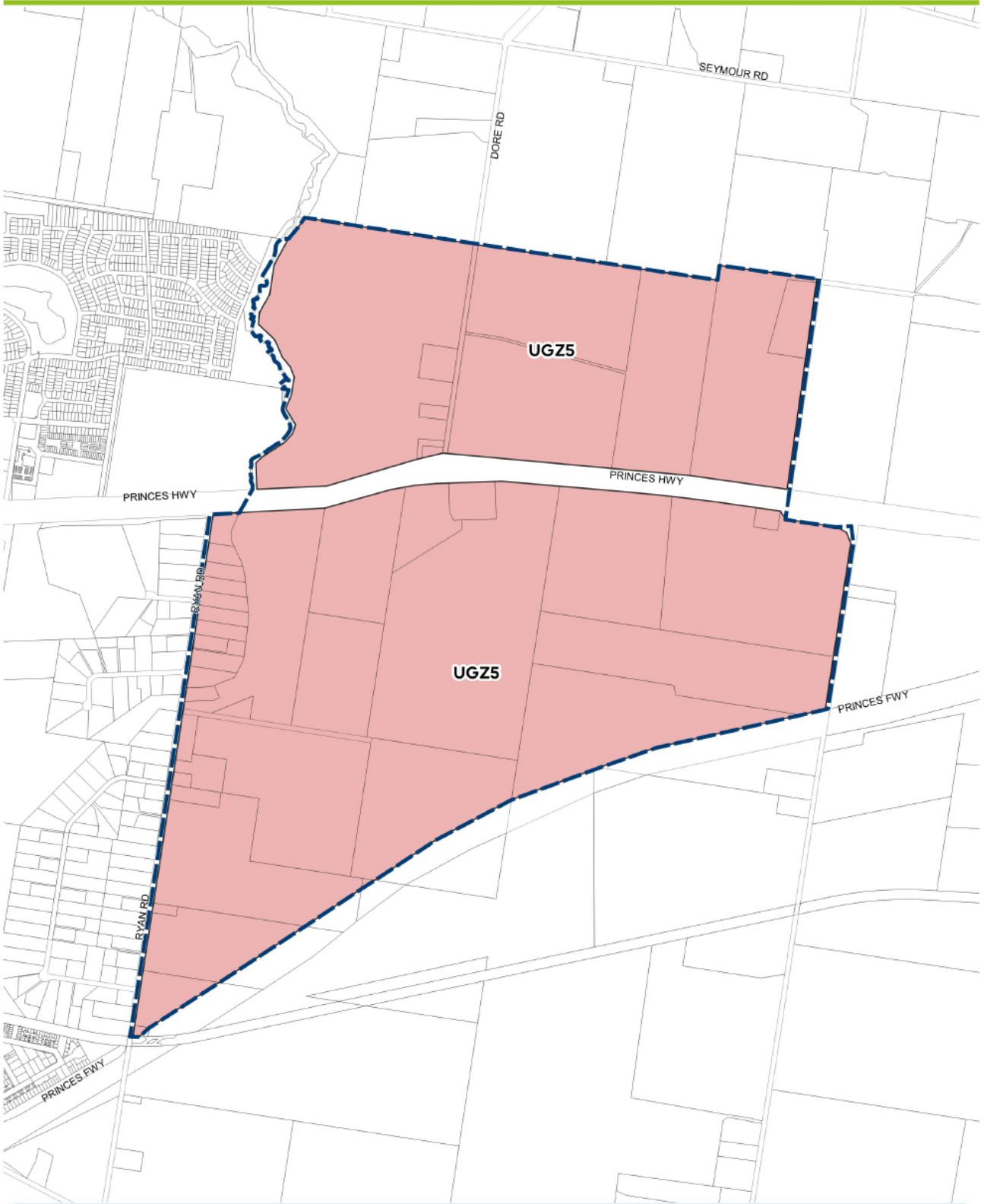





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vpa Proposed Planning Zone
Pakenham East PSP & ICP

1: 20,000 @ A4
0 100 200 300 400 500 m



 precinct boundary  UGZ - Urban Growth Zone  parcel boundary

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Key	Plan/concept plan change – graphics
	Text change
	Table change

PSP		
Section	Change	Reason
Plan 2 Precinct features	Remove properties 1-4.	The change is proposed by the Minister for Planning.
1.2 Land to which this PSP applies	Update precinct areas and boundary description to remove reference to properties 1-4.	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Plan 3 Future Urban Structure	Remove properties 1-4.	The change is proposed by the Minister for Planning.
2.2 Objectives	Adjust the new home target at O5.	The estimated number of homes referred to in the objective will decrease as a result of the proposed removal of properties 1-4 from the PSP.
Plan 4 – Land use budget	Remove properties 1-4	The change is proposed by the Minister for Planning.
	Update property numbers or include note ' <i>properties 1-4 not included</i> '	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Table 1 - Summary land use budget	Update Table 1 to decrease precinct areas, %s and estimated dwelling numbers.	The figures referred to in the table will decrease as a result of the proposed removal of properties 1-4 from the PSP.
2.3 – Summary land use budget	Update text to decrease precinct areas, %s and estimated dwelling numbers.	The figures referred to in the text will decrease as a result of the proposed removal of properties 1-4 from the PSP.
	Realign Interface Housing Area 1 to proposed northern boundary.	Interface Housing Area 1 will shift south of the transmission easement as a result of the proposed removal of properties 1-4 from the PSP. Properties 5, 6, 7, 9 & 14 will now have to respond to the Interface Housing Area 1.
	Update Table 3 – housing delivery guide – remove ' <i>residential outside walkable catchment within and around the transmission easement including interface Housing area 1</i> '.	The figures (NDHA, dwellings/NDHA, dwellings, anticipated population) referred to in the table will decrease as a result of the proposed removal of properties 1-4 from the PSP.
3.2 Local centres and employment	Table 5 anticipated employment creation in the precinct update home-based business number.	The home-based employment figure referred to in the table will decrease as a result of the proposed removal of properties 1-4 from the PSP.
Plan 6 – Open space	Realign Bushfire Threat Interface to follow precinct boundary. Make necessary changes to LP-01 park edge.	The Bushfire Threat Interface will shift south of the transmission easement as a result of the proposed removal of properties 1-4 from the PSP. Properties 5, 6, 7, 9 & 14 will now have respond and address any Bushfire Threat matters.
Figure 4 – Hilltop park (LP-01) concept plan	Change PSP boundary and necessary changes to LP-01 northern edge.	The northern edge of LP-01 will change to reflect the park's transition to the rural land to north.

3.4.1 Bushfire resilience	R50 change wording to describe new bushfire threat interface.	The text currently refers to a local access street along the edge of the UGB (through properties 1-4), this will require update to reflect the proposed removal of the properties from the PSP and introduction of a local access street at the northern edge of properties 5, 6, 7, 9 & 14.
Plan 7 – road network plan	Realign road (cross-section 7) to run alongside the proposed northern precinct boundary to south of properties 1-4.	The plan currently shows a local access street along the edge of the UGB (through properties 1-4), this will require update to reflect the proposed removal of the properties from the PSP and introduction of a local access street at the northern edge of properties 5, 6, 7, 9 & 14.
Plan 8 – public transport and path network	Realign precinct boundary	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Plan 9 – integrated water management	Realign precinct boundary	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
3.6.1 integrated water management	Table 7 – water infrastructure – adjust area for WI-01 and WI-06 with new areas in the precinct	The figures referred to in the table will decrease as a result of the proposed removal of properties 1-4 from the PSP.
Plan 10 - utilities	Realign precinct boundary	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Plan 11 – precinct infrastructure plan	Realign precinct boundary	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
4.1 Appendix A – parcel-specific land use budget	Table 9 – remove parcels 1-4	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
NVPP (Ecology & Heritage Partners)		
2 Area to which the NVPP applies	Table 1 – remove properties 1-4	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
3 Native Vegetation to be removed	Table 3 – remove NV for properties 1-4	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
	Table 4 – remove info for properties 1-4	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
4 Native Vegetation Offsets	Table 6 – remove properties 1-4	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
	Table 8 trees to be retained – remove info for properties 1-4	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
8 Figures	Figures 1, 2, 2a, 2b, 2c, 2d, 2e – update study area	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
NVPP (Appendix 1 – Native Vegetation Removal (NVR) Report, DELWP)		
Offset requirements if a permit is granted per property	Table – remove properties 1-4	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.

Appendix 1: Description of native vegetation to be removed	Table – native vegetation to be removed – remove info for properties 1-4	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Appendix 3 – images of mapped native vegetation	Figures 2-4 – remove properties 1-4 from maps	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Appendix 2- Pakenham East PSP Open space	Update plan 6 (VPA plan)	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Ordinance		
Schedule 5 to Clause 37.07 Urban Growth Zone		
1.0 The plan	Plan 1 – update	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Schedule to Clause 52.16		
1.0 Native vegetation precinct plan	Update table IF NVPP is updated (date change)	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
Explanatory report		
Map 1	Update precinct boundary map	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.
What the amendment does	Delete reference to inserting/amending SUZ instruction	The Minister's proposed changes to the amendment include removal of the SUZ from the portion of the electricity easement to be retained in Property 14.
Why is the amendment required?	Delete reference to inserting/amending the SUZ	The Minister's proposed changes to the amendment include removal of the SUZ from the portion of the electricity easement to be retained in Property 14.
How does the Amendment implement objectives...	Delete any reference to how the amendment has addressed/considered the high voltage electricity transmission easement	The Minister's proposed changes to the amendment include removal of the SUZ from the portion of the electricity easement to be retained in Property 14.
Instruction sheet		
Planning Scheme ordinance	Delete instruction 12 which seeks to insert Schedule 8 to the SUZ	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.s
Amendment maps		
ZN map	Delete UGZ5 north of transmission easement, and SUZ8 – parcels 1-4 are to be retain as FZ	The change is a flow-on from the Minister's proposal to remove properties 1-4 from the PSP.

Pakenham East



Background Report

January 2018

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1 INTRODUCTION

The Victorian Planning Authority (VPA) in consultation with Cardinia Shire Council (CSC) has prepared a draft precinct structure plan (PSPs) for the Pakenham East precinct. A PSP is a 'big picture' plan that sets the vision for developing new communities and is the primary plan for guiding urban development in the growth areas of Melbourne.

The precinct was included in the Urban Growth Boundary as part of the Logical Inclusions process in 2012.

The area will undergo a full transition of land use as part of large scale residential development, with considerable population increase and demographic change.

Cardinia Shire Council commissioned a number of background technical studies to inform the future urban form of the precinct. The purpose of this document is to provide a summary of the findings of these studies and to highlight issues and opportunities that were considered in the preparation of the PSP.

1.1 Purpose

This report summarises the key findings presented by the technical reports and analysis that informed the preparation of the Pakenham East Precinct Structure Plan (PSP); and explains how this information guided the preparation of the proposed future urban structure. More specifically, this report:

- Summarises the strategic context of the precinct;
- Outlines the physical context of the site including topography, vegetation, waterways and contamination. Identifies the land use and development needs for the precinct; and
- Explains how the PSP responds to the key findings of the above.

The technical reports listed in section 1.3 provide specific detail on the key elements outlined by this report.

1.2 Summary of PSP

In summary, the Pakenham East precinct:

- Will be a residential precinct as guided by strategic planning policy;
- Will provide a total of 435.94 hectares of residential, with 6.43 hectares for a local town centre. The local town centre will serve a largely local catchment;
- Will provide a small and local enterprise precinct within the Local Town Centre to encourage lower-cost, flexible space for a range of small local enterprises, to ensure these centres have an ability to adapt and evolve over time;
- Plans for a population of between 20,000-22,200 people at various residential densities in response to walkable catchments within the urban structure;
- Comprises an urban structure that draws upon and integrates the site's existing physical features including undulating topography, significant native and exotic vegetation, a natural waterway system and an area of biodiversity significance;
- Will set aside a conservation and drainage area adjacent to Deep Creek;
- Provides an extensive open space network designed with the site's topography and natural features;
- Requires the following infrastructure:
 - Road and path network;
 - Integrated Water;
 - Government and non-government primary Schools;
 - Government secondary School.

- Community facilities;
- Sports reserve and local park;
- Utility services.

2 METROPOLITAN AND REGIONAL CONTEXT

The metropolitan and regional context for the Precinct is shown in the PSP on *Plan 1 – Regional Context*.

2.1 Metropolitan and Regional Context

The Pakenham East precinct is an existing rural area in the South Eastern Growth Corridor in the Cardinia Shire and covers the localities of Pakenham, Nar Nar Goon and Nar Nar Goon North. The precinct sits amongst the southern extent of the Dandenong Ranges and is characterised by foothills and valleys with defined ridgelines. It is located 56km southeast of Melbourne, 20km east of the Narre Warren-Fountain Gate Principal Activity Centre, and 6km east of the Pakenham town centre. The precinct is bounded by the Princes Freeway to the south, Ryan Road and Deep Creek to the west, the electricity transmission easement area to the north, and Mt Ararat Road and Mt Ararat Road North to the east.

The area will undergo a full transition of land use as part of large scale residential development with considerable population increase and demographic change, with commercial areas and community facilities to support it. Pakenham East will be home to between 20,000-22,200 residents in the next 20-30 years, contributing to the projected population increase to 161,700 within the Cardinia Shire by 2031.

Pakenham is a Major Activity Centre (MAC) that services areas both within and beyond the municipal boundary. The *Cardinia Road Employment Precinct (CREP)* is an emerging employment area 7km to the south-west of the Pakenham AC and is envisaged to be a multi-functional regional employment area that provides a greater mix of jobs. The *South East Business Park (SEBP)*, located approximately 2 to 3km to the south west of Pakenham East PSP will provide approximately 1,500ha of future employment land.

The Pakenham East study area was only included within the urban growth boundary following the 'logical inclusion' process in 2012, which means that the area was not identified in the south east growth corridor plan, a high level integrated land use and transport plan that provides a strategy for long term development in the south-eastern growth area corridor of Melbourne. The Logical Inclusions Advisory Committee supported the inclusion of the Pakenham East area due to a need to increase land supply for housing in the growth corridor, but having landscape constraints to the north and the south.

The Pakenham East precinct will contribute to a residential community for the south east. The location adjacent to Pakenham maximises the use of existing infrastructure and supports the Pakenham MAC. It will also play a role in providing necessary community facilities for the greater area.

The precinct will be serviced by a Local Town Centre (LTC) and a Local Convenience Centre (LCC) that incorporates retail, specialty retail, and a mix of commercial areas. It will provide local employment for the community and reduce the need to travel outside of the precinct for daily shopping needs.

The Deep Creek corridor that runs north-south through the western part of the precinct is identified as having areas of biodiversity and landscape values. Appropriate reserves and planning controls will ensure the long term protection of the native vegetation and habitat. Much of the rest of the precinct is cleared, agricultural land with little native vegetation to be retained.

2.2 Surrounding Areas

A number of new settlements are currently planned, being developed or development has recently finalised around Pakenham East. Surrounding land uses and developments relevant to the precinct include:

Pakenham South Employment Precinct Structure Plan

Pakenham South Employment precinct lies to the south-west of Pakenham East. The precinct comprises approximately 190 hectares of existing employment land, and is bordered by the Princes Freeway to the north, McGregor Road to the west, Koo Wee Rup Road to the east, and the Urban Growth Boundary to the south. The precinct is planned to provide opportunities for industries to operate in a defined employment hub.

Cardinia Road Precinct Structure Plan

The Cardinia Road PSP was approved in November 2008. The precinct lies to the west of Pakenham East and the Pakenham Township. The Princes Highway runs east-west through the centre of the precinct, with the railway line running through the southern area. The 1051 hectare precinct is planned to be largely residential, with a large Neighbourhood Activity Centre (NAC), a small NAC and a Neighbourhood Convenience Centre (NCC).

Cardinia Road Employment Precinct Structure Plan

Cardinia Road Employment PSP is located to the south-west of Pakenham East. The PSP was approved in October, 2010 and will guide the development of a 595 hectare integrated business and industrial park, supported by a neighbourhood activity centre and some high density housing.

Officer Precinct Structure Plan

Officer PSP lies to the west of Cardinia Road PSP, and was approved in December 2011. The precinct is based around a transit-oriented Major Activity Centre and is further supported by a Neighbourhood Activity Centre and multiple Neighbourhood Convenience Centres, with predominantly residential areas.

3 LOCAL CONTEXT

The geographic region is low lying alluvial plains. The area is situated at the foothills of the Dandenong Ranges, where they meet the low lying alluvial plains of the Koo Wee Rup Swamp.

The majority of land is currently zoned Farming Zone (FZ), with small areas zoned Low Density Residential along Ryan Road. Deep Creek and Hancocks Gully are covered by the Land Subject to Inundation overlay and the Floodway overlay. The northern hills area are covered by an Environmental Significance Overlay (ESO).

Pakenham East is largely comprised of pastoral land uses, primarily used for grazing, that have highly modified and dominated the character of the area. Isolated patches of vegetation occur generally along the Deep Creek corridor and within the Princes Highway road reserve. Some scattered indigenous trees have been recorded in the study area.

Pakenham East is well placed to deliver a new community and provide a diversity of housing options and local services. At full development, Pakenham East will accommodate in excess of 7,100 dwellings based upon an average density of 16.40 lots per hectare. It will be of a scale in which local and higher level facilities can be delivered to service new communities and will include Pakenham East Local Town Centre.

Given its proximity and access to major arterial roads, Pakenham East will be well connected to surrounding facilities and connections to Pakenham train station.

3.1 PSP Size, Lot Size and Ownership Pattern

The Pakenham East PSP applies to approximately 629 hectares

There are 50 properties in total. Lot sizes across the precinct range from 30 hectare to approx. 72 hectares. Most parcels have 1 house on the site.

Landholdings are generally medium to large, corresponding with the use of the land for pastoral purposes, hobby farms and rural residential subdivision. Parcels towards Ryan Road are generally smaller than 2 hectares and currently provide rural lifestyle lots.

3.2 Topography, Geology and Waterways

The dominant landform within Pakenham East is foothills and valleys with defined ridgelines. The area has been substantially modified with agricultural and pastoral land use. The majority of the Pakenham East PSP is currently used for pastoral activities. Landforms within Pakenham East include a ridgeline that extends through the centre of the precinct, a deep creek line running along the western boundary and Hancocks Gully in the eastern area of the precinct. A ridgeline and the prominent peak of Mt Ararat sit to the eastern border of the precinct, and form a natural break between urban and rural landscapes.

The Deep Creek is a narrow, meandering creek that runs north-south along the western boundary. Slope gradients are steep at points in the precinct. The majority of the Pakenham East PSP is currently used for sheep, cattle, and horse grazing as well as residential uses.

4 ABORIGINAL CULTURAL HERITAGE

Cardinia Shire Council engaged with Ecology & Heritage Partners Pty Ltd (EHP) to complete an Aboriginal and Historical Heritage Assessment (AHHA) for the proposed Pakenham East PSP area.

At the time of European contact, the Pakenham area and surrounding region was bordered by the traditional lands of two language groups, the Woi wurrung to the north and the Bun wurrung to the south. The consultant undertook a process of consultation with representatives of the Wurundjeri Tribe Land and Cultural Heritage Compensation Council, the Boon Wurrung Foundation and the Bunurong Land Aboriginal Council. There are no Registered Aboriginal Parties currently recognised within the precinct areas. There are no Registered Aboriginal Parties currently recognised within the precinct areas. Aboriginal Victoria (AV) is the statutory authority responsible for evaluating Cultural Heritage Management Plans (CHMPs) and has endorsed the AHHA.

The AHHA focused on identifying areas of sensitivity in the precinct by producing a predictive model. The predictive model was created through GIS analysis of known patterns of Aboriginal land occupation (including variables such as topography, vegetation, and land use) to determine levels of archaeological sensitivity. For the purposes of the predictive model, the term 'archaeological sensitivity' was defined as a combination of density, integrity and research value of archaeological deposits within any given area.

As a part of the AHHA, the desktop assessment identified a total of 28 Aboriginal places within a 2km radius of the Pakenham East precinct. Seven Aboriginal sites were located in the study area. The assessment concluded that artefact scatters and Low Density Artefact Distributions (LDADs) are the types of Aboriginal places that are most likely to occur within the study area.

An initial field survey was undertaken with representatives of the Wurundjeri Tribe Land and Cultural Heritage Compensation Council, the Boon Wurrung Foundation, and the Bunurong Land Aboriginal Council. All previously recorded Aboriginal archaeological places were inspected during the initial field assessment, yet due to reduced ground surface visibility, no Aboriginal archaeological material was identified at these places. One Aboriginal place, an isolated artefact, was identified during the initial survey (VAHR 8021-0380).

The subsequent field inspection identified some areas of Aboriginal likelihood. This included low-lying areas, comprising seasonally inundated flood plains and former marshlands (low likelihood), areas of steep slopes, (>10% slope) (low likelihood), elevated areas that have flat to gentle slopes (<10%) on ridges/hills (moderate likelihood), and areas of cultural heritage sensitivity (high likelihood).

No historical heritage places or areas of historical likelihood were located.

4.1 Cultural Values

The subsequent field inspection identified some areas of Aboriginal likelihood. These include low-lying areas comprising seasonally inundated flood plains and former marshlands (low likelihood), areas of steep slopes, (>10% slope) (low likelihood), elevated areas that have flat to gentle slopes (<10%) on ridges/hills (moderate likelihood), and areas of cultural heritage sensitivity (CHS) (high likelihood). These areas of high likelihood include areas that were previously mapped CHS, which include the 200m Deep Creek buffer and 50m buffers around previously recorded Aboriginal places.

In development of the assessment, AV and the Bunurong Land Aboriginal Council highlighted the sensitivity of the ridgeline landform that extends from the north through to the south of the study area, as ridgelines were often utilised as transit routes in the surrounding area and should be considered as having cultural heritage sensitivity.

4.2 Recommendations and Outcomes

The results of the desktop and standard assessment informed the archaeological sensitivity map. They clearly show that Aboriginal sites may occur anywhere within the study area except areas previously impacted by development. These areas are mapped as unlikely to contain Aboriginal cultural heritage and therefore do not require further archaeological assessment.

Areas of low-lying floodplains (away from natural water courses) and heavily sloping (>10%) ridges and hills are classified as low likelihood archaeological sensitivity. It is recommended that further assessment be undertaken to confirm the presence or absence of cultural heritage.

Areas of moderate likelihood, comprising relatively flat (<10%) elevated landforms that may contain Aboriginal cultural heritage including artefact scatters and LDADs of greater frequency, are recommended to conduct voluntary CHMPs.

Areas of high likelihood, those of previously mapped CHS, include the 200 m Deep Creek buffer and 50 m buffers around previously recorded Aboriginal places. These areas are sensitive and likely to contain further Aboriginal cultural heritage most likely to be intact artefact scatters associated with long-term occupation. Mandatory CHMPs will be required for these areas that will be impacted as part of the Pakenham East PSP (i.e. not with the set aside open spaces). The assessment also recommended that all attempts are made to locate any open space and parkland in these areas to avoid impacts to Aboriginal cultural heritage.

5 POST CONTACT HERITAGE

Context Project Team (CPT) was engaged by Cardinia Shire Council to prepare a Post-Contact Heritage Assessment for the Pakenham East precinct. The assessment occurred over three major stages:

- Identify and assess heritage places and the elements of significance that comprise them.
- Statutory requirements, appropriate curtilage and management recommendations to protect the identified places of heritage significance.
- Incorporate the findings of the John Patrick report on the significance and amenity value of trees within the study area.

The report focusses on statutory heritage assessment for buildings, trees and landscapes, and has utilised the HERCON Criteria as a means for assessing the sites, and the Cardinia Significant Tree Register Criteria.

A desktop assessment of secondary sources found no post-contact heritage places on any statutory or non-statutory registers, and no places within the Study Area had previously been assessed for their heritage values.

During the 1840s a large number of pastoralists move to the area, and combined with Closer Settlement and Soldier Settlement Schemes, the intensification of small scale farms further affected the landscape. The addition of transport networks to the area from the 1870s, namely the railway and the improvement of the Princes Highway, allowed the area to become better connected to Metropolitan Melbourne and the Shire became less isolated.

5.1 Recommendations and Outcomes

The final recommendations are as follows:

Include on Schedule to the Cardinia Heritage Overlay

The assessment recommended three places within the study area for inclusion in the Schedule to the Heritage Overlay of the Cardinia Planning Scheme as Individually Significant places. These are:

- 40 Dore Rd, Pakenham – Local heritage significance (Pear Tree only)
- 32 Mount Ararat South Rd, Nar Nar Goon – Local heritage significance
- 140 Ryan Rd, Pakenham – Local heritage significance

Significant Trees

Cardinia Shire Council have prepared a Significant Tree Register, utilising a specific set of criteria that is based on the recognised heritage (HERCON) criteria. The approach that Cardinia has adopted is if a tree is assessed to warrant inclusion on the Cardinia Shire Significant Tree Register (CSSTR), then it should be added to the Schedule to the Heritage Overlay, and protected through the mechanism of the Heritage Overlay (HO).

One tree, the Pear Tree at 40 Dore Road, Pakenham was assessed in the John Patrick report as having sufficient historical and representative significance for its outstanding size and age (the largest example of the taxon within the municipality) to warrant inclusion on the Significant Tree Register.

Places of archaeological interest

Three places within the study area were identified as having historical archaeological potential. It is recommended that each of these sites be further investigated through a detailed archaeological site inspection and either recording or monitoring as required.

In the event that artefacts, footings, foundations, sites or any other archaeological remains or features be encountered within the three sites listed below, work should cease immediately and the relevant authorities, namely Heritage Victoria, be notified (under the requirements of the *Heritage Act 1995*).

- 40 Dore Rd, Pakenham – Archaeological interest
- 44-55 Dore Rd, Nar Nar Goon – Archaeological interest
- 1550-1560 Princes Hwy, Pakenham – Archaeological interest

Plantings of historic interest only

Plantings of historic interest identified in this report are considered to have some potential to inform of the range of plantings associated with pastoralism and settlement of the area in the nineteenth and twentieth centuries. These are not considered to be of sufficient integrity, or long term value to retain within the urban context.

The recommendation of the report is that these plantings be recorded through photographic means prior to removal, and the recordings are placed with the local historical society and/or Cardinia Shire Council.

- 40 Dore Rd, Pakenham – Pair of *Cupressus sempervirens* (Italian Cypress)
- 44-55 Dore Rd, Nar Nar Goon – Various exotic trees and shrubs in remnant homestead garden

Trees of amenity value

These are trees that have landscape and aesthetic interest and value, and make a contribution to the surrounding locality. There are four trees within the Study Area that have been assessed as having high amenity value, and are considered to have the ability to contribute in a positive way to the new urban landscape. It is recommended to retain these trees and integrate them into the new Pakenham East development.

- 15 Mount Ararat North Rd, Nar Nar Goon North – *Quercus robur* (English Oak) at north homestead site
- 40 Dore Rd, Pakenham – *Phoenix canariensis* (Canary Island Palm) located in the modern garden
- 45-55 Dore Rd, Nar Nar Goon – *Araucaria cunninghamii* (Hoop Pine) located to the west of the dwelling
- 180 Ryan Rd, Pakenham – *Cedrus deodar* (Deodar Cedar)

6 ENVIRONMENTAL SITE ASSESSMENT

GHD was engaged by Cardinia Shire Council to undertake a desktop environmental, hydrological and geotechnical assessment for the precinct. The aim of the assessment was to determine the suitability of land for sensitive uses (including residential, childcare, kindergartens and primary schools) and identify any assessments or remediation works that may be necessary.

The assessment included two stages:

- Stage 1: Assessment included the gathering of relevant information (including the use of literature sources) for the purpose of identifying potential sources of contamination, hydrogeological and geotechnical issues; and
- Stage 2: Assessment included inspecting the site for potential sources of contamination, and areas of geotechnical and hydrogeological significance (i.e. areas of water logging, existing groundwater bores, etc.).

The desktop assessment and site visit identified 'very low' to 'medium' areas of contamination within the precinct. The areas identified as 'low' or 'medium' potential for contamination are localised around past and current farming practices.

6.1 Contamination

The desktop assessment indicated that most properties have been predominantly used for agricultural and stock grazing purposes (particularly for grazing cattle, from 1884 to the present day. Agricultural activities within the Study area usually involved grazing paddocks, however some were identified as potentially housing market gardens. Some properties were identified as potentially containing imported fill material associated with earth works observed in the historical imagery.

Gas pipeline infrastructure occurs on some properties, and has been in use since 1970. Another property has an operation rail electrical substation from the early 1950s.

Other areas of potential concern are properties where agricultural and domestic equipment and scrap has been observed, as well as one property with a truck stop.

The report found that the properties within the precinct with potential sources of contamination are generally consistent with the known historical use for farming and grazing purposes and associated human occupation. Potential sources of contamination were identified on eighteen properties, and one Property sub-area, with a further five properties unable to be accessed and therefore assigned with a conservative medium rating.

GHD recommends that different degrees of additional studies be completed on these properties prior to their redevelopment as part of the Pakenham East PSP.

6.2 Geology

The report indicated that the majority of the area is underlain by Quaternary (Pleistocene to Recent) alluvial deposits of gravels, sand and silt. The precinct is unconformably underlain by micaceous quartz siltstone, with very minor micaceous quartz sandstone.

The intrusive Late Devonian aged Tynon Granite extends from the north through the centre of the Study area and along the eastern boundary. Younger tholeiitic basalt extrusions (Palaeogene age) exist within the Tynning Granite. Overlying topsoil and grass was evident from satellite imagery.

During the agency consultation period, Earth and Energy Resources (EER) within the Department of Economic Development, Jobs, Transport and Resources identified a section of the PSP area (see *Figure 2- Precinct Features*) as being within an Extractive Industry Interest Area (EIIA). A geological analysis of the region will be undertaken to inform a review of the current configuration of the EIIA. Subject to this advice (in particular that there are suitable alternative resource areas in the Cardinia LGAPakenham

Corridor), there may be scope to modify the existing EIA to exclude the area overlapping the Pakenham East PSP (and associated buffers).

6.3 Hydrology

The study area is located in a region that includes north-south oriented ridges, associated with intrusive granite running north-south through the central northern section of the precinct, as well as high and low lying pastures adjacent to historical and existing watercourses.

Typically, shallow groundwater flow and local drainage patterns follow surface topography, with local drainage patterns and flows from higher elevations towards lower elevations.

The precinct contains low lying areas that are listed as being at risk of flooding by the Cardinia Shire Council Planning Scheme.

Deep Creek and two small unnamed water courses running north-south through the central eastern and western parts of the precinct are the nearest surface water bodies. These suggest that shallow groundwater beneath the precinct is likely to flow in a south/south westerly direction, toward Deep Creek and eventually the Western Port Bay.

6.4 Hydrogeology

GHD's report indicated that the estimated depth of ground water in the area ranges from less than 5 to 50 metres below ground level. Groundwater bore yield in the area of the precinct is expected to be less than 1 litre per second.

The groundwater salinity is between 3000 and 7000 mg/L for the majority of the precinct, with the parts in the northernmost area of the precinct listed as being between 1001-3000 mg/L.

GHD found that there are three registered groundwater bores listed for properties in the precinct.

6.5 Recommendations

GHD recommended the following:

High risk – a mechanism in the Urban Growth Zone (UGZ) Schedule for the PSP area should be applied to these properties to ensure an environmental audit is carried out at the site prior to redevelopment to sensitive residential or associated land uses.

Medium risk – an environmental site assessment, which may include a detailed property inspection and intrusive works to assess potential contamination of soil and ground water, should be completed on these properties

Low risk – no further works are recommended on these properties.

7 TOPOGRAPHY & LANDFORM

Cardinia Shire Council engaged Hansen Partnership Pty Ltd to conduct a landscape assessment of the Pakenham East precinct.

The Study Area is an irregular shaped parcel of predominantly cleared agricultural land that falls generally from undulating terrain in the north to the valley floor in the south. The pattern is part of a broader land formation characterised by foothills and valleys, characteristic of the southern extents of the Dandenong Ranges.

A clearly defined ridgeline formation of elevated land extends through the central area of the study, from the northern boundary (at its highest point) down towards the low lying land adjacent to the Princes Highway.

A drainage line runs from north to south along the Deep Creek corridor. A small patch of land in the south west corner of the site is slightly elevated above the surrounding land.

The Princes Highway is an engineered major road which has been raised above the surrounding landscape in most locations, with embankments either side of the road reserve. In the central part of the site, the road passes through the elevated ridgeline and the terrain has been excavated to accommodate the road grading. This has created steep embankments either side of the westbound lanes of the highway.

7.1 Viewshed analysis

A viewshed analysis was undertaken to understand the full extent of technically feasible views to the study area from the surrounding landscape. A viewshed is defined as the surface area that is visible from a given viewpoint or series of viewpoints¹. It is also the area from which that viewpoint may be seen, or also known as 'intervisibility' relation. Obstacles can affect the reciprocal vision of the same two points. The report is limited in that it only takes into account obstacles from topography and not from built form.

The analysis mapped areas of different visual exposures. Areas of very high visual exposure are usually found on the upper extents of the ridgeline towards the central part of the site. There are also consistently areas along the south western boundary from the Princes Highway to the southern corner of the study area that have very high visual exposure, though they are often screened or filtered from view by existing vegetation.

7.2 Landscape characterisation

The report identified the main natural, rural and built characteristics of the study area and its different key features. The precinct is in a predominantly rural setting, made up of cleared pasture land of varying topography and use.

The Deep Creek riparian area is where the most densely vegetated and tree lined landscape is located, and is characterised by a more enclosed, shaded landscape experience with less exposed views.

The Princes Highway bisects the site and the associated grading distinguishes itself from the surrounding area. The adjoining roadside vegetation further separates it from the surrounding rural landscape.

A small area of dense remnant bushland and trees exists on an existing property access via Canty Lane, in the south west corner of the study area.

Residential properties along Ryan Road create a 'Rural Living' character, with properties smaller than those throughout the rest of the precinct, with low or no fences and set within large landscaped garden.

7.3 Landscape values

This section of the report looks at identifying which landscape areas need to be considered in the development of the PSP through categorising those landscape values that are most preferred and least preferred. It is recognised that landscape values vary from person to person, and has used a set of broad landscape character preference indicators.

The assessment indicated that there are four main areas that have a moderate landscape value, with no areas having a high value. These areas are:

- The upper extents of the central ridgeline formation proximate to Dores Road and the northern study area boundary.
- The elevated knoll located towards the centre of the study area, just south of the Princes Highway.
- The land associated with Deep Creek and Deep Creek Road which runs in a north south direction along the western study area boundary.
- The relatively small patch of existing area of suspected remnant bushland located within a private property on Canty Lane.

7.4 Visually sensitive landscapes

Through combining these two assessments, areas have been identified for their potential for visual exposure and landscape value. The following areas have been categorised as high visually sensitive:

- The land associated with the ridgeline formation in the vicinity of Dores Road at the centre of the study area.
- The elevated knoll located to the south of the Princes Highway.
- The land associated with Deep Creek.

7.5 Slope constraints

As there are areas with a slope of greater than 10% within the Study Area, guidelines have been prepared by the Cardinia Shire Council to ensure that development of the land on the hillsides appropriately responds to its context, particularly related to identified view sheds, minimising the amount of disturbance to the natural topography, and the construction of roads and associated infrastructure. These guidelines will apply to any area zoned for residential purposes with a pre-development slope greater than 10%. These will require that a Slope Management Plan is submitted with any planning permit application for subdivision on any land in this area.

8 BIODIVERSITY

The south eastern growth corridor has significant biodiversity values including threatened fauna species that include Growling grass Frog, Southern Brown Bandicoot, Southern Toadlet, Australian Grayling and Dwarf Galaxia and threatened flora species that include Matted Flax-lily, Veined Spear Grass and Green Scentbark. The Pakenham East precinct lies within a landscape which is well documented for its association with significant biodiversity values and comprises areas of native vegetation and habitat for national and state significant flora and fauna species.

The study area is highly modified within private land and is dominated by introduced pasture grasses. Good quality patches of native vegetation are present although in most instances are restricted to road side reserves and riparian/creek lines.

8.1 Native Vegetation Precinct Plan

The Pakenham East Native Vegetation Precinct Plan (NVPP) has been prepared concurrently with the Precinct Structure Plan. The NVPP identifies:

- Native vegetation to be protected and the native vegetation that can be removed, destroyed or lopped without a planning permit; and
- The offsets that must be provided by landowners wishing to commence works prior to removing the native vegetation which can be removed. The NVPP is a separate document.

The statutory basis of the NVPP is Clause 52.16 of the Cardinia Planning Scheme.

The NVPP will be incorporated into the Cardinia Planning Scheme Plan under Clause 81.01 (Incorporated documents) and is a separate document to the Precinct Structure Plan.

8.2 Retention and Offset Requirements

The NVPP will clearly set out the offset requirement, determined in accordance with the Guidelines for the Removal, Destruction or Lopping of Native Vegetation, for native vegetation that can be removed, destroyed or lopped. The NVPP should clearly describe the type and amount of vegetation loss that must be offset, the type and location of offsets to be provided and the timeframe for implementing the offsets.

8.3 Growling Grass Frog Conservation Reserve

An open space reserve has been provided at a width varying between 50m and 100m either side of Deep Creek which will provide protection to this waterway from the impacts of urban development.

A referral has been made to the 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 use and planning controls put in place on the land abutting Deep Creek within the PSP.

The Future Urban Structure and PSP has been drafted to accommodate the potential conditions that maybe 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;
- Appropriate 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).

8.4 Aboricultural Report

A number of indigenous 'scattered trees' exist within the Pakenham East PSP area as identified in Plan 2 of the PSP. Cardinia Shire Council engaged John Patrick to prepare an Aboricultural report for the precinct to provide advice as to whether other trees found within the precinct were of conservation and retention value. This would provide the VPA with more certainty when identifying areas of natural amenity to be retained. The assessment investigated specific trees that were identified in the *Pakenham East Post Contact Heritage Assessment* prepared by Context Pty Ltd, November 2013 (the context report).

A total of six properties were inspected. A number of trees that were assessed are suitable for retention as part of future urban development within the precinct. These trees are listed in the table below.

Table 1 Trees for retention

PSP Property no.	Address	Name	Trees Protection Zone (TPZ)
6	15 Mount Ararat Road, Nar Nar Goon North	English Oak (<i>Quercus robur</i>)	7.8m
8	40 Dore Rd, Nar Nar Goon	Pear (<i>Pyrus communis</i>); Canary Island Date Palm (<i>Phoenix canariensis</i>)	10.8m 7m
11	45-55 Dore Road, Nar Nar Goon	Hoop Pine (<i>Araucaria cunninghamii</i>)	8.2m
50	180 Ryan Rd, Pakenham	Deodar Cedar (<i>Cedrus deodara</i>)	8.6m

The assessment highlights the high potential for damage to trees that are to be retained as part of a subdivision, and therefore requires careful design and management. This includes considerations throughout the construction phase, but also to ensure that there is sufficient room in the long term for future growth.

The assessment sets out some guidelines to ensure successful retention and integration of the above trees into the future Pakenham East PSP throughout the Planning and Subdivision, Construction and Future Plantings stages.

9 TOWN CENTRES

The Pakenham East Future Urban Structure (FUS) identifies the location for a local town centre and a local convenience centre. As a part of the planning process, Tim Nott has been engaged by Cardinia Shire Council to prepare an Economic Assessment report that provides advice on the appropriate size and location of retail activity centre(s) in the precinct and on the contribution that those centres are likely to make to the provision of jobs for local residents.

The report estimated that two neighbourhood level activity centres would be required to service the community. This corresponds with the FUS in the draft PSP that shows a local town centre and local convenience centre serving the area.

9.1 Local Town Centres

A catchment analysis shows that, at full development, the local town centre will be serving the the Pakenham East precinct, and the township of Garfield, approximately 14,600 people. The centre will be able to provide the closest full-line supermarket for these residents, as well as other retail, commercial and community services. These residents will support a further small supermarket and a variety of convenience stores expected from a centre of this size. The total retail floorspace of the centre could be around 9,100 square metres.

The FUS identifies a local convenience centre in the south-west corner of the precinct. The report indicates that this would have a trade area of the south western quadrant of the precinct, and little beyond the precinct boundary to the west. The trade area population of 6,600 at full development would support retail provision of 4,100 square metres. This would support a medium-sized supermarket and specialty stores.

The catchment analysis conducted by the report suggests that both town centres will be needed within the current network of activity centres. Furthermore, without the local convenience centre many residents will be greater than 2.5 km distance from a food and grocery service which doesn't align with the 20 minute neighbourhood objective.

A gap in the network is present in the north-western part of the precinct, where some residents are much more than 1 kilometre from any shops. This poses the need for a local activity centre, which could take the form of a convenience store to provide top-up groceries and coffee shop. The assessment indicates that no more than 300 square metres would be necessary, and this size would have a negligible impact on the retail trade of the other centres. The assessment does suggest that this could be dealt with by permit application later on and may not need be part of the PSP planning process.

It's predicted that the residents of Pakenham East at full development will require around 7,900 jobs. To satisfy the objective of one job per dwelling, 5,900 job opportunities need to be created within Cardinia by this time. The assessment estimates that 3,700 new jobs could be expected in order to adequately service the new population, which would be located in the activity centres and schools in the Pakenham town centre and developing industrial areas. 2,200 jobs will need to be found in trade exposed activities and regional services.

10 COMMUNITY FACILITIES

The VPA undertook an *Open Space and Community Infrastructure Needs Assessment* to quantify the demand for and recommend the provision amount of community infrastructure and open space to support the future population of Pakenham East. The assessment used provision ratios currently applied by the VPA and service providers such as Department of Education and Training (DET) from the document *Guide to Social Infrastructure Planning* prepared by Australian Social & Recreation Research Pty Ltd, October 2009. The configuration and locations of centres within the precinct areas take into account the local topography and the barriers to movement or access to community infrastructure.

In addition to natural topographical boundaries such as the Deep Creek corridor, a number of physical infrastructure and public utility easements traverse the precincts and impose some constraints on the location of community infrastructure and open space. These barriers are:

- Princes Freeway
- Princes Highway
- High voltage powerlines easement (and associated buffers)
- Two gas transmission pipelines (and associated buffers)
- Hancocks Gully
- Steep slopes around the central ridgeline

Environmental and topographical constraints generated by creek corridors and biodiversity conservation areas are most prominent in the Pakenham East precinct.

The Pakenham East area will have a significant population to warrant a considerable quantity and range of community infrastructure from public and private, state, council and non-council facilities that will support services and programs for future residents. This infrastructure will include schools, multi-purpose community centres, and an indoor recreation facility, and may include emergency services and residential aged care services. Most of this infrastructure will be located within or proximate to the three main community hubs, generally based around the proposed town centres and convenience centres.

The precinct has a projected future need for two government primary schools and a government secondary. DET has confirmed that Pakenham East should nominate the provision of two government primary school locations and a government secondary school.

The Catholic Education Office of Melbourne (CEOM) is likely to require one primary school. The strategic location of the school site is justified in their report *A Strategic Study of Pakenham East Precinct, Catholic School Provision to 2036*, Sustainable Planning Strategies Pty Ltd, May 2017.

The assessment identified the need for two level 1 multi-purpose community centres and one level 2 neighbourhood house, or two hectares of community facilities required to support the future population of Pakenham East. These facilities should include four kindergarten rooms in the short term and three in the long term, as well as one maternal and child health consulting room.

11 EMERGENCY SERVICES

Planning for Community Infrastructure in Growth Area Communities makes a series of recommendations regarding the recommended service facility model, land area and building footprint requirements for emergency services facilities in growth areas, and key design issues / criteria, as follows (p115):

Recommended service facility model or growth areas:

- Additional population growth in Melbourne's growth areas will generate the need for additional emergency services facilities.
- The number and type of facilities, timing of development and location will be determined by planning process undertaken by the relevant services.
- The preferred facility model is often an integrated emergency services precinct comprising a police station, ambulance station, SES unit and/or fire station.

Land area and building footprint requirements for growth areas:

- Police – 0.4 ha to 0.6 ha
- Fire and SES – 0.4 ha
- Ambulance – 0.4 ha
- SES Unit – 0.35 ha

Key design issues / criteria:

- The integrated emergency services precinct should have main road frontage, be easily accessible and be located so that it can achieve good emergency response times.

No particular facilities have been identified by the emergency services consulted during the PSP process, but these are likely to be identified as the areas start to develop.

12 OPEN SPACE

12.1 Sports Reserves

All proposed sports reserves are to be provided adjacent to the government education facilities, to protect the option for joint use of these sports reserves in future. The sports reserves will include grassed and hard courts and will take various configurations to cater for sports which currently have high participation rates such as Australian Rules football, soccer, cricket, netball and basketball. However, they will be flexible enough to cater for a range of sports which may become more popular in future, or that may be needed in the wider area. The specific type of sports facilities will be determined by future population needs.

12.2 Local Parks

Generally, local parks should be equitably distributed across the precinct, maximising access by the local community and generating high amenity. Most local parks are proposed in sizes ranging from 0.5 hectares to one hectare, cater for a diverse range of functions (i.e. gathering spaces, walking pets, linear connections, community focal points), and be located within convenient walking distance of 95% of all dwellings (400 metres). One large Local Park will be provided on the high point of the central ridge line north of the Princes Highway to protect the landscape amenity of the precinct.

12.3 Linear Open Space

The area will have immediate access to open space via a unique network of linear bike and walking trails that follow the waterway systems and linear open space areas. These aspects of the precinct will serve a key role in linking the community and promoting active transport options.

Hancocks Gully and Deep Creek will act as linear trails, with off-road shared paths connecting the communities north and south of Princes Highway, and also some of the important destinations of the precinct such as Local Town Centre, schools, community facilities, sports reserves and local parks. Deep Creek is a connective and distinguishing feature which presents the densest native vegetation in the precinct, and contrasts against the surrounding open, pastoral areas. The corridor will shape the structure of the Pakenham East PSP and will be used as a place of respite for local residents, whilst also allowing people to move actively with ease through the area.

A gas pipeline easement that runs north-south through the precinct will become a combination of off-road bicycle and shared path running its extent, linking with other transport routes and open space areas.

13 WHOLE OF WATER CYCLE ASSESSMENT, WATERWAYS AND DRAINAGE

The Victorian Government released a new water policy framework, *Melbourne's Water Future* (Office of the Living Victoria) in 2013. Melbourne's Water Future (MWF) focuses on a holistic approach to managing the different components of the water cycle including water services infrastructure, natural waterways and the built environment. The policy is aimed at achieving a more resilient water cycle, improved security of supply and water quality, lowered costs, improved value for money in meeting the State's water needs, greater environmental and amenity benefits and increase innovation across the water sector. More specifically, the policy refers to treated wastewater, stormwater and rainwater harvesting as future supply sources, with the aspiration that investing in these sources will substantially reduce the need for large scale additions to our drinking water supplies. The preparation of Whole of Water Cycle Assessments for growth areas is a priority initiative in MWF.

Cardinia Shire Council commissioned GHD to undertake a Whole of Water Cycle Assessment (WoWCA) for the Pakenham East PSP area.

Specifically, WoWCA objectives for Pakenham East are to:

- Investigate reliable water supply sources based on identifying opportunities to diversify water supply aiming to reduce conventional use and reduce the costs of centralised systems
- Protect and enhance the values of urban waterways, including minimising stormwater volumes and improving quality
- Manage flooding and minimise risk
- Improve liveability and community health
- Provide efficiencies and benefits to managing of all the elements of the water cycle mentioned above from a holistic point of view

The WoWCA modelling was based on high-level servicing strategies for water supply and sewer services prepared by South East Water who owns the services within the PSP area, and draft preliminary Development Services Schemes (DSS) for the catchment areas within the PSP area, prepared by Melbourne Water.

Melbourne Water is responsible for defining drainage and flood mitigation infrastructure requirements within new developments and management of drainage assets in catchment areas larger than 60 hectares. Cardinia Shire Council generally manages drainage assets in catchment areas of less than 60 hectares.

GHD produced a short list of five options which were discussed by various stakeholders and concluded that two options were the most attractive. Following the completion of that work, GHD were further engaged to undertake more detailed analysis into Options 2 (Pakenham WWTP recycled water) and 3 (Bald Hill stormwater harvesting with recycled water).

Overall, the analysis of these two options (after Option 3 had been split into 3A and 3B), suggests that Stormwater harvesting is a viable innovative alternative. However, it is around neutral on a whole of community NPV basis. Therefore, pursuing this option while be based on factors other than the analysis and require negotiation between stakeholders.

14 TRANSPORT AND MOVEMENT

14.1 Road Network

Road networks are generally based on one mile grids, meaning arterial roads (six and four lane roads) are provided in grids spaced at 1.6 kilometres with connector streets (two lane roads) sitting generally every 800 metres in between. The existing and proposed road network is based on these principles.

The annual average daily traffic (AADT) approach was adopted to define the intersection configuration within the PSP, based on NSW RMS' Guide to Traffic Generating Developments. The Guide sets out the following trip calculations:

- Standard density residential area – daily vehicle trips = 9 per dwelling
- Medium density residential area – daily vehicle trips = 5 per dwelling
- Primary School – daily vehicle trips = 400 per 100 m² gross floor area
- Private School – daily vehicle trips = 350 per 100 m² gross floor area

As part of the background work, a study was prepared by SMEC to review an option for an interchange from the PSP area to the Princess Freeway, east of Ryan Road. The review found that the interchange would result in marginal localised benefits, including slight reductions in travel time from approximately 1 minute, and increased travel speeds of approximately 3km/hr across the local network. To proceed without the interchange vehicles would predominately access the freeway via Racecourse and McGregor Roads. The Princes Freeway would operate at a higher level of service, with higher speeds and lower traffic demands east of Cardinia Road. The benefits and costs of the interchange have been considered and the PSP road network plan has proceeded without the interchange. SMEC are in the process of updating a traffic report prepared in 2015 in consultation with VicRoads. The traffic report is being finalised between Cardinia Council, VPA and VicRoads and will be provided when available.

A SIDRA analysis report was also conducted to review the performance of four proposed intersections at Ryan, Connector A, Connector B and Connector C along Princes Highway using split phasing as recommended by VicRoads.

The assessment recommended that intersections at Ryan, Connector A and Connector B require modified intersection layout arrangements (as shown in the report) to operate at minimum acceptable level.

14.2 Bus Services

A bus capable road network is provided to allow for access within 400 metres of the residential areas. The high frequency bus route will be capable of delivering 'SmartBus' type services to the community.

14.3 Pedestrian and Cycle Network

The PSP incorporates an extensive road and trail network that links to key destinations within and outside of the PSP area, including to schools, sports reserves, community centres and waterways. A combination of on and off road routes allow for commuter cycle trips as well as recreational cycling and walking.

15 UTILITY AND SERVICE INFRASTRUCTURE

The subject area has availability and access for connection to all necessary services, but that future development within the majority of the PSP area will require significant upgrading and extension of all services, particularly sewerage and water supply. Development from the western boundary appears to be the most logical starting area for development, although the provision of a gas supply will need to be determined for early developments.

15.1 Sewerage

South East Water (SEW) is the responsible authority for the provision of sewerage facilities. There are currently no existing reticulation or branch sewers in the PSP area.

Major sewer works for the PSP are will require:

- Extend 450mm and 375mm diameter branch sewers from the existing 525mm diameter Peel Street Branch Sewer in Bald Hill Road near Embrey Close, resulting in 1.3 km of sewer to reach the south western corner of the precinct and an additional 3.4km to reach the northern precinct
- The final location of temporary and permanent pump stations, Rising Sewer Mains, and Branch Sewers will depend on the layout and staging of any development.

15.2 Potable Water Supply

SEW is the responsible authority for the provision of water supply facilities. SEW have developed a servicing strategy. The alignment and sizing of potable water reticulation mains with the Precinct would be in accordance with the Melbourne Retail Water Agencies (MRWA) Edition of the WSAA Water Supply Code.

15.3 Recycled Water Supply

There is potential for the use of recycled water for non-potable uses to be provided throughout the PSP area.

This is generally assessed on a precinct-by-precinct basis by the service provider, being South Easter Water (SEW). Recycled water can be used for irrigation of garden areas, green corridors and sports fields.

SEW has advised that the area is not adjacent to a mandated recycled water area, which currently means that a third-pipe recycled water system will not need to be installed. While recycled water could be provided from Pakenham Treatment Plant, this requires further consideration by SEW.

15.4 Electricity Supply and Transmission Infrastructure

SP-Ausnet controls the electricity supply network across the South East Growth Corridor.

- A new substation has been installed at Officer to meet growth in Pakenham and Officer with the first stage being completed in 2009.
- A new substation commenced construction in Pakenham South in 2016 to meet ongoing growth particularly in the Employment Precinct.
- SP-AusNet also has plans to establish a major new transmission connection terminal station in the Pakenham region in the next 5 to 10 years' time.
- If a zone substation is required in the Pakenham East Precinct, the area required and associated easement requirements will need to be determined.

There are three existing 220 kV overhead transmission lines through the northern end of the site. These lines are owned by SP AusNet and are contained within a Power Transmission Easement which has a total width of approximately 120m. There are also Telstra and Optus Major Optic Fibre Network lines running along the southern boundary of the easement in this area.

SP Austnet have developed subdivision and development guidelines to inform the uses and development that are supported within the easement.

15.5 Gas Supply and High Pressure Gas Transmission Infrastructure

Envestra / APA is the responsible service provider for the provision of gas supply in this area.

Any development east of Deep Creek will require the installation of a new City Gate, which is a pressure regulating kiosk, which reduces the pressure from 10,000 KPa in the transmission pipeline to 550 KPa in the distribution network.

For the planning and implementation of a new City Gate for the Pakenham East Precinct, there would be at least 12-18 month lead time required, and this will need to be taken into account in planning for this area.

Four licenced pipelines, PL75, PL135, PL141 and PL244, intersect the Pakenham East Precinct:

- The T60 pipelines, PL75 which spans Longford to Dandenong and PL135, the pipeline loop between Bunyip and Pakenham lie within a 24.4 m wide easement and have a pipe diameter of 750 mm ND.
- The T61 pipeline between Pakenham and Wollert (PL141) lies within a 27 m wide easement and has a pipe diameter of 750 mm ND.
- PL244 is a DN250 welded steel pipeline, 35.419 km long and originating from the Lang Lang Gas Plant to terminate at the APA operated Pakenham Custody Transfer and Metering Station.

The PSP also contains the Custody Transfer Meter Station (CTMS) owned by APA, housing various equipment (line valves, pig traps, filtering, metering regulating and gas quality monitoring etc.), and an existing gas metering station between the Origin BassGas pipeline and the APA pipelines within the Precinct. There is also a proposed City Gate that will be constructed to service reticulated natural gas to the Precinct. The detail of the location of the City Gate is to be confirmed, but it will be in the vicinity of the existing APA compound (likely on APA owned land).

A Safety Management Study (SMS) has been undertaken to determine the nature of the pipelines, the key aspects of the Precinct, the potential threats and risks, and the actions required to ensure the ongoing safe operation and maintenance of the pipelines in compliance with AS 2885.

15.6 Telecommunications

NBN Co is the responsible agency for the delivery of the National Broadband Network (NBN).

Telecommunication design and installation in all new residential estates greater than 100 lots will be administered through the NBN Co system.

NBN Co has not yet planned how the network will roll out across the Pakenham East Precinct, but will use existing Telstra conduits subject to location and condition.

16 REFERENCES

The following reports have been used to inform this report. Plans have not been included in this report and reference should be made to the original documents when reading this report. The original documents commissions for the Plumpton and Kororoit PSPs are located on the VPA website at www.vpa.vic.gov.au

Organisation name (Year) Title of document

Australian Social and Recreation Research (2009) *Planning for Community Infrastructure in Growth Area Communities*

Beveridge Williams (2013) *Service & Utility Report*

Cardinia Shire Council (2017) *Guidelines for Slope Management*

Context (2017) *Post-Contact Heritage Assessment Pakenham East Precinct*

Ecology & Heritage Partners (2017) *Pakenham East Precinct Structure Plan, Pakenham, Victoria: Aboriginal and Historical Heritage Assessment*

GHD (2013) *Desktop Environmental Site Assessment Report*

GHD (2015) *Options for Whole of Water Cycle Assessment*

GHD (2015) *Whole of Water Cycle Management Plan*

Hansen (2013) *Pakenham East Precinct Landscape Assessment*

John Patrick Pty Ltd (2013) *Significant Tree Assessment*

Tim Nott (2015) *Pakenham East Precinct Structure Plan – Economic Assessment*

LogiCamms (2016) *Pakenham East Precinct Structure Plan AS 2885.1 Safety Management Study Workshop and Report: APA Pipeline and Gas Metering Station*

Origin (2014) *Gas Pipeline Options Assessment*

SMEC (2014) *Interchange Comparative Traffic Modelling Assessment*

SMEC (2015) *Midblock Volume Outputs*

SMEC (2015) *Geotechnical Preliminary Pavement Assessment*

SMEC (2017) *Design Response Options for Electricity Easement*

Sustainable Planning Strategies Pty Ltd for Catholic Education Office Sale (2014) *A Strategic Study of Pakenham East Precinct: Catholic School Provision to 2036*

TFV / VicRoads (2017) *Traffic Analysis Report, Project: Pakenham East PSP: Proposed Intersections along Princes Highway at Ryan Road, Connector A, Connector B, Connector C*

VPA (2017) *Pakenham East Open Space and Community Infrastructure Needs Assessment*



Pakenham East Precinct Structure Plan
**Design Response options for the
Transmission Easement**

urban design | planning | engineering | surveying | landscape architecture | project management

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1 Introduction

Cardinia Shire Council engaged SMEC Urban in December 2012 to undertake a review of development options for the land directly affected by the existing Transmission Easement within the Pakenham East Precinct Structure Plan (PEPSP) study area.

1.1 Study purpose

The purpose of this work was to:

- Research possible development options for land adjacent to and affected by the Transmission Easement;
- Review current policy guidance in relation to the Transmission Easement and its potential uses; and
- Provide design scenarios for the areas affected by the Transmission Easement to enable a well-considered solution to be determined during future design of the urban structure of the PEPSP.

1.2 Study area

The study area is known as the Pakenham East Precinct Structure Plan (PEPSP). It is located to the east of the existing established township, and is bounded by Ryan Road and Deep Creek to the west, an electricity transmission easement and rural properties to the north, Mt Ararat Road to the east and the Princes Freeway to the south

In particular for this study, the land affected is the land directly inside the northern boundary of the overall study area.



Figure 1: Study Area

2 Policy and Guidelines

2.1 Easement details

The Transmission Easement is under the control of SP Ausnet. It is approximately 120m in width, and through the study area, contains 6 groups of 4 x 500kV transmission towers. SP Ausnet have produced the document 'A Guide to Living with Transmission Line Easements', which guides what can be done within an easement controlled by SP Ausnet.

2.2 A Guide to Living with Transmission Line Easements

This document provides information about the types of easements that SP Ausnet control, and what can and cannot be done in that land, given it is held in private ownership, with an easement entitling SP Ausnet to access the land for maintenance, safety control measures, and sometimes for preservation of land for future additional lines.

Any activities proposed within an easement will require written approval from SP Ausnet. In general, uses within the easement are restricted to ground level activities.

Permitted uses include things such as:

- Grazing and agriculture
- Market gardens, orchards and horticultural nurseries
- Dams
- Trees and shrubs that grow no higher than 3m (no trees closer than 20m radius to towers)
- Non-metallic fences up to 3m in height
- Pipeworks of earthenware or plastic materials (no closer than 20m to towers)
- Vehicle parking
- Tennis courts (subject to some specific conditions)
- Ground level sporting facilities such as football fields etc
- Playground equipment (1m maximum height limit)
- Lighting poles (subject to specific conditions).

Prohibited uses include:

- Houses and other buildings and structures
- Swimming pools
- Storage of materials in skips and industrial style bins
- Stockpiling of material
- Vehicle repairs and fuelling
- Use of vehicles and equipment exceeding 3m in operating height
- Storage or handling of flammable liquids or gases
- Parking of large trucks/caravans, and loading/unloading of trucks
- Operation of large water spray irrigators of the gun type
- Metal pipes within 30m of any tower steelwork
- Explosives storage.

2.3 Examples of usage of easements

There are many examples around metropolitan Melbourne of how areas encumbered by Transmission Easements are utilised for both public and private uses. Some examples include:

- Construction of wetlands and stormwater detention basins (for example, at the Hawkstowe project in Mernda and Lyndarum at Epping);
- Agricultural and horticultural uses (both on a large scale and for hobby farms);
- Sporting fields (Donnelly Recreation Reserve, Cranbourne);
- Car parking (Merinda Park railway station in Cranbourne, and South Morang railway station); and
- Recreational trails.

The above could be considered within Pakenham East, subject to also considering other objectives for the precinct.



Figure 2: Images taken from 'A Guide to Living with Transmission Line Easements' by SP Ausnet



3 Possible development scenarios

Given the location of the easement, traversing the northern boundary of the PEPSP study area, it provides a constraint to gaining appropriate development solutions for the small areas of land that sit to the north of the easement within the PEPSP and the current Urban Growth Boundary.

The easement affects 5 land titles as well as Dore Road, and to consider development scenarios, each title should be considered for its individual development potential to ensure that a solution can be achieved for each individual landowner/title, as well as for the area as an integrated solution.

3.1 Easement use opportunities

As outlined in section 2.2 above, the easement can be utilised for both public and private land uses, provided the uses fit within the approval and guidelines of SP Ausnet. Any use or development on land affected by the easement will require the approval of SP Ausnet.

Public use opportunities

Given the location of the easement in this area, there is the opportunity to utilise it to provide a linear trail linkage between Deep Creek, the hill top (and any potential hilltop reserve that may be created as part of the PEPSP), and the creekline in the eastern half of the study area. The easement width of 120m is a substantial area, and it may not be desirable for Council to take on management of this entire area for a linear trail, so consideration could also be given to utilising part of the easement for other uses (private or public). Nearer to the waterways, another suitable potential use for the easement land could be water quality treatment areas if required in these locations.

Private use opportunities

As the easement is in the northern part of the study area, there is the opportunity to utilise the land within the easement as part of larger lots that could be attractive to people desiring a large home with some land around it for hobby farming purposes (ie. a couple of horses, cattle, small scale horticulture etc). Given the undulating topography, and larger rural allotments to the north, this use in between standard residential development and rural land is appropriate, and could provide another market for the PEPSP area to attract.

3.2 Development Scenarios

In order to test options for the site, 5 development scenarios have been prepared, to indicate possible alternatives for development of land adjacent to the Transmission Easement. The 5 options explored are:

1. Full development
2. Linear Trail Network
3. Public use of easement
4. No development north of easement
5. Rural lots.

The options are included as **Attachment 1** to this report. All of the options provide each of the titles affected by the easement with the ability to develop their land to varying degrees, depending on the specific circumstances of the property boundaries and easement location.

Attachment 2 includes a preliminary land budget which details a full breakdown of developable land areas and potential site yields per property for each of the development scenarios, as well as an overall summary for the 4 properties affected. This has been prepared based on average lot size estimates, based on the sketch plans included in Attachment 1. Given the topography and the location, the lot typologies/ densities utilised in the plans and land budget are:

- Rural living (2.0 ha average lot size);
- Lower density lots (1500m² average lot size); and
- Standard residential (800m² average lot size).

Option 1: Full development

The full development scenario presented considers the retention of the easement within private property (other than where affected by another use such as the creek), through the use of larger lots with buildable areas retained outside the easement. Depending on specific circumstances and the market at the time of development, these lot sizes could be adapted to be smaller or larger.

The full development scenario considers development of all of the land on the northern side of the easement, which would include a road for access across the hilltop to provide connectivity from west to east through this area. The only area north of the easement that would not be able to be developed into lower density style allotments is the eastern extent, given the limited width of land contained within the development area between the UGB and the easement. This concept could also be adapted to include a hilltop reserve if that was the desired outcome.

Option 1: Summary Development Analysis

Net Residential Area	32.84 ha
Lot Yield Estimate (total)	106
Public Open Space area	4.97 ha
Length of proposed new roads	1704 lin m
Length of proposed linear trail	0 m

Option 2: Linear Trail Network

This option presents the concept of utilising part of the Electricity Transmission easement land (50-60m width) along its southern boundary as a linear trail connection linking the Deep Creek corridor to the hilltop reserve and the eastern creek corridor. This would provide a network of pedestrian and cycling trails throughout the northern part of the PEPSP, using land that may otherwise be underutilised. The trail network also allows for the majority of the overhead towers to be retained in land within public ownership, ensuring maintenance accessibility is readily available.

The remainder of the easement is suggested to be utilised for a small number of larger 'hobby farm' style allotments. These lots would have an adequate area outside of the easement available for construction of a dwelling, with the land affected by the easement being available for uses such as those outlined in Section 2.2 of this report.

It may also be appropriate to consider introducing some design guidelines on these allotments to ensure that land is suitably utilised, and that the interface between these lots and the linear trail part of the easement is managed appropriately through consistent fencing and maintenance management.

Option 2: Summary Development Analysis

Net Residential Area	25.34 ha
Lot Yield Estimate (total)	88
Public Open Space area	15.98 ha
Length of proposed new roads	1437 lin m
Length of proposed linear trail	1639 lin m

Option 3: Public use of easement

Option 3 designates the majority of the easement as public space, providing a linear link between the creek corridors, and also to the potential hilltop reserve. This option continues public access eastward to Mount Ararat South Road, providing additional public open space plus a link to future possible linear trail development within the easement beyond the current PEPSP boundary.

Development for lower density residential is still considered to the north of the easement, in pockets that retain the hilltop park.

Option 3: Summary Development Analysis

Net Residential Area	11.56 ha
Lot Yield Estimate (total)	88
Public Open Space area	27.87 ha
Length of proposed new roads	1395 lin m
Length of proposed linear trail	2215 lin m

Option 4: No development north of easement

This option utilises the transmission easement as the northern limits of development. Given the limited opportunities for development north of the easement, it may be considered appropriate that the land within and north of the easement should not be developed for residential purposes, but maintained as a rural/rural living area given it will be relatively removed from the remaining area of the PEPSP and its services.

The implications of this option are that the western most title (Property 1) cannot be developed at all, given it is wholly contained within the easement, or north of it. Property 2 also is not able to be developed, assuming that the Hilltop Park is a priority for Council to achieve.

Option 4: Summary Development Analysis

Net Residential Area	3.17 ha
Lot Yield Estimate (total)	40
Public Open Space area	2.65 ha
Length of proposed new roads	403 lin m
Length of proposed linear trail	0 lin m

Option 5: Rural lots

Option 5 allows development of lots within and north of the easement to an average size of approximately 2.0ha, and provides a consistent approach to the easement along its length through the PSP area. This option creates new roads north of the easement, to allow for development of such interface lots.

Option 5: Summary Development Analysis

Net Residential Area	36.96 ha
Lot Yield Estimate (total)	33
Public Open Space area	3.96 ha
Length of proposed new roads	1410 lin m
Length of proposed linear trail	0 lin m

3.3 Assessment of development scenarios

All of the five development scenarios presented have merit, and should be considered in conjunction with the overall planning of the PEPSP area. The most appropriate solution for the area will be influenced by the outcomes of planning for the remainder of the PEPSP area.

In terms of maximising developable land, Option 1 provides the best outcome.

If considering the best public access solution, Option 3 provides the most land for public use. This option also provides a connection to any potential future trail development along the easement beyond the PEPSP boundary.

Option 2 provides a balanced approach to public and private use of the easement.

Option 4 utilises the easement to set the northern edge to development, rather than assuming that the line of the UGB dictates the development edge.

Option 5 provides a rural living transitional approach to the interface between rural land to the north and the development of the PEPSP to the south.

In terms of developable land and lot yields, the summary contained in Attachment 2, and briefly outlined above for each option, provides a clear indication of potential yields and requirements for infrastructure (roads and linear trail/ open space development). A snapshot comparing the options is outlined below:

	Option 1	Option 2	Option 3	Option 4	Option 5
Net Residential Area	32.84 ha	25.34 ha	11.56 ha	3.17 ha	36.96 ha
Lot Yield Estimate (total)	106	88	88	40	33
Public Open Space area	4.97 ha	15.98 ha	27.87 ha	2.65 ha	3.96 ha
Length of proposed new roads	1704 lin m	1437 lin m	1395 lin m	403 lin m	1410 lin m
Length of proposed linear trail	0 m	1639 lin m	2215 lin m	0 lin m	0 lin m

In terms of development lot yields, options 2 and 3 provide a comparable potential overall yield of 88 lots, with the significant difference being whether there is a large area of land provided as public open space under the easement, or retained as partially private and part public.

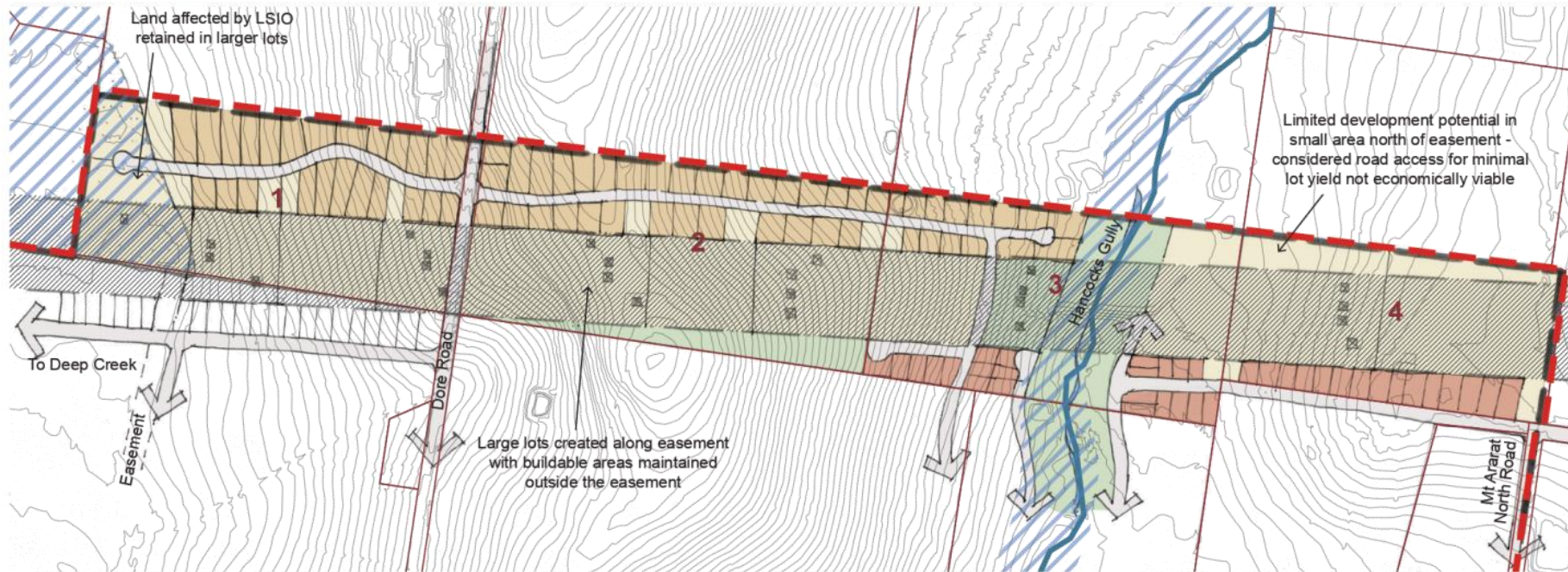
Options 4 and 5 provide a comparable potential overall yield, the major differences being that Option 4 provides no development potential for properties 1 and 2, whereas Option 5 provides a consistent approach for development across the 4 properties. The major issue in implementing Option 5 - is the significant amount of road construction that will be required to service the 2.0ha lots.

4 Conclusion

There are varied opportunities for development within and along the transmission easement through the PEPSP. The eventual preferred solution should be determined in conjunction with the overall design response to land to the south of the transmission easement, as there are many other factors that will influence the best solution for the land affected by the easement. Each design response option in this report presents different combinations of development and open space, each of which has differing impacts on lot yield and required infrastructure investment. The eventual design solution will likely require combining elements from multiple scenarios.

5 Attachment

1. Transmission Easement Development Scenarios
2. Development Analysis Summaries



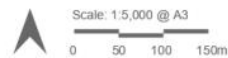
- LEGEND**
- Pakeham East PSP Boundary
 - Transmission Easement
 - Transmission Towers
 - Property Boundaries
 - Land subject to Inundation (LSIO)
 - Suggested Road Network
 - Lots in Transmission Easement (2ha)
 - Lower Density Lots (1500m²+)
 - Standard Density Lots (800 - 1500m²+)
 - Linear Open Space
 - Contours (1m intervals)

Note:
 These plans are indicative only, and the lot layout shown is conceptual and based on preliminary site information only.
 For detailed yield estimates, the development analysis tables accompanying these plans should be relied upon rather than the sketch lot layout shown.

Transmission Easement Development Scenario: Sketch Option 1 - Full Development
 Pakenham East Precinct Structure Plan



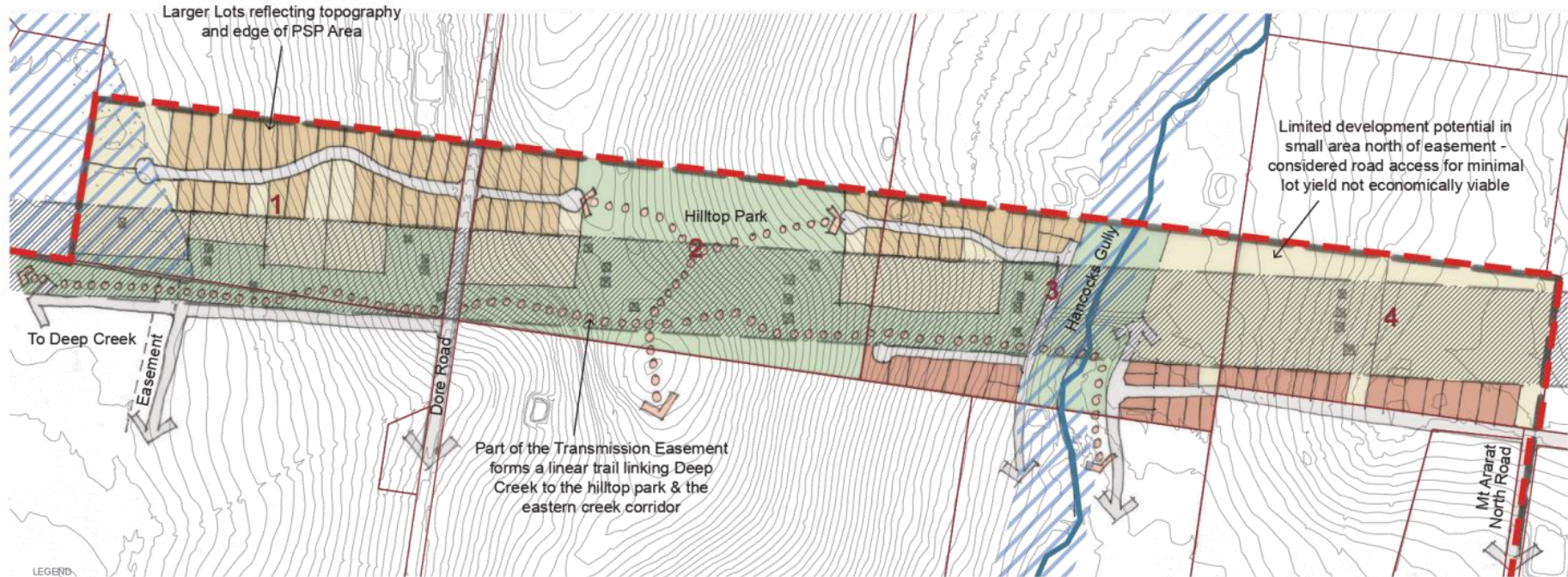
Revision	Date	Description	Checked
B	4/02/13	Adding more Lower Density Lots, and Hilltop Park area	DS/MM / 4/02/13
A	21/01/13	Transmission Easement Development Option 1	MH / 21/01/13



ref: 3410608U
 date: 4 Feb 2013
 rev: B
 drawn: RL
 checked: DS/MMH

please note:
 This plan is based on preliminary information only and may be subject to change as a result of formal Council/Authority advice, detailed site investigations and confirmation by survey

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- LEGEND
- Pakeham East PSP Boundary
 - Transmission Easement
 - Transmission Towers
 - Property Boundaries
 - Land subject to inundation (LSIO)
 - Suggested Road Network
 - Lots in Transmission Easement (2ha)
 - Lower Density Lots (1500m²+)
 - Standard Density Lots (800 - 1500m²+)
 - Trail Network
 - Linear Open Space
 - Contours (1m intervals)

Note:
 These plans are indicative only, and the lot layout shown is conceptual and based on preliminary site information only.
 For detailed yield estimates, the development analysis tables accompanying these plans should be relied upon rather than the sketch lot layout shown.

Transmission Easement Development Scenario: Sketch Option 2 - Linear Trail Network
 Pakenham East Precinct Structure Plan



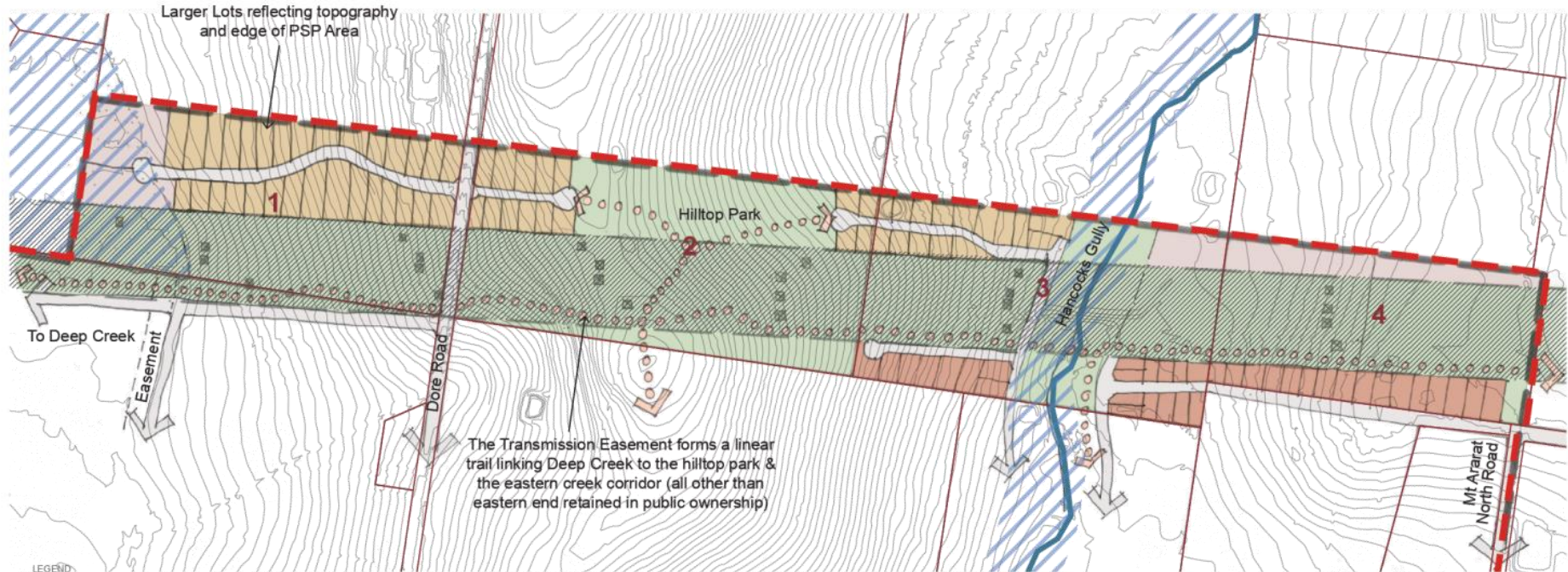
Revision	Date	Description	Checked
8	4/02/13	Transmission Easement Development Option 2	DS/MM / 4/02/13



ref: 3410808U
 date: 4 Feb 2013
 rev: 8
 drawn: RL
 checked: DS/MMH

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- LEGEND:
- Pakeham East PSP Boundary
 - Transmission Easement
 - Transmission Towers
 - Property Boundaries
 - Land subject to inundation (LSIO)
 - Suggested Road Network
 - Rural Living Lots / Rural Lots
 - Lower Density Lots (1500m²+)
 - Standard Density Lots (800 - 1500m²+)
 - Trail Network
 - Linear Open Space
 - Contours (1m intervals)

Note:
 These plans are indicative only, and the lot layout shown is conceptual and based on preliminary site information only.
 For detailed yield estimates, the development analysis tables accompanying these plans should be relied upon rather than the sketch lot layout shown.

Transmission Easement Development Scenario: Sketch Option 3 - Public Use of Easement
 Pakenham East Precinct Structure Plan



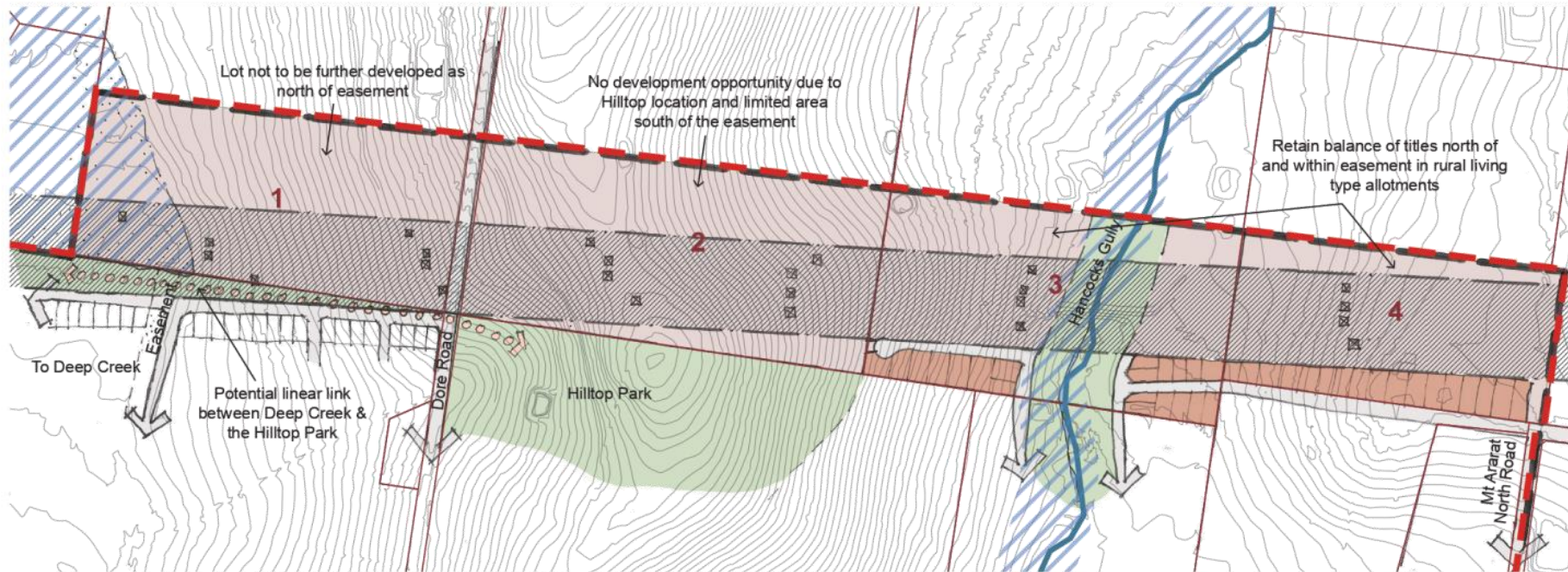
Revision	Date	Description	Checked
B	4/02/13	Removal of Lots within Transmission Easement, changing surrounding to Rural Lots	MH/OS / 4/02/13
A	21/01/13	Transmission Easement Development Option 3	MW/ 21/01/13



ref: 3410608U
 date: 4 Feb 2013
 rev: B
 drawn: RL
 checked: DS/MH

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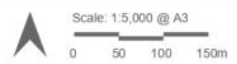
- LEGEND
- Pakeham East PSP Boundary
 - Transmission Easement
 - Transmission Towers
 - Property Boundaries
 - Land subject to Inundation (LSIO)
 - Suggested Road Network
 - Rural Living Lots
 - Standard Density Lots (800 - 1500m²+)
 - Trail Network
 - Open Space
 - Contours (1m intervals)

Note:
 These plans are indicative only, and the lot layout shown is conceptual and based on preliminary site information only.
 For detailed yield estimates, the development analysis tables accompanying these plans should be relied upon rather than the sketch lot layout shown.

Transmission Easement Development Scenario: Sketch Option 4 - No Development North of Easement
 Pakenham East Precinct Structure Plan



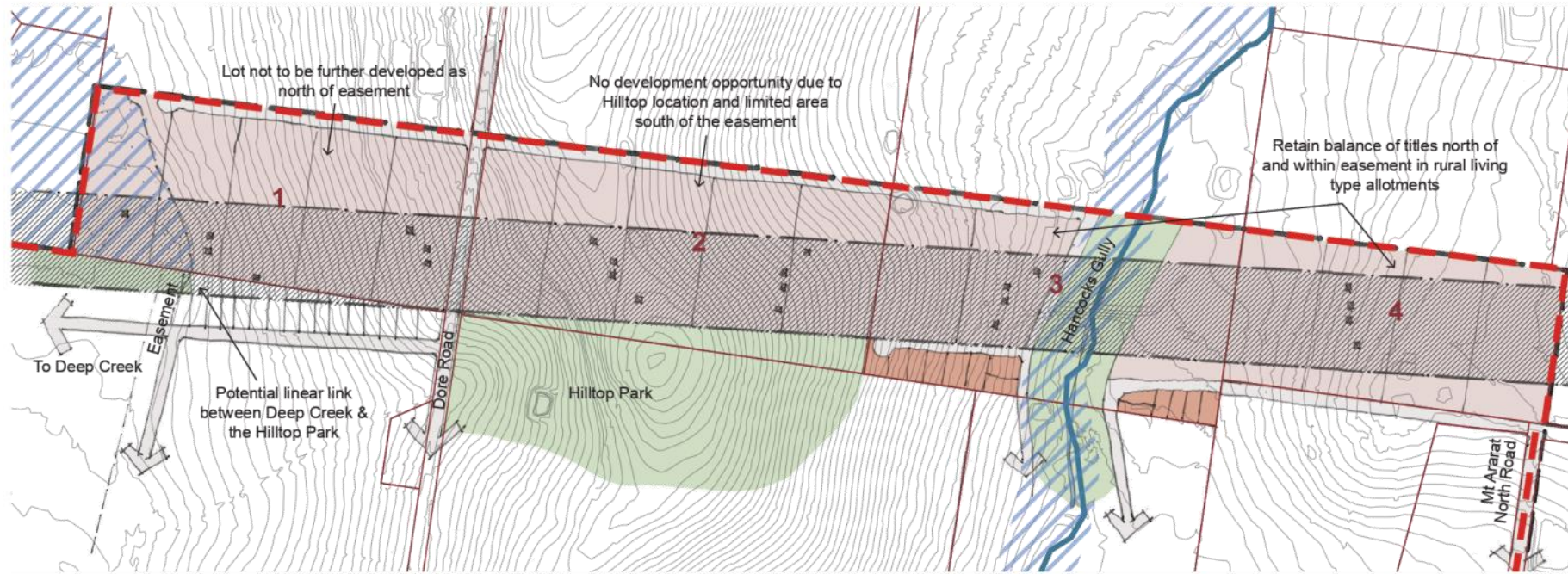
Revision	Date	Description	Checked
C	4/03/13	Rural Living Lots Colour change	DS/MM / 4/03/13
B	4/02/13	Transmission Easement Development Option 4	DS/MM / 4/02/13



ref: 341080BU
 date: 4 March 2013
 rev: C
 drawn: RL
 checked: DS/MMH

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- LEGEND
- Pakeham East PSP Boundary
 - Transmission Easement
 - Transmission Towers
 - Property Boundaries
 - Land subject to Inundation (LSIO)
 - Suggested Road Network
 - Rural Living Lots
 - Lower Density Lots (1500m²+)
 - Standard Density Lots (800 - 1500m²+)
 - Open Space
 - Contours (1m intervals)

Note:
 These plans are indicative only, and the lot layout shown is conceptual and based on preliminary site information only.
 For detailed yield estimates, the development analysis tables accompanying these plans should be relied upon rather than the sketch lot layout shown.



Transmission Easement Development Scenario: Sketch Option 5 - Rural Lots
 Pakenham East Precinct Structure Plan



Revision	Date	Description	Checked
A	4/02/13	Transmission Easement Development Option 5	DS/MM / 4/02/13



ref: 3410808U
 date: 4 Feb 2013
 rev: A
 drawn: RL
 checked: DS/MMH

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Pakenham East PSP - Transmission Easement Development Scenarios - Summary Development Analysis

Development Analysis: Transmission Easement Development Scenario: Sketch Option 1 - Full Development										
	Property 1		Property 2		Property 3		Property 4		Overall	
130304 / 06w4										
Total Site Area	11.01 ha %NTSA		12.71 ha %NTSA		11.59 ha %NTSA		8.42 ha %NTSA		43.73 ha %NTSA	
Area within Transmission easement	4.91 ha		6.47 ha		5.68 ha		5.26 ha		22.32 ha	
Encumbered Land Non developable	0.00 ha 0.00 ha 0%		0.00 ha 0.00 ha 0%		0.00 ha 0.00 ha 0%		0.00 ha 0.00 ha 0%		0.00 ha 0.00 ha 0%	
Gross Developable Area	11.01 ha %GDA		12.71 ha %GDA		11.59 ha %GDA		8.42 ha %GDA		43.73 ha %GDA	
Public Open Space	0.00 ha 0%		1.31 ha 10%		3.66 ha 32%		0.00 ha 0%		4.97 ha 11%	
Pasive Open Space	0.00 ha 0%		1.31 ha 10%		3.66 ha 32%		0.00 ha 0%		4.97 ha 11%	
Net Developable Area	11.01 ha %NDA		11.40 ha %NDA		7.93 ha %NDA		8.42 ha %NDA		38.76 ha %NDA	
Roads	0.76 ha 7%		0.80 ha 7%		1.31 ha 17%		0.00 ha 0%		2.93 ha 7%	
Local & Connector Streets	0.76 ha		0.80 ha		1.31 ha		0.00 ha		2.93 ha	
Net Residential Area	10.25 ha 93%		10.54 ha 93%		6.62 ha 84%		8.42 ha 100%		35.83 ha 82%	
Lots in Transmission easement	6.67 ha		6.80 ha		3.72 ha		6.98 ha		24.17 ha	
Lower Density Housing	3.58 ha		3.74 ha		1.35 ha		0.00 ha		8.67 ha	
Standard Density Housing	0.00 ha		0.00 ha		1.55 ha		1.44 ha		2.99 ha	
Lot Yield Estimate										
Lots in Transmission easement	3 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00		3 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00		2 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00		3 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00		11 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00	
Lower Density Housing	24 lots Avg. lot size (sq) 1500		25 lots Avg. lot size (sq) 1500		9 lots Avg. lot size (sq) 1500		0 lots Avg. lot size (sq) 1500		58 lots Avg. lot size (sq) 1500	
Standard Density Housing	0 lots Avg. lot size (sq) 800		0 lots Avg. lot size (sq) 800		19 lots Avg. lot size (sq) 800		18 lots Avg. lot size (sq) 800		37 lots Avg. lot size (sq) 800	
Total Lots	27 lots		26 lots		30 lots		21 lots		106 lots	
Length of proposed linear trails	0 lm		0 lm		0 lm		0 lm		0 lm	
Length of proposed new roads	465 lm		533 lm		726 lm		0 lm		1704 lm	

Development Analysis: Transmission Easement Development Scenario: Sketch Option 2 - Linear Trail Network										
	Property 1		Property 2		Property 3		Property 4		Overall	
130304 / 06w4										
Total Site Area	11.01 ha %NTSA		12.71 ha %NTSA		11.59 ha %NTSA		8.42 ha %NTSA		43.73 ha %NTSA	
Area within Transmission easement	4.91 ha		6.47 ha		5.68 ha		5.26 ha		22.32 ha	
Encumbered Land Non developable	0.00 ha 0.00 ha 0%		0.00 ha 0.00 ha 0%		0.00 ha 0.00 ha 0%		0.00 ha 0.00 ha 0%		0.00 ha 0.00 ha 0%	
Gross Developable Area	11.01 ha %GDA		12.71 ha %GDA		11.59 ha %GDA		8.42 ha %GDA		43.73 ha %GDA	
Public Open Space	2.44 ha 22%		9.40 ha 75%		4.06 ha 35%		0.00 ha 0%		15.90 ha 37%	
Pasive Open Space	2.44 ha 22%		9.40 ha 75%		4.06 ha 35%		0.00 ha 0%		15.90 ha 37%	
Net Developable Area	8.57 ha %NDA		3.23 ha %NDA		7.53 ha %NDA		8.42 ha %NDA		27.75 ha %NDA	
Roads	0.76 ha 7%		0.34 ha 3%		1.31 ha 17%		0.00 ha 0%		2.41 ha 6%	
Local & Connector Streets	0.76 ha		0.34 ha		1.31 ha		0.00 ha		2.41 ha	
Net Residential Area	7.81 ha 71%		2.89 ha 23%		6.22 ha 54%		8.42 ha 100%		25.34 ha 58%	
Lots in Transmission easement	4.31 ha		1.00 ha		3.34 ha		7.01 ha		16.26 ha	
Lower Density Housing	3.50 ha		1.29 ha		1.30 ha		0.00 ha		6.09 ha	
Standard Density Housing	0.00 ha		0.00 ha		1.58 ha		1.41 ha		2.99 ha	
Lot Yield Estimate										
Lots in Transmission easement	2 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00		1 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00		2 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00		4 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00		9 lots Avg. lot size (sq) 2.00 Avg. lot size (sq) 2.00	
Lower Density Housing	23 lots Avg. lot size (sq) 1500		9 lots Avg. lot size (sq) 1500		9 lots Avg. lot size (sq) 1500		0 lots Avg. lot size (sq) 1500		41 lots Avg. lot size (sq) 1500	
Standard Density Housing	0 lots Avg. lot size (sq) 800		0 lots Avg. lot size (sq) 800		20 lots Avg. lot size (sq) 800		18 lots Avg. lot size (sq) 800		38 lots Avg. lot size (sq) 800	
Total Lots	25 lots		10 lots		31 lots		22 lots		88 lots	
Length of proposed linear trails	204 lm		1050 lm		385 lm		0 lm		1629 lm	
Length of proposed new roads	454 lm		155 lm		828 lm		0 lm		1437 lm	

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Pakenham East PSP - Transmission Easement Development Scenarios - Summary Development Analysis

Development Analysis: Transmission Easement Development Scenario: Sketch Option 3 - Public Use of Easement										
	Property 1		Property 2		Property 3		Property 4		Overall	
130304 / RevA	NTSA		NTSA		NTSA		NTSA		NTSA	
Total Site Area	11.01 ha		12.71 ha		11.59 ha		8.42 ha		43.73 ha	
Area within Transmission easement	4.91 ha		6.47 ha		5.68 ha		5.26 ha		22.32 ha	
Encumbered Land	0.00 ha 0%		0.00 ha 0%		0.46 ha 4%		1.50 ha 18%		1.96 ha 4%	
Non developable	0.00 ha		0.00 ha		0.46 ha		1.50 ha		1.96 ha	
Gross Developable Area	11.01 ha %GDA		12.71 ha %GDA		11.13 ha %GDA		6.92 ha %GDA		41.77 ha %GDA	
Public Open Space	4.91 ha 44%		10.89 ha 86%		6.79 ha 61%		5.26 ha 76%		27.81 ha 67%	
Precision Open Space	4.91 ha 44%		10.89 ha 86%		6.79 ha 61%		5.26 ha 76%		27.81 ha 67%	
Net Developable Area	6.10 ha %GDA %MGA		1.82 ha %GDA %MGA		4.34 ha %GDA %MGA		1.66 ha %GDA %MGA		13.92 ha %GDA %MGA	
Roads	0.71 ha 6% 17%		0.34 ha 3% 19%		1.31 ha 12% 30%		0.00 ha 0% 0%		2.36 ha 6% 17%	
Local & Connector Streets	0.71 ha		0.34 ha		1.31 ha		0.00 ha		2.36 ha	
Net Residential Area	5.39 ha 49% 80%		1.46 ha 12% 81%		3.03 ha 27% 70%		1.66 ha 24% 100%		11.54 ha 28% 83%	
Lots in Transmission easement / Flood Overlay	1.41 ha		0.00 ha		0.00 ha		0.00 ha		1.41 ha	
Lower Density Housing	3.98 ha		1.46 ha		1.39 ha		0.00 ha		6.85 ha	
Standard Density Housing	0.00 ha		0.00 ha		1.64 ha		1.66 ha		3.30 ha	
Lot Yield Estimate										
Lots in Transmission easement / Flood Overlay	1 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)		0 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)		0 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)		0 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)		1 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)	
Lower Density Housing	27 lots 1500		10 lots 1500		9 lots 1500		0 lots 1500		46 lots 1500	
Standard Density Housing	0 lots 800		0 lots 800		21 lots 800		20 lots 800		41 lots 800	
Total Lots	28 lots		10 lots		30 lots		20 lots		88 lots	
Length of proposed linear trails	204 lm		1050 lm		532 lm		429 lm		2215 lm	
Length of proposed new roads	412 lm		155 lm		828 lm		0 lm		1395 lm	

Development Analysis: Transmission Easement Development Scenario: Sketch Option 4 - No Development north of easement										
	Property 1		Property 2		Property 3		Property 4		Overall	
130304 / RevA	NTSA		NTSA		NTSA		NTSA		NTSA	
Total Site Area	11.01 ha		12.71 ha		11.59 ha		8.42 ha		43.73 ha	
Area within Transmission easement	4.91 ha		6.47 ha		5.68 ha		5.26 ha		22.32 ha	
Encumbered Land	11.01 ha 100%		12.71 ha 100%		6.61 ha 57%		6.89 ha 82%		37.22 ha 85%	
Non developable (bural land)	11.01 ha		12.71 ha		6.61 ha		6.89 ha		37.22 ha	
Gross Developable Area	0.00 ha %GDA		0.00 ha %GDA		4.98 ha %GDA		1.53 ha %GDA		6.51 ha %GDA	
Public Open Space	0.00 ha 0%		0.00 ha 0%		2.65 ha 53%		0.00 ha 0%		2.65 ha 41%	
Precision Open Space	0.00 ha 0%		0.00 ha 0%		2.65 ha 53%		0.00 ha 0%		2.65 ha 41%	
Net Developable Area	0.00 ha %GDA %MGA		0.00 ha %GDA %MGA		2.33 ha %GDA %MGA		1.53 ha %GDA %MGA		3.86 ha %GDA %MGA	
Roads	0.00 ha 0% 0%		0.00 ha 0% 0%		0.69 ha 14% 36%		0.00 ha 0% 0%		0.69 ha 11% 18%	
Local & Connector Streets	0.00 ha		0.00 ha		0.69 ha		0.00 ha		0.69 ha	
Net Residential Area	0.00 ha 0% 0%		0.00 ha 0% 0%		1.64 ha 33% 70%		1.53 ha 100% 100%		3.17 ha 49% 83%	
Lots in Transmission easement	0.00 ha		0.00 ha		0.00 ha		0.00 ha		0.00 ha	
Lower Density Housing	0.00 ha		0.00 ha		0.00 ha		0.00 ha		0.00 ha	
Standard Density Housing	0.00 ha		0.00 ha		1.64 ha		1.53 ha		3.17 ha	
Lot Yield Estimate										
Lots in Transmission easement	0 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)		0 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)		0 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)		0 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)		0 lots Ave. lot size (ha) 2.00 Ave. lot size (sq ft)	
Lower Density Housing	0 lots 1500		0 lots 1500		0 lots 1500		0 lots 1500		0 lots 1500	
Standard Density Housing	0 lots 800		0 lots 800		21 lots 800		19 lots 800		40 lots 800	
Total Lots	0 lots		0 lots		21 lots		19 lots		40 lots	
Length of proposed linear trails	0 lm		0 lm		0 lm		0 lm		0 lm	
Length of proposed new roads	0 lm		0 lm		403 lm		0 lm		403 lm	

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Pakenham East PSP - Transmission Easement Development Scenarios - Summary Development Analysis

Development Analysis: Transmission Easement Development Scenario: Sketch Option 5 - Rural lots					
	Property 1	Property 2	Property 3	Property 4	Overall
130304 / RevA					
Total Site Area	11.01 ha	12.71 ha	11.59 ha	8.42 ha	43.73 ha
Area within Transmission easement	4.91 ha	6.47 ha	5.68 ha	5.26 ha	22.32 ha
Encumbered Land	0.00 ha	0.00 ha	0.00 ha	0.00 ha	0.00 ha
Non developable	0.00 ha	0.00 ha	0.00 ha	0.00 ha	0.00 ha
Gross Developable Area	11.01 ha	12.71 ha	11.59 ha	8.42 ha	43.73 ha
Public Open Space	0.00 ha	1.37 ha	2.63 ha	0.00 ha	3.96 ha
Precative Open Space	0.00 ha	1.37 ha	2.63 ha	0.00 ha	3.96 ha
Net Developable Area	11.01 ha	11.40 ha	8.94 ha	8.42 ha	39.77 ha
Roads	0.66 ha	0.85 ha	1.30 ha	0.00 ha	2.81 ha
Local & Connector Streets	0.66 ha	0.85 ha	1.30 ha	0.00 ha	2.81 ha
Net Residential Area	10.35 ha	10.55 ha	7.64 ha	8.42 ha	36.96 ha
Lots in Transmission easement	10.35 ha	10.55 ha	6.36 ha	8.42 ha	35.70 ha
Lower Density Housing	0.00 ha	0.00 ha	0.00 ha	0.00 ha	0.00 ha
Standard Density Housing	0.00 ha	0.00 ha	1.26 ha	0.00 ha	1.26 ha
Lot Yield Estimate					
Lots in Transmission easement	Ave. lot size (ha) 5 lots 2.00	Ave. lot size (ha) 5 lots 2.00	Ave. lot size (ha) 3 lots 2.00	Ave. lot size (ha) 4 lots 2.00	Ave. lot size (ha) 17 lots 2.00
Lower Density Housing	0 lots 1500	0 lots 1500	0 lots 1500	0 lots 1500	0 lots 1500
Standard Density Housing	0 lots 800	0 lots 800	16 lots 800	0 lots 800	16 lots 800
Total Lots	5 lots	5 lots	19 lots	4 lots	33 lots
Length of proposed linear trails	0 km	0 km	0 km	0 km	0 km
Length of proposed new roads	380 km	530 km	500 km	0 km	1410 km

Pakenham East PSP - Transmission Easement Development Scenarios - Summary Development Analysis

Development Analysis - Summary for each Scenario															
	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5		
130304 / Block	43.73 ha			43.73 ha			43.73 ha			43.73 ha			43.73 ha		
Total Site Area	43.73 ha			43.73 ha			43.73 ha			43.73 ha			43.73 ha		
Area within Transmission easement	22.32 ha			22.32 ha			22.32 ha			22.32 ha			22.32 ha		
Encumbered Land	0.00 ha			0.00 ha			1.96 ha			37.22 ha			0.00 ha		
Non developable	0.00 ha			0.00 ha			1.96 ha			37.22 ha			0.00 ha		
Gross Developable Area	43.73 ha			43.73 ha			41.77 ha			6.51 ha			43.73 ha		
Public Open Space	4.97 ha			15.90 ha			27.85 ha			2.65 ha			3.96 ha		
Private Open Space	4.97 ha			15.90 ha			27.85 ha			2.65 ha			3.96 ha		
Net Developable Area	38.76 ha			27.75 ha			13.92 ha			3.86 ha			39.77 ha		
Roads	5.92 ha			2.41 ha			2.36 ha			0.69 ha			2.81 ha		
Local & Connector Streets	5.92 ha			2.41 ha			2.36 ha			0.69 ha			2.81 ha		
Net Residential Area	32.84 ha			25.34 ha			11.56 ha			3.17 ha			38.96 ha		
Lots in Transmission easement	24.17 ha			16.20 ha			1.41 ha			0.00 ha			35.70 ha		
Lower Density Housing	8.67 ha			6.00 ha			0.00 ha			0.00 ha			0.00 ha		
Standard Density Housing	2.99 ha			2.99 ha			3.30 ha			3.17 ha			1.26 ha		
Lot Yield Estimate															
Lots in Transmission easement	11 lots			9 lots			1 lots			0 lots			17 lots		
	Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)		
	2.00			2.00			2.00			2.00			2.00		
Lower Density Housing	58 lots			41 lots			46 lots			0 lots			0 lots		
	Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)		
	1500			1500			1500			1500			1500		
Standard Density Housing	37 lots			30 lots			41 lots			40 lots			16 lots		
	Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)			Avg. lot size (sq)		
	800			800			800			800			800		
Total Lots	106 lots			88 lots			88 lots			40 lots			33 lots		
Length of proposed linear trails	0 km			1639 km			2215 km			0 km			0 km		
Length of proposed new roads	1704 km			1497 km			1895 km			403 km			1410 km		