



Whittlesea Amendment C241

Shenstone Park Precinct Structure Plan

Planning Evidence of David Barnes
Hansen Partnership

On behalf of Ouson

6 November 2020

© Hansen Partnership 2020.

This document has been published by
Hansen Partnership Pty Ltd.

Hansen Partnership

Level 4 136 Exhibition St
Melbourne VIC 3000
T 03 9654 8844
E info@hansenpartnership.com.au
W hansenpartnership.com.au

ABN 20 079 864 716

This document is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any person or process without the prior written permission of Hansen Partnership.

Contents

1.	Introduction.....	4
2.	Summary of Opinions	5
3.	Key Plans and Images	7
3.1.	Melbourne 2050 Spatial Framework	7
3.2.	Northern Growth Corridor Plan.....	8
3.3.	Precinct Structure Plan	9
3.4.	Updated Precinct Structure Plan	9
3.5.	Existing and Proposed Zoning	10
4.	Amendment C241	11
4.1.	Changes to the Planning Scheme	11
4.2.	Shenstone Park PSP.....	12
5.	1100 Donnybrook Road	13
5.1.	Land	13
5.2.	Ouson's Submission.....	15
6.	Phillips Quarry	16
6.1.	Current Permit	16
6.2.	Work Authority Application (WA006852)	17
6.3.	Lack of certainty	18
7.	Policy context.....	19
7.1.	Relevant State and Regional Planning Policy	19
7.2.	Relevant State Extractive Resources Policy	22
7.3.	Policies and guidelines regarding buffers	23
8.	Planning implications of the Phillips Quarry on the Ouson land	26
8.1.	Implication of land being identified as a "future residential area"	26
8.2.	Planning status of the Phillips Quarry	27

8.3.	Should buffers be mandatory or discretionary	27
8.4.	Where buffers should be measured from and who should own the land	28
8.5.	GHD Report for the VPA	29
8.6.	Shenstone Park PSP	30
8.7.	VPA Part A Submission	32
8.8.	Evidence of Tim Marks	33
8.9.	Directional dust buffer	33
8.10.	APA Safety Management Study	34
8.11.	Evidence of Marshall Day	35
8.12.	Conclusion in relation to buffers	35
8.13.	Modifications to the amendment documentation	36
9.	Public Open Space	37
9.1.	Credited Open Space	37
9.2.	Uncredited Open Space	41
10.	Access to Donnybrook Road	43
11.	Conclusion	44

Figures

<i>Figure 1: Melbourne 2050 Spatial Framework (Clause 11.01-1R of the Whittlesea Planning Scheme)</i>	7
<i>Figure 2: Northern Growth Corridor Plan</i>	8
<i>Figure 3 Draft Shenstone PSP Plan 3 - Future Urban Structure</i>	9
<i>Figure 4: Updated Draft Shenstone PSP Plan 3 Future Urban Structure - for Discussion, VPA Part A Submission</i>	9
<i>Figure 5: Existing Zoning</i>	10
<i>Figure 6: Proposed Zoning</i>	10
<i>Figure 7: 1100 Donnybrook Road aerial</i>	13
<i>Figure 8: Draft Shenstone Park PSP Plan 3 – Future Urban Structure (1100 Donnybrook Rd)</i>	14
<i>Figure 9: Endorsed Plans for Phillips Quarry (Permit: 704901)</i>	16
<i>Figure 10: Donnybrook Proposed Quarry Developments Figure 1 and 1a (Letter from Ponte Lawyer for Barrow, dated 2nd October, 2020, Annexure 6</i>	17
<i>Figure 11 - Proposed Earthen Bund (Letter from Ponte Lawyers for Barro, dated 2nd October, 2020, Annexure D)</i>	18
<i>Figure 12: Activity boundary to property boundary of sensitive use in an urban context (Source: EPA Recommended Separation Distances for Industrial Residual Air Emissions, page 13)</i>	25
<i>Figure 13 - Buffers recommended in the GHD report (Source GHD 2019, page v)</i>	30
<i>Figure 14 - Quarry Buffer, Plan 15 of the Panel Version of the PSP</i>	31
<i>Figure 15 - Vibration buffers recommended by Tim Marks, Expert Evidence for Ouson page 13)</i>	33
<i>Figure 17: Needs Analysis of OpenSpace and Recreation Facilities - 'Community Infrastructure & Open Space Needs Assessment (September 2019)'</i>	37
<i>Figure 18: Draft Shenstone Park PSP Plan 7 - Open Space</i>	38
<i>Figure 19: Updated Shenstone Park PSP Plan 7 - Open Space Plan</i>	39
<i>Figure 20: Ouson proposed Master Plan for 1100 Donnybrook Road</i>	40
<i>Figure 21: Draft Shenstone Park PSP Plan 12 - Integrated Water Management</i>	41
<i>Figure 22: Woodstock West Development Services Scheme (DSS) extract showing 1100 Donnybrook Road</i>	41
<i>Figure 23: Updated Draft Shenstone PSP Plan 12 - Integrated Water Management Plan</i>	42
<i>Figure 24: Draft Shenstone Park PSP Plan 10 - Street Network</i>	43

Appendices

Appendix	Curriculum Vitae
----------	------------------

1.Introduction

1. My name is David Barnes. I am the Managing Director of Hansen Partnership Pty Ltd, Urban Planning, Urban Design and Landscape Architecture, located at Level 4, 136 Exhibition Street, Melbourne.
2. I hold the following qualifications:
 - Bachelor of Town and Regional Planning (Hons), University of Melbourne, 1980.
 - Master of Business Administration, Royal Melbourne Institute of Technology, 1993.
3. I have practiced as a town planner for over 40 years, working in the public and private sectors. I have also worked overseas in Vietnam on a variety of statutory planning, strategic planning, institutional strengthening and tourism projects.
4. I am both a statutory and strategic planner. My planning experience covers many aspects of the planning approvals process on a range of projects, including residential, commercial, industrial, retail, mixed use and rural developments.
5. I have been engaged by Hall & Wilcox on behalf of 1100 Donnybrook Developments Pty Ltd, a related entity of Ouson, to review the planning merits of Amendment C241 to the Whittlesea Planning Scheme, with a focus on the issues raised by Ouson in their submission to the amendment (Submission 20).
6. Key documents I have referred to and relied upon in preparing my evidence are referenced throughout my report.
7. I have had regard to Planning Panels Victoria's Guide to Expert Evidence in preparing my evidence.
8. I have been assisted in the preparation of this statement by Joel Schmetzer, a planner from my office.
9. A copy of my Curriculum Vitae is provided in Appendix 1.

2. Summary of Opinions

10. A summary of my opinions follows:

- Amendment C241 proposes to implement and incorporate the 'Shenstone Park Precinct Structure Plan' (PSP) into the Whittlesea Planning Scheme by introducing Schedule 7 to the Urban Growth Zone (UGZ).
- Ouson owns Parcel 15 within the PSP area, which is located at 1100 Donnybrook Road.
- As far as relevant to planning matters, the Ouson submission expresses concerns about:
 - The extent of the Phillips Quarry buffers across its site and the application of the buffers based on the quarry's property boundary rather than existing approved excavation boundary within the site.
 - The impacts of the gas pipeline along the eastern boundary of the quarry.
 - The extent of uncredited POS associated with the Darebin Creek tributary.
 - The lack of formal access to the site from Donnybrook Road.
 - The location of the areas of open space within the property.
- The Phillips Quarry is subject to an existing planning permit that was extended in 2014. The original work authority for the site (WA160), which was surrendered by the previous owner, included an extraction boundary within the quarry site. If buffers were taken from that boundary, they would not affect residential land on the Ouson property.
- The current owner has indicated that they intend to apply for a new work authority and amend the existing planning permit that would allow extraction to extend to the northern boundary of the site. This would result in buffers affecting residential land on the Ouson site.
- State planning policy and planning guidelines require that buffers should be provided around quarries and be measured from the boundary of the activity rather than the property boundary and should be owned by, or under the control of, the proponent of the activity.
- The GHD report prepared for the VPA as background to the PSP, recommended that buffers should be measured from the extraction boundary, not from property boundaries. The assessment measures the buffers from the extraction boundary identified in the 1993 endorsed plans for the site. Such buffers would not affect residential development on the Ouson property.
- The buffers shown in the PSP differ from those recommended in the GHD report. They are taken from the boundary of the quarry site rather than from the approved extraction area. They extend onto residential land on the Ouson site.
- The VPA acknowledges that scope exists to vary the buffers, depending on expert evidence provided and the outcome of any conclave in relation to the matter.
- The evidence of Tim Marks for Ouson, recommends a reduction in the blasting vibration from 550 metres to 360 metres, measured from the extent of excavation. This buffer would not affect residential land on the Ouson site.
- Marks recommends a reverse buffer of at least 240 metres be applied to the extent of excavation on the Phillips Quarry site, from the APA pipeline. This would move buffers away from residential land on the Ouson Property.
- A Safety Management Study has been undertaken in relation to the gas pipeline that runs beside the Phillips Quarry and identifies a risk from blasting. It recommends the need to liaise with the operator of the quarry, and DJPR regarding the extent of the extraction license for the Phillips Quarry to protect the pipeline.

- Given the status of the existing planning permit and the lack of an approved work authority, there is no certainty regarding the detailed operational characters of a quarry on the site.
- Whilst considerable effort has gone into identifying buffers for the proposed Phillips Quarry to date, the detailed operational characteristics of the quarry need to be known before 'actual buffers' can be determined.
- The intent of the amendment appears to prohibit development on land identified as "future residential area", which is within the Phillips Quarry Sensitive Use Buffer, until the quarry resource has been excavated and buffers resolved. However, this is not clear.
- It is not appropriate to prohibit residential development within the buffer given the uncertainty that exists in relation to the operational characteristics and actual buffers that will be appropriate for an operational quarry on the site.
- Development within the buffer should be discretionary, to provide a permit trigger to require a full planning assessment of the appropriateness of residential development on the land within the buffer, at the time a planning permit application is lodged.
- The following modification are recommended to the amendment in relation to the quarry:
 - Modify relevant text and plans in the PSP (i.e. R19) and Schedule 7 to the Urban Growth Zone, to make development within the Phillips Quarry Sensitive Use Buffer, discretionary rather than mandatory.
 - Reduce the Phillips Quarry Sensitive Use Buffer from 550 metres to 450 metres, measured from the property boundary.
 - Delete reference to "future residential area" on all plans and in all text throughout the PSP and Schedule 7 to the Urban Growth Zone.
 - Delete the Blast Buffer and the Noise Buffer for the Phillips Quarry.
- In relation to open space:
 - The proposed alternate locations of open space as identified on the Master Plan prepared by Ouson are consistent with the Precinct Structure Planning Guidelines and will increase accessibility for future residents.
 - The Shenstone Park PSP should be updated to reflect the proposed alternate locations of open space.
 - The uncredited open space associated with the Darebin Creek Tributary has been amended as part of the VPA's Part A Submission, which has resolved inconsistencies with the Melbourne Water approved Development Services Scheme in this location.
- In relation to access, the Shenstone Park PSP should be updated to include reference to a left-in / left-out connection to Donnybrook Road to provide certainty for the future development of 1100 Donnybrook Road.

3.Key Plans and Images

3.1. Melbourne 2050 Spatial Framework



Figure 1: Melbourne 2050 Spatial Framework (Clause 11.01-1R of the Whittlesea Planning Scheme)

3.2. Northern Growth Corridor Plan

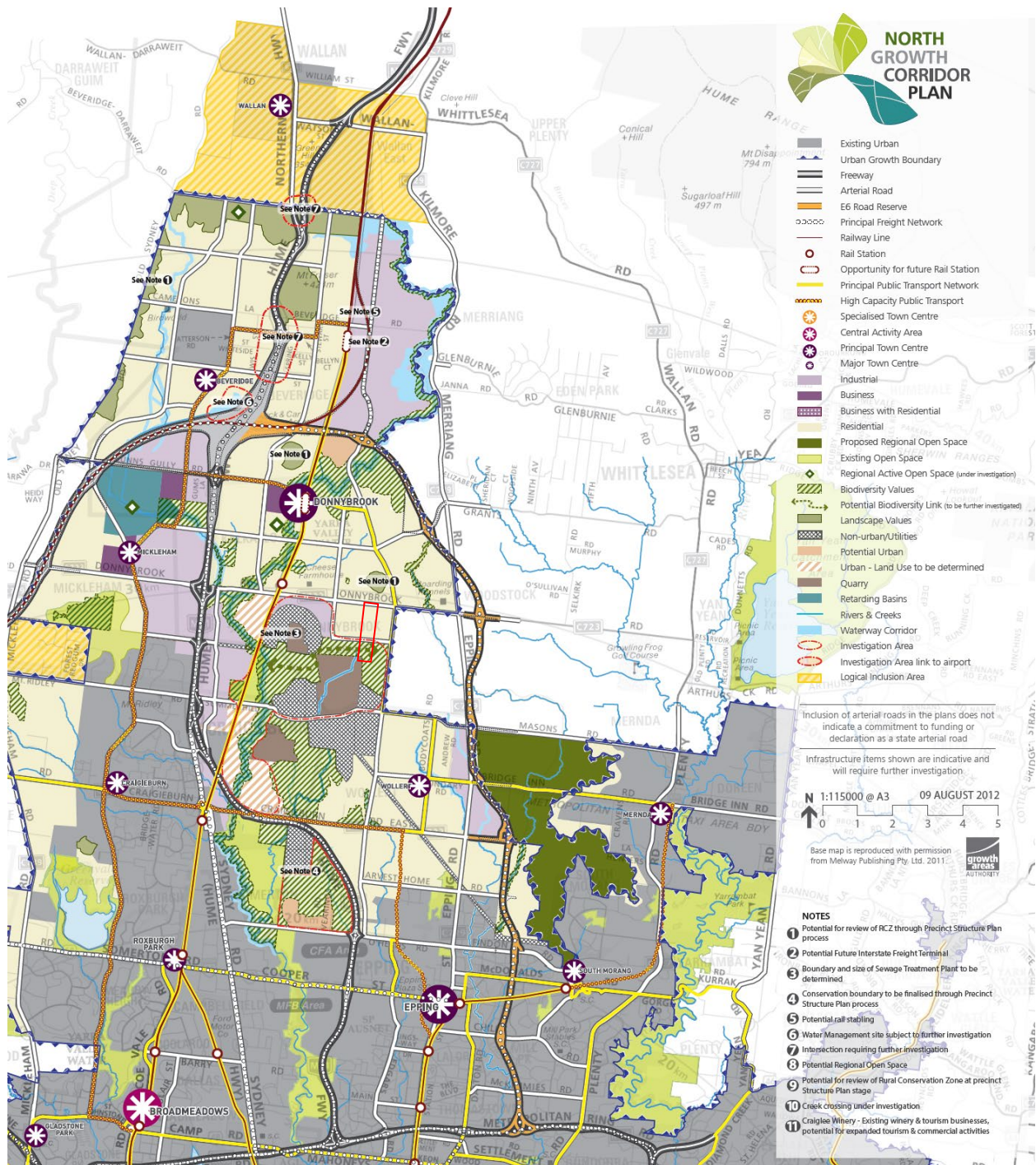


Figure 2: Northern Growth Corridor Plan

3.3. Precinct Structure Plan

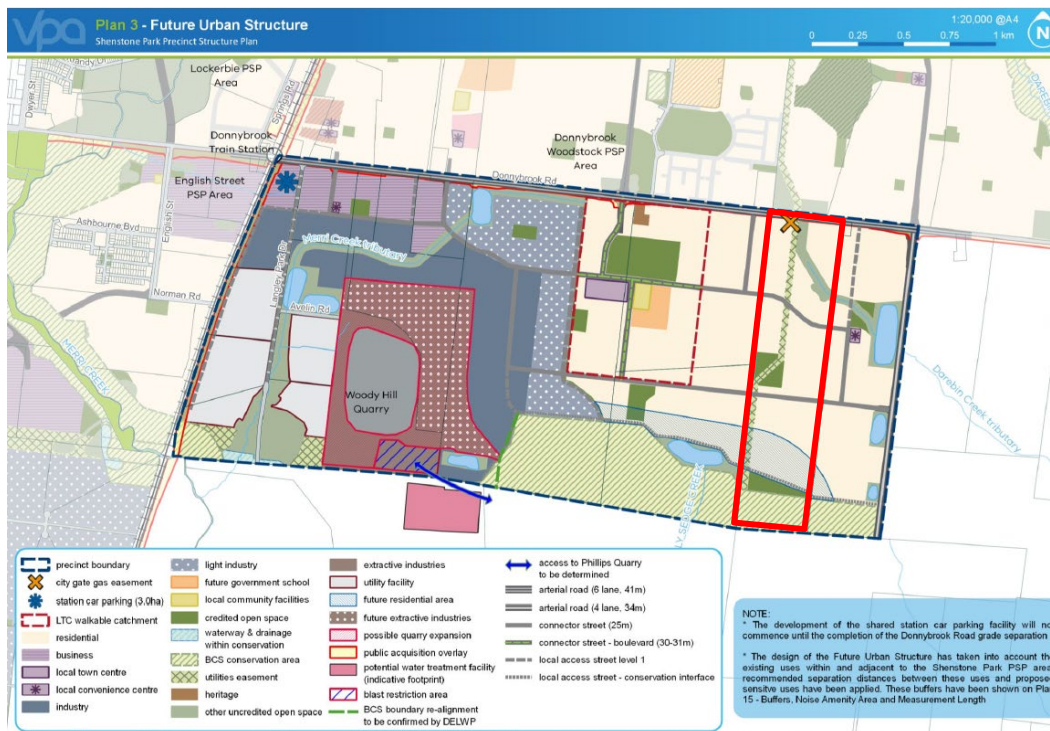


Figure 3 Draft Shenstone PSP Plan 3 - Future Urban Structure

3.4. Updated Precinct Structure Plan

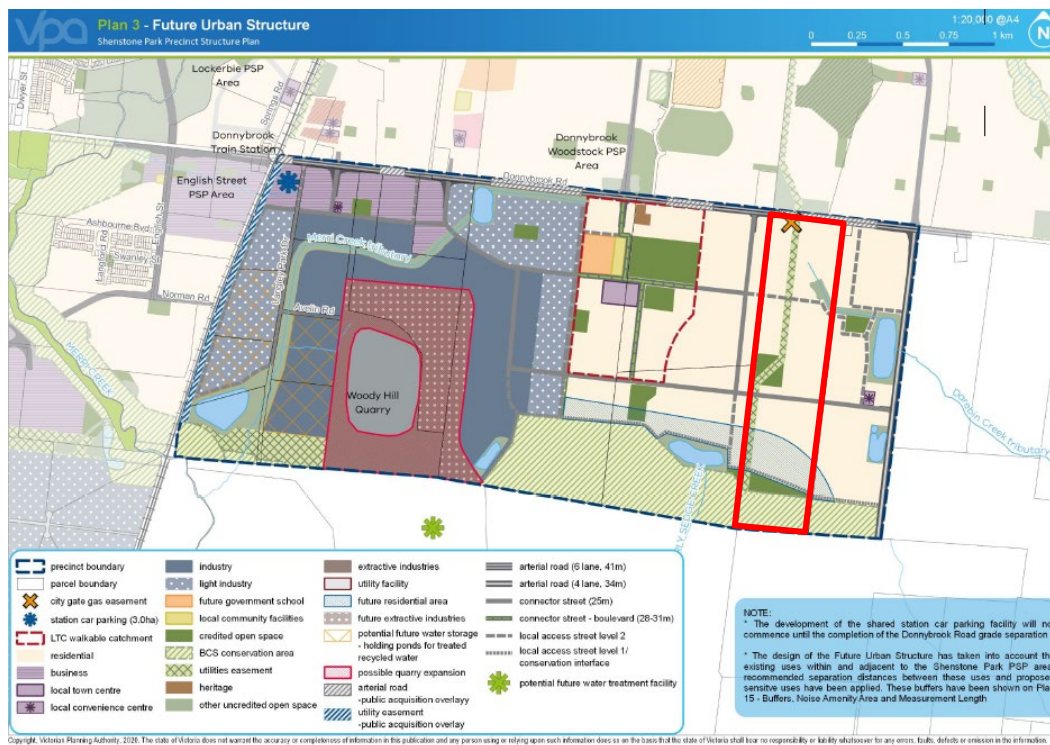


Figure 4: Updated Draft Shenstone PSP Plan 3 Future Urban Structure - for Discussion, VPA Part A Submission

3.5. Existing and Proposed Zoning

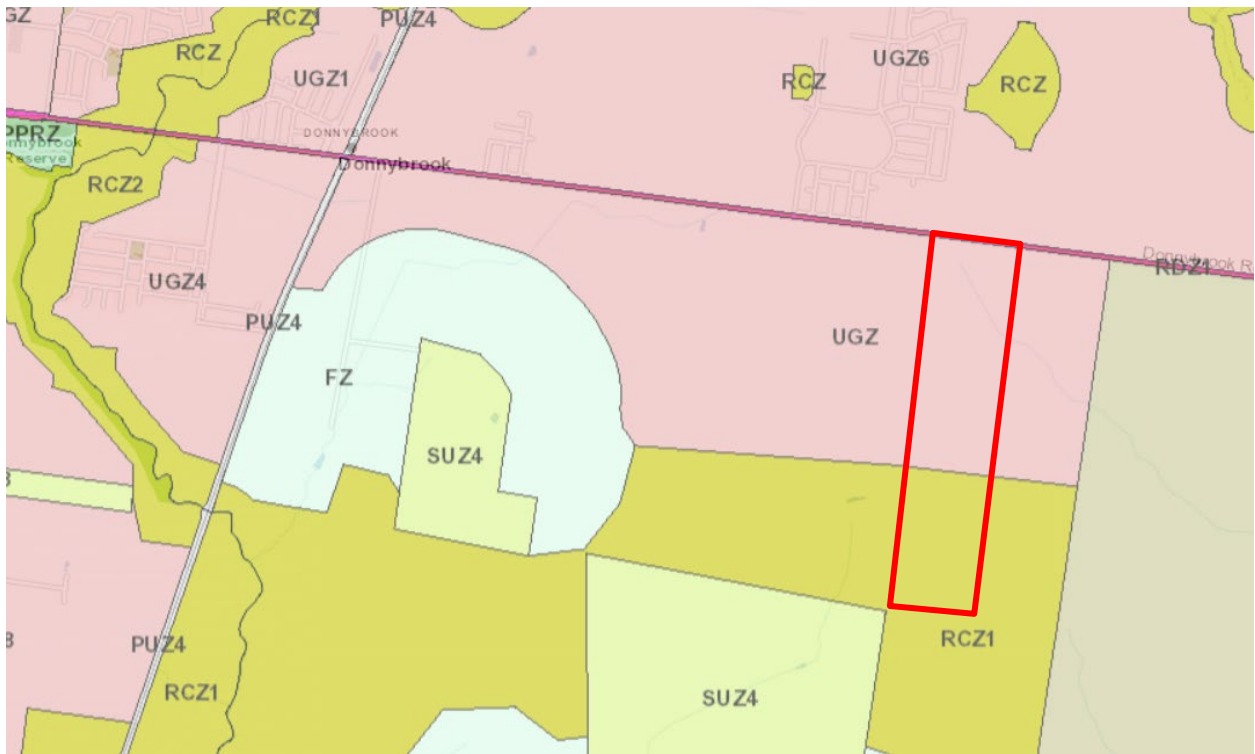


Figure 5: Existing Zoning

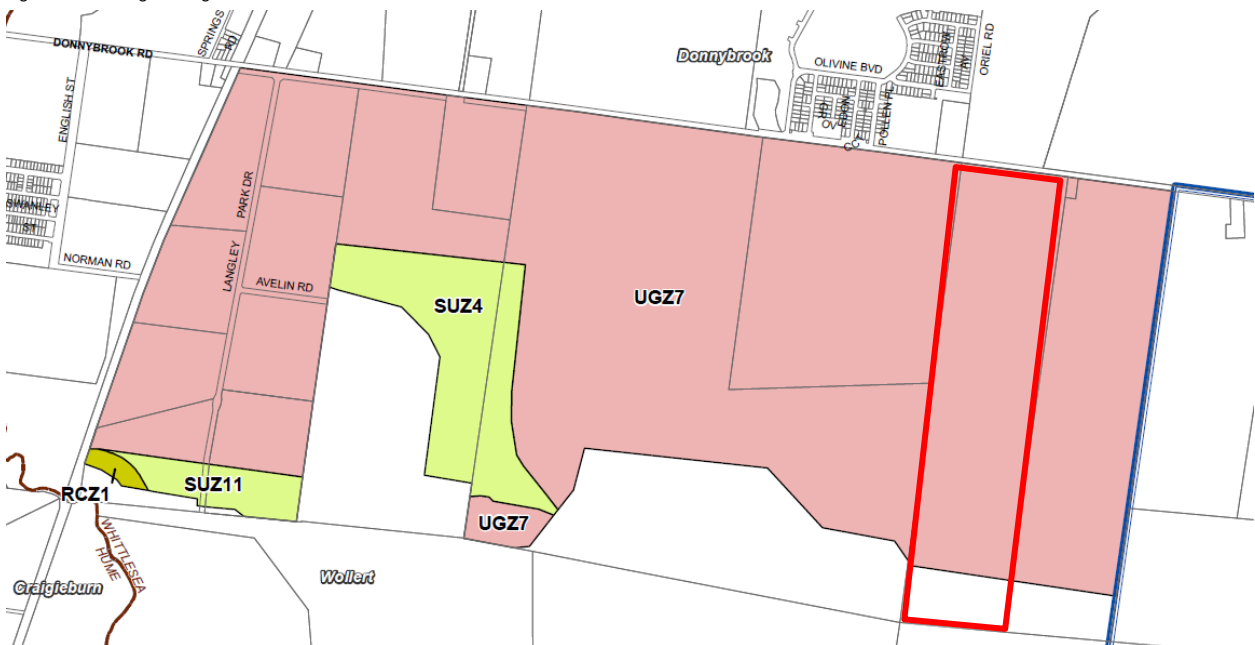


Figure 6: Proposed Zoning

4. Amendment C241

4.1. Changes to the Planning Scheme

11. As set out in the Explanatory Report for the amendment:

- Amendment C241 seeks to implement and incorporate the 'Shenstone Park Precinct Structure Plan' (PSP) into the Whittlesea Planning Scheme by introducing Schedule 7 to the Urban Growth Zone (UGZ).
- More specifically the amendment seeks to:
 - Rezone the majority of the PSP area to the Urban Growth Zone.
 - Rezone a portion of Farming Zone (FZ) land associated with the Woody Hill Quarry to the Special Use Zone (SUZ4).
 - Rezone land from Rural Conservation Zone (RCZ1) and Farming Zone (FZ) to UGZ7 to reflect changes to the boundary of Biodiversity Conservation Strategy (BCS) Conservation area 28.
 - Insert Schedule 11 to the Special Use Zone (SUZ) and rezone land from RCZ1 and FZ to SUZ11 that is within the transmission line easement.
 - Delete Schedule 4 and apply Schedule 6 to the Environmental Significance Overlay (ESO) within the Biodiversity Conservation Strategy.
 - Insert Schedule 8 to the Incorporated Plan Overlay (IPO) and apply IPO8 to land within the Biodiversity Conservation Strategy and zone to RCZ within the amendment area.
 - Insert Schedule 9 to the Incorporated Plan Overlay (IPO) and apply IPO9 to land zoned SUZ4 and SUZ11 within the amendment area which includes the existing and expanded Woody Hill Quarry and land within the transmission line easement, to ensure any future development within these areas is generally in accordance with the PSP.
 - Amend the Schedule to the Heritage Overlay and includes a new entry H0187 relating to 1030 Donnybrook Road, Donnybrook.
 - Amend the Schedule to Clause 66.06 Notice of Permit Applications Under Local Provisions to require notice to the gas pipeline licensee under the Pipelines Act 2005 for a permit application for Accommodation (other than Dwelling), Child care centre, Cinema based entertainment facility, Corrective institution, Education centre, Hospital, Place of Assembly, Residential aged care facility, retail and service station within the '590m measurement length' shown on Plan 15 of the PSP.

4.2. Shenstone Park PSP

12. The Shenstone Park PSP area is located in the Northern Growth Corridor. It is located in Donnybrook, directly east of the Melbourne-Sydney railway line, and south of Donnybrook Road. It covers an approximate area of 628 hectares.
13. Currently land within the PSP area is used for predominantly rural activities, largely associated with grazing. There is also the existing Woody Hill Quarry.
14. The draft PSP was exhibited on 4 October 2019. Figure 3 shows the 'Future Urban Structure' as envisaged by the PSP. Key features of the PSP include:
 - The majority of the eastern half of the land is allocated to residential use:
 - The total anticipated number of dwellings is 3,659.
 - The anticipated population is 10,244 to 11,342 people.
 - A large portion of the western extent of the PSP area is taken up by the Woody Hill Quarry and an expansion area for that quarry.
 - Land to the north and east of the quarry is allocated for industry and commercial uses, along Donnybrook Road to the north-west.
 - A local town centre is positioned slightly north of centre, and includes land available for a future government school.
 - Land along the southern boundary is associated with the BCS conservation area.
 - Various buffers to the Woody Hill and to the Phillips Quarries.
15. Phillips Quarry is located outside the PSP area to the south. However, the noise, blast, and sensitive use buffer areas extend into the southern extent of the PSP area and onto the Ouson land. Further, the Phillips Quarry relies on access via the Woody Hill Quarry and through the land owned by Donnybrook JV Pty Ltd within the PSP area.
16. I noted that the VPA has prepared an updated version of the PSP which responds to a number of submissions, for consideration at the Panel hearing.

5. 1100 Donnybrook Road

5.1. Land

17. Ouson owns land identified as Parcel 15 within the PSP, at 1100 Donnybrook Road. The site has an approximate area of 67 hectares and fronts onto the south side of Donnybrook Road. It is currently used for grazing and contains a single dwelling and associated outbuildings in its north-west corner. A trotting track is located centrally.
18. The APA Gas pipeline extends through the site from south to north, predominantly along the western side of the property. An associated City Gate facility, which includes a gas pressure pump and relief valve, is located in the north-west corner of the property, approximately 35 metres from the Donnybrook Road frontage.

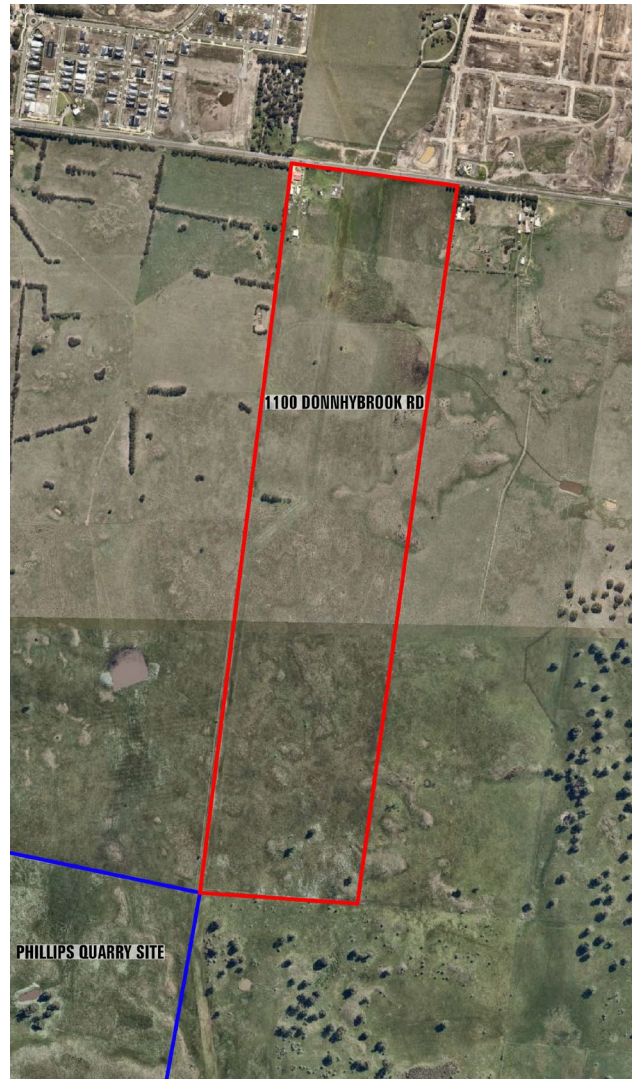


Figure 7: 1100 Donnybrook Road aerial

19. The exhibited version of the PSP identifies the following key features in relation to the land:
- The majority of site is designated for residential use and development and is zoned as UGZ7.
 - A 'Future Residential' area is located within the buffer to the Phillips Quarry.
 - The southern portion of the property is reserved as part of the BCS conservation area and is zoned RCZ with an ES06 and IPO8 applied.
 - Two areas of credited POS are shown on the site: one directly north of the BCS conservation area and another at a bend in the gas pipeline reserve.
 - One area of uncredited POS is shown running across the northern part of the site associated with a headwaters of a tributary of the Darebin Creek.
 - A utilities easement is aligned with the gas pipeline.
 - Two east-west connector streets are shown on the site.
 - No north south streets are shown on the site and no direct road connection is shown between the site and Donnybrook Road.



Figure 8: Draft Shenstone Park PSP Plan 3 – Future Urban Structure (1100 Donnybrook Rd)

5.2. Ouson's Submission

20. Ouson's submission dated 15 November 2019, raised a number of concerns in relation to the PSP:

- The extent of the Phillips Quarry buffer across the site and the application of the buffer based on the quarry's property boundary rather than from the source of emissions shown by either the 'Approved extraction boundary' or the 'Stage 1 works area' as measured by the 'Impact Assessment Report for the Shenstone Park Precinct Structure Plan' prepared by GHD. They also question the blast area buffer extent over the gas pipeline reserve.
- The extent of uncredited POS associated along the Darebin Creek tributary. The northern extent is considered to be an unreasonable encumbrance that is not consistent with the Melbourne Water's approved Lockerbie East Development Services Scheme.
- The lack of formal access to the site equal to that proposed for other landholdings in the PSP area. The relocation of a nearby access way to a common boundary with the site was suggested.
- Reservations regarding the assessment and mapping of the BCS conservation area. I have been instructed that this matter is not being pursued any further.
- Reservations regarding the location of the areas of open space on either side of the utilities easement. It was suggested the open space be relocated to more consolidated and usable locations for future residents.
- Reservations regarding the location of the rising main and pump station.

6. Phillips Quarry

6.1. Current Permit

21. The approvals history in relation to the potential for a quarry to be established on the Phillips site is complex and is far from clear.

22. The current Planning Permit (704901) for the proposed Phillips Quarry was first issued on 8 July 1999. The permit was subsequently corrected on 3 July 2012 and amended on 20 July 2014. It allows for:

Use and development of the land for stone extraction in accordance with any Work Authority issued under the Ministerial Resources (Sustainable Development) Act 1990 and creation of access to a Road Zone – Category 1 in accordance with the endorsed plans.

23. Following the July 2014 amendment, the permit was due to expire on 8 July 2019. On the 29 July 2019 the applicant requested an extension of time to the permit, which was approved by Council for a further five years on 26 November 2019. The expiry date is now 8 July 2024. I note the extension of time granted by Council was premised on the need to amend the permit.

24. I understand that the current owner of the site (The Barro Group) will be seeking to amend the permit under Section 72 of the *Planning and Environment Act 1987*, following the preparation of a new Work Authority as required under the *Ministerial Resources (Sustainable Development) Act 1990*, and to update a number of conditions. However, I note that the S72 application is yet to be made and the new Work Authority application is yet to be lodged. No application documents have been made available.

25. I have viewed the endorsed plans provided by Whittlesea City Council (Figure 9). The proposed limit of the future extraction zone shown on those plans is setback from the north-east boundary of the quarry site. The plans provide access to the site from land directly to the north of the proposed quarry site. I understand that it is proposed to seek to amend the endorsed plans after the completion of the Work Authority application process.

26. I note that in their response to the Panel, Barro Group have said that there are no endorsed plans. The plan shown in Figure 9 relates to the pre-2014 Amended Permit and was referred to in the original permit but the 2014 amendment removed reference to the plans.

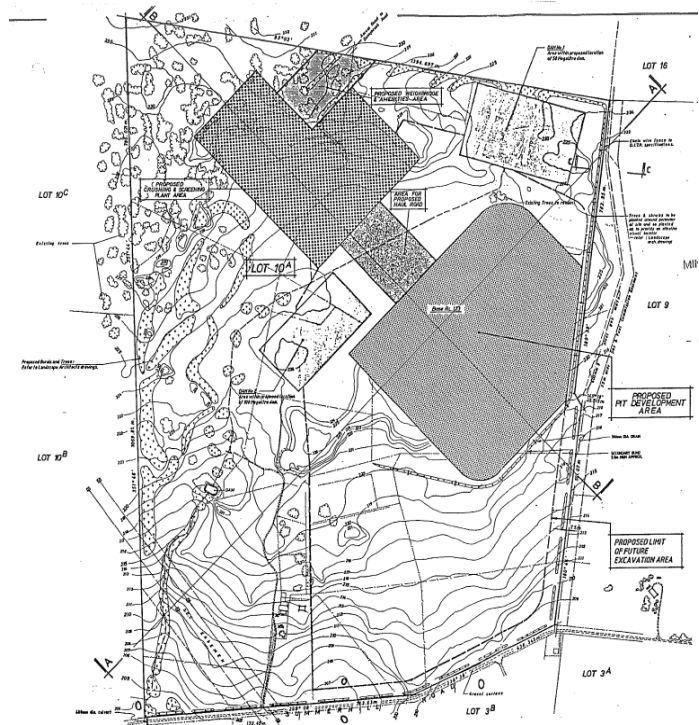


Figure 9: Endorsed Plans for Phillips Quarry (Permit: 704901)

6.2. Work Authority Application (WA006852)

27. I have reviewed information submitted by Barro Group in response to Direction 6 and 7 from the Panel, dated 2 October 2020, and the Quarry Statement provided by the VPA in response to Items 13 to 15 of the Panel's directions. I understand that following acquisition of the land by Barro Group, the previous owner surrendered the Work Authority (WA160) and currently there is no active Work Authority applying to the land. The applicant has initiated this process with the Earth Resources Regulation Division (ERRD). WA6852 was allocated to the proposed quarry on 25 September 2018 but no draft work plan has yet been submitted. The Work Authority application covers an area of approximately 212 hectares.
28. From information submitted by the proponent, I understand that the extraction life of the quarry is expected to be in excess of 50 years. It is expected to commence as soon as approvals are obtained. The proposed staging of excavation is intended to commence in the north eastern corner of the site as shown in Figure 10. Access arrangements are proposed to be via the existing Woody Hill Quarry to the north-west. An agreement has been entered into with Donnybrook JV Pty Ltd to provide a Southern Access Road and Bund Area within the southern portion of land, to the north of the quarry via land transfer. This will be located within the PSP area.
29. I understand that the Barro Group intend to extract the north-easterly most area of the site as soon as possible to allow for the development of the 'Future Residential Area' within the 550 metre buffer identified in the Shenstone Park PSP.
30. I note that these statements reflect the stated intentions of the Barro group with regard to the quarry and that the quarry does not have a current Work Authority. The current planning permit would need to be amended before it can be acted upon. The actual staging of excavation works, the location of any extraction area, and the conditions that may apply to any quarry activity are yet to be determined.

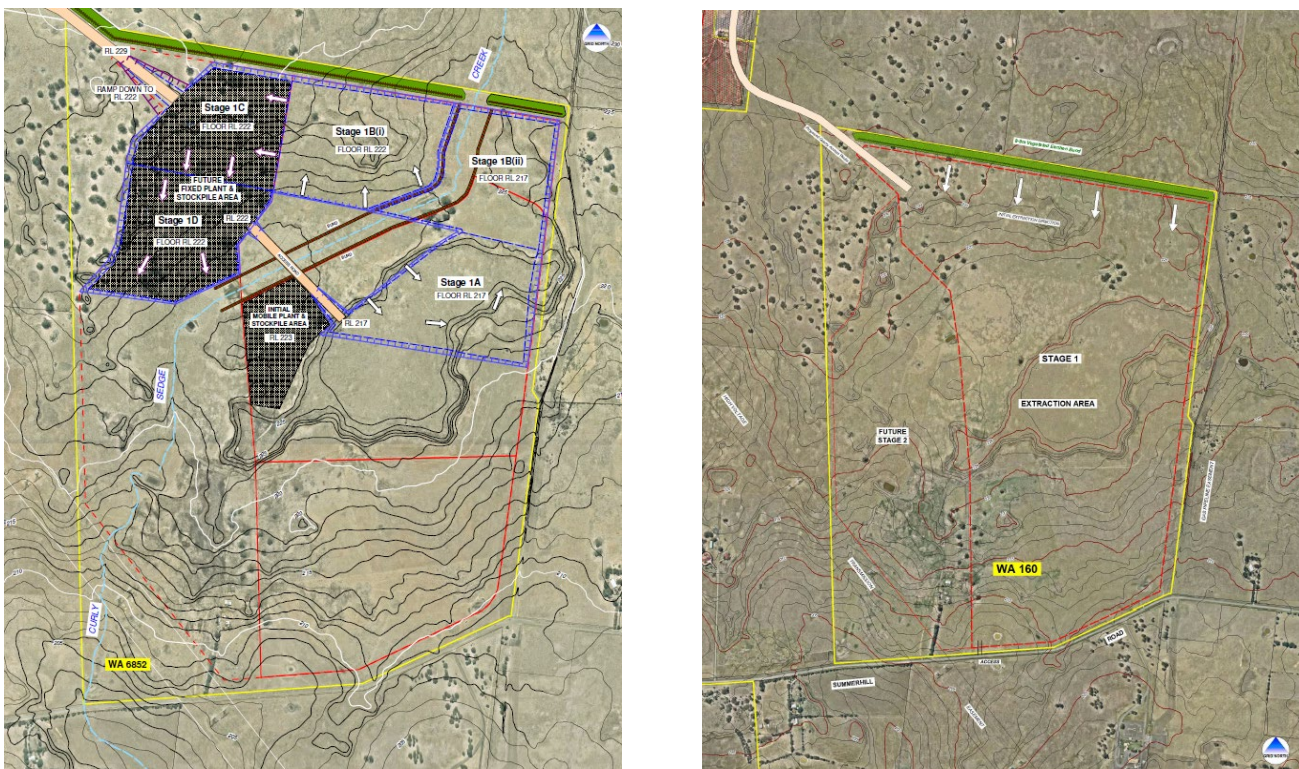


Figure 10: Donnybrook Proposed Quarry Developments Figure 1 and 1a (Letter from Ponte Lawyer for Barrow, dated 2nd October, 2020, Annexure 6)

31. The information submitted on behalf of the proponent includes annexures that show the location and a 'section' for an earthen bund proposed along the eastern boundary of the Woody Hill Quarry and the northern boundary of the proposed Phillips Quarry. Assuming that only the eastern part of the 'section' is relevant to the northern boundary of the Phillips Quarry, the width of the earthen bund would be 34 metres. Allowing 5 metres for management access along the outside of the bund and 10 metres for management access between the bund and the quarry, the mound is likely to result in a setback of extraction works of around 49 metres, or approximately 50 metres, from the property boundary.

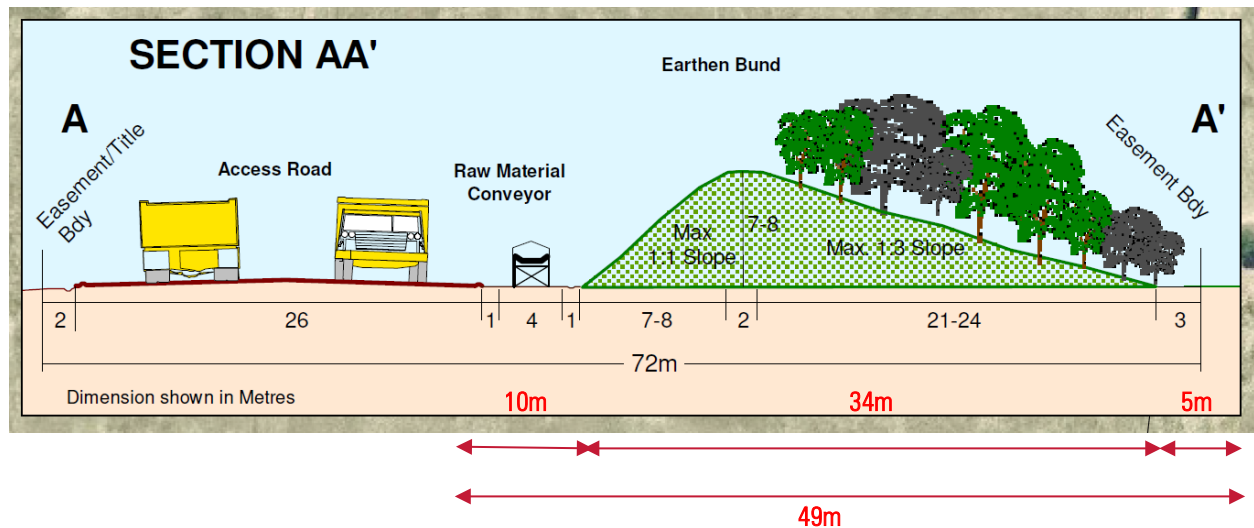


Figure 11 - Proposed Earthen Bund (Letter from Ponte Lawyers for Barro, dated 2nd October, 2020, Annexure D)

6.3. Lack of certainty

32. In relation to the information contained in the existing planning permit that applies to the quarry the site, and from the information provided by the applicant in relation to its future intentions, I conclude that there is no certainty in relation to the details of the proposed use of the site for a quarry. There is no certainty in relation to:
- When the use will commence and how long it may continue.
 - The boundaries of the excavation, particularly in relation to the north-east boundary, in relation to the Ouson Property and the gas pipeline.
 - The stages or sequencing of excavation and the direction and timeframe in which it will proceed.
 - The mitigation measures that will be imposed on the quarry to minimise off-site impacts.
 - The buffers that will be required for the quarry, which will be determined on the basis of detailed expert advice, once the operational details of the operations of the quarry are known.

7. Policy context

7.1. Relevant State and Regional Planning Policy

33. Planning policies relevant to extractive industries, urban growth areas, and extractive industries within urban growth areas, are largely contained within Plan Melbourne and within the following clauses of the Whittlesea Planning Policy Framework:

Clause 11 – Settlement

Clause 14 – Natural Resources

Clause 17 – Economic Development

Plan Melbourne Policy

34. Planning policy in relation to extractive resources seeks to protect resources for future extraction, where consistent with other planning considerations.
35. Direction 1.4 of Plan Melbourne specifically relates to supporting the productive use of Melbourne's non-urban land and resources. Policy 1.4.2 seeks to:

Identify and protect extractive resources (such as stone and sand) important for Melbourne's future needs.

36. The importance of extractive resources for supporting Melbourne's sustained growth is highlighted. In relation to growth areas, Plan Melbourne notes:

The sequencing of urban development in growth areas should allow strategic resources such as stone and sand to be extracted ahead of establishing urban areas, with provision for these areas to proceed outside defined buffer zones that can be subsequently in-filled by other urban land uses.

37. Although, I note that the above comment has not been included in State planning policy in the Whittlesea Planning Scheme.

Settlement and Urban Growth

38. Clause 11.01 (Settlement) seeks to focus sustainable development within existing settlements across Victoria. Population growth and the provision of an appropriate supply of residential, commercial and industrial land is to take place across a region in accordance with regional growth plans. Urban growth should preserve and protect features of rural land and natural resources.
39. Clause 11.02 (Managing Growth) seeks to ensure a sufficient supply of urban land is provided to accommodate projected population growth over at least a 15 year period and to provide clear direction on locations where growth should occur. Growth should maintain access to productive natural resources and an adequate supply of well-located land for energy generation, infrastructure and industry. Urban areas are to be comprehensively planned through the structure planning process, that should identify amongst other things, the strategic and physical context of the location.

40. Clause 11.03-2S Growth Areas, focuses on locating urban growth close to transport, infrastructure and existing services, while protecting primary production, major sources of raw materials and valued environmental areas.
41. Key strategies include:
- Ensuring regions and their settlements are planned in accordance with their relevant regional growth plan (Clause 11.01-1S).*
 - Delivering networks of high-quality integrated settlements that have a strong identity and sense of place, are prosperous and are sustainable by:*
 - *Preserving and protecting features of rural land and natural resources and features to enhance their contribution to settlements and landscapes (Clause 11.01-1S).*
 - Maintaining access to productive natural resources and an adequate supply of well-located land for energy generation, infrastructure and industry (Clause 11.02-1S).*
 - Protecting and manage natural resources and areas of heritage, cultural and environmental significance (Clause 11.03-2S).*
 - Identifying appropriate uses for constrained areas, including quarry buffers (Clause 11.03-2S).*
42. Planning policy generally seeks to identify and protect extractive resources in peri-urban areas and rural areas. Extractive resources should be taken into account in the identification of urban growth areas and should be protected from urban encroachment, where consistent with other planning policies. The appropriate time to plan for extractive resources within growth areas is during the identification of urban growth boundaries, and during the framework planning process undertaken when corridor plans are prepared. Both the Woody Hill and the Phillips Quarry are specifically identified and planned for in the North Corridor Plan.
43. I note that the planning merits of establishing a new quarry that was not shown in the North Corridor Plan, was considered at a recent Panel Hearing for Mitchell Amendment C106. That amendment involved the Beveridge West PSP. In that case the Panel recommended that the proposed quarry should be included in the PSP, as the opportunity existed to extract the resource in advance of urban development. However, the Mitchell Panel did not consider the issue of what, if any, buffers should be established with respect to that quarry. It also expressed the view that using other's land for those buffers was "problematic".

Earth and Energy Resources

44. Clause 14.03 Resource Exploration and Extraction, encourages the exploration and extraction of natural resources, where consistent with overall planning and environmental considerations.
45. Key strategies include:
- Develop and maintain buffers around mining and quarrying activities.*
 - Ensure planning permit applications clearly define buffer areas appropriate to the nature of the proposed extractive uses, which are to be owned or controlled by the proponent of an extractive industry.*
 - Determine buffer areas between extractive activities and sensitive land uses on the following considerations:*
 - *Appropriate limits on effects can be met at the sensitive locations using practical and available technology.*
 - *Whether a change of land use in the vicinity of the extractive industry is proposed.*
 - *Use of land within the buffer areas is not limited by adverse effects created by the extractive activities.*

- *Performance standards identified under the relevant legislation.*
- *Types of activities within land zoned for public use.*

North Corridor Plan

46. The North Corridor Plan generally implements relevant State planning policy in relation to settlement planning, urban growth area planning and the protection of natural resources contained within the growth area. The Plan is contained within the document titled Growth Corridor Plans, Managing Melbourne's Growth (June 2012). That document contains corridor framework plans for most of Melbourne's Growth Areas.
47. The Plan sets out a general land use framework to guide the planning of new communities within the corridor. The Plan identifies those extractive resources and quarries that are considered relevant to plan around in the strategic planning of urban growth area. It identifies both the Woody Hill Quarry and the Phillips Quarry. Future land uses around the quarries are identified as largely comprising conservation and non-sensitive uses, that will provide an appropriate buffer to enable resources to be extracted without causing undue impacts on adjoining sensitive uses.
48. The Plan refers to ensuring that approved and operational quarries are protected from encroachment by sensitive land uses, and to locating non-sensitive uses adjacent to existing quarry sites within the Urban Growth Boundary. It refers to any buildings proposed within 200 metres of title boundaries to be subject to a risk assessment undertaken at the PSP stage to assess the risks of rock blasting.

The North Corridor Plan ensures that approved and operational quarries are protected from encroachment by sensitive land uses. It also locates industrial or commercial development activities adjacent to existing quarry sites within/adjacent to the UGB. On that basis, these precincts would be rezoned to Urban Growth Zone, but any buildings proposed within 200m of the title boundary of such quarries will be subject to a risk assessment to be undertaken at PSP stage, to ensure that the impact of rock blasting is acceptable.¹

¹ Growth Corridor Plans, Managing Melbourne Growth, page 74

7.2. Relevant State Extractive Resources Policy

49. State Government policy in relation to extractive industry has been evolving over recent years.
50. A number of key policy documents have been published that respond to the forecast doubling of demand for extractive resources over the next 30 years to 2050. These policies place increased emphasis on protecting extractive resources for excavation and ensuring that unplanned urban encroachment does not sterilise strategic resources.
51. Key documents that highlight the emphasis placed on protecting extractive resources:
 - Help Victoria Growth – Extractive Resources Strategy - 2018.*
 - The Joint Ministerial Statement – Extractive Resources*
 - The Strategic Extractive Resource Areas Pilot Project.*
52. The identification of the Woody Hill and Phillips quarries in the North Corridor Plan and the Shenstone Park PSP, is generally consistent with the State extractive resources policy.
53. However, that policy does not obviate the need for a proper planning assessment of the operational details of a future quarry on the site. The policies do not suggest that excavation should be allowed to extend to property boundaries, with all requirements for buffers to be satisfied on adjoining land. Such considerations still need to be assessed against other relevant planning policies and controls.

Help Victoria Grow - Extractive Resources Strategy 2018

54. The purpose of The Help Victoria Grow Strategy is to ensure that high quality extractive resources continue to be available at a competitive price to support Victoria's growth. The strategy identifies that the demand for extractive resources in Victoria is expected to double between 2016 and 2050.
55. The strategy outlines a number of actions required to secure the long term availability of extractive resources. One such action relates to Resource and Land use Planning. A key issue identified in that action is to undertake a Pilot Project to respond to some of the identified deficiencies in the existing planning system in relation to the protection of strategic resources.

Joint Ministerial Statement – Extractive Resources

56. The purpose of the Joint Ministerial Statement is to provide a whole of government approach to securing quarry resources to meet the growing needs of Victoria and in particular metropolitan Melbourne. The statement seeks to implement key initiatives from the Helping Victoria Grow Strategy, by committing to 6 key actions:
 1. *Streamline approval processes to expand production*
 2. *Protect the continuity of supply from existing quarries*
 3. *Apply the 'agent of change' principle to quarries.*
 4. *Provide better guidance to industry and local government.*
 5. *Identify and protect extractive resources of strategic importance.*

6. Reduce the environmental impact of quarrying and deliver landscapes for the community.²

57. The agent of change principle (Action 3) is aimed at preventing the incursion of new development into quarry buffers, which would result in pressure for the premature closure of quarries.³
58. Action 5 is most relevant to potential reforms to the planning process, in that it is focussed on identifying planning process to better protect extractive industries that are of strategic importance to the state, from the encroachment of unplanned development.

Strategic Extractive Resource Areas Pilot Project

59. The Strategic Extractive Resource Areas (SERA) pilot project is a key initiative of the Extractive Resources Strategy. It is intended to help secure strategic extractive resources in defined locations.
60. It is the intention that the State Government will progressively roll out SERAs in suitable areas identified as being strategically important for the supply of extractive resources that are needed to meet expected demand. Any further SERA pilot project areas will be determined in consultation with local councils, industry and communities and appropriately assessed on a case-by-case basis.
61. The pilot project is a partnership between the Victorian Government, Wyndham City Council, and South Gippsland Shire Council.
62. The SERA Pilot Project:
 - Identifies criteria for the identification of SERAs.
 - Recommends the application of a Special Use Zone to existing and approved quarries with a works authority.
 - Recommends the application of a modified State Resources Overlay as a buffer to Special Use Zone.

7.3. Policies and guidelines regarding buffers

63. State planning policies and guidelines in relation to buffers for quarries state that:
 - Buffers should be provided around uses such as quarries.
 - They should be taken from the boundary of the activity rather than from the property boundary.
 - They should be owned by the proponent of the activity.
64. State extractive resources policies that prioritise the protection of resources, do not obviate the need to apply State planning policy in relation to buffers to quarries. Extractive resources policy supports the protection of resources to allow for their extraction. They do not go to the extent of suggesting that excavation can extend to property boundaries, without consideration of the need for buffers within the boundaries of a site. They do not remove the need for proposed new quarries such as the proposed Phillips Quarry, to comply with State planning policy regarding buffers.

² Joint Ministerial Statement Extractive Resources, page 4

³ Ibid. page 6

Clause 14.03 of the VPPs

65. Clause 14.03 of the VPPs includes State planning policies and strategies that require buffers to be identified around quarries, for those buffers to be clearly identified in planning permit applications, and for them to be owned or controlled by quarry operators:

Develop and maintain buffers around mining and quarrying activities.

Ensure planning permit applications clearly define buffer areas appropriate to the nature of the proposed extractive uses, which are to be owned or controlled by the proponent of an extractive industry.

Planning Practice Note 89

66. Planning Practice Note 89 (Extractive Industry and Resources) provides information in relation to the extractive industry approvals process, how the industry can be protected by way of buffers, and ways that the Victorian Government is making improvements to the regulation of the industry.

67. In relation to buffers, the practice note highlights that it is State planning policy to:

Establish buffers around quarrying activities; and

For permit applications to clearly define buffers, which are to be owned or controlled by the proponent.

Under Clause 14.03 of planning schemes, it is a state planning policy strategy to develop and maintain buffers around quarrying activities. This strategy applies to both new extractive industry and new sensitive use and development.

It is also a state planning policy strategy to ensure planning permit applications clearly define buffer areas appropriate to the nature of the proposed extractive uses, which are to be owned or controlled by the proponent. However, many existing extractive industries commenced operation prior to this requirement coming into effect.

Planning and responsible authorities need to give effect to Clause 14.03 by ensuring an appropriate buffer is maintained around an existing quarry.⁴

EPA Recommended Separation Distances for Industrial Residual Air Emissions

68. EPA Publication Number 1518, outlines recommended separation distances for industrial land uses that emit odour or dust, from sensitive land uses. The guidelines relate to off-site residual odour and dust emissions. They do not relate to noise, vibration, ambient and hazardous air pollutants etc.
69. The guidelines define a default minimum separation distance of 500 metres for a quarry with blasting. This is reduced to 250 metres if no blasting is to occur.
70. The document states that separation distances are to be determined by measuring the buffer from the 'activity boundary' of the industrial activity to the nearest sensitive land use (See Figure 13). This is to allow

⁴ Planning Practice Note 89: Extractive Industry and Resources, page 9

for land internal to the property boundary to be included as part of the required buffer. This is consistent with State Planning Policy Clause 14.03, which requires buffers to be owned or controlled by quarry operators.

71. The document identifies that it is the responsibility of the 'agent of change' to provide evidence for variations to the minimum separation distance. The guidelines note that:

Where both an industrial land use and a sensitive land use are proposed that give rise to the consideration of separation distances between them, then both can be considered the 'agent of change'.⁵

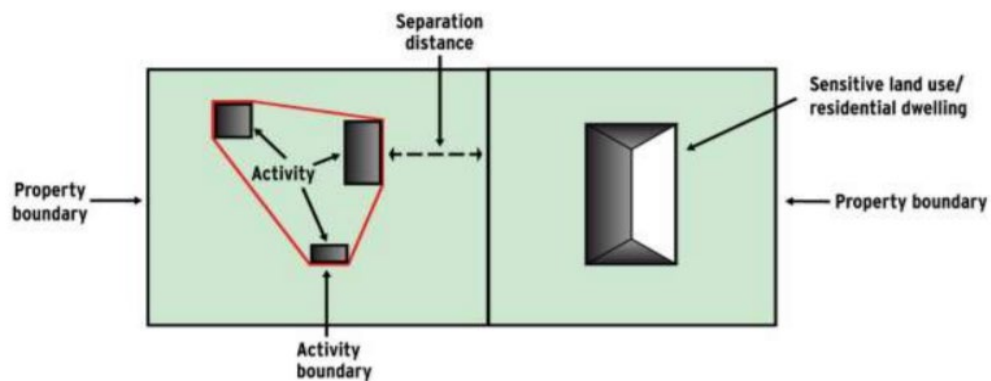


Figure 12: Activity boundary to property boundary of sensitive use in an urban context (Source: EPA Recommended Separation Distances for Industrial Residual Air Emissions, page 13)

⁵ EPA Recommended Separation Distances for Industrial Residual Air Emissions, Page 13

8. Planning implications of the Phillips Quarry on the Ouson land

8.1. Implication of land being identified as a “future residential area”

72. A key planning matter relevant to the Ouson Property is the implications of part of its land being identified as “future residential area”.
73. I assume that the amendment proposes to prohibit development on land identified as “future residential area”, until the quarry resource has been excavated and buffers resolved. However, that is not clear from the wording of the amendment documentation.
74. Requirement 19 of the panel version of the PSP, states that development is not permitted on such land until the resource has been extinguished or a buffer is no longer required:
- R19 Development (including subdivision) is not permitted in the “future residential area” identified on Plan 3, until such time as DJPR determines that the earth resources in the Phillips Quarry have been extinguished, or that the sensitive use buffer is no longer required.*
75. However, whilst the PSP is to be an incorporated document in the planning scheme, I do not believe that the inclusion of such a requirement in the PSP alone, is sufficient to prohibit development in a “future residential area”. The provisions of Schedule 7 to the Urban Growth Zone would also need to be worded to prohibit development of the land. On my reading of Schedule 7, it does not do that. It seems to make Accommodation uses discretionary on land in a “future residential area” and “buffer” (see table below). I find the wording of the schedule in relation to the development “future residential area” confusing.
76. Pursuant to Section 2 of Clause 2.3 of the schedule, if an Accommodation use is located on land identified as “future residential area” or a “sensitive use buffer”, it complies with that condition. If it complies with the condition it is a discretionary use, not a prohibited use. For the intent of Requirement 19 of the PSP to be met and for the use to be prohibited, the condition would need to read “Not on land ...”. I am not sure whether this is a typographical error or intentional.

Section 2 - Permit required	
Use	Condition
Accommodation	On land identified as ‘future residential area’ on Plan 3 and within the ‘Phillips Quarry sensitive use buffer’ on Plan 15 in the incorporated Shenstone Park Precinct Structure Plan.
Education centre	
Medical centre	

8.2. Planning status of the Phillips Quarry

77. There is no doubt that planning for the Shenstone Park PSP area and surrounds, supports the establishment of a quarry on the Phillips Quarry site:
- The land is zoned Special Use 4 – Earth and Energy Resources Industry.
 - An planning permit exists for the site.
 - The site is identified for a quarry in the North Corridor Plan.
 - The Shenstone PSP proposes to include a land use pattern, planning buffers and controls, in response to a quarry being established on the site.
78. However, the operational details of the site are not as yet known. The Phillips Quarry has a planning permit but does not have an approved work authority. The existing planning permit was originally approved on the basis of endorsed plans and a draft work authority (WA160) that indicated that the area of excavation was not to extend to the northern-east boundary of the quarry site. The Barro Group have indicated that they intend to seek approval for a new work authority that would allow excavation to extend to the northern property boundary, or at least to within approximately 50 metres of the northern boundary (allowing for earthen mounding and landscaping).
79. That proposed change does not have any bearing on the appropriateness of the quarry activity on the site per se. However, in my opinion, it is relevant in terms of considering broader planning merits of extending the excavation area beyond what was previously approved, and where buffer areas should be measured from.

8.3. Should buffers be mandatory or discretionary

80. Potentially the key question before the panel in terms of buffers, is whether they should be mandatory or discretionary.
81. In my opinion, given the circumstances associated with the Phillips Quarry and the Shenstone Park PSP, they should be discretionary, not mandatory.
82. Whilst the EPA guidelines establish “default” buffers for air emissions, expert advice or evidence is required to determine actual buffers required for blasting vibration, flyrock from blasting, and operational noise and vibration etc. This evidence cannot be meaningfully provided until the operational details and the mitigation measures that will be incorporated in the operation of the actual quarry are known.
83. The approach taken by the VPA has been to apply a mandatory buffer (apparently) from the boundary of the quarry site. I do not consider this to be an appropriate response. I do not consider this approach to be consistent with planning policy, or in-line with emerging State government policy for strategic extractive resources. It obviates the need of the quarry operator to be responsible for providing any part of the buffer on its land, and places full responsibility of providing buffers on adjoining land.
84. The Phillips Quarry benefits from the fact that a ‘natural buffer’ of around 300 metres is provided by the conservation and open space areas shown on the PSP, along its northern boundary. If any additional buffer beyond 300 metres is required for a quarry on the site, once the operational details are known, it would be reasonable for such to be provided on the quarry site.
85. The role of the PSP in responding to a planned quarry on adjoining land to the south, should be to draw attention to it by way of a general buffer (discretionary), to ensure that proper planning consideration is given

to determining if it is appropriate for a residential development to proceed on the land the time an application for residential development is made. That assessment would take into account matters such as:

- Whether a work authority had been granted and the operation details of the quarry are known.
- Whether works had commenced.
- The approved extraction boundaries.
- The actual buffers required, based on expert advice based on the approved operational details of the quarry.
- The staging of excavation and whether land close to the residential areas had been excavated and excavation had moved south.

86. If that assessment determined that it was not appropriate to allow residential development to proceed at that time, the planning permit would be refused. Otherwise a planning permit would be granted.

8.4. Where buffers should be measured from and who should own the land

87. As identified in the previous section of this report, State planning policy and guidelines in relation to buffers, state that:
- Buffers should be provided around uses such as quarries.
 - They should be taken from the boundary of the activity rather than the property boundary.
 - They should be owned by the proponent of the activity.
88. To be consistent with State planning policy and buffer guidelines, buffers should be measured from the activity boundary, not the property boundary. They should be owned or controlled by the quarry operator and should be located on adjoining land.
89. I acknowledge that it is not always possible for the whole of a buffer to be owned by quarry operator, especially in relation to an existing quarry. However, on basis of equity and fairness, it is reasonable to expect that the responsibility to provide a buffer to a use with off-site amenity impacts, should primarily be placed on the proponent of the use, not on adjoining property owners.
90. In relation to a 'proposed' quarry such as the Phillips Quarry, which does not yet have an approved work authority and for which excavation has not yet commenced, the opportunity exists to consider the ability to provide at least part of the required buffer within the site itself.

8.5. GHD Report for the VPA

91. GHD prepared two reports for the VPA (2017 and 2019) to assess buffer requirements between the existing Woody Hill Quarry and the proposed Phillips Quarry, and sensitive residential areas. These reports were prepared as input into the preparation of the PSP. The 2019 report included an addendum in relation to the Woody Hill Quarry but otherwise contained the same recommendations in relation to the Phillips Quarry as the 2017 report.
92. The GHD report recommended that all buffers should be measured from the extent of the approved extraction area for the Phillips Quarry, not from property boundaries.
93. The following buffer distances were recommended in the GHD report in relation to the Phillips Quarry:⁶
 - 500 metre dust directional buffer from the approved extraction area boundary.
 - An operational noise buffer of 300 m from the approved extraction areas boundary, prior to any operational noise mitigation being implemented.
 - A 100 metre operational vibration buffer from the extraction area boundary.
 - A blast generated fly-rock buffer of 200 m from the extraction area boundary.
 - Blast generated vibration buffer of 550 metres from the extraction area boundary.
94. Figure 14 shows the extent of the buffers identified in the GHD Report. Given that they are taken from the extent of the approved extraction area on the Phillips Quarry, they are considerably less than those contained in the PSP. Such buffers would not affect land identified for residential purposes on the Ouson property.

⁶ GHD, Shenstone Park Impact Assessment Woody Hill Addendum, Sept 2019, page iv

95. The buffers determined in the GHD Report were based on the endorsed plans from the original 1993 design of the quarry associated with WA160.

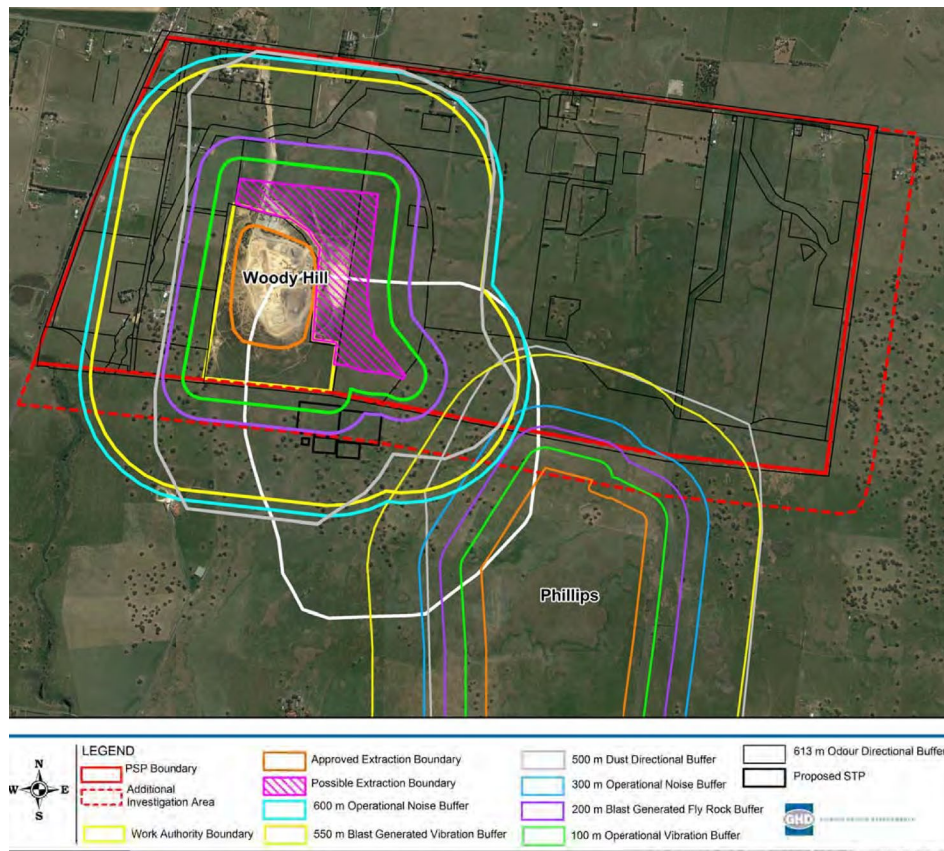


Figure 13 - Buffers recommended in the GHD report (Source GHD 2019, page v)

8.6. Shenstone Park PSP

96. The Shenstone Park PSP acknowledges the existing Woody Hill Quarry and the proposed Phillips Quarry, and identifies land use interfaces and buffer distances between the quarries and sensitive residential uses.
97. The buffers shown on the PSP are as follows:
- A blast buffer of 200 metres.
 - A noise buffer of 300 metres.
 - A sensitive use buffer of 550 metres.
98. The buffers shown in the PSP differ from those recommended in the GHD report in the following ways:
- They are taken from the boundary of the quarry site rather than from the approved extraction area.
 - The 'sensitive use buffer' is a combination of both the 550 metre blasting vibration buffer and the 500 metre directional dust buffer identified in the GHD report.

99. As the buffers in the PSP are taken from the property boundary they are considerably more stringent than those recommended in the GHD report and have a more significant impact on the Ouson land. This approach is the reason why a “future residential area” has been identified on the southern part of the Ouson land in the PSP.

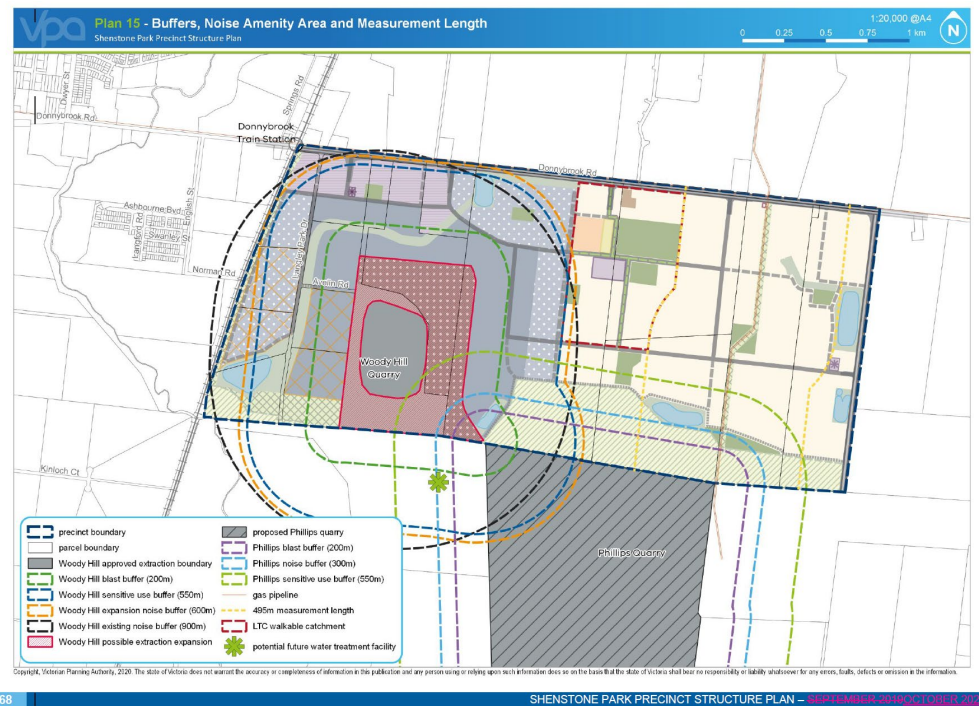


Figure 14 - Quarry Buffer, Plan 15 of the Panel Version of the PSP

100. The PSP report also includes comments that refer to the existence of the quarry resources, their importance to the State, and the need to project and to utilise the resources. It comments that the resource takes precedence over private development and that the buffers are proposed to ensure that quarries can operate whilst protecting amenity:

The PSP responds to the current operation of the Woody Hill Quarry and allows for its future expansion. Buffers for noise, sensitive use and blasting are shown on Plan 15, calculated from the maximum possible extent of expansion, given known constraints. The Phillips Quarry has also been shown on Plan 15 as its future operation impacts the development of residential land in the south east of the PSP area. These two quarries are of strategic importance to the State and the earth resources in these locations need to be protected and utilised. These resources take precedence over private development and the buffers shown on Plan 15 are intended to ensure the quarries can operate while protecting amenity and human health and safety.⁷

⁷ Shenstone PSP - Panel Version, page 66

8.7. VPA Part A Submission

101. The VPA's Part A statement reiterates that the buffers proposed in the PSP that relate to the Phillips Quarry are as follows:⁸

- Blast buffer (200 metres).
- Noise buffer (300 metres).
- Sensitive use buffer (550 metres).

102. The statement includes the following comment:

The length and point of origin of the blast buffer and sensitive use buffer have important implications for land use within the PSP area. Under the UGZ7, buildings are prohibited within the 200m blast buffer (except if related to extractive industry). The UGZ7 has been tailored to exclude sensitive uses in proximity to the quarry.

103. The VPA states that in preparing the buffers that were eventually included in the PSP, it took into account a whole of government approach. That approach was to take the buffers from the boundary of the Special Use 4 Zone that applied to the Phillips Quarry, rather than from the boundary of the actual excavation or works proposed:

In preparing the Amendment, the VPA has taken a whole of government approach with DJPR to the point of origin of the buffers (sensitive use and blast). It is the whole of government position that the buffers should be taken from the boundary of the Special Use Zone 4 (SUZ4). It is the whole of government position that extractive industry must not be unnecessarily constrained by adjacent uses through the strategic planning process. The point of origin from the boundary of SUZ4 provides certainty to all parties in the precinct about future use for both extractive and urban land uses.

104. The VPA does, however, identify that scope exists to vary the buffers, depending on expert evidence provided and the outcome of any conclave in relation to the matter:

The precautionary principle was used by VPA to set the length of buffers because specific information was not provided for the current operations of Woody Hill and the future Phillips Quarry. Even current operational practices on a site do not bind an operator for the life of resource extraction. VPA acknowledges that the length of the buffers (both sensitive use and blast buffers) will be the subject of expert evidence including potential for buffer distances to be agreed. The VPA will consider the evidence once filed, and any conclave report, and consider whether the whole of government position remains appropriate.⁹

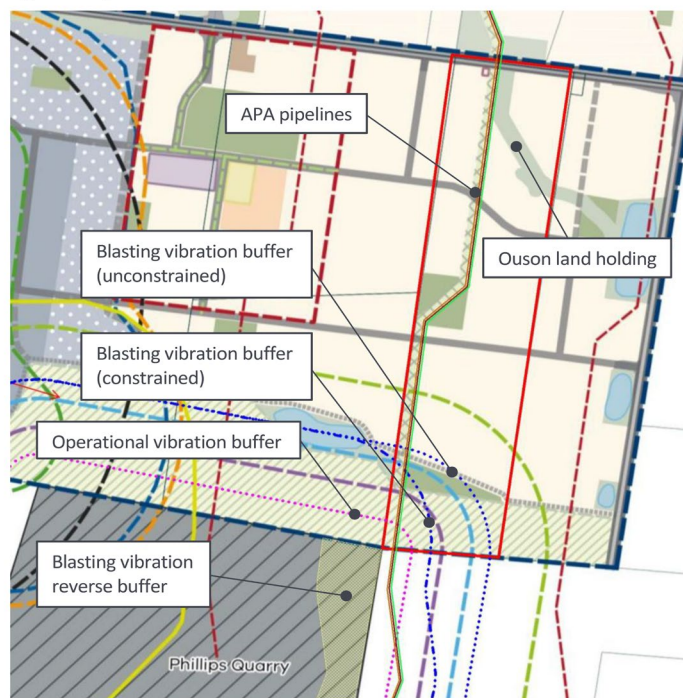
⁸ PVA Part A Submission, page 38

⁹ Ibid, page 39

8.8. Evidence of Tim Marks

105. The evidence of Tim Marks for Ouson, considers the impacts of vibration from the operation of equipment and blasting on the Phillips Quarry site. It also considers implications of the proximity of the APA gas pipeline to the Phillips Quarry site.
106. Mr Marks recommends a reduced buffers area between the extent of work and sensitive uses, than the buffers identified in PSP. He recommends the following buffers:
- A buffer from the operational equipment at the quarry of 100 metres.
 - A buffer zone to control blasting vibration of at least 360 metres, measured to the nearest dwellings north of the BCS on the Ouson land holding.¹⁰
107. He also recommends a reverse buffer of at least 240 metres be applied to the extent of excavation on the Phillips Quarry site, from the APA pipeline.
108. The 360 metre buffer is shown on Figure 16. That figure shows that a 360 metre buffer taken from the property boundary, is essentially located within the conversation and open space area on the south part of the Ouson Property and would essentially avoid land identified for residential purposes.
109. Mr Marks has also shown a second blasting vibration buffer, that takes into account his recommendation for a reverse buffer of 240 metres to the gas pipeline. As can be seen from Figure 16, that buffer would be wholly contained within the conservation / open space area and not affect any land identified for residential purpose.

Figure 2: Proposed buffers



8.9. Directional dust buffer

110. I note that the green dotted buffer line on the PSP (see Figure 15) is identified as a Sensitive Land Use buffer of 550 metres. That buffer relates to both the 550 metres blast generation vibration buffer identified in the GHD report, and also to the 500 metre directional dust buffer identified by GHD.

Figure 15 - Vibration buffers recommended by Tim Marks, Expert Evidence for Ouson page

¹⁰ Evidence of Tim Marks for Ouson, page 13

111. Mr Marks evidence does not address dust. The 500 directional dust buffer is consistent with the default buffer for a quarry that involves blasting, as identified in the EPA guidelines.
112. However, I note that the directional dust emissions buffer relates to residual or accidental emissions that may occur beyond the boundary of a site. Under normal operating conditions all dust would be expected to be contained within the boundaries of the quarry site and no off-site emissions should not occur. Off-site emissions will only occur in cases such as human error, mechanical or equipment breakdown or abnormal weather or atmospheric conditions. If they did occur they would be limited to an low number of occasions in any year.
113. From a planning perspective a buffer for such residual emissions, is less critical than buffers relating to blasting vibration or flyrock from blasting.

8.10. APA Safety Management Study

114. A Safety Management Study has been undertaken in relation to the gas pipeline that runs through the Ouson Property and continues south close to the eastern boundary of the proposed Phillips Quarry. The Study identified blasting from the quarry as a risk to the pipeline.
115. Actions recommended in the study identified the risk to the gas pipeline posed by blasting, the need to liaise with the operator of the quarry, and for discussions to be held with the DJPR regarding the extent of the extraction license for the Phillips Quarry to ensure protection of the pipeline. It does not refer to any possible separation distance of buffer between the pipeline and the extent of extraction, as does the Marks Report:

The main actions to be considered from the SMS include:

- 1. APA Infrastructure protection team to liaise with Phillips Quarry to discuss future risks and mitigation to prevent blast impact to the existing APA pipelines.*
- 2. VPA to discuss with Department of Jobs, Precincts and Regions(DJPR) extent of extraction license for Phillips Quarry to ensure protection of APA pipeline and invite APA input as required.¹¹*

116. Based on the evidence provide by Mr Marks which identified the need for a reverse buffer to the gas pipeline, and the actions identified in the Safety Management Study, it appears a setback or a restriction on blasting, may be required along the north-eastern boundary of the quarry. Any such setback would increase the distance between the excavation area and the residential development on the Ouson Property and lessen or remove the need for a buffer to apply for residential land on the Ouson site.

¹¹ Safety Management Study, page 5

8.11. Evidence of Marshall Day

117. Evidence provided by Christophe Delaire for Ouson, assessed potential noise impacts from the Phillips Quarry on the Ouson Land. The findings of the assessment are as follows:¹²

Compliance with the day-time SEPP N-1 noise limit can be achieved within 100-200 m of the Phillips Quarry property boundary without the use of noise mitigation measures (see Figure 9)

Reasonable and feasible noise mitigation measures, such as the proposed earth bund, can be implemented at the Phillips Quarry to achieve the day-time SEPP N-1 noise limit throughout the Ouson land holding (see Figure 11).

The 300 m noise buffer proposed in the PSP is not required to protect residential areas within the Ouson land holding from noise generated by the proposed Phillips Quarry.

118. This evidence demonstrates that noise is not likely to be the critical determinant of the buffer required between the Phillips Quarry and residential uses.

8.12. Conclusion in relation to buffers

119. Whilst considerable effort has gone into identifying buffers for the proposed Phillips Quarry to date, in my opinion, detailed operational characteristics of the quarry need to be known before 'actual buffers' can be determined.
120. What is required in the PSP is a buffer that is discretionary, which triggers the need for a proper planning assessment at the time a planning permit application is lodged for residential development.
121. If the buffer is discretionary and not mandatory, then the need for it to be accurately defined is reduced, as the impact on adjacent land owners is less. Nevertheless, where the buffer extends onto adjacent private property, it should be reasonable and not excessive. It should be measured from the boundary of extraction if that is known. If that is not known, it is reasonable to be measured from a point within the property boundary, based on the assumption that as a minimum, an earthen mound and associated management access and landscaping will be required within the quarry site. I have assumed a minimum distance of 50 metres.
122. Given the lack of detail regarding buffers relating to the operation of an actual quarry on this site, from a planning perspective, I do not see the need for a number of different buffers relating to different impacts. One buffer, that is wide enough to include possible impacts from all other sources, should be sufficient to trigger the need for a comprehensive, planning permit based assessment of impacts.

¹² Evidence of Christophe Delaire for Ouson, page 16

8.13. Modifications to the amendment documentation

123. On the basis of the above I suggest the following modifications be made to the amendment documentation.

Suggested modifications	Reason
Modify relevant text and plans in the PSP (i.e. R19) and Schedule 7 to the Urban Growth Zone, to make development within the Phillips Quarry Sensitive Use Buffer, discretionary rather than mandatory.	I consider a discretionary rather than a mandatory requirement to be appropriate.
Reduce the Phillips Quarry Sensitive Use Buffer from 550 metres to 450 metres, measured from the property boundary.	The 550 metre distance was based on a blasting vibration buffer of 550 metres, which Marks suggests can be reduced to 360 metres. Accordingly, the critical determinant of this buffer was dust, which GHD suggested should be 500 metres. Reference to 450 metres from the property boundary assumes a 500 metre buffer from the minimum possible edge of excavation, which I assume to be 50 metres inside the boundary of the quarry site, to allow for earthen mounding.
Delete reference to “future residential area” on all plans and in all text throughout the PSP and Schedule 7 to the Urban Growth Zone.	It is sufficient to refer to land within the Phillips Quarry Sensitive Use Buffer. The buffer will be shown on Plan 15 of the PSP.
Delete the Blast Buffer and the Noise Buffer for the Phillips Quarry.	The Sensitive Use Buffer extends beyond the distance of the noise buffer blast buffer and will trigger the need for an assessment of all impacts associated with the quarry.

9. Public Open Space

124. I have been asked to comment on the location of credited and uncredited public open space at 1100 Donnybrook Road.

9.1. Credited Open Space

125. The Precinct Structure Planning Guidelines (2013) outline a number of standards in relation to the provision of open space. Relevant to this matter, the requirements recommend:

- A network of quality, well-distributed, multi-functional and cost-effective open space, catering for a broad range of users.
- A total open space requirement equal to 10% of the net developable area in residential areas, of which 6% should be active open space.
- Local parks should be within 400m safe walking distance of at least 95% of all dwellings.
- The open space network design should maximise the integration and sharing of space with publicly accessible encumbered land such as drainage, utility, and conservation reserves.
- All public open space areas should be designed to maximise passive surveillance.
- The public open space network is combined with techniques for managing urban run-off and biodiversity.

126. A number of quantitative assessment principles are also identified including:

- The precinct's physical features such as topography, extent of native vegetation, cultural heritage and drainage reserves and considering how these can be integrated and shared with the open space network.
- The function of parks within the open space network and the appropriate distribution and proximity to the precinct's population.

127. The VPA and the City of Whittlesea undertook a 'Community Infrastructure & Open Space Needs Assessment (September 2019)' to inform the demand for community infrastructure and open space within the Shenstone Park PSP. Figure 17 identifies the open space and recreational facilities needs assessment for Shenstone Park as calculated by the report. This is based on the Precinct Structure Planning Guidelines for open space.

Table 9 Needs Analysis of OpenSpace and Recreation Facilities based on Population Projections for Shenstone Park

	Open Space		Level 2	
	Local Parks	Sports Reserves	Indoor Recreation Centre (2 Courts)	Lower Order Tennis Facility
Land take for facility	0.10 - 1.70 hectares	10 hectares or 6 hectares reserves	1.2 hectares	6 court facility 0.4 ha 8 court facility 0.6 ha
Provision ratio	4% of residential NDA	6% of residential NDA	1 per 20,000 people	1 court per 2,000 people
Calculated land take (ha)	7.74	11.62	0.51*	5.12
Proposed provision	8 Local Parks	1 x 8 ha sports reserve	0	6-court facility

*Consideration has also been given to the provision of infrastructure that has been supplied within the Donnybrook/Woodstock PSP to accommodate demand from Shenstone Park. See Appendix B for the proposed community infrastructure to be delivered within the Donnybrook/Woodstock PSP.

Figure 16: Needs Analysis of OpenSpace and Recreation Facilities - 'Community Infrastructure & Open Space Needs Assessment (September 2019)'

128. Generally in line with the Needs Assessment, the exhibited PSP allocates a total of 20.04 hectares of land to credited open space within Shenstone Park. 8.45ha of this is credited to a Sports Reserve, located within the Local Town Centre. The remaining 8.45ha is distributed across a range of Local Parks of varying sizes from 0.86ha to 2.34ha.

129. Based on a NDA of 193.62ha for residential land, the exhibited draft PSP allocates approximately 10.35% to credited open space, with 4.36% set aside for the Sports Reserve. This is generally in line with the quantitative requirements of the Precinct Structure Planning Guidelines.
130. The Needs Assessment notes that the location of open space within the exhibited draft Shenstone Park PSP has been equitably distributed to minimise walking distances exceeding 400m. A number of local parks have also been co-located with, or abutting, areas of significant vegetation or drainage assets to connect residents with natural and heritage features and to make practical use of infrastructure assets. It is also noted that most Local Parks are approximately one hectare in size to cater for a diverse range of functions.
131. Based on Plan 7 (Open Space), all residential land will be within 400m of open space apart from a small section of land at 1000 and 1100 Donnybrook Road to the north, and 1150 Donnybrook Road along the eastern boundary (Figure 18).

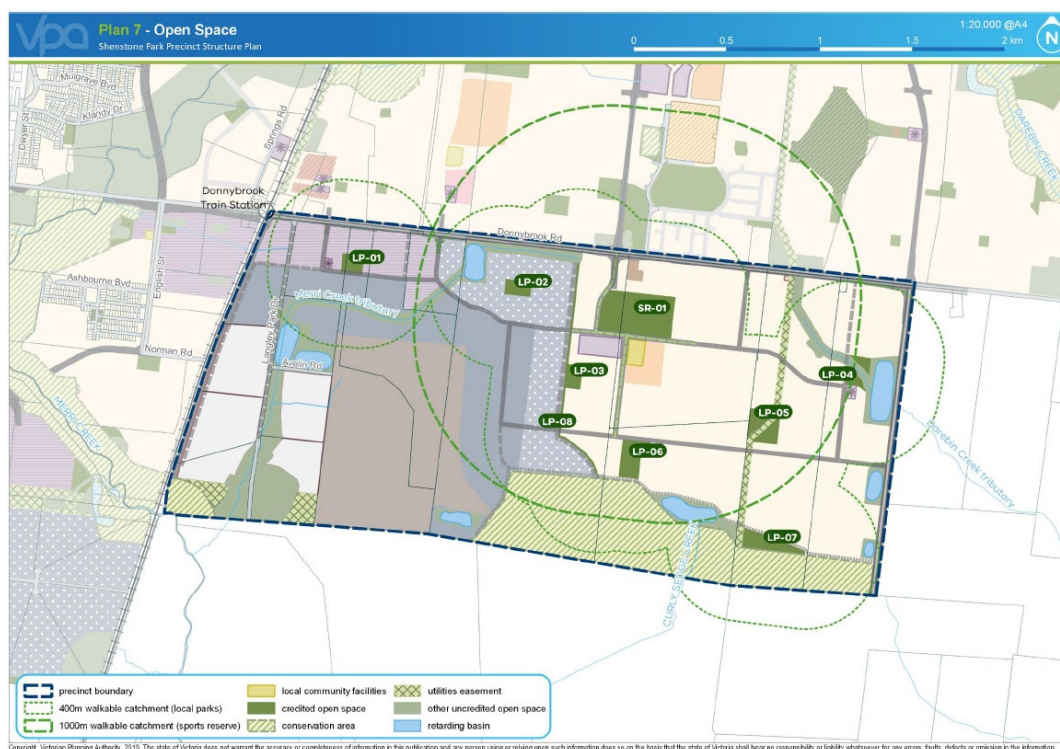


Figure 17: Draft Shenstone Park PSP Plan 7 - Open Space

132. The draft PSP allocates a total of 4.29 hectares of credited open space to 1100 Donnybrook Road across two local parks. The two local parks consist of:
- LP-05 located centrally on either side of the utilities easement along the western boundary. 1.95 hectares in size.
 - LP-06 located directly to the north of the BCS conservation area. 2.34 hectares in size.
133. In its submission, Ouson has raised concerns regarding the location of the open space on either side of the utilities easement. It suggested that the open space be relocated to more consolidated and usable locations for future residents.

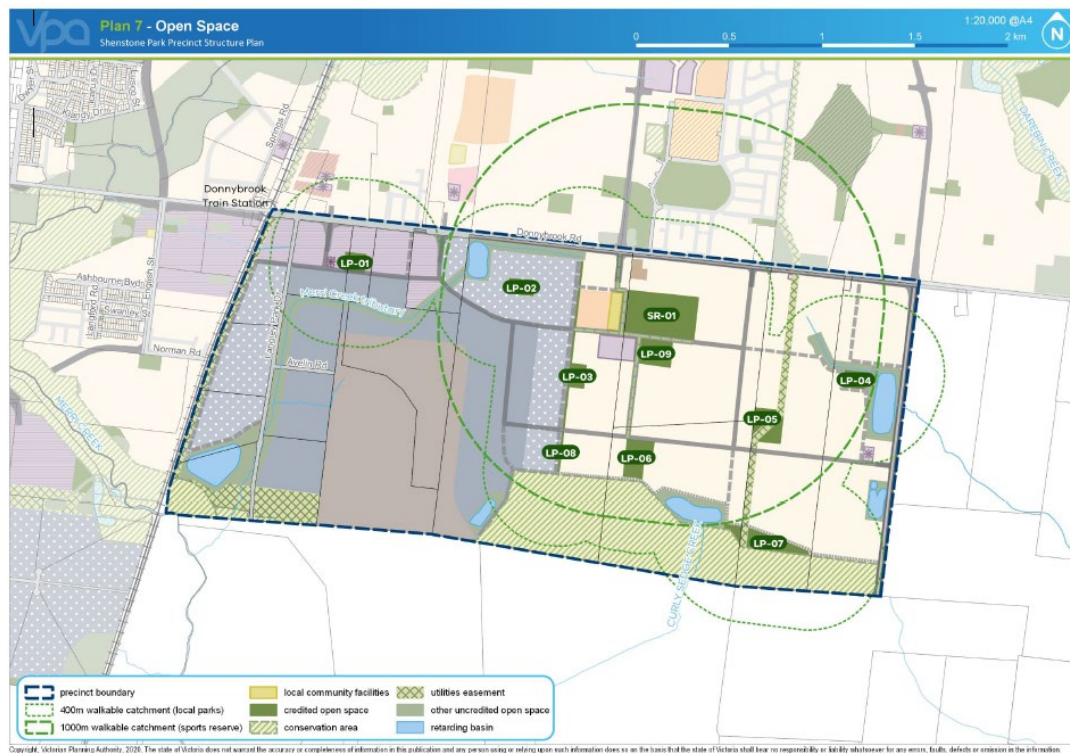


Figure 18: Updated Shenstone Park PSP Plan 7 - Open Space Plan

134. I am aware that the VPA have addressed open space issues raised by submissions in its Part A Submission to the Panel. Appendix 2 'Track Changes Shenstone Park PSP' includes an amended Plan 7 (Figure 19). The changes made to the plan includes a new Local Park (LP-09) at 1,030 Donnybrook Road and changes to the location of LP-04. The resulting approximate total allocation of open space has been increased to 14.12 hectares.
135. No changes were made to the provision of credited open space at 1100 Donnybrook Road, however the VPA notes in its Part A Submission that:
- Ouson Group submitted that the location and size of LP-05 and LP-07 on Property 15 should be amended. VPA does not have an in-principle objection to the proposed change, but VPA has requested mapping files from Ouson Group. VPA are hopeful this submission can be resolved prior to panel, in consultation with Whittlesea City Council.*
136. Ouson has prepared a Master Plan for its site which is shown in Figure 20. The Master Plan includes alternative locations for the local parks at 1100 Donnybrook Road. LP-05 is split into two parks, with one centrally located to the east of the utilities easement and one further north near the proposed drainage reserve. LP-06, which abuts the conservation reserve, has been shifted north and is centrally located within the southern section of the site.
137. I note that Requirement 39 of the Shenstone Park PSP outline requirements for considering the relocation of allocated open space. It notes:

Proposals to relocate allocated open space must:

- *not detract from walkable access as demonstrated on Plan 07 not being adversely impacted*
- *not diminishing the quality or usability of the space*

- *not adversely impacting on the overall diversity of the precinct open space network*
- *still be supported by the preferred path network outlined in Plan 09.*

138. With reference to this requirement and the Precinct Structure Planning Guidelines, I am of the opinion that the proposed locations of the open space as identified within the Master Plan are appropriate and will increase accessibility for future residents, for the following reasons:

- The proposed locations remain consistent with the PSP quantitative guidelines for locating local parks:
 - The total area allocated to open space will not change as a result of the altered locations and arrangements. Each park will also be of an appropriate size to ensure a diverse range of functions can be incorporated.
 - The location of the parks will still ensure that 95% of all dwellings are located within 400m safe walking distance of a local park.
 - By situating the northern part of LP-05 further north the 400m walking catchment coverage will be increased to the future northern dwellings on the site.
- The proposed location will not impact on the distribution of open space across the network and on adjoining land. The locations continue to ensure even distribution and access across the precinct network.
- The location continues to maximise the integration with encumbered land associated with the publicly accessible utilities reserve.



Figure 19: Ousun proposed Master Plan for 1100 Donnybrook Road

139. The proposed central location of LP-06 within the southern section of the site has strong open space planning merits. I will allow for a greater level of access from this location for future residents and will increase opportunities for passive surveillance due to the surrounding residential land on all sides.
140. I note however, that relocating this park further to the north will reduce the buffer provided by the park in combination with the conservation area, to the Phillips Quarry.
141. My preference would be for the park to remain adjacent to the conservation reserve due to its role in maintaining a buffer to the Quarry. However, the more central location does provide for improved accessibility outcomes for future residents and I have no objections to this alternate location if this is considered to be acceptable by the VPA on the basis of open space planning.
142. I believe that the proposed locations as outlined within the Master Plan continue to meet the guidelines of the PSP and the VPA, and provide a better outcome in terms of the amenity of this development parcel. It is

important when planning a development that individual developers have the incentive to maximise the amenity of their particular parcel of land and of effectively competing with other development in the area.

143. I have been instructed that preliminary discussions have been held with the VPA in relation to the Master Plan, who have indicated that they are comfortable with the open space distribution proposed.
144. For consistency and to provide certainty, the Shenstone Park PSP should be updated to reflect the proposed location of the open space as outlined within the Master Plan.

9.2. Uncredited Open Space

145. The draft Shenstone Park PSP includes an area of uncredited public open space associated with the Darebin Creek tributary running through the north east section of 1100 Donnybrook Road.

146. The Ouson submission questions the extent of uncredited POS along the Darebin Creek tributary. The northern extent is considered to be an unreasonable encumbrance that is not consistent with the Melbourne Water's approved Development Services Scheme (DSS) for this location (Figure 21).

147. The northern section of 1100 Donnybrook Road is located within the Woodstock West Development Services Scheme (DSS). Run off is proposed to discharge into a retarding basin at 1150 Donnybrook Road to the east.

148. The Melbourne Water DSS proposes piped drainage along the gas easement to convey drainage south of Donnybrook Road, to a sediment pond and constructed waterway along the eastern boundary of 1100 Donnybrook Road, before being conveyed to the retarding basin further east at 1150 Donnybrook Road. It does not identify the need for land associated with the northern section of uncredited open space that extends to Donnybrook Road as identified within the draft Shenstone Park PSP.

149. As outlined in the drainage evidence prepared by Mr John Yalden for Ouson, the DSS "provides an adequate strategy for the Subject Land which proposes to convey flows from Donnybrook Road in pipes rather than constructed waterways". Mr Yalden concludes in relation to this matter that "the extension of the drainage reserve to Donnybrook Road is not required for drainage purposes nor for connectivity to Donnybrook Road and therefore should be removed". I am therefore of the opinion that the DSS and the PSP should align.

150. I note that the uncredited open space associated with the Darebin Creek Tributary has been amended as part of the 'draft Future

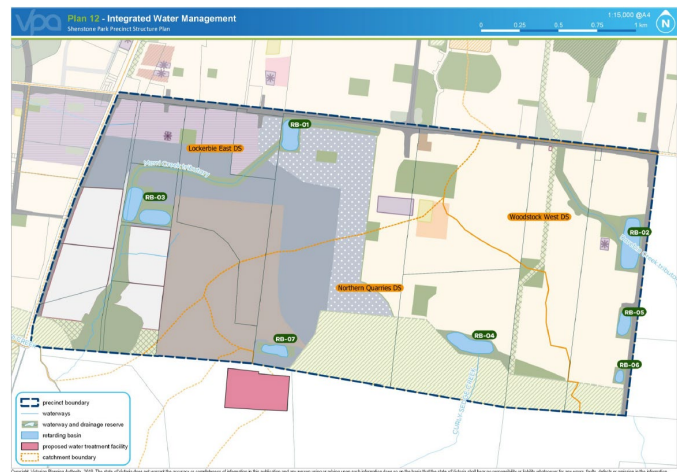


Figure 20: Draft Shenstone Park PSP Plan 12 - Integrated Water Management

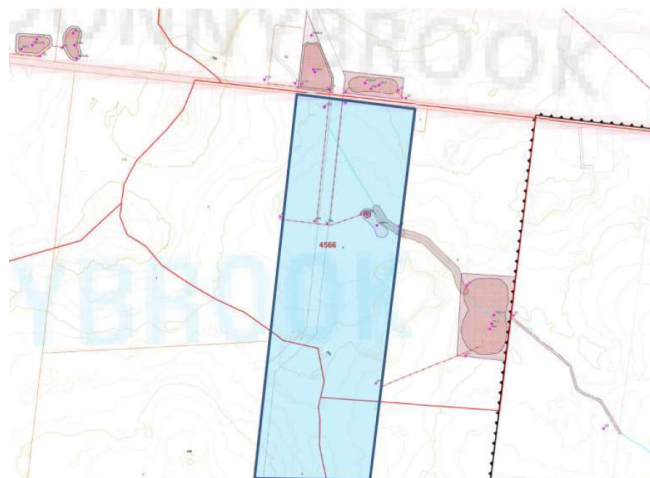


Figure 21: Woodstock West Development Services Scheme (DSS) extract showing 1100 Donnybrook Road

Urban Structure – For Discussion’ plan circulated by the as part of their Part A Submission. The uncredited open space has been reduced and no longer extends to the Donnybrook Road frontage (Figure 23). This is now consistent with the Melbourne Water approved DSS.

151. In its Part A submission, the VPA provides a response to the Ouson submission:

The Future Urban Structure showed a waterway from Donnybrook Road through Property 15 to the western boundary of 1150 Donnybrook Road. Submission 15 was to remove part of the waterway on property 15 and replace with pipe drainage. Melbourne Water considered the proposed change and has agreed to the change. VPA has updated the Future Urban Structure’ to remove the waterway and this has reverted to residential use. Melbourne Water has agreed to these changes and VPA believes this item is resolved.

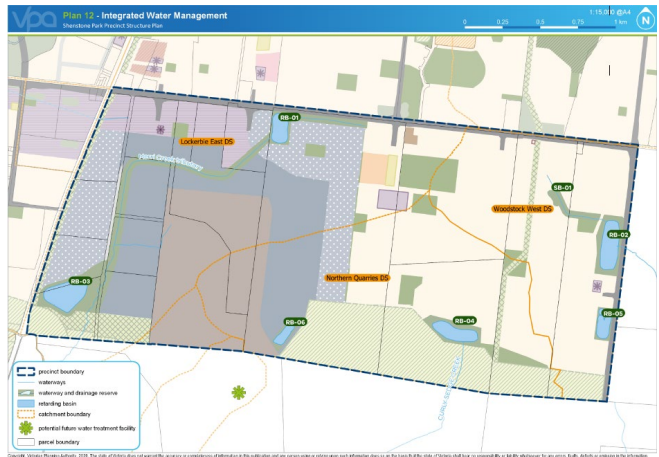


Figure 22: Updated Draft Shenstone PSP Plan 12 - Integrated Water Management Plan

152. I consider this issue has been adequately resolved in the updated PSP.

10. Access to Donnybrook Road

153. The draft Shenstone Park PSP does not include a direct road access point to 1100 Donnybrook Road along Donnybrook Road. The Ouson submission raises issue with the problems this creates for providing formal access to the site, equal to that proposed for other landholdings in the PSP area.

154. Formal access points to Donnybrook Road are provided to each property within the PSP area, other than 1100 Donnybrook Road (Figure 24). The property is reliant on east-west connector roads from adjoining properties.

155. It is important to ensure that every landowner has a point of access to begin development of their land without relying on access through an adjoining property, unless there is a good reason for this not to occur. This ensures fair, reasonable, and equitable development for all land owners and assists with development staging.

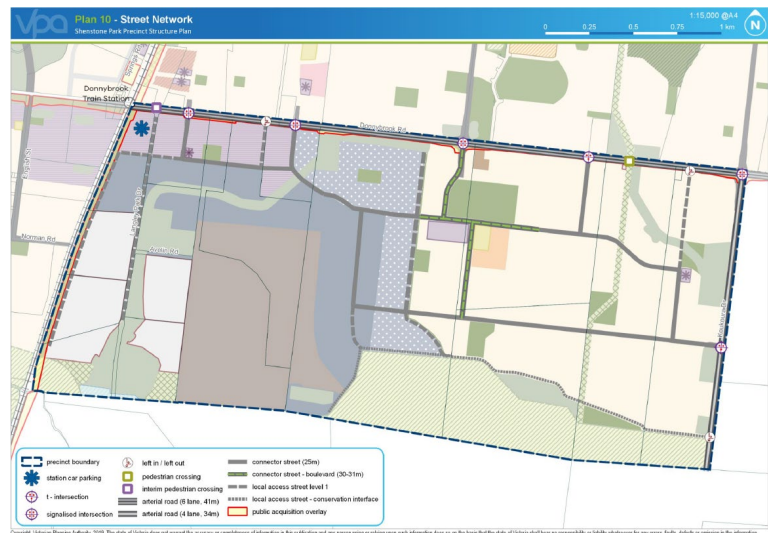


Figure 23: Draft Shenstone Park PSP Plan 10 - Street Network

156. I am aware of the VPA's response to the submission made by Ouson that the number and location of intersections along Donnybrook Road has been based on modelling and suggesting that another intersection at 1100 Donnybrook Road is not warranted. It raises the possibility of providing a local access connection to Donnybrook Road as part of the subdivision process for 1100 Donnybrook Road in the form of a service road and left-in / left-out connection.
157. Traffic evidence prepared by Mr Henry Turnbull for Ouson, has assessed the suitability of a left-in / left-out access point to 1100 Donnybrook Road immediately east of the utilities easement. Mr Turnbull concludes that such an arrangement is consistent with the Department of Transport's (DoT) access management policies and is appropriately spaced with respect to other properties.
158. The master plan prepared by Ouson includes a left-in / left-out arrangement to Donnybrook Road (Figure 20).
159. I consider the inclusion of a left-in / left-out access point along Donnybrook Road to 1100 Donnybrook Road to be a positive outcome for the site that will allow for development to occur before any east-west connections are established from adjoining properties.
160. The Shenstone Park PSP should be updated to include reference to a left-in / left-out connection to Donnybrook Road to provide certainty for the future development of 1100 Donnybrook Road.

11. Conclusion

161. In relation to the matters raised by Ouson in relation to Amendment C241, it is my opinion:

- The buffers associated with the Phillips Quarry should be reduced and modified as identified through this report.
- Modifications to the layout and provision of open space shown on the Master Plan prepared by Ouson, are generally consistent with the requirements of the Precinct Structure Planning Guidelines, the Shenstone Park PSP and strategic open space documents prepared by Council and the VPA.
- The provision of direct vehicle access to the site as recommended in Traffic Evidence provided on behalf of Ouson, should be incorporated into the PSP documentation



David Barnes

Town Planner - BTRP(Hons); MBA, FPIA

David Barnes

Managing Director

email dbarnes@hansenpartnership.com.au | phone +61 3 9664 9818 | mobile + 61 419 327 556

Summary of Experience

David has been a town planner since 1980. With an MBA to supplement his planning qualifications, David is both a strategic planning specialist and an experienced statutory planner. As a statutory planner, David has been involved in obtaining planning approvals for a wide range of projects including residential, retail, commercial, industrial, rural, tourism, entertainment, sports, recreation and community development projects. He has extensive experience representing clients at planning appeals and panel hearings as both an advocate and as an expert witness.

As a strategic planner, David's experience encompasses policy formulation and implementation; preparation of strategy plans, structure plans, urban design frameworks, development plans, planning schemes and amendments; community consultation; preparation of infrastructure funding strategies and development contributions plans; and preparation of commercial, industrial and residential market assessments.

In addition, David has experience in Asia, preparing urban management plans, strategy plans, structure plans, master plans and detailed plans, planning and development controls, and in relation to institutional strengthening programs and professional training programs.

Current

Managing Director
Hansen Partnership
January 2012 – present

Experience

Hansen Partnership

Director (september 1997 – december 2011)

Henshall Hansen Associates

Director (july 1995 – aug 1997)

Associate director (1992 – july 1995)

Senior planner (april 1988 – november 1989) Associate (1989-1992)

wbcm Consultants Limited

Senior urban planner (july 1985 – april 1988)

Melbourne and Metropolitan Board of Works

Statutory planner (february – june 1985)

Planning officer (april 1982 – february 1984)

Estate Office, Victorian Railways

Town planner (november 1980 – april 1982)

Qualifications

- Master of Business Administration, RMIT University (1993)
- Bachelor of Town and Regional Planning (hons), University of Melbourne (1980)

Affiliations

- Property Council of Australia, Victoria Division (2012 – present; 2009-2010) - member planning committee
- Planning Institute of Australia (PIA) (2007 – present) - fellow
- Victoria Planning and Environmental Law Association (2009 – present) - member
- planning institute of australia (PIA) (1996-2007) - member
- vice president and treasurer royal australian planning institute (1996-1997)

Specialisations

- strategic planner
- statutory planner
- town planning advocate
- town planning expert witness
- infrastructure funding and development contributions
- international planning – urban management, institutional strengthening, training



Key Project Experience

Structure Planning

- Review of Bayswater / Bayswater North Industrial Precinct, with the AEC Group, State Development Business and Innovation (2014)
- Bendigo Hospital Surrounds Structure Plan, the City of Greater Bendigo (2013)
- Birregurra Structure Plan Review, Otway Shire Council (2013)
- Chapel Vision Structure Plan Review, Stonnington City Council (2013)
- Warrnambool – North Dennington Structure Plan and Development Control Plan, Warrnambool City Council (2012)
- Hamilton Structure Plan and Town Centre Urban Design Framework, for South Grampians Shire (2010)
- Traralgon Town Centre Structure Plan and Urban Design Framework, for Latrobe Valley Shire (2010)
- Ringwood Transit City Development Contributions Plan, for Maroondah City Council (2009)
- Frankston Safe Boat Harbour Planning Scheme Amendment, for Frankston City Council (2008)
- Clifton Springs Town Centre Structure Plan, for the City of Greater Geelong (2008)
- Warrnambool and Moyne Development Program, for Warrnambool City Council and Moyne Shire Council (2008)
- Spring Creek Urban Growth Framework Plan and Precinct Structure Plan, for the Surf Coast Shire (2008)
- Newhaven, Cape Woolamai and San Remo Structure Plan, for Bass Coast Shire Council (2007)
- Ocean Grove Structure Plan, for the City of Greater Geelong (2006)
- Jackass Flat Structure Plan, Greater Bendigo City Council (2006)
- Burwood Heights Activity Centre Structure Plan, Whitehorse City Council, (2004)
- Torquay / Jan Juc Population and Residential Development Review, (2004)
- West Melbourne Structure Plan, for the City of Melbourne (2003)
- Highett Structure Plan, for the Cities of Bayside and Kingston (2002-2003)

Character Studies

- Birregurra Neighbourhood Character Study, Otway Shire Council, (2011)
- Romsey Neighbourhood Character Study, for Macedon Ranges Shire, (2010)
- Boroondara My Neighbourhood – Prized Residential Character Areas, for

Boroondara City Council (2008)

- Dandenong Neighbourhood Character Study, for the City of Greater Dandenong (2007-2008)
- Queenscliffe Urban Character Study, for the Borough of Queenscliffe (2000)

Strategy Planning and Studies

- La Trobe University Bendigo Campus Vision, for La Trobe University (2014)
- La Trobe University Boroondara Campus Vision, La Trobe University (2012)
- Mildura Settlement Strategy, Mildura Rural City Council (2013)
- New Gisborne Development Plan, Macedon Ranges Shire Council, (2011)
- Wyndeham Open Space and Recreation Strategy, with @leisure, for the Wyndeham Shire Council (2011)
- Strengthening Victoria's Food Bowl, with PSI Delta, for Moira Campaspe, Swan Hill and Mildura councils (2011)
- Sweetwater Creek, Strategic Justification for Development / Environmental Overlays, for Frankston City Council (2010)
- Utilising Victoria's Planning Framework to Support Sustainability, Municipal Association of Victoria (2009-2010)
- Shepparton East Outline Development Plan, for the City of Greater Shepparton (2009)
- Melbourne Industrial Land Supply and Demand Study, with Charter Keck Cramer, for Melbourne City Council (2009)
- LaTrobe University Strategy Planning Review, for LaTrobe University (2008/2009)
- Review of Referral Requirements under the Victoria Planning Provisions, for the Department of Planning and Community Development (2008)
- Whitehorse Student Accommodation – Strategic Review and Planning Scheme Amendment, for Whitehorse City Council (2007)
- Sustainability in the Planning Process, for the municipalities of Moreland, Port Phillip and Darebin (2007-2008)
- Geelong Region Strategy Plan, for the G21 Geelong Regional Alliance (2005-2006)
- Bell Street Strategy Plan and Urban Design Framework, Darebin City Council (2005)
- Kingston Retail and Commercial Development Strategy, with Charter keck Cramer, for the City of Kingston (2004)
- Willoughby Industrial Strategy, Willoughby City Council (2003)
- Yarra Industrial Strategy, for Yarra City Council (2003)
- Moorabool Rural Housing Study, for Moorabool Shire Council (2003)

- Ballan Township Strategy Plan, for Moorabool Shire Council (2003)
- Blackrock Shopping Centre Study, for the Cities of Bayside and Kingston, (2002-2003)
- Bayside Industrial Areas Study, for the City of Bayside (2002)
- Moreland Industrial Areas Review, for the City of Moreland (2002)
- Geelong Industrial Land Use Study, for the City of Greater Geelong, with MacroPlan (2001)
- Anglesea Population Review and Review of Township Boundaries, for Surf Coast Shire Council (2000)
- Torquay Population and Residential Strategy Review, for Surf Coast Shire Council (2000)
- Torquay Industrial Area Review, for Surf Coast Shire Council (2000)
- Bayside Height Control Study, for the City of Bayside (1999)
- Development Contributions Plan for Plenty and Yarrambat, for the Nillumbik Shire Council (1998-1999)
- Geelong CAA Revitalisation Program, for the Greater City of Geelong (1998)
- Sydenham Activity Area Policy Review, for the City of Brimbank (1998)

Management Plans

- Melton North Green Wedge Management Plan, Melton Shire Council (2014)

Infrastructure reviews

- Traralgon Growth Areas Review, for LaTrobe City Council (2011)
- Fishermans Bend Industrial Land Review, with Charter Keck Cramer, for Port Phillip City Council (2009)
- Doncaster Hill Energy Plan, for Manningham City Council and Sustainability Victoria (2008)
- Car Parking Rate Review, for the Department of Infrastructure (1999)

master planning

- Geelong Western Wedge Strategic Framework Plan and Railway Station Master Plan, for the Department of Infrastructure (2002)

Urban Design Framework

- Ringwood Town Centre Urban Design Framework, for the City of Maroondah (2002-2003)
- Knox Central Urban Design Framework, for the City of Knox (2002-2003)

Design Guidelines

- Knox Residential Capacity and Design Guidelines Project, Knox City Council (2010)
- Aireys Inlet Activity Centre Urban Design Guidelines, for Surf Coast Shire, (2008-2009)
- Kingston Residential Design Guidelines, for the city of Kingston (2000)
- Kingston Residential Design Guidelines, for the city of Kingston (2000)
- Miller Street and Gilbert Street Preston Design Guidelines, for Darebin City Council (2009)
- Station Street Fairfield Design Guidelines, for Darebin City Council (2008)
- Victoria Street Urban Design Framework and Streetscape Plan, for the City of Yarra (2002)
- Hastings Foreshore Urban Design Framework, for Mornington Peninsula Shire (2000)
- Carrum Urban Design Framework, for the City of Kingston (2000)

International planning

- Ben Dam Detailed Master Plan and Urban Management System, for the Ba Ria Vung Tao People's Committee, Vietnam, 2013.
- Long Thanh International Airport Master Plan – Vietnam, with the Vietnamese Institute of Architecture Urban and Rural Planning, for the Dong Nai People's Committee (2009-2012)
- Three Delta Towns Water Supply and Sanitation Project – Vietnam, with Gutteridge Haskins and Davey, for AusAide, (2002-2003)
- Capacity 21 Project – Environment Issues in Investment Planning in Vietnam – Quang Ninh Provincial Pilot Project, Ha Long Bay Vietnam, UNDP Project VIE 97/007, prepared for Colenco-Holinger (2000)
- HCMC UNDP Public Administration Reform Project, preparation of Proposal for Consultancy Team, (1999)
- Hanoi Planning and Development Controls, Hanoi, Vietnam, as part of Hanoi Planning and Development Control Project (1995-1997)